



**Hollow Structural Section**

**Light Gauge Section**

**NSMP**  
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**NIPPON STEEL METAL PRODUCTS CO.,LTD.**



# Introduction

Nippon Steel Metal Products Co.,Ltd., the core affiliate of Nippon Steel Corporation, produces various grades of Hollow Structural Section (HSS) in many international standards with the advanced “Cold Roll Forming Technology” based on long experience of almost 60 years and ceaseless R&D activities. Our HSS is widely used in many fields such as Construction, Civil Engineering and Industrial & Construction Machineries and has attained reputation for its excellent quality and delivery from all over the world.

## Standards

Various major international standards, such as ASTM, CSA, EN, AS/NZS, JIS, BCR and UBCR are available.

## Sizes

Wide range of size is available including one of the largest cold roll formed HSS in the world. Square size varies with each side from 50mm to 550mm or 2inch to 22inch. wall thickness from 1.6mm to 25mm or 0.063inch to 0.984inch.

## Quality

The highest and consistent quality is guaranteed such as high dimensional accuracy, reliable welding quality and smooth surface.

## Certified

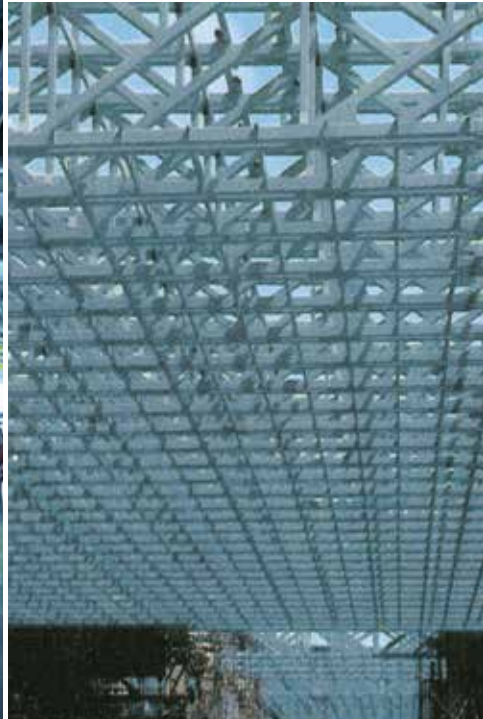
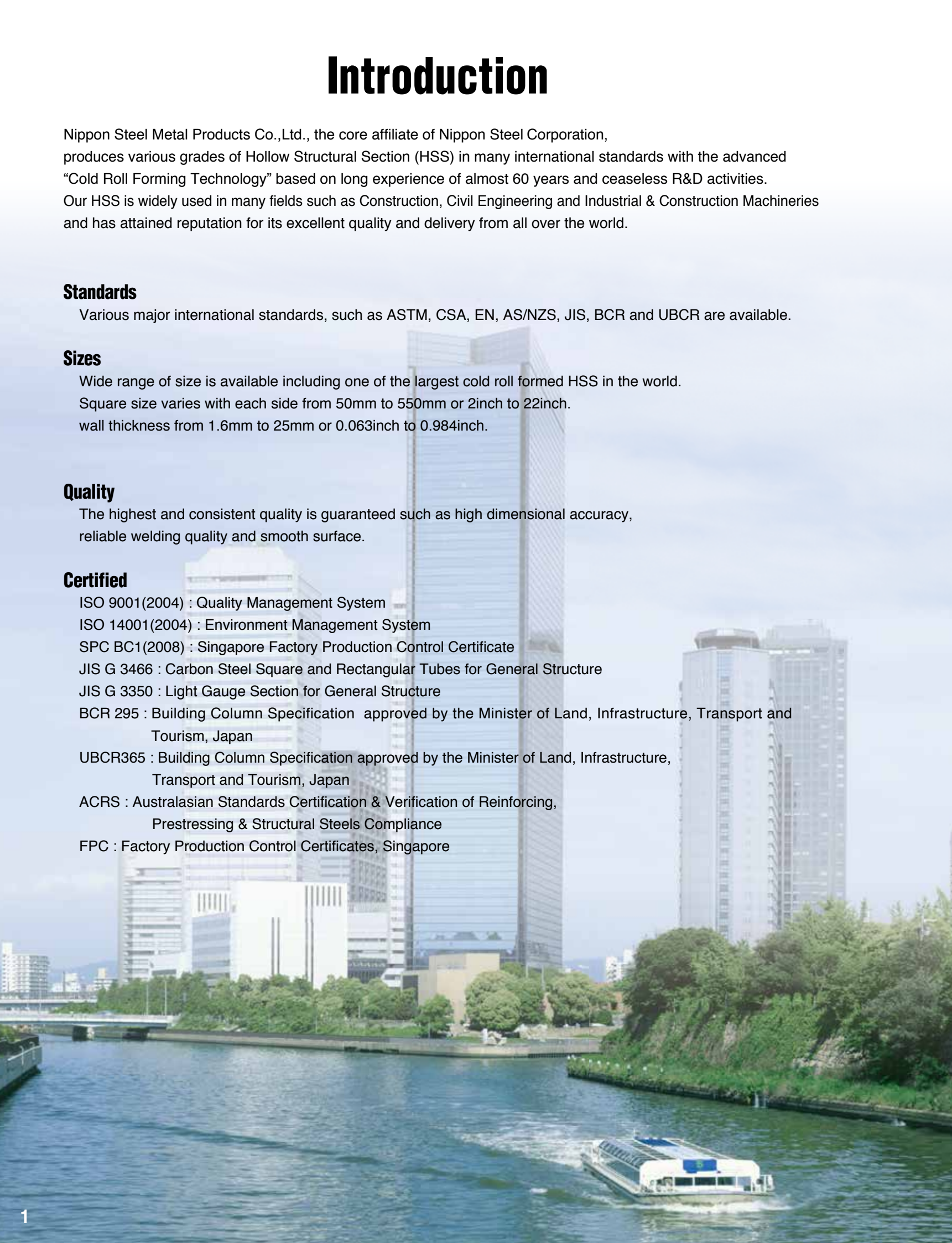
- ISO 9001(2004) : Quality Management System
- ISO 14001(2004) : Environment Management System
- SPC BC1(2008) : Singapore Factory Production Control Certificate
- JIS G 3466 : Carbon Steel Square and Rectangular Tubes for General Structure
- JIS G 3350 : Light Gauge Section for General Structure
- BCR 295 : Building Column Specification approved by the Minister of Land, Infrastructure, Transport and Tourism, Japan
- UBCR365 : Building Column Specification approved by the Minister of Land, Infrastructure, Transport and Tourism, Japan
- ACRS : Australasian Standards Certification & Verification of Reinforcing, Prestressing & Structural Steels Compliance
- FPC : Factory Production Control Certificates, Singapore

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| <b>CSA G40.21-04</b>                  | <b>15</b> |
| <b>EN 10219</b>                       | <b>19</b> |
| <b>AS/NZS1163</b>                     | <b>27</b> |
| <b>JIS G 3466</b>                     | <b>35</b> |
| <b>BCR 295<br/>        UBCR 365</b>   | <b>43</b> |
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| <b>Primer painted, Pre-Galvanized</b> | <b>53</b> |

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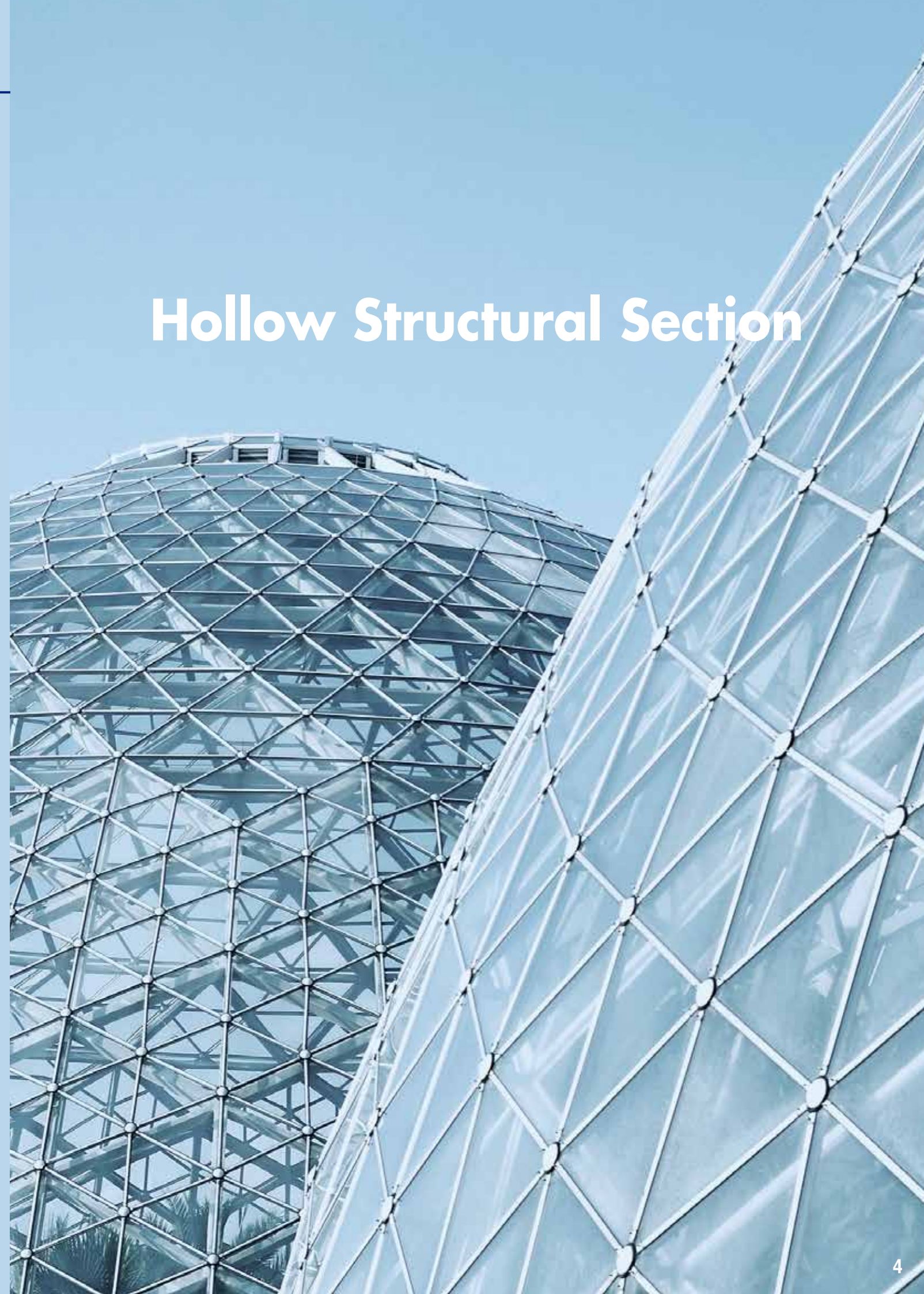
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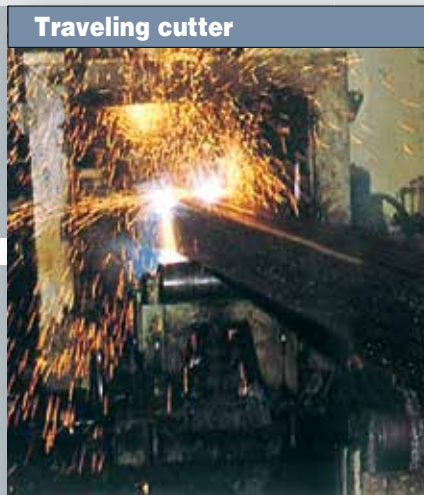
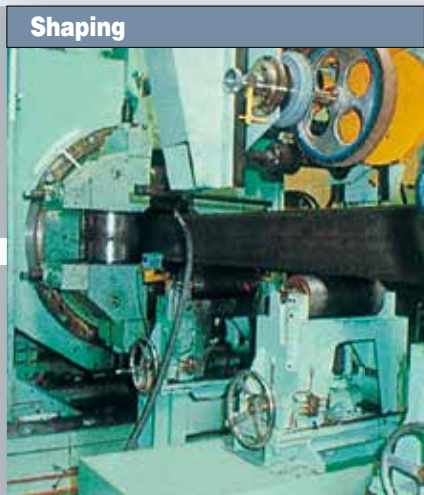
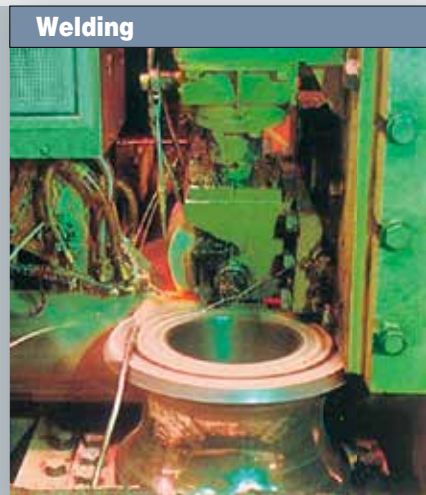
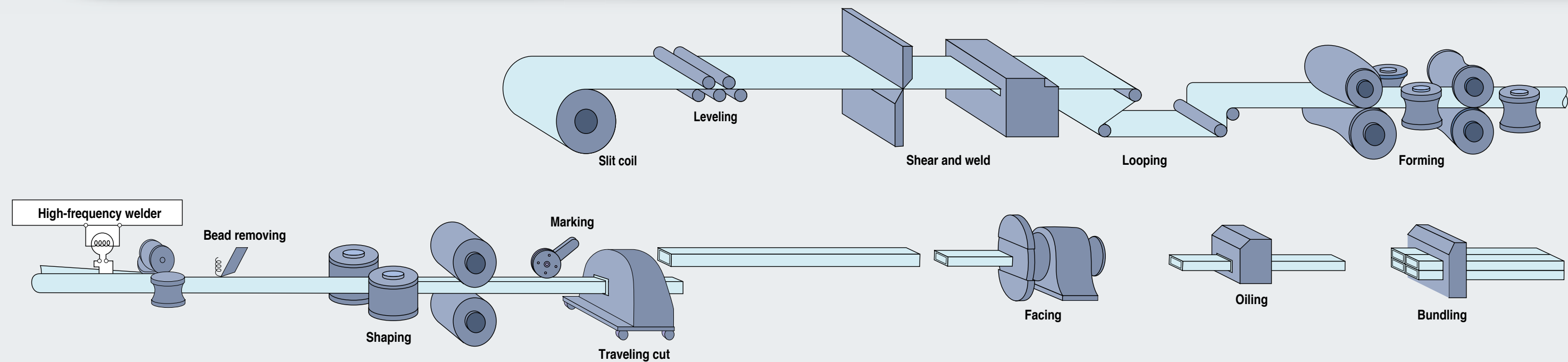


## Hollow Structural Section





Manufacturing process





Mechanical properties and chemical composition

| Specification                              |         |                   | page  | Mechanical properties                                    |                                                            |                           |                                                                           |                                        |  |      | Chemical composition |                  |                        |                 |                 |                 |                                        |
|--------------------------------------------|---------|-------------------|-------|----------------------------------------------------------|------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------|----------------------------------------|--|------|----------------------|------------------|------------------------|-----------------|-----------------|-----------------|----------------------------------------|
| Standard                                   | Grade   | ※<br>Availability |       | Yield strength<br>(N/mm <sup>2</sup> )<br>Min or Min/Max | Tensile strength<br>(N/mm <sup>2</sup> )<br>Min or Min/Max | Yield ratio<br>(%)<br>Max | Elongation <sup>1)</sup><br>(%)<br>Min                                    | Charpy absorption<br>energy (J)<br>Min |  |      | C<br>(%)<br>Max      | Si<br>(%)<br>Max | Mn<br>(%)<br>Max       | P<br>(%)<br>Max | S<br>(%)<br>Max | N<br>(%)<br>Max | Ceq or Cev <sup>2)</sup><br>(%)<br>Max |
| ASTMA 500                                  | B       | ○                 | 9-14  | 315                                                      | 400                                                        | -                         | 23                                                                        | -                                      |  |      | 0.26                 | -                | 1.35                   | 0.035           | 0.035           | -               | -                                      |
|                                            | C       | ○                 |       | 345                                                      | 425                                                        | -                         | 21                                                                        | -                                      |  |      | 0.23                 | -                | 1.35                   | 0.035           | 0.035           | -               | -                                      |
| CSA<br>G40.21-04                           | 350W    | ○                 | 15-18 | 350                                                      | 450/620                                                    | -                         | 22                                                                        | -                                      |  |      | 0.23                 | 0.40             | 0.50/1.50<br>(Min/Max) | 0.040           | 0.050           | -               | -                                      |
| EN10219                                    | S275J0H | ○                 | 19-26 | T≤16 275<br>16<T 265                                     | T<3 430/580<br>3≤T 410/560                                 | -                         | 20                                                                        | 27(0℃)                                 |  | 0.20 | -                    | 1.50             | 0.040                  | 0.040           | 0.009           | 0.40            |                                        |
|                                            | S275J2H | ○                 |       |                                                          |                                                            |                           |                                                                           | 27(-20℃)                               |  | 0.20 | -                    | 1.50             | 0.035                  | 0.035           | -               | 0.40            |                                        |
|                                            | S355J0H | ○                 |       | T≤16 355<br>16<T 345                                     | T<3 510/680<br>3≤T 470/630                                 | -                         | 20                                                                        | 27(0℃)                                 |  | 0.22 | 0.55                 | 1.60             | 0.040                  | 0.040           | 0.009           | 0.45            |                                        |
|                                            | S355J2H | ○                 |       |                                                          |                                                            |                           |                                                                           | 27(-20℃)                               |  | 0.22 | 0.55                 | 1.60             | 0.035                  | 0.035           | -               | 0.45            |                                        |
| AS/NZS 1163                                | C350L0  | ○                 | 27-34 | 350                                                      | 430                                                        | -                         | B/T≤15 12<br>15<B/T≤30 14<br>30<B/T 16                                    | 27(0℃)                                 |  | 0.20 | 0.45                 | 1.60             | 0.030                  | 0.030           | -               | 0.43            |                                        |
|                                            | C450    | ○                 |       | 450                                                      | 500                                                        | -                         | B/T≤15 10<br>15<B/T≤30 12<br>30<B/T 14                                    | -                                      |  | 0.20 | 0.45                 | 1.70             | 0.030                  | 0.030           | -               | 0.43            |                                        |
|                                            | C450L0  | △                 |       |                                                          |                                                            |                           |                                                                           | 27(0℃)                                 |  |      |                      |                  |                        |                 |                 |                 |                                        |
| JIS G 3466                                 | STKR400 | ○                 | 35-42 | 245                                                      | 400                                                        | -                         | 23                                                                        | -                                      |  |      | 0.25                 | -                | -                      | 0.040           | 0.040           | -               | -                                      |
|                                            | STKR490 | ○                 |       | 325                                                      | 490                                                        | -                         | 23                                                                        | -                                      |  |      | 0.18                 | 0.55             | 1.50                   | 0.040           | 0.040           | -               | -                                      |
| Approved<br>by MLIT of Japan <sup>3)</sup> | BCR295  | ○                 | 43-46 | 6≤T<12 295<br>12≤T≤22 295/445                            | 400/550                                                    | 12≤T 90                   | T=6 19, T=8,9 22,<br>T=12 24, T=14,16 27,<br>T=19 29, T=22 31,<br>T=25 33 | 27(0℃) <sup>4)</sup>                   |  | 0.20 | 0.35                 | 1.40             | 0.030                  | 0.015           | 0.006           | 0.36            |                                        |
|                                            | UBCR365 | ○                 | 43-46 | 6≤T<12 365<br>12≤T<22 365/515                            | 490/640                                                    | 12≤T 90                   | T=6 19, T=8,9 22,<br>T=12 24, T=14,16 27,<br>T=19 29, T=22 31             | 27(0℃) <sup>4)</sup>                   |  | 0.18 | 0.55                 | 1.60             | 0.030                  | 0.015           | 0.006           | 0.44            |                                        |

T : Wall thickness

Notes:

- 1)Test piece shall be in accordance with each standard.
- 2)EN 10219 : Cev = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15  
AS/NZS 1163 : Cev = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15  
BCR 295 : Ceq = C+Mn/6+Si/24+Ni/40+Cr/5+Mo/4+V/14
- 3)The Minister of Land, Infrastructure, Transport and Tourism of Japan.
- 4)It shall be applied to wall thickness over 12mm.

※ Availability :  
○: Available  
△: Please consult us. (Size and delivery date should be checked before ordering.)

Please consult us if you require other standards and additional requirements.

ASTM A500 “Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes”

Mechanical properties and chemical composition

Refer to page 7-8.

Tolerances

The tolerances on dimensions are established in accordance with ASTM A500

| Characteristics           | Tolerances                               |                                            |
|---------------------------|------------------------------------------|--------------------------------------------|
| Outside dimensions        | (H,B≤2.5 in.)                            | ±0.020 in. (0.5mm)                         |
| H : Longest side          | (2.5 in.<H,B≤3.5 in.)                    | ±0.025 in. (0.6mm)                         |
| B : Shortest side         | (3.5 in.<H,B≤5.5 in.)                    | ±0.030 in. (0.8mm)                         |
|                           | (5.5 in.<H,B)                            | 1% in dimensions                           |
| Wall thickness(T)         | ±10% in thickness                        |                                            |
| Squareness of sides       | 90°±2°                                   |                                            |
| External corner radius(R) | R≤3T                                     |                                            |
| Twist                     | (H≤1.5 in.)                              | ±0.050 in./3 feet length (1.3mm/1m length) |
|                           | (1.5 in.<H≤2.5 in.)                      | ±0.062 in./3 feet length (1.6mm/1m length) |
|                           | (2.5 in.<H≤4.0 in.)                      | ±0.075 in./3 feet length (1.9mm/1m length) |
|                           | (4.0 in.<H≤6.0 in.)                      | ±0.087 in./3 feet length (2.2mm/1m length) |
|                           | (6.0 in.<H≤8.0 in.)                      | ±0.100 in./3 feet length (2.5mm/1m length) |
|                           | (8.0 in.<H)                              | ±0.112 in./3 feet length (2.8mm/1m length) |
| Straightness              | 1/8 in./1 feet length (10.4mm/1m length) |                                            |
| Length(L)                 | 0, +50mm (Private standard tolerance)    |                                            |

NOTE

- 1)The tolerance of outside dimensions includes an allowance for convexity or concavity.
- 2)Outside dimensions are measured across the flats at positions at least 2 in. from the end of the HSS.

Packing

In bare bundle (steel banded) or in bulk. Standard lengths are 40 and 48 feet.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.

a)Manufacturer's Name   b)Standard & Grade   c)Size   d)Manufacturing Date   e)Heat No.   f)Country of Origin

Inspection and Testing

ASTM A500 is subject to specific inspection and testing. The test method shall be in accordance with ASTM A370, ASTM A751.

If you need additional requirements, please consult us.

| Available size range |             |               |                     |       |       |       |       | Dimensions (in.-size) |       |       |       |
|----------------------|-------------|---------------|---------------------|-------|-------|-------|-------|-----------------------|-------|-------|-------|
| Size(in.)            |             |               | Wall thickness(in.) |       |       |       |       |                       |       |       |       |
|                      |             |               | BWG#7               | 3/16  | 4/16  | 5/16  | 6/16  | 8/16                  | 10/16 | 12/16 | 14/16 |
|                      |             |               | 0.180               | 0.188 | 0.250 | 0.313 | 0.375 | 0.500                 | 0.625 | 0.750 | 0.875 |
| SQUARE               | RECTANGULAR | mm            | 4.57                | 4.76  | 6.35  | 7.94  | 9.53  | 12.70                 | 15.88 | 19.05 | 22.23 |
| 2.0 x 2.0            | 3.0 x 2.0   | 50.8 x 50.8   |                     |       |       |       |       |                       |       |       |       |
| 2.5 x 2.5            |             | 63.5 x 63.5   |                     | ● ▲   | ● ▲   |       |       |                       |       |       |       |
|                      |             | 76.2 x 50.8   |                     | ● ▲   | ● ▲   |       |       |                       |       |       |       |
| 3.0 x 3.0            | 4.0 x 2.0   | 76.2 x 76.2   | ● ▲                 | ● ▲   | ● ▲   | ●     | ●     |                       |       |       |       |
|                      |             | 101.6 x 50.8  | ● ▲                 | ● ▲   | ● ▲   |       |       |                       |       |       |       |
| 3.5 x 3.5            | 4.0 x 3.0   | 88.9 x 88.9   | ● ▲                 | ● ▲   | ● ▲   |       |       |                       |       |       |       |
|                      |             | 101.6 x 76.2  | ● ▲                 | ● ▲   | ● ▲   |       |       |                       |       |       |       |
|                      |             | 127 x 50.8    | ● ▲                 | ● ▲   | ● ▲   |       |       |                       |       |       |       |
| 4.0 x 4.0            | 5.0 x 3.0   | 101.6 x 101.6 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ●                     |       |       |       |
|                      |             | 127 x 76.2    | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   |                       |       |       |       |
|                      |             | 152.4 x 50.8  | ● ▲                 | ● ▲   | ● ▲   |       |       |                       |       |       |       |
| 4.5 x 4.5            | 6.0 x 3.0   | 114.3 x 114.3 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   |       |                       |       |       |       |
|                      |             | 152.4 x 76.2  | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   |                       |       |       |       |
| 5.0 x 5.0            | 6.0 x 4.0   | 127 x 127     | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 152.4 x 101.6 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ●                     |       |       |       |
| 6.0 x 6.0            | 7.0 x 5.0   | 152.4 x 152.4 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 177.8 x 127   |                     |       |       | ● ▲   | ● ▲   | ●                     |       |       |       |
|                      |             | 203.2 x 101.6 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ●                     |       |       |       |
| 7.0 x 7.0            | 8.0 x 6.0   | 177.8 x 177.8 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 203.2 x 152.4 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 254 x 101.6   |                     |       |       | ● ▲   | ● ▲   |                       |       |       |       |
| 8.0 x 8.0            | 10 x 4.0    | 203.2 x 203.2 | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   | ●     |       |       |
|                      |             | 254 x 152.4   | ● ▲                 | ● ▲   | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 304.8 x 101.6 |                     |       | ● ▲   | ● ▲   | ● ▲   | ●                     |       |       |       |
|                      | 10 x 8.0    | 254 x 203.2   |                     |       |       |       | ● ▲   | ● ▲                   |       |       |       |
|                      | 12 x 6.0    | 304.8 x 152.4 |                     |       |       |       | ● ▲   | ● ▲                   |       |       |       |
| 10 x 10              | 12 x 8.0    | 254 x 254     |                     |       | ● ▲   | ● ▲   | ● ▲   | ● ▲                   | ● ▲   | ●     |       |
|                      |             | 304.8 x 203.2 |                     |       | ● ▲   | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
|                      |             | 355.6 x 152.4 |                     |       |       | ● ▲   | ● ▲   | ● ▲                   |       |       |       |
| 12 x 12              | 14 x 10     | 304.8 x 304.8 |                     |       | ● ▲   | ● ▲   | ● ▲   | ● ▲                   | ● ▲   | ● ▲   |       |
|                      |             | 355.6 x 254   |                     |       |       |       | ● ▲   | ● ▲                   | ● ▲   |       |       |
|                      |             | 406.4 x 203.2 |                     |       | ● ▲   | ● ▲   | ● ▲   | ● ▲                   | ●     |       |       |
| 14 x 14              | 16 x 8.0    | 355.6 x 355.6 |                     |       |       | ● ▲   | ● ▲   | ● ▲                   | ● ▲   | ● ▲   | ● ▲   |
|                      |             | 406.4 x 304.8 |                     |       |       |       | ●     | ●                     | ●     | ●     |       |
| 16 x 16              | 20 x 12     | 406.4 x 406.4 |                     |       |       | ●     | ● ▲   | ● ▲                   | ● ▲   | ● ▲   | ● ▲   |
| 508 x 304.8          |             |               |                     |       |       |       | ● ▲   | ● ▲                   | ● ▲   |       |       |
| 18 x 18              | 24 x 12     | 457.2 x 457.2 |                     |       |       |       |       | ● ▲                   | ● ▲   | ● ▲   | ● ▲   |
|                      |             | 609.6 x 304.8 |                     |       |       |       |       | ● ▲                   | ● ▲   | ● ▲   |       |
| 20 x 20              |             | 508 x 508     |                     |       |       |       |       | ● ▲                   | ● ▲   | ● ▲   | ● ▲   |
| 22 x 22              |             | 558.8 x 558.8 |                     |       |       |       |       |                       |       | ● ▲   | ○     |

- Grade B Available   ○ Grade B to be Confirmed
- ▲ Grade C Available

If you require other sizes, please consult us.

Available size range

Dimensions (mm-size)

| Size(mm)  |             | Wall thickness (mm) |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |
|-----------|-------------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| SQUARE    | RECTANGULAR | 1.6                 | 2.0 | 2.3 | 2.5 | 3.0 | 3.2 | 4.0 | 4.5 | 5.0 | 6.0 | 6.3 | 8.0 | 9.0 | 10.0 | 12.0 | 12.5 | 16.0 | 19.0 | 22.0 |
| 50 x 50   | 60 x 30     | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |     |     |     |     |     |      |      |      |      |      |      |
|           | 60 x 40     | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |     |     |      |      |      |      |      |      |
| 60 x 60   | 70 x 40     | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |      |      |      |      |      |      |
|           | 75 x 45     | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |      |      |      |      |      |
|           | 75 x 50     |                     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |      |      |      |      |      |
|           | 100 x 40    | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |     |     |     |     |     |      |      |      |      |      |      |
| 75 x 75   | 100 x 50    | ●                   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |     |      |      |      |      |      |      |
|           | 125 x 40    | ●▲                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |     |     |      |      |      |      |      |      |
| 90 x 90   |             |                     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 125 x 75    | ●                   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   | ●    | ●    |      |      |      |      |
| 100 x 100 | 150 x 50    |                     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 150 x 75    |                     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 150 x 80    |                     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
| 120 x 120 |             |                     |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●    |      |      |      |      |
|           | 125 x 125   |                     |     | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   |      |      |      |      |
| 150 x 150 | 150 x 100   |                     |     | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●    |      |      |      |      |
|           | 175 x 125   |                     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●    |      |      |      |      |
|           | 200 x 100   |                     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●    |      |      |      |      |
| 175 x 175 | 200 x 150   |                     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   |      |      |      |      |
|           | 250 x 100   |                     |     |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●    |      |      |      |      |
| 200 x 200 |             |                     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   | ●    |      |      |
|           | 225 x 175   |                     |     |     |     |     |     | ●   | ●   | ●▲  |     |     |     |     |      |      |      |      |      |      |
|           | 250 x 150   |                     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   |      |      |      |      |
|           | 300 x 100   |                     |     |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 250 x 200   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |      |      |
|           | 300 x 150   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |      |      |
| 250 x 250 |             |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   | ●    |      |      |
|           | 300 x 200   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●    |      |      |      |      |
|           | 350 x 150   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |      |      |
| 300 x 300 |             |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   |      |      |
|           | 350 x 250   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   |      |      |      |
|           | 400 x 200   |                     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   |      |      |      |      |
| 350 x 350 |             |                     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |      |
|           | 400 x 300   |                     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ●    |      |      |      |
| 400 x 400 |             |                     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |      |
|           | 500 x 300   |                     |     |     |     |     |     |     |     |     |     |     |     |     | ●▲   | ●▲   | ●▲   | ●▲   |      |      |
| 450 x 450 |             |                     |     |     |     |     |     |     |     |     |     |     |     | ●   | ●    | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |
|           | 600 x 300   |                     |     |     |     |     |     |     |     |     |     |     |     |     |      | ●▲   | ●▲   | ●▲   | ●▲   |      |
| 500 x 500 |             |                     |     |     |     |     |     |     |     |     |     |     |     | ●   | ●    | ●▲   | ●▲   | ●▲   | ●▲   | ●    |
| 550 x 550 |             |                     |     |     |     |     |     |     |     |     |     |     |     |     |      |      | ●▲   | ●▲   | ●    |      |

● Grade B Available ▲ Grade C Available

Section properties Square : 2 in. x 2 in. to 14 in. x 14 in.

| Dimensions   |         |           | Mass     |          |         | Area              | Second moment of area |                     | Radius of gyration |        | Elastic section modulus |                     | Plastic section modulus |                      | Nominal length per tonne |      |
|--------------|---------|-----------|----------|----------|---------|-------------------|-----------------------|---------------------|--------------------|--------|-------------------------|---------------------|-------------------------|----------------------|--------------------------|------|
| Nominal size |         | Thickness |          |          |         |                   |                       |                     |                    |        |                         |                     |                         |                      |                          |      |
| A in.        | x B in. | t in.     | M1 kg/ft | M2 lb/ft | M3 kg/m | A in <sup>2</sup> | Ix in. <sup>4</sup>   | Iy in. <sup>4</sup> | ix in.             | iy in. | Zx in. <sup>3</sup>     | Zy in. <sup>3</sup> | Zpx in. <sup>3</sup>    | Zpy in. <sup>3</sup> | ft                       |      |
| 2            | x       | 2         | 0.180    | 1.89     | 4.17    | 6.21              | 1.227                 | 0.653               | 0.653              | 0.729  | 0.729                   | 0.653               | 0.653                   | 0.817                | 0.817                    | 529  |
|              |         |           | 0.188    | 1.96     | 4.31    | 6.42              | 1.269                 | 0.668               | 0.668              | 0.726  | 0.726                   | 0.668               | 0.668                   | 0.841                | 0.841                    | 510  |
|              |         |           | 0.250    | 2.45     | 5.40    | 8.04              | 1.589                 | 0.766               | 0.766              | 0.694  | 0.694                   | 0.766               | 0.766                   | 1.00                 | 1.00                     | 408  |
| 2.5          | x       | 2.5       | 0.180    | 2.45     | 5.39    | 8.03              | 1.587                 | 1.38                | 1.38               | 0.934  | 0.934                   | 1.11                | 1.11                    | 1.35                 | 1.35                     | 408  |
|              |         |           | 0.188    | 2.53     | 5.58    | 8.32              | 1.644                 | 1.42                | 1.42               | 0.930  | 0.930                   | 1.14                | 1.14                    | 1.40                 | 1.40                     | 395  |
|              |         |           | 0.250    | 3.22     | 7.09    | 10.6              | 2.089                 | 1.69                | 1.69               | 0.899  | 0.899                   | 1.35                | 1.35                    | 1.71                 | 1.71                     | 311  |
| 3            | x       | 3         | 0.180    | 3.00     | 6.61    | 9.85              | 1.947                 | 2.52                | 2.52               | 1.14   | 1.14                    | 1.68                | 1.68                    | 2.03                 | 2.03                     | 333  |
|              |         |           | 0.188    | 3.11     | 6.86    | 10.2              | 2.019                 | 2.60                | 2.60               | 1.13   | 1.13                    | 1.73                | 1.73                    | 2.10                 | 2.10                     | 322  |
|              |         |           | 0.250    | 3.99     | 8.79    | 13.1              | 2.589                 | 3.16                | 3.16               | 1.10   | 1.10                    | 2.10                | 2.10                    | 2.61                 | 2.61                     | 251  |
|              |         |           | 0.313    | 4.79     | 10.6    | 15.7              | 3.108                 | 3.58                | 3.58               | 1.07   | 1.07                    | 2.39                | 2.39                    | 3.04                 | 3.04                     | 209  |
| 3.5          | x       | 3.5       | 0.375    | 5.51     | 12.1    | 18.1              | 3.576                 | 3.88                | 3.88               | 1.04   | 1.04                    | 2.59                | 2.59                    | 3.38                 | 3.38                     | 181  |
|              |         |           | 0.180    | 3.56     | 7.83    | 11.7              | 2.307                 | 4.16                | 4.16               | 1.34   | 1.34                    | 2.38                | 2.38                    | 2.84                 | 2.84                     | 281  |
|              |         |           | 0.188    | 3.69     | 8.13    | 12.1              | 2.394                 | 4.29                | 4.29               | 1.34   | 1.34                    | 2.45                | 2.45                    | 2.93                 | 2.93                     | 271  |
| 4            | x       | 4         | 0.250    | 4.76     | 10.5    | 15.6              | 3.089                 | 5.29                | 5.29               | 1.31   | 1.31                    | 3.02                | 3.02                    | 3.69                 | 3.69                     | 210  |
|              |         |           | 0.180    | 4.11     | 9.06    | 13.5              | 2.667                 | 6.38                | 6.38               | 1.55   | 1.55                    | 3.19                | 3.19                    | 3.78                 | 3.78                     | 243  |
|              |         |           | 0.188    | 4.27     | 9.40    | 14.0              | 2.769                 | 6.59                | 6.59               | 1.54   | 1.54                    | 3.30                | 3.30                    | 3.91                 | 3.91                     | 234  |
| 4.5          | x       | 4.5       | 0.250    | 5.53     | 12.2    | 18.2              | 3.589                 | 8.22                | 8.22               | 1.51   | 1.51                    | 4.11                | 4.11                    | 4.97                 | 4.97                     | 181  |
|              |         |           | 0.313    | 6.72     | 14.8    | 22.0              | 4.358                 | 9.58                | 9.58               | 1.48   | 1.48                    | 4.79                | 4.79                    | 5.90                 | 5.90                     | 149  |
|              |         |           | 0.375    | 7.83     | 17.2    | 25.7              | 5.076                 | 10.7                | 10.7               | 1.45   | 1.45                    | 5.35                | 5.35                    | 6.72                 | 6.72                     | 128  |
|              |         |           | 0.500    | 9.80     | 21.6    | 32.2              | 6.356                 | 12.3                | 12.3               | 1.39   | 1.39                    | 6.13                | 6.13                    | 8.02                 | 8.02                     | 102  |
| 5            | x       | 5         | 0.180    | 4.67     | 10.3    | 15.3              | 3.027                 | 9.28                | 9.28               | 1.75   | 1.75                    | 4.13                | 4.13                    | 4.86                 | 4.86                     | 214  |
|              |         |           | 0.188    | 4.85     | 10.7    | 15.9              | 3.144                 | 9.60                | 9.60               | 1.75   | 1.75                    | 4.27                | 4.27                    | 5.03                 | 5.03                     | 206  |
|              |         |           | 0.250    | 6.31     | 13.9    | 20.7              | 4.089                 | 12.1                | 12.1               | 1.72   | 1.72                    | 5.36                | 5.36                    | 6.43                 | 6.43                     | 158  |
|              |         |           | 0.313    | 7.68     | 16.9    | 25.2              | 4.983                 | 14.2                | 14.2               | 1.69   | 1.69                    | 6.30                | 6.30                    | 7.68                 | 7.68                     | 130  |
| 6            | x       | 6         | 0.180    | 5.22     | 11.5    | 17.1              | 3.387                 | 12.9                | 12.9               | 1.96   | 1.96                    | 5.18                | 5.18                    | 6.07                 | 6.07                     | 192  |
|              |         |           | 0.188    | 5.43     | 11.9    | 17.8              | 3.519                 | 13.4                | 13.4               | 1.95   | 1.95                    | 5.36                | 5.36                    | 6.29                 | 6.29                     | 184  |
|              |         |           | 0.250    | 7.08     | 15.6    | 23.2              | 4.589                 | 16.9                | 16.9               | 1.92   | 1.92                    | 6.78                | 6.78                    | 8.07                 | 8.07                     | 141  |
|              |         |           | 0.313    | 8.65     | 19.0    | 28.4              | 5.608                 | 20.1                | 20.1               | 1.89   | 1.89                    | 8.02                | 8.02                    | 9.71                 | 9.71                     | 116  |
|              |         |           | 0.375    | 10.1     | 22.3    | 33.3              | 6.576                 | 22.8                | 22.8               | 1.86   | 1.86                    | 9.11                | 9.11                    | 11.2                 | 11.2                     | 99.0 |
| 7            | x       | 7         | 0.500    | 12.9     | 28.4    | 42.3              | 8.356                 | 27.0                | 27.0               | 1.80   | 1.80                    | 10.8                | 10.8                    | 13.7                 | 13.7                     | 77.5 |
|              |         |           | 0.180    | 6.33     | 13.9    | 20.8              | 4.107                 | 22.9                | 22.9               | 2.36   | 2.36                    | 7.65                | 7.65                    | 8.90                 | 8.90                     | 158  |
|              |         |           | 0.188    | 6.58     | 14.5    | 21.6              | 4.269                 | 23.8                | 23.8               | 2.36   | 2.36                    | 7.93                | 7.93                    | 9.24                 | 9.24                     | 152  |
|              |         |           | 0.250    | 8.62     | 19.0    | 28.3              | 5.589                 | 30.3                | 30.3               | 2.33   | 2.33                    | 10.1                | 10.1                    | 11.9                 | 11.9                     | 116  |
|              |         |           | 0.313    | 10.6     | 23.3    | 34.7              | 6.858                 | 36.3                | 36.3               | 2.30   | 2.30                    | 12.1                | 12.1                    | 14.4                 | 14.4                     | 94.3 |
| 8            | x       | 8         | 0.375    | 12.5     | 27.4    | 40.9              | 8.076                 | 41.6                | 41.6               | 2.27   | 2.27                    | 13.9                | 13.9                    | 16.8                 | 16.8                     | 80.0 |
|              |         |           | 0.500    | 16.0     | 35.2    | 52.4              | 10.36                 | 50.5                | 50.5               | 2.21   | 2.21                    | 16.8                | 16.8                    | 20.9                 | 20.9                     | 62.5 |
|              |         |           | 0.180    | 7.44     | 16.4    | 24.4              | 4.827                 | 37.1                | 37.1               | 2.77   | 2.77                    | 10.6                | 10.6                    | 12.3                 | 12.3                     | 134  |
|              |         |           | 0.188    | 7.74     | 17.0    | 25.4              | 5.019                 | 38.5                | 38.5               | 2.77   | 2.77                    | 11.0                | 11.0                    | 12.7                 | 12.7                     | 129  |
|              |         |           | 0.250    | 10.2     | 22.4    | 33.3              | 6.589                 | 49.4                | 49.4               | 2.74   | 2.74                    | 14.1                | 14.1                    | 16.5                 | 16.5                     | 98.0 |
| 9            | x       | 9         | 0.313    | 12.5     | 27.5    | 41.0              | 8.108                 | 59.5                | 59.5               | 2.71   | 2.71                    | 17.0                | 17.0                    | 20.1                 | 20.1                     | 80.0 |
|              |         |           | 0.375    | 14.8     | 32.5    | 48.4              | 9.576                 | 68.7                | 68.7               | 2.68   | 2.68                    | 19.6                | 19.6                    | 23.5                 | 23.5                     | 67.6 |
|              |         |           | 0.500    | 19.1     | 42.0    | 62.5              | 12.36                 | 84.6                | 84.6               | 2.62   | 2.62                    | 24.2                | 24.2                    | 29.6                 | 29.6                     | 52.4 |
|              |         |           | 0.180    | 8.55     | 18.8    | 28.1              | 5.547                 | 56.1                | 56.1               | 3.18   | 3.18                    | 14.0                | 14.0                    | 16.2                 | 16.2                     | 117  |
|              |         |           | 0.188    | 8.90     | 19.6    | 29.2              | 5.769                 | 58.2                | 58.2               | 3.18   | 3.18                    | 14.6                | 14.6                    | 16.8                 | 16.8                     | 112  |
| 10           | x       | 10        | 0.250    | 11.7     | 25.8    | 38.4              | 7.589                 | 75.1                | 75.1               | 3.15   | 3.15                    | 18.8                | 18.8                    | 21.9                 | 21.9                     | 85.5 |
|              |         |           | 0.313    | 14.4     | 31.8    | 47.3              | 9.358                 | 90.9                | 90.9               | 3.12   | 3.12                    | 22.7                | 22.7                    | 26.7                 | 26.7                     | 69.4 |
|              |         |           | 0.375    | 17.1     | 37.6    | 56.0              | 11.08                 | 106                 | 106                | 3.09   | 3.09                    | 26.4                | 26.4                    | 31.3                 | 31.3                     | 58.5 |
|              |         |           | 0.500    | 22.1     | 48.8    | 72.6              | 14.36                 | 131                 | 131                | 3.03   | 3.03                    | 32.9                | 32.9                    | 39.7                 | 39.7                     | 45.2 |
|              |         |           | 0.625    | 26.9     | 59.2    | 88.2              | 17.43                 | 153                 | 153                | 2.96   | 2.96                    | 38.3                | 38.3                    | 47.2                 | 47.2                     | 37.2 |
| 11           | x       | 11        | 0.250    | 14.8     | 32.6    | 48.5              | 9.589                 | 151                 | 151                | 3.96   | 3.96                    | 30.1                | 30.1                    | 34.9                 | 34.9                     | 67.6 |
|              |         |           | 0.313    | 18.3     | 40.3    | 60.0              | 11.86                 | 183                 | 183                | 3.93   | 3.93                    | 36.7                | 36.7                    | 42.8                 | 42.8                     | 54.6 |
|              |         |           | 0.375    | 21.7     | 47.8    | 71.2              | 14.08                 | 214                 | 214                | 3.90   | 3.90                    | 42.9                | 42.9                    | 50.4                 | 50.4                     | 46.1 |
|              |         |           | 0.500    | 28.3     | 62.3    | 92.9              | 18.36                 | 271                 | 271                | 3.84   | 3.84                    | 54.2                | 54.2                    | 64.6                 | 64.6                     | 35.3 |
|              |         |           | 0.625    | 34.6     | 76.2    | 113               | 22.43                 | 321                 | 321                | 3.78   | 3.78                    | 64.2                | 64.2                    | 77.6                 | 77.6                     | 28.9 |
| 12           | x       | 12        | 0.750    | 40.6     | 89.3    | 133               | 26.30                 | 364                 | 364                | 3.72   | 3.72                    | 72.8                | 72.8                    | 89.4                 | 89.4                     | 24.6 |
|              |         |           | 0.250    | 17.9     | 39.4    | 58.6              | 11.59                 | 265                 | 265                | 4.78   | 4.78                    | 44.1                | 44.1                    | 50.8                 | 50.8                     | 55.9 |
|              |         |           | 0.313    | 22.1     | 48.8    | 72.6              | 14.36                 | 324                 | 324                | 4.75   | 4.75                    | 54.0                | 54.0                    | 62.6                 | 62.6                     | 45.2 |
|              |         |           | 0.375    | 26.3     | 58.0    | 86.4              | 17.08                 | 380                 | 380                | 4.72   | 4.72                    | 63.4                | 63.4                    | 73.9                 | 73.9                     | 38.0 |
|              |         |           | 0.500    | 34.5     | 75.9    | 113               | 22.36                 | 485                 | 485                | 4.66   | 4.66                    | 80.9                | 80.9                    | 95.4                 | 95.4                     | 29.0 |
| 13           | x       | 13        | 0.625    | 42.3     | 93.2    | 139               | 27.43                 | 580                 | 580                | 4.60   | 4.60                    | 96.7                | 96.7                    | 116                  | 116                      | 23.6 |
|              |         |           | 0.750    | 49.8     | 110     | 163               | 32.30                 | 665                 | 665                | 4.54   | 4.54                    | 111                 | 111                     | 134                  | 134                      | 20.1 |
|              |         |           | 0.313    | 26.0     | 57.2    | 85.3              | 16.86                 | 522                 | 522                | 5.57   | 5.57                    | 74.6                | 74.6                    | 86.1                 | 86.1                     | 38.5 |
|              |         |           | 0.375    | 31.0     | 68.2    | 102               | 20.08                 | 615                 | 615                | 5.54   | 5.54                    | 87.9                | 87.9                    | 102                  | 102                      | 32.3 |
|              |         |           | 0.500    | 40.6     | 89.5    | 133               | 26.36                 | 791                 | 791                | 5.48   | 5.48                    | 113                 | 113                     | 132                  | 132                      | 24.6 |
| 14           | x       | 14        | 0.625    | 50.0     | 110     | 164               | 32.43                 | 952                 | 952                | 5.42   | 5.42                    | 136                 | 136                     | 161                  | 161                      | 20.0 |
|              |         |           | 0.750    | 59.1     | 130     | 194               | 38.30                 | 1,100               | 1,100              | 5.36   | 5.36                    | 157                 | 157                     | 188                  | 188                      | 16.9 |
|              |         |           | 0.875    | 67.8     | 149     | 222               | 43.97                 | 1,230               | 1,230              | 5.30   | 5.30                    | 176                 | 176                     | 213                  | 213                      | 14.7 |

Section properties    Square : 16 in. x 16 in. to 22 in. x 22 in.

| Dimensions   |           |       | Mass     |          |         | Area               | Second moment of area |                     | Radius of gyration |        | Elastic section modulus |                     | Plastic section modulus |                      | Nominal length per tonne |
|--------------|-----------|-------|----------|----------|---------|--------------------|-----------------------|---------------------|--------------------|--------|-------------------------|---------------------|-------------------------|----------------------|--------------------------|
| Nominal size | Thickness |       |          |          |         |                    |                       |                     |                    |        |                         |                     |                         |                      |                          |
| A in.        | x B in.   | t in. | M1 kg/ft | M2 lb/ft | M3 kg/m | A in. <sup>2</sup> | Ix in. <sup>4</sup>   | Iy in. <sup>4</sup> | ix in.             | iy in. | Zx in. <sup>3</sup>     | Zy in. <sup>3</sup> | Zpx in. <sup>3</sup>    | Zpy in. <sup>3</sup> | ft                       |
| 16 x 16      |           | 0.313 | 29.8     | 65.7     | 97.9    | 19.36              | 789                   | 789                 | 6.38               | 6.38   | 98.6                    | 98.6                | 113                     | 113                  | 33.6                     |
|              |           | 0.375 | 35.6     | 78.4     | 117     | 23.08              | 931                   | 931                 | 6.35               | 6.35   | 116                     | 116                 | 134                     | 134                  | 28.1                     |
|              |           | 0.500 | 46.8     | 103      | 154     | 30.36              | 1,200                 | 1,200               | 6.29               | 6.29   | 150                     | 150                 | 175                     | 175                  | 21.4                     |
|              |           | 0.625 | 57.7     | 127      | 189     | 37.43              | 1,450                 | 1,450               | 6.23               | 6.23   | 182                     | 182                 | 214                     | 214                  | 17.3                     |
|              |           | 0.750 | 68.3     | 150      | 224     | 44.30              | 1,690                 | 1,690               | 6.17               | 6.17   | 211                     | 211                 | 250                     | 250                  | 14.6                     |
|              |           | 0.875 | 78.6     | 173      | 258     | 50.97              | 1,900                 | 1,900               | 6.11               | 6.11   | 238                     | 238                 | 285                     | 285                  | 12.7                     |
| 18 x 18      |           | 0.500 | 53.0     | 117      | 174     | 34.36              | 1,740                 | 1,740               | 7.11               | 7.11   | 193                     | 193                 | 224                     | 224                  | 18.9                     |
|              |           | 0.625 | 65.4     | 144      | 215     | 42.43              | 2,110                 | 2,110               | 7.05               | 7.05   | 234                     | 234                 | 274                     | 274                  | 15.3                     |
|              |           | 0.750 | 77.6     | 171      | 254     | 50.30              | 2,460                 | 2,460               | 6.99               | 6.99   | 273                     | 273                 | 322                     | 322                  | 12.9                     |
|              |           | 0.875 | 89.4     | 197      | 293     | 57.97              | 2,780                 | 2,780               | 6.93               | 6.93   | 309                     | 309                 | 368                     | 368                  | 11.2                     |
| 20 x 20      |           | 0.500 | 59.1     | 130      | 194     | 38.36              | 2,410                 | 2,410               | 7.93               | 7.93   | 241                     | 241                 | 279                     | 279                  | 16.9                     |
|              |           | 0.625 | 73.1     | 161      | 240     | 47.43              | 2,940                 | 2,940               | 7.87               | 7.87   | 294                     | 294                 | 342                     | 342                  | 13.7                     |
|              |           | 0.750 | 86.8     | 191      | 285     | 56.30              | 3,430                 | 3,430               | 7.81               | 7.81   | 343                     | 343                 | 403                     | 403                  | 11.5                     |
|              |           | 0.875 | 100      | 221      | 329     | 64.97              | 3,900                 | 3,900               | 7.75               | 7.75   | 390                     | 390                 | 461                     | 461                  | 10.0                     |
| 22 x 22      |           | 0.750 | 96.1     | 212      | 315     | 62.30              | 4,630                 | 4,630               | 8.62               | 8.62   | 421                     | 421                 | 492                     | 492                  | 10.4                     |
|              |           | 0.875 | 111      | 244      | 364     | 71.97              | 5,280                 | 5,280               | 8.56               | 8.56   | 480                     | 480                 | 565                     | 565                  | 9.01                     |

Section properties    Rectangular : 3 in. x 2 in. to 8 in. x 6 in.

| Dimensions   |           | Mass  |          |          | Area    | Second moment of area |                                 | Radius of gyration              |        | Elastic section modulus |                                 | Plastic section modulus         |                                  | Nominal length per tonne         |      |
|--------------|-----------|-------|----------|----------|---------|-----------------------|---------------------------------|---------------------------------|--------|-------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|------|
| Nominal size | Thickness |       |          |          |         |                       |                                 |                                 |        |                         |                                 |                                 |                                  |                                  |      |
| A in.        | x B in.   | t in. | M1 kg/ft | M2 lb/ft | M3 kg/m | A in. <sup>2</sup>    | I <sub>x</sub> in. <sup>4</sup> | I <sub>y</sub> in. <sup>4</sup> | ix in. | iy in.                  | Z <sub>x</sub> in. <sup>3</sup> | Z <sub>y</sub> in. <sup>3</sup> | Z <sub>px</sub> in. <sup>3</sup> | Z <sub>py</sub> in. <sup>3</sup> | ft   |
| 3 x 2        |           | 0.180 | 2.45     | 5.39     | 8.03    | 1.587                 | 1.81                            | 0.952                           | 1.07   | 0.775                   | 1.20                            | 0.952                           | 1.52                             | 1.14                             | 408  |
|              |           | 0.188 | 2.53     | 5.58     | 8.32    | 1.644                 | 1.86                            | 0.977                           | 1.06   | 0.771                   | 1.24                            | 0.977                           | 1.57                             | 1.18                             | 395  |
|              |           | 0.250 | 3.22     | 7.09     | 10.6    | 2.089                 | 2.21                            | 1.15                            | 1.03   | 0.742                   | 1.47                            | 1.15                            | 1.92                             | 1.44                             | 311  |
| 4 x 2        |           | 0.180 | 3.00     | 6.61     | 9.85    | 1.947                 | 3.75                            | 1.25                            | 1.39   | 0.802                   | 1.88                            | 1.25                            | 2.40                             | 1.47                             | 333  |
|              |           | 0.188 | 3.11     | 6.86     | 10.2    | 2.019                 | 3.87                            | 1.29                            | 1.38   | 0.798                   | 1.93                            | 1.29                            | 2.48                             | 1.52                             | 322  |
|              |           | 0.250 | 3.99     | 8.79     | 13.1    | 2.589                 | 4.69                            | 1.54                            | 1.35   | 0.770                   | 2.35                            | 1.54                            | 3.09                             | 1.88                             | 251  |
| 4 x 3        |           | 0.180 | 3.56     | 7.83     | 11.7    | 2.307                 | 5.07                            | 3.24                            | 1.48   | 1.19                    | 2.53                            | 2.16                            | 3.09                             | 2.54                             | 281  |
|              |           | 0.188 | 3.69     | 8.13     | 12.1    | 2.394                 | 5.23                            | 3.34                            | 1.48   | 1.18                    | 2.62                            | 2.23                            | 3.20                             | 2.62                             | 271  |
|              |           | 0.250 | 4.76     | 10.5     | 15.6    | 3.089                 | 6.45                            | 4.10                            | 1.45   | 1.15                    | 3.23                            | 2.74                            | 4.03                             | 3.30                             | 210  |
| 5 x 2        |           | 0.180 | 3.56     | 7.83     | 11.7    | 2.307                 | 6.67                            | 1.55                            | 1.70   | 0.820                   | 2.67                            | 1.55                            | 3.47                             | 1.80                             | 281  |
|              |           | 0.188 | 3.69     | 8.13     | 12.1    | 2.394                 | 6.89                            | 1.60                            | 1.70   | 0.816                   | 2.75                            | 1.60                            | 3.59                             | 1.86                             | 271  |
|              |           | 0.250 | 4.76     | 10.5     | 15.6    | 3.089                 | 8.48                            | 1.92                            | 1.66   | 0.789                   | 3.39                            | 1.92                            | 4.51                             | 2.32                             | 210  |
| 5 x 3        |           | 0.180 | 4.11     | 9.06     | 13.5    | 2.667                 | 8.77                            | 3.96                            | 1.81   | 1.22                    | 3.51                            | 2.64                            | 4.33                             | 3.04                             | 243  |
|              |           | 0.188 | 4.27     | 9.40     | 14.0    | 2.769                 | 9.06                            | 4.08                            | 1.81   | 1.21                    | 3.62                            | 2.72                            | 4.49                             | 3.15                             | 234  |
|              |           | 0.250 | 5.53     | 12.2     | 18.2    | 3.589                 | 11.3                            | 5.05                            | 1.77   | 1.19                    | 4.52                            | 3.37                            | 5.70                             | 3.98                             | 181  |
|              |           | 0.313 | 6.72     | 14.8     | 22.0    | 4.358                 | 13.2                            | 5.85                            | 1.74   | 1.16                    | 5.27                            | 3.90                            | 6.77                             | 4.72                             | 149  |
|              |           | 0.375 | 7.83     | 17.2     | 25.7    | 5.076                 | 14.7                            | 6.48                            | 1.70   | 1.13                    | 5.89                            | 4.32                            | 7.71                             | 5.35                             | 128  |
| 6 x 2        |           | 0.180 | 4.11     | 9.06     | 13.5    | 2.667                 | 10.7                            | 1.85                            | 2.01   | 0.833                   | 3.58                            | 1.85                            | 4.71                             | 2.13                             | 243  |
|              |           | 0.188 | 4.27     | 9.40     | 14.0    | 2.769                 | 11.1                            | 1.90                            | 2.00   | 0.829                   | 3.70                            | 1.90                            | 4.88                             | 2.20                             | 234  |
|              |           | 0.250 | 5.53     | 12.2     | 18.2    | 3.589                 | 13.8                            | 2.31                            | 1.96   | 0.802                   | 4.60                            | 2.31                            | 6.18                             | 2.75                             | 181  |
| 6 x 3        |           | 0.180 | 4.67     | 10.3     | 15.3    | 3.027                 | 13.8                            | 4.67                            | 2.13   | 1.24                    | 4.60                            | 3.12                            | 5.76                             | 3.55                             | 214  |
|              |           | 0.188 | 4.85     | 10.7     | 15.9    | 3.144                 | 14.3                            | 4.83                            | 2.13   | 1.24                    | 4.76                            | 3.22                            | 5.97                             | 3.68                             | 206  |
|              |           | 0.250 | 6.31     | 13.9     | 20.7    | 4.089                 | 17.9                            | 6.00                            | 2.09   | 1.21                    | 5.98                            | 4.00                            | 7.62                             | 4.67                             | 158  |
|              |           | 0.313 | 7.68     | 16.9     | 25.2    | 4.983                 | 21.1                            | 6.98                            | 2.06   | 1.18                    | 7.03                            | 4.65                            | 9.11                             | 5.56                             | 130  |
|              |           | 0.375 | 8.98     | 19.8     | 29.5    | 5.826                 | 23.8                            | 7.78                            | 2.02   | 1.16                    | 7.92                            | 5.19                            | 10.4                             | 6.34                             | 111  |
| 6 x 4        |           | 0.180 | 5.22     | 11.5     | 17.1    | 3.387                 | 16.8                            | 9.01                            | 2.23   | 1.63                    | 5.62                            | 4.51                            | 6.81                             | 5.15                             | 192  |
|              |           | 0.188 | 5.43     | 11.9     | 17.8    | 3.519                 | 17.4                            | 9.32                            | 2.23   | 1.63                    | 5.81                            | 4.66                            | 7.06                             | 5.34                             | 184  |
|              |           | 0.250 | 7.08     | 15.6     | 23.2    | 4.589                 | 22.1                            | 11.7                            | 2.19   | 1.60                    | 7.36                            | 5.87                            | 9.06                             | 6.84                             | 141  |
|              |           | 0.313 | 8.65     | 19.0     | 28.4    | 5.608                 | 26.2                            | 13.8                            | 2.16   | 1.57                    | 8.72                            | 6.92                            | 10.9                             | 8.21                             | 116  |
|              |           | 0.375 | 10.1     | 22.3     | 33.3    | 6.576                 | 29.7                            | 15.6                            | 2.13   | 1.54                    | 9.90                            | 7.82                            | 12.5                             | 9.44                             | 99.0 |
|              |           | 0.500 | 12.9     | 28.4     | 42.3    | 8.356                 | 35.3                            | 18.4                            | 2.06   | 1.48                    | 11.8                            | 9.21                            | 15.4                             | 11.5                             | 77.5 |
| 7 x 5        |           | 0.313 | 10.6     | 23.3     | 34.7    | 6.858                 | 45.5                            | 26.9                            | 2.60   | 1.98                    | 13.0                            | 10.8                            | 15.9                             | 12.6                             | 94.3 |
|              |           | 0.375 | 12.5     | 27.4     | 40.9    | 8.076                 | 52.2                            | 30.8                            | 2.54   | 1.95                    | 14.9                            | 12.3                            | 18.5                             | 14.6                             | 80.0 |
|              |           | 0.500 | 16.0     | 35.2     | 52.4    | 10.36                 | 63.5                            | 37.2                            | 2.48   | 1.90                    | 18.1                            | 14.9                            | 23.1                             | 18.2                             | 62.5 |
| 8 x 4        |           | 0.180 | 6.33     | 13.9     | 20.8    | 4.107                 | 34.1                            | 11.6                            | 2.88   | 1.68                    | 8.52                            | 5.82                            | 10.6                             | 6.53                             | 158  |
|              |           | 0.188 | 6.58     | 14.5     | 21.6    | 4.269                 | 35.3                            | 12.0                            | 2.88   | 1.68                    | 8.83                            | 6.02                            | 11.0                             | 6.77                             | 152  |
|              |           | 0.250 | 8.62     | 19.0     | 28.3    | 5.589                 | 45.1                            | 15.3                            | 2.84   | 1.65                    | 11.3                            | 7.63                            | 14.1                             | 8.72                             | 116  |
|              |           | 0.313 | 10.6     | 23.3     | 34.7    | 6.858                 | 53.9                            | 18.1                            | 2.80   | 1.62                    | 13.5                            | 9.05                            | 17.1                             | 10.5                             | 94.3 |
|              |           | 0.375 | 12.5     | 27.4     | 40.9    | 8.076                 | 61.9                            | 20.6                            | 2.77   | 1.60                    | 15.5                            | 10.3                            | 19.9                             | 12.2                             | 80.0 |
|              |           | 0.500 | 16.0     | 35.2     | 52.4    | 10.36                 | 75.1                            | 24.6                            | 2.69   | 1.54                    | 18.8                            | 12.3                            | 24.7                             | 15.0                             | 62.5 |
| 8 x 6        |           | 0.180 | 7.44     | 16.4     | 24.4    | 4.827                 | 45.1                            | 29.0                            | 3.06   | 2.45                    | 11.3                            | 9.68                            | 13.4                             | 11.0                             | 134  |
|              |           | 0.188 | 7.74     | 17.0     | 25.4    | 5.019                 | 46.8                            | 30.1                            | 3.05   | 2.45                    | 11.7                            | 10.0                            | 13.9                             | 11.4                             | 129  |
|              |           | 0.250 | 10.2     | 22.4     | 33.3    | 6.589                 | 60.1                            | 38.6                            | 3.02   | 2.42                    | 15.0                            | 12.9                            | 18.0                             | 14.8                             | 98.0 |
|              |           | 0.313 | 12.5     | 27.5     | 41.0    | 8.108                 | 72.4                            | 46.4                            | 2.99   | 2.39                    | 18.1                            | 15.5                            | 21.9                             | 18.0                             | 80.0 |
|              |           | 0.375 | 14.8     | 32.5     | 48.4    | 9.576                 | 83.7                            | 53.5                            | 2.96   | 2.36                    | 20.9                            | 17.8                            | 25.6                             | 21.0                             | 67.6 |
|              |           | 0.500 | 19.1     | 42.0     | 62.5    | 12.36                 | 103                             | 65.7                            | 2.89   | 2.31                    | 25.8                            | 21.9                            | 32.2                             | 26.4                             | 52.4 |

Section properties    Rectangular : 10 in. x 4 in. to 24 in. x 12 in.

| Dimensions   |           | Mass  |          |          | Area    | Second moment of area |                                 | Radius of gyration              |        | Elastic section modulus |                                 | Plastic section modulus         |                                  | Nominal length per tonne         |      |
|--------------|-----------|-------|----------|----------|---------|-----------------------|---------------------------------|---------------------------------|--------|-------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|------|
| Nominal size | Thickness |       |          |          |         |                       |                                 |                                 |        |                         |                                 |                                 |                                  |                                  |      |
| A in.        | x B in.   | t in. | M1 kg/ft | M2 lb/ft | M3 kg/m | A in. <sup>2</sup>    | I <sub>x</sub> in. <sup>4</sup> | I <sub>y</sub> in. <sup>4</sup> | ix in. | iy in.                  | Z <sub>x</sub> in. <sup>3</sup> | Z <sub>y</sub> in. <sup>3</sup> | Z <sub>px</sub> in. <sup>3</sup> | Z <sub>py</sub> in. <sup>3</sup> | ft   |
| 10           | x 4       | 0.313 | 12.5     | 27.5     | 41.0    | 8.108                 | 95.5                            | 22.4                            | 3.43   | 1.66                    | 19.1                            | 11.2                            | 24.6                             | 12.8                             | 80.0 |
|              |           | 0.375 | 14.8     | 32.5     | 48.4    | 9.576                 | 110                             | 25.5                            | 3.39   | 1.63                    | 22.0                            | 12.8                            | 28.7                             | 14.9                             | 67.6 |
|              |           | 0.500 | 19.1     | 42.0     | 62.5    | 12.36                 | 136                             | 30.8                            | 3.31   | 1.58                    | 27.1                            | 15.4                            | 36.1                             | 18.5                             | 52.4 |
| 10           | x 6       | 0.180 | 8.55     | 18.8     | 28.1    | 5.547                 | 76.9                            | 35.1                            | 3.72   | 2.52                    | 15.4                            | 11.7                            | 18.6                             | 13.1                             | 117  |
|              |           | 0.188 | 8.90     | 19.6     | 29.2    | 5.769                 | 79.8                            | 36.5                            | 3.72   | 2.51                    | 16.0                            | 12.2                            | 19.3                             | 13.6                             | 112  |
|              |           | 0.250 | 11.7     | 25.8     | 38.4    | 7.589                 | 103                             | 46.9                            | 3.69   | 2.49                    | 20.6                            | 15.6                            | 25.1                             | 17.7                             | 85.5 |
|              |           | 0.313 | 14.4     | 31.8     | 47.3    | 9.358                 | 125                             | 56.5                            | 3.65   | 2.46                    | 25.0                            | 18.8                            | 30.7                             | 21.5                             | 69.4 |
|              |           | 0.375 | 17.1     | 37.6     | 56.0    | 11.08                 | 145                             | 65.4                            | 3.62   | 2.43                    | 29.0                            | 21.8                            | 35.9                             | 25.2                             | 58.5 |
| 12           | x 4       | 0.500 | 22.1     | 48.8     | 72.6    | 14.36                 | 181                             | 80.8                            | 3.55   | 2.37                    | 36.2                            | 26.9                            | 45.6                             | 31.9                             | 45.2 |
|              |           | 0.250 | 11.7     | 25.8     | 38.4    | 7.589                 | 127                             | 22.3                            | 4.09   | 1.71                    | 21.1                            | 11.1                            | 27.3                             | 12.5                             | 85.5 |
|              |           | 0.313 | 14.4     | 31.8     | 47.3    | 9.372                 | 153                             | 26.6                            | 4.05   | 1.69                    | 25.6                            | 13.3                            | 33.4                             | 15.1                             | 69.4 |
| 10           | x 8       | 0.375 | 17.1     | 37.6     | 56.0    | 11.08                 | 178                             | 30.5                            | 4.01   | 1.66                    | 29.6                            | 15.2                            | 39.0                             | 17.6                             | 58.5 |
|              |           | 0.500 | 22.1     | 48.8     | 72.6    | 14.36                 | 221                             | 36.9                            | 3.92   | 1.60                    | 36.8                            | 18.5                            | 49.4                             | 22.0                             | 45.2 |
|              |           | 0.375 | 19.4     | 42.7     | 63.6    | 12.58                 | 180                             | 127                             | 3.78   | 3.18                    | 35.9                            | 31.8                            | 43.1                             | 37.0                             | 51.5 |
| 12           | x 6       | 0.500 | 25.2     | 55.5     | 82.7    | 16.36                 | 226                             | 160                             | 3.72   | 3.12                    | 45.2                            | 39.9                            | 55.1                             | 47.2                             | 39.7 |
|              |           | 0.375 | 19.4     | 42.7     | 63.6    | 12.58                 | 228                             | 77.2                            | 4.26   | 2.48                    | 38.1                            | 25.7                            | 47.7                             | 29.4                             | 51.5 |
| 12           | x 8       | 0.500 | 25.2     | 55.5     | 82.7    | 16.36                 | 287                             | 96.0                            | 4.19   | 2.42                    | 47.8                            | 32.0                            | 60.9                             | 37.4                             | 39.7 |
|              |           | 0.250 | 14.8     | 32.6     | 48.5    | 9.589                 | 196                             | 105                             | 4.52   | 3.31                    | 32.6                            | 26.3                            | 39.1                             | 29.6                             | 67.6 |
| 14           | x 6       | 0.313 | 18.3     | 40.3     | 60.0    | 11.86                 | 239                             | 128                             | 4.49   | 3.28                    | 39.8                            | 32.0                            | 47.9                             | 36.3                             | 54.6 |
|              |           | 0.375 | 21.7     | 47.8     | 71.2    | 14.08                 | 279                             | 149                             | 4.45   | 3.26                    | 46.5                            | 37.3                            | 56.5                             | 42.7                             | 46.1 |
|              |           | 0.500 | 28.3     | 62.3     | 92.9    | 18.36                 | 353                             | 188                             | 4.39   | 3.20                    | 58.9                            | 46.9                            | 72.4                             | 54.7                             | 35.3 |
|              |           | 0.313 | 18.3     | 40.3     | 60.0    | 11.86                 | 288                             | 76.7                            | 4.93   | 2.54                    | 41.2                            | 25.6                            | 51.9                             | 28.7                             | 54.6 |
| 14           | x 10      | 0.375 | 21.7     | 47.8     | 71.2    | 14.08                 | 337                             | 89.1                            | 4.89   | 2.52                    | 48.1                            | 29.7                            | 61.1                             | 33.6                             | 46.1 |
|              |           | 0.500 | 28.3     | 62.3     | 92.9    | 18.36                 | 426                             | 111                             | 4.82   | 2.46                    | 60.8                            | 37.1                            | 78.3                             | 42.9                             | 35.3 |
| 16           | x 8       | 0.375 | 26.3     | 58.0     | 86.4    | 17.08                 | 476                             | 284                             | 5.28   | 4.08                    | 68.0                            | 56.8                            | 81.5                             | 64.8                             | 38.0 |
|              |           | 0.500 | 34.5     | 75.9     | 113     | 22.36                 | 608                             | 361                             | 5.22   | 4.02                    | 86.9                            | 72.3                            | 105                              | 83.6                             | 29.0 |
|              |           | 0.625 | 42.3     | 93.2     | 139     | 27.43                 | 728                             | 431                             | 5.15   | 3.96                    | 104                             | 86.2                            | 127                              | 101                              | 23.6 |
|              |           | 0.250 | 17.9     | 39.4     | 58.6    | 11.59                 | 393                             | 135                             | 5.82   | 3.42                    | 49.1                            | 33.8                            | 60.3                             | 37.4                             | 55.9 |
| 16           | x 12      | 0.313 | 22.1     | 48.8     | 72.6    | 14.36                 | 481                             | 165                             | 5.79   | 3.39                    | 60.1                            | 41.2                            | 74.2                             | 45.9                             | 45.2 |
|              |           | 0.375 | 26.3     | 58.0     | 86.4    | 17.08                 | 565                             | 193                             | 5.75   | 3.36                    | 70.6                            | 48.2                            | 87.6                             | 54.2                             | 38.0 |
|              |           | 0.500 | 34.5     | 75.9     | 113     | 22.36                 | 722                             | 244                             | 5.68   | 3.30                    | 90.2                            | 61.0                            | 113                              | 69.7                             | 29.0 |
|              |           | 0.625 | 42.3     | 93.2     | 139     | 27.43                 | 863                             | 290                             | 5.61   | 3.25                    | 108                             | 72.4                            | 137                              | 84.1                             | 23.6 |
|              |           | 0.375 | 31.0     | 68.2     | 102     | 20.08                 | 748                             | 482                             | 6.11   | 4.90                    | 93.5                            | 80.3                            | 111                              | 91.3                             | 32.3 |
| 20           | x 12      | 0.500 | 40.6     | 89.5     | 133     | 26.36                 | 962                             | 618                             | 6.04   | 4.84                    | 120                             | 103                             | 144                              | 118                              | 24.6 |
|              |           | 0.625 | 50.0     | 110      | 164     | 32.43                 | 1,160                           | 742                             | 5.98   | 4.78                    | 145                             | 124                             | 175                              | 144                              | 20.0 |
|              |           | 0.750 | 59.1     | 130      | 194     | 38.30                 | 1,340                           | 856                             | 5.91   | 4.73                    | 167                             | 143                             | 205                              | 168                              | 16.9 |
|              |           | 0.500 | 46.8     | 103      | 154     | 30.36                 | 1,650                           | 750                             | 7.37   | 4.97                    | 165                             | 125                             | 201                              | 141                              | 21.4 |
| 24           | x 12      | 0.625 | 57.7     | 127      | 189     | 37.43                 | 2,000                           | 904                             | 7.30   | 4.91                    | 200                             | 151                             | 245                              | 172                              | 17.3 |
|              |           | 0.750 | 68.3     | 150      | 224     | 44.30                 | 2,320                           | 1,050                           | 7.24   | 4.86                    | 232                             | 174                             | 287                              | 202                              | 14.6 |
|              |           | 0.500 | 53.0     | 117      | 174     | 34.36                 | 2,580                           | 882                             | 8.67   | 5.07                    | 215                             | 147                             | 266                              | 164                              | 18.9 |
| 24           | x 12      | 0.625 | 65.4     | 144      | 215     | 42.43                 | 3,130                           | 1,070                           | 8.59   | 5.01                    | 261                             | 178                             | 325                              | 201                              | 15.3 |
|              |           | 0.750 | 77.6     | 171      | 254     | 50.30                 | 3,650                           | 1,240                           | 8.52   | 4.96                    | 304                             | 206                             | 382                              | 235                              | 12.9 |



CSA G40.21-04 “General requirements for rolled or weld structural quality steel/structural quality steel”

Mechanical properties and chemical composition

Refer to page 7-8.

Tolerances

The tolerances on dimensions are established in accordance with CSA G40.21-04.

| Characteristics            | Tolerances                               |                         |
|----------------------------|------------------------------------------|-------------------------|
| Outside dimensions of side | (H≤2.5 in.)                              | ± 0.02 in.              |
| H : Longest side           | (2.5 in.<H≤3.5 in.)                      | ± 0.03 in.              |
| B : Shortest side          | (3.5 in.<H≤5.5 in.)                      | ± 0.04 in.              |
|                            | (5.5 in.<H)                              | ± 1%                    |
| Wall thickness(T)          | −5%,+10%                                 |                         |
| Squareness of sides        | 90° ± 1.0°                               |                         |
| External corner radius     | (perimeter ≤24 in.)                      | (24 in.<perimeter)      |
|                            | (T≤0.109 in.)                            | 0.218 in. —             |
|                            | (0.109 in.<T≤0.134 in.)                  | 0.268 in. —             |
|                            | (0.134 in.<T≤0.156 in.)                  | 0.312 in. —             |
|                            | (0.156 in.<T≤0.188 in.)                  | 0.470 in. —             |
|                            | (0.188 in.<T≤0.250 in.)                  | 0.625 in. 0.750 in.     |
|                            | (0.250 in.<T≤0.313 in.)                  | 0.785 in. 0.940 in.     |
|                            | (0.313 in.<T≤0.375 in.)                  | 0.938 in. 1.125 in.     |
|                            | (0.375 in.<T≤0.500 in.)                  | 1.250 in. 1.500 in.     |
|                            | (0.500 in.<T)                            | — 3 x T                 |
| Straightness               | 1/8 in./1 feet length (10.4mm/1m length) |                         |
| Twist                      | (H≤1.5 in.)                              | 0.050 in.               |
|                            | (1.5 in.<H≤2.5 in.)                      | 0.062 in.               |
|                            | (2.5 in.<H≤4 in.)                        | 0.075 in.               |
|                            | (4 in.<H≤6 in.)                          | 0.087 in.               |
|                            | (6 in.<H≤8 in.)                          | 0.100 in.               |
|                            | (8 in.<H)                                | 0.112 in.               |
| Weight                     | -3.5%,+10%                               |                         |
| Length(L)                  | (L≤24 in.)                               | -0.25 in. and +0.5 in.  |
|                            | (24 in.<L)                               | -0.25 in. and +0.75 in. |

NOTE

1) Outside dimensions are measured across the flats at positions at least 50mm from the end of the HSS.

Packing

In bare bundle (steel banded) or in bulk. Standard lengths are 20, 24, 40 and 48 feet.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.

a)Manufacturer's Name b)Standard & Grade c)Size d)Manufacturing Date e)Heat No. f)Country of Origin

Inspection and Testing

CSA is subject to tensile testing and impact test in accordance with CSA G40.21-04.

Available size range

Dimensions (in.-size)

| Size(in.) |             |               | Wall thickness(in.) |       |       |       |       |       |       |       |       |
|-----------|-------------|---------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|           |             |               | BWG#7               | 3/16  | 4/16  | 5/16  | 6/16  | 8/16  | 10/16 | 12/16 | 14/16 |
|           |             |               | 0.180               | 0.188 | 0.250 | 0.313 | 0.375 | 0.500 | 0.625 | 0.750 | 0.875 |
| SQUARE    | RECTANGULAR | mm            | 4.57                | 4.76  | 6.35  | 7.94  | 9.53  | 12.70 | 15.88 | 19.05 | 22.23 |
| 2.0 x 2.0 |             | 50.8 x 50.8   |                     |       |       |       |       |       |       |       |       |
| 2.5 x 2.5 |             | 63.5 x 63.5   |                     | ●     | ●     |       |       |       |       |       |       |
|           | 3.0 x 2.0   | 76.2 x 50.8   |                     | ●     | ●     |       |       |       |       |       |       |
| 3.0 x 3.0 |             | 76.2 x 76.2   | ●                   | ●     | ●     |       |       |       |       |       |       |
|           | 4.0 x 2.0   | 101.6 x 50.8  | ●                   | ●     | ●     |       |       |       |       |       |       |
| 3.5 x 3.5 |             | 88.9 x 88.9   | ●                   | ●     | ●     |       |       |       |       |       |       |
|           | 4.0 x 3.0   | 101.6 x 76.2  | ●                   | ●     | ●     |       |       |       |       |       |       |
|           | 5.0 x 2.0   | 127 x 50.8    | ●                   | ●     | ●     |       |       |       |       |       |       |
| 4.0 x 4.0 |             | 101.6 x 101.6 | ●                   | ●     | ●     |       | ●     |       |       |       |       |
|           | 5.0 x 3.0   | 127 x 76.2    | ●                   | ●     | ●     |       |       |       |       |       |       |
|           | 6.0 x 2.0   | 152.4 x 50.8  | ●                   | ●     | ●     |       |       |       |       |       |       |
| 4.5 x 4.5 |             | 114.3 x 114.3 | ●                   | ●     | ●     |       |       |       |       |       |       |
|           | 6.0 x 3.0   | 152.4 x 76.2  | ●                   | ●     | ●     |       | ●     |       |       |       |       |
| 5.0 x 5.0 |             | 127 x 127     | ●                   | ●     | ●     |       | ●     |       |       |       |       |
|           | 6.0 x 4.0   | 152.4 x 101.6 | ●                   | ●     | ●     |       | ●     |       |       |       |       |
| 6.0 x 6.0 |             | 152.4 x 152.4 | ●                   | ●     | ●     |       | ●     |       |       |       |       |
|           | 8.0 x 4.0   | 203.2 x 101.6 | ●                   | ●     | ●     |       | ●     |       |       |       |       |
| 7.0 x 7.0 |             | 177.8 x 177.8 | ●                   | ●     | ●     | ●     | ●     | ●     |       |       |       |
|           | 8.0 x 6.0   | 203.2 x 152.4 | ●                   | ●     | ●     | ●     | ●     | ●     |       |       |       |
| 8.0 x 8.0 |             | 203.2 x 203.2 | ●                   | ●     | ●     | ●     | ●     | ●     |       |       |       |
|           | 10 x 6.0    | 254 x 152.4   | ●                   | ●     | ●     | ●     | ●     | ●     |       |       |       |
|           | 12 x 4.0    | 304.8 x 101.6 |                     |       | ●     | ●     | ●     |       |       |       |       |
|           | 10 x 8.0    | 254 x 203.2   |                     |       |       |       | ●     | ●     |       |       |       |
|           | 12 x 6.0    | 304.8 x 152.4 |                     |       |       |       | ●     | ●     |       |       |       |
| 10 x 10   |             | 254 x 254     |                     |       | ●     | ●     | ●     | ●     | ●     |       |       |
|           | 12 x 8.0    | 304.8 x 203.2 |                     |       | ●     | ●     | ●     | ●     | ●     |       |       |
|           | 14 x 6.0    | 355.6 x 152.4 |                     |       |       | ●     | ●     | ●     |       |       |       |
| 12 x 12   |             | 304.8 x 304.8 |                     |       | ●     | ●     | ●     | ●     | ●     | ●     |       |
|           | 14 x 10     | 355.6 x 254   |                     |       |       | ●     | ●     | ●     | ●     |       |       |
|           | 16 x 8.0    | 406.4 x 203.2 |                     |       | ●     | ●     | ●     | ●     |       |       |       |
| 14 x 14   |             | 355.6 x 355.6 |                     |       |       | ●     | ●     | ●     | ●     | ●     | ●     |
| 16 x 12   |             | 406.4 x 304.8 |                     |       |       |       | ●     | ●     | ●     |       |       |
| 16 x 16   |             | 406.4 x 406.4 |                     |       |       |       | ●     | ●     | ●     | ●     | ●     |
|           | 20 x 12     | 508 x 304.8   |                     |       |       |       |       | ●     | ●     | ●     |       |
| 18 x 18   |             | 457.2 x 457.2 |                     |       |       |       |       | ●     | ●     | ●     | ●     |
|           | 24 x 12     | 609.6 x 304.8 |                     |       |       |       |       | ●     | ●     | ●     |       |
| 20 x 20   |             | 508 x 508     |                     |       |       |       |       | ●     | ●     | ●     | ●     |
| 22 x 22   |             | 558.8 x 558.8 |                     |       |       |       |       |       |       | ●     |       |

● 350W Available

If you require other sizes, please contact us.



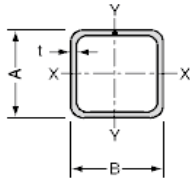
Section properties Square : 2 in. x 2 in. to 22 in. x 22 in.

| Dimensions    |           | Mass  |       |      | Area             | Second moment of area |                  | Radius of gyration |       | Elastic section modulus |                  | Plastic section modulus |                  | Nominal length per tonne |
|---------------|-----------|-------|-------|------|------------------|-----------------------|------------------|--------------------|-------|-------------------------|------------------|-------------------------|------------------|--------------------------|
| Nominal size  | Thickness | M1    | M2    | M3   | A                | I <sub>x</sub>        | I <sub>y</sub>   | ix                 | iy    | Z <sub>x</sub>          | Z <sub>y</sub>   | Z <sub>px</sub>         | Z <sub>py</sub>  | ft                       |
| A in. x B in. | t in.     | kg/ft | lb/ft | kg/m | in. <sup>2</sup> | in. <sup>4</sup>      | in. <sup>4</sup> | in.                | in.   | in. <sup>3</sup>        | in. <sup>3</sup> | in. <sup>3</sup>        | in. <sup>3</sup> |                          |
| 2 x 2         | 0.180     | 1.89  | 4.17  | 6.21 | 1.227            | 0.653                 | 0.653            | 0.729              | 0.729 | 0.653                   | 0.653            | 0.817                   | 0.817            | 529                      |
|               | 0.188     | 1.96  | 4.31  | 6.42 | 1.269            | 0.668                 | 0.668            | 0.726              | 0.726 | 0.668                   | 0.668            | 0.841                   | 0.841            | 510                      |
|               | 0.250     | 2.45  | 5.40  | 8.04 | 1.589            | 0.766                 | 0.766            | 0.694              | 0.694 | 0.766                   | 0.766            | 1.00                    | 1.00             | 408                      |
| 3 x 3         | 0.180     | 3.00  | 6.61  | 9.85 | 1.947            | 2.52                  | 2.52             | 1.14               | 1.14  | 1.68                    | 1.68             | 2.03                    | 2.03             | 333                      |
|               | 0.188     | 3.11  | 6.86  | 10.2 | 2.019            | 2.60                  | 2.60             | 1.13               | 1.13  | 1.73                    | 1.73             | 2.10                    | 2.10             | 322                      |
|               | 0.250     | 3.99  | 8.79  | 13.1 | 2.589            | 3.16                  | 3.16             | 1.10               | 1.10  | 2.10                    | 2.10             | 2.61                    | 2.61             | 251                      |
| 3.5 x 3.5     | 0.180     | 3.56  | 7.83  | 11.7 | 2.307            | 4.16                  | 4.16             | 1.34               | 1.34  | 2.38                    | 2.38             | 2.84                    | 2.84             | 281                      |
|               | 0.188     | 3.69  | 8.13  | 12.1 | 2.394            | 4.29                  | 4.29             | 1.34               | 1.34  | 2.45                    | 2.45             | 2.93                    | 2.93             | 271                      |
|               | 0.250     | 4.76  | 10.5  | 15.6 | 3.089            | 5.29                  | 5.29             | 1.31               | 1.31  | 3.02                    | 3.02             | 3.69                    | 3.69             | 210                      |
| 4 x 4         | 0.180     | 4.11  | 9.06  | 13.5 | 2.667            | 6.38                  | 6.38             | 1.55               | 1.55  | 3.19                    | 3.19             | 3.78                    | 3.78             | 243                      |
|               | 0.188     | 4.27  | 9.40  | 14.0 | 2.769            | 6.59                  | 6.59             | 1.54               | 1.54  | 3.30                    | 3.30             | 3.91                    | 3.91             | 234                      |
|               | 0.250     | 5.53  | 12.2  | 18.2 | 3.589            | 8.22                  | 8.22             | 1.51               | 1.51  | 4.11                    | 4.11             | 4.97                    | 4.97             | 181                      |
| 4.5 x 4.5     | 0.375     | 7.83  | 17.2  | 25.7 | 5.076            | 10.7                  | 10.7             | 1.45               | 1.45  | 5.35                    | 5.35             | 6.72                    | 6.72             | 128                      |
|               | 0.180     | 4.67  | 10.3  | 15.3 | 3.027            | 9.28                  | 9.28             | 1.75               | 1.75  | 4.13                    | 4.13             | 4.86                    | 4.86             | 214                      |
|               | 0.188     | 4.85  | 10.7  | 15.9 | 3.144            | 9.60                  | 9.60             | 1.75               | 1.75  | 4.27                    | 4.27             | 5.03                    | 5.03             | 206                      |
| 5 x 5         | 0.250     | 6.31  | 13.9  | 20.7 | 4.089            | 12.1                  | 12.1             | 1.72               | 1.72  | 5.36                    | 5.36             | 6.43                    | 6.43             | 158                      |
|               | 0.180     | 5.22  | 11.5  | 17.1 | 3.387            | 12.9                  | 12.9             | 1.96               | 1.96  | 5.18                    | 5.18             | 6.07                    | 6.07             | 192                      |
|               | 0.188     | 5.43  | 11.9  | 17.8 | 3.519            | 13.4                  | 13.4             | 1.95               | 1.95  | 5.36                    | 5.36             | 6.29                    | 6.29             | 184                      |
| 6 x 6         | 0.250     | 7.08  | 15.6  | 23.2 | 4.589            | 16.9                  | 16.9             | 1.92               | 1.92  | 6.78                    | 6.78             | 8.07                    | 8.07             | 141                      |
|               | 0.375     | 10.1  | 22.3  | 33.3 | 6.576            | 22.8                  | 22.8             | 1.86               | 1.86  | 9.11                    | 9.11             | 11.2                    | 11.2             | 99.0                     |
|               | 0.500     | 12.9  | 28.4  | 42.3 | 8.356            | 27.0                  | 27.0             | 1.80               | 1.80  | 10.8                    | 10.8             | 13.7                    | 13.7             | 77.5                     |
| 6 x 6         | 0.180     | 6.33  | 13.9  | 20.8 | 4.107            | 22.9                  | 22.9             | 2.36               | 2.36  | 7.65                    | 7.65             | 8.90                    | 8.90             | 158                      |
|               | 0.188     | 6.58  | 14.5  | 21.6 | 4.269            | 23.8                  | 23.8             | 2.36               | 2.36  | 7.93                    | 7.93             | 9.24                    | 9.24             | 152                      |
|               | 0.250     | 8.62  | 19.0  | 28.3 | 5.589            | 30.3                  | 30.3             | 2.33               | 2.33  | 10.1                    | 10.1             | 11.9                    | 11.9             | 116                      |
| 7 x 7         | 0.375     | 12.5  | 27.4  | 40.9 | 8.076            | 41.6                  | 41.6             | 2.27               | 2.27  | 13.9                    | 13.9             | 16.8                    | 16.8             | 80.0                     |
|               | 0.500     | 16.0  | 35.2  | 52.4 | 10.36            | 50.5                  | 50.5             | 2.21               | 2.21  | 16.8                    | 16.8             | 20.9                    | 20.9             | 62.5                     |
| 7 x 7         | 0.180     | 7.44  | 16.4  | 24.4 | 4.827            | 37.1                  | 37.1             | 2.77               | 2.77  | 10.6                    | 10.6             | 12.3                    | 12.3             | 134                      |
|               | 0.188     | 7.74  | 17.0  | 25.4 | 5.019            | 38.5                  | 38.5             | 2.77               | 2.77  | 11.0                    | 11.0             | 12.7                    | 12.7             | 129                      |
|               | 0.250     | 10.2  | 22.4  | 33.3 | 6.589            | 49.4                  | 49.4             | 2.74               | 2.74  | 14.1                    | 14.1             | 16.5                    | 16.5             | 98.0                     |
| 8 x 8         | 0.313     | 12.5  | 27.5  | 41.0 | 8.108            | 59.5                  | 59.5             | 2.71               | 2.71  | 17.0                    | 17.0             | 20.1                    | 20.1             | 80.0                     |
|               | 0.375     | 14.8  | 32.5  | 48.4 | 9.576            | 68.7                  | 68.7             | 2.68               | 2.68  | 19.6                    | 19.6             | 23.5                    | 23.5             | 67.6                     |
|               | 0.500     | 19.1  | 42.0  | 62.5 | 12.36            | 84.6                  | 84.6             | 2.62               | 2.62  | 24.2                    | 24.2             | 29.6                    | 29.6             | 52.4                     |
| 8 x 8         | 0.180     | 8.55  | 18.8  | 28.1 | 5.547            | 56.1                  | 56.1             | 3.18               | 3.18  | 14.0                    | 14.0             | 16.2                    | 16.2             | 117                      |
|               | 0.188     | 8.90  | 19.6  | 29.2 | 5.769            | 58.2                  | 58.2             | 3.18               | 3.18  | 14.6                    | 14.6             | 16.8                    | 16.8             | 112                      |
|               | 0.250     | 11.7  | 25.8  | 38.4 | 7.589            | 75.1                  | 75.1             | 3.15               | 3.15  | 18.8                    | 18.8             | 21.9                    | 21.9             | 85.5                     |
| 10 x 10       | 0.313     | 14.4  | 31.8  | 47.3 | 9.358            | 90.9                  | 90.9             | 3.12               | 3.12  | 22.7                    | 22.7             | 26.7                    | 26.7             | 69.4                     |
|               | 0.375     | 17.1  | 37.6  | 56.0 | 11.08            | 106                   | 106              | 3.09               | 3.09  | 26.4                    | 26.4             | 31.3                    | 31.3             | 58.5                     |
|               | 0.500     | 22.1  | 48.8  | 72.6 | 14.36            | 131                   | 131              | 3.03               | 3.03  | 32.9                    | 32.9             | 39.7                    | 39.7             | 45.2                     |
| 10 x 10       | 0.250     | 14.8  | 32.6  | 48.5 | 9.589            | 151                   | 151              | 3.96               | 3.96  | 30.1                    | 30.1             | 34.9                    | 34.9             | 67.6                     |
|               | 0.313     | 18.3  | 40.3  | 60.0 | 11.86            | 183                   | 183              | 3.93               | 3.93  | 36.7                    | 36.7             | 42.8                    | 42.8             | 54.6                     |
|               | 0.375     | 21.7  | 47.8  | 71.2 | 14.08            | 214                   | 214              | 3.90               | 3.90  | 42.9                    | 42.9             | 50.4                    | 50.4             | 46.1                     |
| 12 x 12       | 0.500     | 28.3  | 62.3  | 92.9 | 18.36            | 271                   | 271              | 3.84               | 3.84  | 54.2                    | 54.2             | 64.6                    | 64.6             | 35.3                     |
|               | 0.625     | 34.6  | 76.2  | 113  | 22.43            | 321                   | 321              | 3.78               | 3.78  | 64.2                    | 64.2             | 77.6                    | 77.6             | 28.9                     |
| 12 x 12       | 0.250     | 17.9  | 39.4  | 58.6 | 11.59            | 265                   | 265              | 4.78               | 4.78  | 44.1                    | 44.1             | 50.8                    | 50.8             | 55.9                     |
|               | 0.313     | 22.1  | 48.8  | 72.6 | 14.36            | 324                   | 324              | 4.75               | 4.75  | 54.0                    | 54.0             | 62.6                    | 62.6             | 45.2                     |
|               | 0.375     | 26.3  | 58.0  | 86.4 | 17.08            | 380                   | 380              | 4.72               | 4.72  | 63.4                    | 63.4             | 73.9                    | 73.9             | 38.0                     |
| 14 x 14       | 0.500     | 34.5  | 75.9  | 113  | 22.36            | 485                   | 485              | 4.66               | 4.66  | 80.9                    | 80.9             | 95.4                    | 95.4             | 29.0                     |
|               | 0.625     | 42.3  | 93.2  | 139  | 27.43            | 580                   | 580              | 4.60               | 4.60  | 96.7                    | 96.7             | 116                     | 116              | 23.6                     |
|               | 0.750     | 49.8  | 110   | 163  | 32.30            | 665                   | 665              | 4.54               | 4.54  | 111                     | 111              | 134                     | 134              | 20.1                     |
| 14 x 14       | 0.313     | 26.0  | 57.2  | 85.3 | 16.86            | 522                   | 522              | 5.57               | 5.57  | 74.6                    | 74.6             | 86.1                    | 86.1             | 38.5                     |
|               | 0.375     | 31.0  | 68.2  | 102  | 20.08            | 615                   | 615              | 5.54               | 5.54  | 87.9                    | 87.9             | 102                     | 102              | 32.3                     |
|               | 0.500     | 40.6  | 89.5  | 133  | 26.36            | 791                   | 791              | 5.48               | 5.48  | 113                     | 113              | 132                     | 132              | 24.6                     |
| 16 x 16       | 0.625     | 50.0  | 110   | 164  | 32.43            | 952                   | 952              | 5.42               | 5.42  | 136                     | 136              | 161                     | 161              | 20.0                     |
|               | 0.750     | 59.1  | 130   | 194  | 38.30            | 1,100                 | 1,100            | 5.36               | 5.36  | 157                     | 157              | 188                     | 188              | 16.9                     |
|               | 0.875     | 67.8  | 149   | 222  | 43.97            | 1,230                 | 1,230            | 5.30               | 5.30  | 176                     | 176              | 213                     | 213              | 14.7                     |
| 16 x 16       | 0.375     | 35.6  | 78.4  | 117  | 23.08            | 931                   | 931              | 6.35               | 6.35  | 116                     | 116              | 134                     | 134              | 28.1                     |
|               | 0.500     | 46.8  | 103   | 154  | 30.36            | 1,200                 | 1,200            | 6.29               | 6.29  | 150                     | 150              | 175                     | 175              | 21.4                     |
|               | 0.625     | 57.7  | 127   | 189  | 37.43            | 1,450                 | 1,450            | 6.23               | 6.23  | 182                     | 182              | 214                     | 214              | 17.3                     |
| 18 x 18       | 0.750     | 68.3  | 150   | 224  | 44.30            | 1,690                 | 1,690            | 6.17               | 6.17  | 211                     | 211              | 250                     | 250              | 14.6                     |
|               | 0.875     | 78.6  | 173   | 258  | 50.97            | 1,900                 | 1,900            | 6.11               | 6.11  | 238                     | 238              | 285                     | 285              | 12.7                     |
| 18 x 18       | 0.500     | 53.0  | 117   | 174  | 34.36            | 1,740                 | 1,740            | 7.11               | 7.11  | 193                     | 193              | 224                     | 224              | 18.9                     |
|               | 0.625     | 65.4  | 144   | 215  | 42.43            | 2,110                 | 2,110            | 7.05               | 7.05  | 234                     | 234              | 274                     | 274              | 15.3                     |
|               | 0.750     | 77.6  | 171   | 254  | 50.30            | 2,460                 | 2,460            | 6.99               | 6.99  | 273                     | 273              | 322                     | 322              | 12.9                     |
| 20 x 20       | 0.875     | 89.4  | 197   | 293  | 57.97            | 2,780                 | 2,780            | 6.93               | 6.93  | 309                     | 309              | 368                     | 368              | 11.2                     |
|               | 0.500     | 59.1  | 130   | 194  | 38.36            | 2,410                 | 2,410            | 7.93               | 7.93  | 241                     | 241              | 279                     | 279              | 16.9                     |
|               | 0.625     | 73.1  | 161   | 240  | 47.43            | 2,940                 | 2,940            | 7.87               | 7.87  | 294                     | 294              | 342                     | 342              | 13.7                     |
| 22 x 22       | 0.750     | 86.8  | 191   | 285  | 56.30            | 3,430                 | 3,430            | 7.81               | 7.81  | 343                     | 343              | 403                     | 403              | 11.5                     |
|               | 0.875     | 100   | 221   | 329  | 64.97            | 3,900                 | 3,900            | 7.75               | 7.75  | 390                     | 390              | 461                     | 461              | 10.0                     |
|               | 0.750     | 96.1  | 212   | 315  | 62.30            | 4,630                 | 4,630            | 8.62               | 8.62  | 421                     | 421              | 492                     | 492              | 10.4                     |

NOTE

The calculation of section properties are based on the following corner geometry, as standard.

| Thickness(T) | Inside corner profile | Outside corner profile |
|--------------|-----------------------|------------------------|
| nominal      | 1.0T                  | 2.0T                   |



Section properties Rectangular : 3 in. x 2 in. to 24 in. x 12 in.

| Dimensions    |           | Mass     |          |         | Area               | Second moment of area           |                                 | Radius of gyration |        | Elastic section modulus         |                                 | Plastic section modulus          |                                  | Nominal length per tonne |
|---------------|-----------|----------|----------|---------|--------------------|---------------------------------|---------------------------------|--------------------|--------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|--------------------------|
| Nominal size  | Thickness |          |          |         |                    |                                 |                                 |                    |        |                                 |                                 |                                  |                                  |                          |
| A in. x B in. | t in.     | M1 kg/ft | M2 lb/ft | M3 kg/m | A in. <sup>2</sup> | I <sub>x</sub> in. <sup>4</sup> | I <sub>y</sub> in. <sup>4</sup> | ix in.             | iy in. | Z <sub>x</sub> in. <sup>3</sup> | Z <sub>y</sub> in. <sup>3</sup> | Z <sub>px</sub> in. <sup>3</sup> | Z <sub>py</sub> in. <sup>3</sup> | ft                       |
| 3 x 2         | 0.180     | 2.45     | 5.39     | 8.03    | 1.587              | 1.81                            | 0.952                           | 1.07               | 0.775  | 1.20                            | 0.952                           | 1.52                             | 1.14                             | 408                      |
|               | 0.188     | 2.53     | 5.58     | 8.32    | 1.644              | 1.86                            | 0.977                           | 1.06               | 0.771  | 1.24                            | 0.977                           | 1.57                             | 1.18                             | 395                      |
|               | 0.250     | 3.22     | 7.09     | 10.6    | 2.089              | 2.21                            | 1.15                            | 1.03               | 0.742  | 1.47                            | 1.15                            | 1.92                             | 1.44                             | 311                      |
| 4 x 2         | 0.180     | 3.00     | 6.61     | 9.85    | 1.947              | 3.75                            | 1.25                            | 1.39               | 0.802  | 1.88                            | 1.25                            | 2.40                             | 1.47                             | 333                      |
|               | 0.188     | 3.11     | 6.86     | 10.2    | 2.019              | 3.87                            | 1.29                            | 1.38               | 0.798  | 1.93                            | 1.29                            | 2.48                             | 1.52                             | 322                      |
|               | 0.250     | 3.99     | 8.79     | 13.1    | 2.589              | 4.69                            | 1.54                            | 1.35               | 0.770  | 2.35                            | 1.54                            | 3.09                             | 1.88                             | 251                      |
| 4 x 3         | 0.180     | 3.56     | 7.83     | 11.7    | 2.307              | 5.07                            | 3.24                            | 1.48               | 1.19   | 2.53                            | 2.16                            | 3.09                             | 2.54                             | 281                      |
|               | 0.188     | 3.69     | 8.13     | 12.1    | 2.394              | 5.23                            | 3.34                            | 1.48               | 1.18   | 2.62                            | 2.23                            | 3.20                             | 2.62                             | 271                      |
|               | 0.250     | 4.76     | 10.5     | 15.6    | 3.089              | 6.45                            | 4.10                            | 1.45               | 1.15   | 3.23                            | 2.74                            | 4.03                             | 3.30                             | 210                      |
| 5 x 2         | 0.180     | 3.56     | 7.83     | 11.7    | 2.307              | 6.67                            | 1.55                            | 1.70               | 0.820  | 2.67                            | 1.55                            | 3.47                             | 1.80                             | 281                      |
|               | 0.188     | 3.69     | 8.13     | 12.1    | 2.394              | 6.89                            | 1.60                            | 1.70               | 0.816  | 2.75                            | 1.60                            | 3.59                             | 1.86                             | 271                      |
|               | 0.250     | 4.76     | 10.5     | 15.6    | 3.089              | 8.48                            | 1.92                            | 1.66               | 0.789  | 3.39                            | 1.92                            | 4.51                             | 2.32                             | 210                      |
| 5 x 3         | 0.180     | 4.11     | 9.06     | 13.5    | 2.667              | 8.77                            | 3.96                            | 1.81               | 1.22   | 3.51                            | 2.64                            | 4.33                             | 3.04                             | 243                      |
|               | 0.188     | 4.27     | 9.40     | 14.0    | 2.769              | 9.06                            | 4.08                            | 1.81               | 1.21   | 3.62                            | 2.72                            | 4.49                             | 3.15                             | 234                      |
|               | 0.250     | 5.53     | 12.2     | 18.2    | 3.589              | 11.3                            | 5.05                            | 1.77               | 1.19   | 4.52                            | 3.37                            | 5.70                             | 3.98                             | 181                      |
| 6 x 2         | 0.375     | 7.83     | 17.2     | 25.7    | 5.076              | 14.7                            | 6.48                            | 1.70               | 1.13   | 5.89                            | 4.32                            | 7.71                             | 5.35                             | 128                      |
|               | 0.180     | 4.11     | 9.06     | 13.5    | 2.667              | 10.7                            | 1.85                            | 2.01               | 0.833  | 3.58                            | 1.85                            | 4.71                             | 2.13                             | 243                      |
|               | 0.188     | 4.27     | 9.40     | 14.0    | 2.769              | 11.1                            | 1.90                            | 2.00               | 0.829  | 3.70                            | 1.90                            | 4.88                             | 2.20                             | 234                      |
| 6 x 3         | 0.250     | 5.53     | 12.2     | 18.2    | 3.589              | 13.8                            | 2.31                            | 1.96               | 0.802  | 4.60                            | 2.31                            | 6.18                             | 2.75                             | 181                      |
|               | 0.180     | 4.67     | 10.3     | 15.3    | 3.027              | 13.8                            | 4.67                            | 2.13               | 1.24   | 4.60                            | 3.12                            | 5.76                             | 3.55                             | 214                      |
|               | 0.188     | 4.85     | 10.7     | 15.9    | 3.144              | 14.3                            | 4.83                            | 2.13               | 1.24   | 4.76                            | 3.22                            | 5.97                             | 3.68                             | 206                      |
| 6 x 4         | 0.250     | 6.31     | 13.9     | 20.7    | 4.089              | 17.9                            | 6.00                            | 2.09               | 1.21   | 5.98                            | 4.00                            | 7.62                             | 4.67                             | 158                      |
|               | 0.375     | 8.98     | 19.8     | 29.5    | 5.826              | 23.8                            | 7.78                            | 2.02               | 1.16   | 7.92                            | 5.19                            | 10.4                             | 6.34                             | 111                      |
|               | 0.180     | 5.22     | 11.5     | 17.1    | 3.387              | 16.8                            | 9.01                            | 2.23               | 1.63   | 5.62                            | 4.51                            | 6.81                             | 5.15                             | 192                      |
| 7 x 5         | 0.188     | 5.43     | 11.9     | 17.8    | 3.519              | 17.4                            | 9.32                            | 2.23               | 1.63   | 5.81                            | 4.66                            | 7.06                             | 5.34                             | 184                      |
|               | 0.250     | 7.08     | 15.6     | 23.2    | 4.589              | 22.1                            | 11.7                            | 2.19               | 1.60   | 7.36                            | 5.87                            | 9.06                             | 6.84                             | 141                      |
|               | 0.375     | 10.1     | 22.3     | 33.3    | 6.576              | 29.7                            | 15.6                            | 2.13               | 1.54   | 9.90                            | 7.82                            | 12.5                             | 9.44                             | 99.0                     |
| 8 x 4         | 0.375     | 12.5     | 27.4     | 40.9    | 8.076              | 52.2                            | 30.8                            | 2.54               | 1.95   | 14.9                            | 12.3                            | 18.5                             | 14.6                             | 80.0                     |
|               | 0.180     | 6.33     | 13.9     | 20.8    | 4.107              | 34.1                            | 11.6                            | 2.88               | 1.68   | 8.52                            | 5.82                            | 10.6                             | 6.53                             | 158                      |
|               | 0.188     | 6.58     | 14.5     | 21.6    | 4.269              | 35.3                            | 12.0                            | 2.88               | 1.68   | 8.83                            | 6.02                            | 11.0                             | 6.77                             | 152                      |
| 8 x 6         | 0.250     | 8.62     | 19.0     | 28.3    | 5.589              | 45.1                            | 15.3                            | 2.84               | 1.65   | 11.3                            | 7.63                            | 14.1                             | 8.72                             | 116                      |
|               | 0.375     | 12.5     | 27.4     | 40.9    | 8.076              | 61.9                            | 20.6                            | 2.77               | 1.60   | 15.5                            | 10.3                            | 19.9                             | 12.2                             | 80.0                     |
|               | 0.180     | 7.44     | 16.4     | 24.4    | 4.827              | 45.1                            | 29.0                            | 3.06               | 2.45   | 11.3                            | 9.68                            | 13.4                             | 11.0                             | 134                      |
| 10 x 4        | 0.188     | 7.74     | 17.0     | 25.4    | 5.019              | 46.8                            | 30.1                            | 3.05               | 2.45   | 11.7                            | 10.0                            | 13.9                             | 11.4                             | 129                      |
|               | 0.250     | 10.2     | 22.4     | 33.3    | 6.589              | 60.1                            | 38.6                            | 3.02               | 2.42   | 15.0                            | 12.9                            | 18.0                             | 14.8                             | 98.0                     |
|               | 0.313     | 12.5     | 27.5     | 41.0    | 8.108              | 72.4                            | 46.4                            | 2.99               | 2.39   | 18.1                            | 15.5                            | 21.9                             | 18.0                             | 80.0                     |
| 10 x 6        | 0.375     | 14.8     | 32.5     | 48.4    | 9.576              | 83.7                            | 53.5                            | 2.96               | 2.36   | 20.9                            | 17.8                            | 25.6                             | 21.0                             | 67.6                     |
|               | 0.500     | 19.1     | 42.0     | 62.5    | 12.36              | 103                             | 65.7                            | 2.89               | 2.31   | 25.8                            | 21.9                            | 32.2                             | 26.4                             | 52.4                     |
|               | 0.313     | 12.5     | 27.5     | 41.0    | 8.108              | 95.5                            | 22.4                            | 3.43               | 1.66   | 19.1                            | 11.2                            | 24.6                             | 12.8                             | 80.0                     |
| 10 x 8        | 0.375     | 14.8     | 32.5     | 48.4    | 9.576              | 110                             | 25.5                            | 3.39               | 1.63   | 22.0                            | 12.8                            | 28.7                             | 14.9                             | 67.6                     |
|               | 0.180     | 8.55     | 18.8     | 28.1    | 5.547              | 76.9                            | 35.1                            | 3.72               | 2.52   | 15.4                            | 11.7                            | 18.6                             | 13.1                             | 117                      |
|               | 0.188     | 8.90     | 19.6     | 29.2    | 5.769              | 79.8                            | 36.5                            | 3.72               | 2.51   | 16.0                            | 12.2                            | 19.3                             | 13.6                             | 112                      |
| 12 x 4        | 0.250     | 11.7     | 25.8     | 38.4    | 7.589              | 103                             | 46.9                            | 3.69               | 2.49   | 20.6                            | 15.6                            | 25.1                             | 17.7                             | 85.5                     |
|               | 0.313     | 14.4     | 31.8     | 47.3    | 9.358              | 125                             | 56.5                            | 3.65               | 2.46   | 25.0                            | 18.8                            | 30.7                             | 21.5                             | 69.4                     |
|               | 0.375     | 17.1     | 37.6     | 56.0    | 11.08              | 145                             | 65.4                            | 3.62               | 2.43   | 29.0                            | 21.8                            | 35.9                             | 25.2                             | 58.5                     |
| 12 x 6        | 0.500     | 22.1     | 48.8     | 72.6    | 14.36              | 181                             | 80.8                            | 3.55               | 2.37   | 36.2                            | 26.9                            | 45.6                             | 31.9                             | 45.2                     |
|               | 0.250     | 11.7     | 25.8     | 38.4    | 7.589              | 127                             | 22.3                            | 4.09               | 1.71   | 21.1                            | 11.1                            | 27.3                             | 12.5                             | 85.5                     |
|               | 0.313     | 14.1     | 31.8     | 47.3    | 9.372              | 153                             | 26.6                            | 4.05               | 1.69   | 25.6                            | 13.3                            | 33.4                             | 15.1                             | 69.4                     |
| 12 x 8        | 0.375     | 17.1     | 37.6     | 56.0    | 11.08              | 178                             | 30.5                            | 4.01               | 1.66   | 29.6                            | 15.2                            | 39.0                             | 17.6                             | 58.5                     |
|               | 0.375     | 19.4     | 42.7     | 63.6    | 12.58              | 180                             | 127                             | 3.78               | 3.18   | 35.9                            | 31.8                            | 43.1                             | 37.0                             | 51.5                     |
|               | 0.500     | 25.2     | 55.5     | 82.7    | 16.36              | 226                             | 160                             | 3.72               | 3.12   | 45.2                            | 39.9                            | 55.1                             | 47.2                             | 39.7                     |
| 12 x 10       | 0.375     | 19.4     | 42.7     | 63.6    | 12.58              | 228                             | 77.2                            | 4.26               | 2.48   | 38.1                            | 25.7                            | 47.7                             | 29.4                             | 51.5                     |
|               | 0.500     | 25.2     | 55.5     | 82.7    | 16.36              | 287                             | 96.0                            | 4.19               | 2.42   | 47.8                            | 32.0                            | 60.9                             | 37.4                             | 39.7                     |
|               | 0.250     | 14.8     | 32.6     | 48.5    | 9.589              | 196                             | 105                             | 4.52               | 3.31   | 32.6                            | 26.3                            | 39.1                             | 29.6                             | 67.6                     |
| 14 x 6        | 0.313     | 18.3     | 40.3     | 60.0    | 11.86              | 239                             | 128                             | 4.49               | 3.28   | 39.8                            | 32.0                            | 47.9                             | 36.3                             | 54.6                     |
|               | 0.375     | 21.7     | 47.8     | 71.2    | 14.08              | 279                             | 149                             | 4.45               | 3.26   | 46.5                            | 37.3                            | 56.5                             | 42.7                             | 46.1                     |
|               | 0.500     | 28.3     | 62.3     | 92.9    | 18.36              | 353                             | 188                             | 4.39               | 3.20   | 58.9                            | 46.9                            | 72.4                             | 54.7                             | 35.3                     |
| 14 x 8        | 0.313     | 18.3     | 40.3     | 60.0    | 11.86              | 288                             | 76.7                            | 4.93               | 2.54   | 41.2                            | 25.6                            | 51.9                             | 28.7                             | 54.6                     |
|               | 0.375     | 21.7     | 47.8     | 71.2    | 14.08              | 337                             | 89.1                            | 4.89               | 2.52   | 48.1                            | 29.7                            | 61.1                             | 33.6                             | 46.1                     |
|               | 0.500     | 28.3     | 62.3     | 92.9    | 18.36              | 426                             | 111                             | 4.82               | 2.46   | 60.8                            | 37.1                            | 78.3                             | 42.9                             | 35.3                     |
| 14 x 10       | 0.375     | 26.3     | 58.0     | 86.4    | 17.08              | 476                             | 284                             | 5.28               | 4.08   | 68.0                            | 56.8                            | 81.5                             | 64.8                             | 38.0                     |
|               | 0.500     | 34.5     | 75.9     | 113     | 22.36              | 608                             | 361                             | 5.22               | 4.02   | 86.9                            | 72.3                            | 105                              | 83.6                             | 29.0                     |
|               | 0.625     | 42.3     | 93.2     | 139     | 27.43              | 728                             | 431                             | 5.15               | 3.96   | 104                             | 86.2                            | 127                              | 101                              | 23.6                     |
| 16 x 8        | 0.250     | 17.9     | 39.4     | 58.6    | 11.59              | 393                             | 135                             | 5.82               | 3.42   | 49.1                            | 33.8                            | 60.3                             | 37.4                             | 55.9                     |
|               | 0.313     | 22.1     | 48.8     | 72.6    | 14.36              | 481                             | 165                             | 5.79               | 3.39   | 60.1                            | 41.2                            | 74.2                             | 45.9                             | 45.2                     |
|               | 0.375     | 26.3     | 58.0     | 86.4    | 17.08              | 565                             | 193                             | 5.75               | 3.36   | 70.6                            | 48.2                            | 87.6                             | 54.2                             | 38.0                     |
| 20 x 12       | 0.500     | 34.5     | 75.9     | 113     | 22.36              | 722                             | 244                             | 5.68               | 3.30   | 90.2                            | 61.0                            | 113                              | 69.7                             | 29.0                     |
|               | 0.500     | 46.8     | 103      | 154     | 30.36              | 1,650                           | 750                             | 7.37               | 4.97   | 165                             | 125                             | 201                              | 141                              | 21.4                     |
|               | 0.625     | 57.7     | 127      | 189     | 37.43              | 2,000                           | 904                             | 7.30               | 4.91   | 200                             | 151                             | 245                              | 172                              | 17.3                     |
| 24 x 12       | 0.750     | 68.3     | 150      | 224     | 44.30              | 2,320                           | 1,050                           | 7.24               | 4.86   | 232                             | 174                             | 287                              | 202                              | 14.6                     |
|               | 0.500     | 53.0     | 117      | 174     | 34.36              | 2,580                           | 882                             | 8.67               | 5.07   | 215                             | 147                             | 266                              | 164                              | 18.9                     |
|               | 0.625     | 65.4     | 144      | 215     | 42.43              | 3,130                           | 1,070                           | 8.59               | 5.01   | 261                             | 178                             | 325                              | 201                              | 15.3                     |
| 24 x 12       | 0.750     | 77.6     | 171      | 254     | 50.30              | 3,650                           | 1,240                           | 8.52               | 4.96   | 304                             | 206                             | 382                              | 235                              | 12.9                     |



EN 10219 “Cold formed welded structural hollow sections of non-alloy and fine grain steels”

Mechanical properties and chemical composition

Refer to page 7-8.

Tolerances

The tolerances on dimensions are established in accordance with EN 10219-1&2

| Characteristics            | Tolerances                   |                          |
|----------------------------|------------------------------|--------------------------|
| Outside dimensions of side | (H,B<100mm)                  | ±1% with a min of ±0.5mm |
| H : Longest side           | (100mm≤H,B≤200mm)            | ±0.8%                    |
| B : Shortest side          | (200mm<H,B)                  | ±0.6%                    |
| Wall thickness(T)          | (T≤5mm)                      | ±10%                     |
|                            | (5mm<T)                      | ±0.50mm                  |
| Concavity/Convexity        | Max 0.8% with a min of 0.5mm |                          |
| Squareness of sides        | 90°±1°                       |                          |
| External corner radius     | (T≤6mm)                      | 1.6T≤R≤2.4T              |
|                            | (6mm<T≤10mm)                 | 2.0T≤R≤3.0T              |
|                            | (10mm<T)                     | 2.4T≤R≤3.6T              |
| Twist                      | 2mm+0.5mm/m in length        |                          |
| Straightness               | 0.15% in total length        |                          |
| Mass                       | ±6% in individual lengths    |                          |
| Length                     | Approximate                  | 0,+50mm                  |
|                            | Exact L<6,000mm              | 0,+5mm                   |
|                            | 6,000mm≤L≤10,000mm           | 0,+15mm                  |
|                            | 10,000mm<L                   | 0,+5mm+1mm/m             |

NOTE

1)The outside dimensions are measured across the flats at positions at least 50mm from the end of the HSS.

Packing

In bare bundle (steel banded) or in bulk. Standard lengths are 6, 8 and 12 meter.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.

a)Manufacturer's Name b)Standard & Grade c)Size d)Manufacturing Date e)Heat No. f)Country of Origin

Inspection and Testing

EN 10219 is subject to tensile testing in accordance with EN 10002-1,

Charpy impact test in accordance with EN 10045-1.

If you need additional requirements, please consult us.

| Available size range |             |                    |     |     |     |     |     |     |     |     |     |     |     |     |      | Dimensions (mm-Size) |      |      |      |      |      |  |  |
|----------------------|-------------|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------------------|------|------|------|------|------|--|--|
| Size(mm)             |             | Wall thickness(mm) |     |     |     |     |     |     |     |     |     |     |     |     |      |                      |      |      |      |      |      |  |  |
| SQUARE               | RECTANGULAR | 1.6                | 2.0 | 2.3 | 2.5 | 3.0 | 3.2 | 4.0 | 4.5 | 5.0 | 6.0 | 6.3 | 8.0 | 9.0 | 10.0 | 12.0                 | 12.5 | 16.0 | 19.0 | 20.0 | 22.0 |  |  |
| 50 x 50              | 60 x 30     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |     |     |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 60 x 40     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 70 x 40     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |      |                      |      |      |      |      |      |  |  |
| 60 x 60              | 75 x 45     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 75 x 50     |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
| 75 x 75              | 100 x 40    | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 100 x 50    | ●                  | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |     |      |                      |      |      |      |      |      |  |  |
| 80 x 80              |             |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   |     |      |                      |      |      |      |      |      |  |  |
|                      | 125 x 40    | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |     |     |     |      |                      |      |      |      |      |      |  |  |
| 90 x 90              |             |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |                      |      |      |      |      |      |  |  |
| 100 x 100            |             | ●                  | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●                    |      |      |      |      |      |  |  |
|                      | 125 x 75    | ●                  | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   | ●   |      |                      |      |      |      |      |      |  |  |
|                      | 150 x 50    |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 150 x 75    |                    |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |                      |      |      |      |      |      |  |  |
|                      | 150 x 80    |                    |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
| 120 x 120            |             |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●                    |      |      |      |      |      |  |  |
| 125 x 125            |             |                    |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
|                      | 150 x 100   |                    |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●                    |      |      |      |      |      |  |  |
| 150 x 150            |             |                    |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   |      |      |      |  |  |
|                      | 175 x 125   |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●                    |      |      |      |      |      |  |  |
|                      | 200 x 100   |                    |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●                    |      |      |      |      |      |  |  |
| 175 x 175            |             |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
|                      | 200 x 150   |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
|                      | 250 x 100   |                    |     |     |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●    | ●                    |      |      |      |      |      |  |  |
| 200 x 200            |             |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●    |      |      |  |  |
|                      | 225 x 175   |                    |     |     |     |     |     |     | ●   | ●   | ●▲  |     |     |     |      |                      |      |      |      |      |      |  |  |
|                      | 250 x 150   |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   |      |      |      |      |  |  |
|                      | 300 x 100   |                    |     |     |     |     |     |     | ●   | ●   | ●▲  | ●▲  | ●▲  | ●▲  |      |                      |      |      |      |      |      |  |  |
|                      | 250 x 200   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
|                      | 300 x 150   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
| 250 x 250            |             |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●    |      |      |  |  |
|                      | 300 x 200   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●    |      |      |  |  |
|                      | 350 x 150   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   |      |      |      |      |      |  |  |
| 300 x 300            |             |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●▲   |      |      |  |  |
|                      | 350 x 250   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   |      |      |      |  |  |
|                      | 400 x 200   |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲                   | ●▲   |      |      |      |      |  |  |
| 350 x 350            |             |                    |     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
|                      | 400 x 300   |                    |     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲   | ●▲                   | ●▲   | ●    |      | ●▲   | ●▲   |  |  |
| 400 x 400            |             |                    |     |     |     |     |     |     |     |     |     |     |     | ●▲  | ●▲   | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
|                      | 500 x 300   |                    |     |     |     |     |     |     |     |     |     |     |     |     |      | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
| 450 x 450            |             |                    |     |     |     |     |     |     |     |     |     |     |     | ●   | ●    | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
|                      | 600 x 300   |                    |     |     |     |     |     |     |     |     |     |     |     |     |      | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
| 500 x 500            |             |                    |     |     |     |     |     |     |     |     |     |     |     | ●   | ●    | ●▲                   | ●▲   | ●▲   | ●▲   | ●▲   | ●▲   |  |  |
| 550 x 550            |             |                    |     |     |     |     |     |     |     |     |     |     |     |     |      | ●                    | ●    | ●    | ●▲   | ●▲   | ●▲   |  |  |

● S275J0H/S275J2H Available  
▲ S355J0H/S355J2H Available  
△ S355J0H Available, S355J2H to be confirmed  
□ S355J0H Available  
If you require other sizes, please consult us.

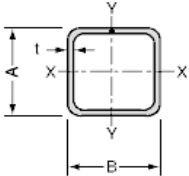


Section properties    Square : 50 mm x 50 mm to 120 mm x 120 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 50 x 50      | 1.6       | 2.38   | 3.032             | 11.7                           | 11.7                           | 1.96               | 1.96              | 4.68                           | 4.68                           | 5.46                            | 5.46                            | 18.5                       | 7.04                       | 0.195                             | 420                      |
|              | 2.0       | 2.93   | 3.737             | 14.1                           | 14.1                           | 1.95               | 1.95              | 5.66                           | 5.66                           | 6.66                            | 6.66                            | 22.6                       | 8.51                       | 0.193                             | 341                      |
|              | 2.3       | 3.34   | 4.252             | 15.9                           | 15.9                           | 1.93               | 1.93              | 6.34                           | 6.34                           | 7.52                            | 7.52                            | 25.6                       | 9.55                       | 0.192                             | 300                      |
|              | 2.5       | 3.60   | 4.589             | 16.9                           | 16.9                           | 1.92               | 1.92              | 6.78                           | 6.78                           | 8.07                            | 8.07                            | 27.5                       | 10.2                       | 0.191                             | 278                      |
|              | 3.0       | 4.25   | 5.408             | 19.5                           | 19.5                           | 1.90               | 1.90              | 7.79                           | 7.79                           | 9.39                            | 9.39                            | 32.1                       | 11.8                       | 0.190                             | 236                      |
|              | 3.2       | 4.50   | 5.727             | 20.4                           | 20.4                           | 1.89               | 1.89              | 8.16                           | 8.16                           | 9.89                            | 9.89                            | 33.9                       | 12.3                       | 0.189                             | 222                      |
|              | 4.0       | 5.45   | 6.948             | 23.7                           | 23.7                           | 1.85               | 1.85              | 9.49                           | 9.49                           | 11.7                            | 11.7                            | 40.4                       | 14.4                       | 0.186                             | 183                      |
|              | 4.5       | 6.02   | 7.669             | 25.5                           | 25.5                           | 1.82               | 1.82              | 10.2                           | 10.2                           | 12.8                            | 12.8                            | 44.1                       | 15.6                       | 0.185                             | 166                      |
|              | 5.0       | 6.56   | 8.356             | 27.0                           | 27.0                           | 1.80               | 1.80              | 10.8                           | 10.8                           | 13.7                            | 13.7                            | 47.5                       | 16.6                       | 0.183                             | 152                      |
|              | 6.0       | 7.56   | 9.633             | 29.5                           | 29.5                           | 1.75               | 1.75              | 11.8                           | 11.8                           | 15.3                            | 15.3                            | 53.2                       | 18.2                       | 0.179                             | 132                      |
| 60 x 60      | 1.6       | 2.88   | 3.672             | 20.7                           | 20.7                           | 2.37               | 2.37              | 6.89                           | 6.89                           | 7.99                            | 7.99                            | 32.4                       | 10.4                       | 0.235                             | 347                      |
|              | 2.0       | 3.56   | 4.537             | 25.1                           | 25.1                           | 2.35               | 2.35              | 8.38                           | 8.38                           | 9.79                            | 9.79                            | 39.8                       | 12.6                       | 0.233                             | 281                      |
|              | 2.3       | 4.06   | 5.172             | 28.3                           | 28.3                           | 2.34               | 2.34              | 9.44                           | 9.44                           | 11.1                            | 11.1                            | 45.2                       | 14.2                       | 0.232                             | 246                      |
|              | 2.5       | 4.39   | 5.589             | 30.3                           | 30.3                           | 2.33               | 2.33              | 10.1                           | 10.1                           | 11.9                            | 11.9                            | 48.7                       | 15.2                       | 0.231                             | 228                      |
|              | 3.0       | 5.19   | 6.608             | 35.1                           | 35.1                           | 2.31               | 2.31              | 11.7                           | 11.7                           | 14.0                            | 14.0                            | 57.1                       | 17.7                       | 0.230                             | 193                      |
|              | 3.2       | 5.50   | 7.007             | 36.9                           | 36.9                           | 2.30               | 2.30              | 12.3                           | 12.3                           | 14.7                            | 14.7                            | 60.3                       | 18.6                       | 0.229                             | 182                      |
|              | 4.0       | 6.71   | 8.548             | 43.6                           | 43.6                           | 2.26               | 2.26              | 14.5                           | 14.5                           | 17.6                            | 17.6                            | 72.6                       | 22.0                       | 0.226                             | 149                      |
|              | 4.5       | 7.43   | 9.469             | 47.2                           | 47.2                           | 2.23               | 2.23              | 15.7                           | 15.7                           | 19.3                            | 19.3                            | 79.8                       | 23.9                       | 0.225                             | 135                      |
|              | 5.0       | 8.13   | 10.36             | 50.5                           | 50.5                           | 2.21               | 2.21              | 16.8                           | 16.8                           | 20.9                            | 20.9                            | 86.4                       | 25.6                       | 0.223                             | 123                      |
|              | 6.0       | 9.45   | 12.03             | 56.1                           | 56.1                           | 2.16               | 2.16              | 18.7                           | 18.7                           | 23.7                            | 23.7                            | 98.4                       | 28.6                       | 0.219                             | 106                      |
| 75 x 75      | 1.6       | 3.64   | 4.632             | 41.3                           | 41.3                           | 2.99               | 2.99              | 11.0                           | 11.0                           | 12.7                            | 12.7                            | 64.1                       | 16.5                       | 0.295                             | 275                      |
|              | 2.0       | 4.50   | 5.737             | 50.5                           | 50.5                           | 2.97               | 2.97              | 13.5                           | 13.5                           | 15.6                            | 15.6                            | 79.0                       | 20.2                       | 0.293                             | 222                      |
|              | 2.3       | 5.14   | 6.552             | 57.1                           | 57.1                           | 2.95               | 2.95              | 15.2                           | 15.2                           | 17.7                            | 17.7                            | 90.0                       | 22.9                       | 0.292                             | 194                      |
|              | 2.5       | 5.56   | 7.089             | 61.4                           | 61.4                           | 2.94               | 2.94              | 16.4                           | 16.4                           | 19.1                            | 19.1                            | 97.1                       | 24.6                       | 0.291                             | 180                      |
|              | 3.0       | 6.60   | 8.408             | 71.6                           | 71.6                           | 2.92               | 2.92              | 19.1                           | 19.1                           | 22.5                            | 22.5                            | 115                        | 28.7                       | 0.290                             | 152                      |
|              | 3.2       | 7.01   | 8.927             | 75.5                           | 75.5                           | 2.91               | 2.91              | 20.1                           | 20.1                           | 23.8                            | 23.8                            | 121                        | 30.3                       | 0.289                             | 143                      |
|              | 4.0       | 8.59   | 10.95             | 90.2                           | 90.2                           | 2.87               | 2.87              | 24.1                           | 24.1                           | 28.8                            | 28.8                            | 147                        | 36.3                       | 0.286                             | 116                      |
|              | 4.5       | 9.55   | 12.17             | 98.6                           | 98.6                           | 2.85               | 2.85              | 26.3                           | 26.3                           | 31.7                            | 31.7                            | 163                        | 39.7                       | 0.285                             | 105                      |
|              | 5.0       | 10.5   | 13.36             | 106                            | 106                            | 2.82               | 2.82              | 28.4                           | 28.4                           | 34.5                            | 34.5                            | 177                        | 42.9                       | 0.283                             | 95.4                     |
|              | 6.0       | 12.3   | 15.63             | 120                            | 120                            | 2.77               | 2.77              | 32.0                           | 32.0                           | 39.6                            | 39.6                            | 205                        | 48.7                       | 0.279                             | 81.5                     |
| 80 x 80      | 6.3       | 12.5   | 15.95             | 119                            | 119                            | 2.73               | 2.73              | 31.8                           | 31.8                           | 39.7                            | 39.7                            | 211                        | 49.7                       | 0.273                             | 79.9                     |
|              | 8.0       | 15.1   | 19.24             | 134                            | 134                            | 2.64               | 2.64              | 35.7                           | 35.7                           | 46.1                            | 46.1                            | 247                        | 56.7                       | 0.266                             | 66.2                     |
|              | 2.3       | 5.50   | 7.012             | 69.9                           | 69.9                           | 3.16               | 3.16              | 17.5                           | 17.5                           | 20.3                            | 20.3                            | 110                        | 26.2                       | 0.312                             | 182                      |
|              | 2.5       | 5.96   | 7.589             | 75.1                           | 75.1                           | 3.15               | 3.15              | 18.8                           | 18.8                           | 21.9                            | 21.9                            | 119                        | 28.2                       | 0.311                             | 168                      |
|              | 3.0       | 7.07   | 9.008             | 87.8                           | 87.8                           | 3.12               | 3.12              | 22.0                           | 22.0                           | 25.8                            | 25.8                            | 140                        | 33.0                       | 0.310                             | 141                      |
|              | 3.2       | 7.51   | 9.567             | 92.7                           | 92.7                           | 3.11               | 3.11              | 23.2                           | 23.2                           | 27.3                            | 27.3                            | 148                        | 34.9                       | 0.309                             | 133                      |
|              | 4.0       | 9.22   | 11.75             | 111                            | 111                            | 3.07               | 3.07              | 27.8                           | 27.8                           | 33.1                            | 33.1                            | 180                        | 41.8                       | 0.306                             | 108                      |
|              | 4.5       | 10.33  | 13.07             | 122                            | 122                            | 3.05               | 3.05              | 30.4                           | 30.4                           | 36.5                            | 36.5                            | 200                        | 45.9                       | 0.305                             | 97.5                     |
|              | 5.0       | 11.3   | 14.36             | 131                            | 131                            | 3.03               | 3.03              | 32.9                           | 32.9                           | 39.7                            | 39.7                            | 218                        | 49.7                       | 0.303                             | 88.7                     |
|              | 6.0       | 13.2   | 16.83             | 149                            | 149                            | 2.98               | 2.98              | 37.3                           | 37.3                           | 45.8                            | 45.8                            | 252                        | 56.6                       | 0.299                             | 75.7                     |
| 90 x 90      | 6.3       | 13.5   | 17.21             | 149                            | 149                            | 2.94               | 2.94              | 37.1                           | 37.1                           | 46.1                            | 46.1                            | 261                        | 57.9                       | 0.293                             | 74.0                     |
|              | 8.0       | 16.4   | 20.84             | 168                            | 168                            | 2.84               | 2.84              | 42.1                           | 42.1                           | 53.9                            | 53.9                            | 307                        | 66.6                       | 0.286                             | 61.1                     |
|              | 2.3       | 6.23   | 7.932             | 101                            | 101                            | 3.56               | 3.56              | 22.4                           | 22.4                           | 25.9                            | 25.9                            | 158                        | 33.6                       | 0.352                             | 161                      |
|              | 2.5       | 6.74   | 8.589             | 109                            | 109                            | 3.56               | 3.56              | 24.1                           | 24.1                           | 28.0                            | 28.0                            | 170                        | 36.2                       | 0.351                             | 148                      |
|              | 3.0       | 8.01   | 10.21             | 127                            | 127                            | 3.53               | 3.53              | 28.3                           | 28.3                           | 33.0                            | 33.0                            | 201                        | 42.5                       | 0.350                             | 125                      |
|              | 3.2       | 8.51   | 10.85             | 135                            | 135                            | 3.52               | 3.52              | 29.9                           | 29.9                           | 35.0                            | 35.0                            | 214                        | 44.9                       | 0.349                             | 117                      |
|              | 4.0       | 10.5   | 13.35             | 162                            | 162                            | 3.48               | 3.48              | 36.0                           | 36.0                           | 42.6                            | 42.6                            | 261                        | 54.2                       | 0.346                             | 95.4                     |
|              | 4.5       | 11.7   | 14.87             | 178                            | 178                            | 3.46               | 3.46              | 39.5                           | 39.5                           | 47.1                            | 47.1                            | 289                        | 59.6                       | 0.345                             | 85.7                     |
|              | 5.0       | 12.8   | 16.36             | 193                            | 193                            | 3.43               | 3.43              | 42.9                           | 42.9                           | 51.4                            | 51.4                            | 316                        | 64.7                       | 0.343                             | 77.9                     |
|              | 6.0       | 15.1   | 19.23             | 220                            | 220                            | 3.39               | 3.39              | 49.0                           | 49.0                           | 59.5                            | 59.5                            | 368                        | 74.2                       | 0.339                             | 66.2                     |
| 100 x 100    | 6.3       | 15.5   | 19.73             | 221                            | 221                            | 3.35               | 3.35              | 49.1                           | 49.1                           | 60.3                            | 60.3                            | 382                        | 76.2                       | 0.333                             | 64.6                     |
|              | 1.6       | 4.89   | 6.232             | 100                            | 100                            | 4.01               | 4.01              | 20.0                           | 20.0                           | 22.9                            | 22.9                            | 154                        | 30.0                       | 0.395                             | 204                      |
|              | 2.0       | 6.07   | 7.737             | 123                            | 123                            | 3.99               | 3.99              | 24.6                           | 24.6                           | 28.3                            | 28.3                            | 191                        | 36.9                       | 0.393                             | 165                      |
|              | 2.3       | 6.95   | 8.852             | 140                            | 140                            | 3.97               | 3.97              | 27.9                           | 27.9                           | 32.3                            | 32.3                            | 217                        | 42.0                       | 0.392                             | 144                      |
|              | 2.5       | 7.53   | 9.589             | 151                            | 151                            | 3.96               | 3.96              | 30.1                           | 30.1                           | 34.9                            | 34.9                            | 235                        | 45.2                       | 0.391                             | 133                      |
|              | 3.0       | 8.96   | 11.41             | 177                            | 177                            | 3.94               | 3.94              | 35.4                           | 35.4                           | 41.2                            | 41.2                            | 279                        | 53.2                       | 0.390                             | 112                      |
|              | 3.2       | 9.52   | 12.13             | 187                            | 187                            | 3.93               | 3.93              | 37.5                           | 37.5                           | 43.7                            | 43.7                            | 296                        | 56.3                       | 0.389                             | 105                      |
|              | 4.0       | 11.7   | 14.95             | 226                            | 226                            | 3.89               | 3.89              | 45.3                           | 45.3                           | 53.3                            | 53.3                            | 362                        | 68.1                       | 0.386                             | 85.2                     |
|              | 4.5       | 13.1   | 16.67             | 249                            | 249                            | 3.87               | 3.87              | 49.9                           | 49.9                           | 59.0                            | 59.0                            | 402                        | 75.1                       | 0.385                             | 76.4                     |
|              | 5.0       | 14.4   | 18.36             | 271                            | 271                            | 3.84               | 3.84              | 54.2                           | 54.2                           | 64.6                            | 64.6                            | 441                        | 81.7                       | 0.383                             | 69.4                     |
| 120 x 120    | 6.0       | 17.0   | 21.63             | 311                            | 311                            | 3.79               | 3.79              | 62.3                           | 62.3                           | 75.1                            | 75.1                            | 514                        | 94.1                       | 0.379                             | 58.9                     |
|              | 6.3       | 17.5   | 22.25             | 314                            | 314                            | 3.76               | 3.76              | 62.8                           | 62.8                           | 76.4                            | 76.4                            | 536                        | 97.0                       | 0.373                             | 57.3                     |
|              | 8.0       | 21.4   | 27.24             | 366                            | 366                            | 3.67               | 3.67              | 73.2                           | 73.2                           | 91.1                            | 91.1                            | 645                        | 114                        | 0.366                             | 46.8                     |
|              | 9.0       | 23.5   | 29.98             | 391                            | 391                            | 3.61               | 3.61              | 78.1                           | 78.1                           | 98.6                            | 98.6                            | 700                        | 123                        | 0.361                             | 42.5                     |
|              | 10.0      | 25.6   | 32.57             | 411                            | 411                            | 3.55               | 3.55              | 82.2                           | 82.2                           | 105                             | 105                             | 750                        | 130                        | 0.357                             | 39.1                     |
|              | 12.0      | 28.3   | 36.06             | 408                            | 408                            | 3.36               | 3.36              | 81.6                           | 81.6                           | 110                             | 110                             | 794                        | 136                        | 0.338                             | 35.3                     |
|              | 6.0       | 20.7   | 26.43             | 562                            | 562                            | 4.61               | 4.61              | 93.7                           | 93.7                           | 112                             | 112                             | 913                        | 141                        | 0.459                             | 48.2                     |
|              | 6.3       | 21.4   | 27.29             | 572                            | 572                            | 4.58               | 4.58              | 95.3                           | 95.3                           | 114                             | 114                             | 955                        | 146                        | 0.453                             | 46.7                     |
|              | 8.0       | 26.4   | 33.64             | 677                            | 677                            | 4.49               | 4.49              | 113                            | 113                            | 138                             | 138                             | 1,160                      | 175                        | 0.446                             | 37.9                     |
|              | 9.0       | 29.2   | 37.18             | 730                            | 730                            | 4.43               | 4.43              | 122                            | 122                            | 150                             | 150                             | 1,270                      | 189                        | 0.441                             | 34.3                     |
| 120 x 120    | 10.0      | 31.8   | 40.57             | 777                            | 777                            | 4.38               | 4.38              | 129                            | 129                            | 162                             | 162                             | 1,380                      | 203                        | 0.437                             | 31.4                     |
|              | 12.0      | 35.8   | 45.66             | 806                            | 806                            | 4.20               | 4.20              | 134                            | 134                            | 174                             | 174                             | 1,520                      | 219                        | 0.418                             | 27.9                     |

NOTE  
The calculation of section properties are based on the following corner geometry, as standard.

| Thickness(T)                                 | Inside corner profile | Outside corner profile |
|----------------------------------------------|-----------------------|------------------------|
| 6mm and less                                 | 1.0T                  | 2.0T                   |
| more than 6mm and less than or equal to 10mm | 1.5T                  | 2.5T                   |
| more than 10mm                               | 2.0T                  | 3.0T                   |



Section properties    Square : 125 mm x 125 mm to 350 mm x 350 mm

| Dimensions   |           | Mass   | Area  | Second moment of area |        | Radius of gyration |       | Elastic section modulus |        | Plastic section modulus |         | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------|-----------------------|--------|--------------------|-------|-------------------------|--------|-------------------------|---------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |       |                       |        |                    |       |                         |        |                         |         |                            |                            |                                   |                          |
| A mm         | x B mm    | M kg/m | A cm² | Ix cm⁴                | Iy cm⁴ | ix cm              | iy cm | Zx cm³                  | Zy cm³ | Zpx cm³                 | Zpy cm³ | cm⁴                        | cm³                        | m²/m                              | m                        |
| 125 x 125    | 2.3       | 8.75   | 11.15 | 278                   | 278    | 4.99               | 4.99  | 44.5                    | 44.5   | 51.1                    | 51.1    | 430                        | 66.8                       | 0.492                             | 114                      |
|              | 2.5       | 9.49   | 12.09 | 300                   | 300    | 4.98               | 4.98  | 48.1                    | 48.1   | 55.3                    | 55.3    | 465                        | 72.1                       | 0.491                             | 105                      |
|              | 3.0       | 11.3   | 14.41 | 355                   | 355    | 4.96               | 4.96  | 56.7                    | 56.7   | 65.6                    | 65.6    | 553                        | 85.1                       | 0.490                             | 88.4                     |
|              | 3.2       | 12.0   | 15.33 | 376                   | 376    | 4.95               | 4.95  | 60.1                    | 60.1   | 69.6                    | 69.6    | 587                        | 90.2                       | 0.489                             | 83.1                     |
|              | 4.0       | 14.9   | 18.95 | 457                   | 457    | 4.91               | 4.91  | 73.2                    | 73.2   | 85.3                    | 85.3    | 722                        | 110                        | 0.486                             | 67.2                     |
|              | 4.5       | 16.6   | 21.17 | 506                   | 506    | 4.89               | 4.89  | 80.9                    | 80.9   | 94.8                    | 94.8    | 804                        | 122                        | 0.485                             | 60.2                     |
|              | 5.0       | 18.3   | 23.36 | 553                   | 553    | 4.86               | 4.86  | 88.4                    | 88.4   | 104                     | 104     | 884                        | 133                        | 0.483                             | 54.5                     |
|              | 6.0       | 21.7   | 27.63 | 641                   | 641    | 4.82               | 4.82  | 103                     | 103    | 122                     | 122     | 1,040                      | 154                        | 0.479                             | 46.1                     |
|              | 6.3       | 22.4   | 28.55 | 653                   | 653    | 4.78               | 4.78  | 104                     | 104    | 125                     | 125     | 1,090                      | 160                        | 0.473                             | 44.6                     |
|              | 8.0       | 27.7   | 35.24 | 775                   | 775    | 4.69               | 4.69  | 124                     | 124    | 151                     | 151     | 1,330                      | 192                        | 0.466                             | 36.1                     |
|              | 9.0       | 30.6   | 38.98 | 838                   | 838    | 4.64               | 4.64  | 134                     | 134    | 165                     | 165     | 1,450                      | 208                        | 0.461                             | 32.7                     |
|              | 10.0      | 33.4   | 42.57 | 893                   | 893    | 4.58               | 4.58  | 143                     | 143    | 178                     | 178     | 1,570                      | 223                        | 0.457                             | 29.9                     |
|              | 12.0      | 37.7   | 48.06 | 934                   | 934    | 4.41               | 4.41  | 149                     | 149    | 192                     | 192     | 1,750                      | 243                        | 0.438                             | 26.5                     |
| 12.5         | 38.9      | 49.54  | 949   | 949                   | 4.38   | 4.38               | 152   | 152                     | 197    | 197                     | 1,790   | 248                        | 0.436                      | 25.7                              |                          |
| 150 x 150    | 3.2       | 14.5   | 18.53 | 661                   | 661    | 5.97               | 5.97  | 88.1                    | 88.1   | 101                     | 101     | 1,030                      | 132                        | 0.589                             | 68.8                     |
|              | 4.0       | 18.0   | 22.95 | 808                   | 808    | 5.93               | 5.93  | 108                     | 108    | 125                     | 125     | 1,260                      | 162                        | 0.586                             | 55.5                     |
|              | 4.5       | 20.1   | 25.67 | 896                   | 896    | 5.91               | 5.91  | 120                     | 120    | 139                     | 139     | 1,410                      | 180                        | 0.585                             | 49.6                     |
|              | 5.0       | 22.3   | 28.36 | 982                   | 982    | 5.89               | 5.89  | 131                     | 131    | 153                     | 153     | 1,550                      | 197                        | 0.583                             | 44.9                     |
|              | 6.0       | 26.4   | 33.63 | 1,150                 | 1,150  | 5.84               | 5.84  | 153                     | 153    | 180                     | 180     | 1,830                      | 230                        | 0.579                             | 37.9                     |
|              | 6.3       | 27.4   | 34.85 | 1,170                 | 1,170  | 5.80               | 5.80  | 156                     | 156    | 185                     | 185     | 1,920                      | 239                        | 0.573                             | 36.6                     |
|              | 8.0       | 33.9   | 43.24 | 1,410                 | 1,410  | 5.71               | 5.71  | 188                     | 188    | 226                     | 226     | 2,360                      | 289                        | 0.566                             | 29.5                     |
|              | 9.0       | 37.7   | 47.98 | 1,540                 | 1,540  | 5.66               | 5.66  | 205                     | 205    | 248                     | 248     | 2,610                      | 316                        | 0.561                             | 26.6                     |
|              | 10.0      | 41.3   | 52.57 | 1,650                 | 1,650  | 5.61               | 5.61  | 220                     | 220    | 269                     | 269     | 2,840                      | 341                        | 0.557                             | 24.2                     |
|              | 12.0      | 47.1   | 60.06 | 1,780                 | 1,780  | 5.44               | 5.44  | 237                     | 237    | 298                     | 298     | 3,230                      | 380                        | 0.538                             | 21.2                     |
|              | 12.5      | 48.7   | 62.04 | 1,820                 | 1,820  | 5.41               | 5.41  | 242                     | 242    | 306                     | 306     | 3,320                      | 389                        | 0.536                             | 20.5                     |
| 175 x 175    | 4.5       | 23.7   | 30.17 | 1,450                 | 1,450  | 6.93               | 6.93  | 166                     | 166    | 192                     | 192     | 2,260                      | 249                        | 0.685                             | 42.2                     |
|              | 5.0       | 26.2   | 33.36 | 1,590                 | 1,590  | 6.91               | 6.91  | 182                     | 182    | 211                     | 211     | 2,500                      | 273                        | 0.683                             | 38.2                     |
|              | 6.0       | 31.1   | 39.63 | 1,860                 | 1,860  | 6.86               | 6.86  | 213                     | 213    | 249                     | 249     | 2,950                      | 320                        | 0.679                             | 32.1                     |
|              | 6.3       | 32.3   | 41.15 | 1,920                 | 1,920  | 6.83               | 6.83  | 219                     | 219    | 257                     | 257     | 3,100                      | 333                        | 0.673                             | 31.0                     |
|              | 8.0       | 40.2   | 51.24 | 2,330                 | 2,330  | 6.74               | 6.74  | 266                     | 266    | 316                     | 316     | 3,840                      | 406                        | 0.666                             | 24.9                     |
|              | 9.0       | 44.7   | 56.98 | 2,550                 | 2,550  | 6.68               | 6.68  | 291                     | 291    | 348                     | 348     | 4,250                      | 446                        | 0.661                             | 22.4                     |
|              | 10.0      | 49.1   | 62.57 | 2,750                 | 2,750  | 6.63               | 6.63  | 314                     | 314    | 379                     | 379     | 4,640                      | 484                        | 0.657                             | 20.4                     |
|              | 12.0      | 56.6   | 72.06 | 3,020                 | 3,020  | 6.47               | 6.47  | 345                     | 345    | 425                     | 425     | 5,350                      | 547                        | 0.638                             | 17.7                     |
|              | 12.5      | 58.5   | 74.54 | 3,090                 | 3,090  | 6.44               | 6.44  | 354                     | 354    | 438                     | 438     | 5,520                      | 562                        | 0.636                             | 17.1                     |
| 200 x 200    | 4.5       | 27.2   | 34.67 | 2,190                 | 2,190  | 7.95               | 7.95  | 219                     | 219    | 253                     | 253     | 3,410                      | 329                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1   | 38.36 | 2,410                 | 2,410  | 7.93               | 7.93  | 241                     | 241    | 279                     | 279     | 3,760                      | 362                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8   | 45.63 | 2,830                 | 2,830  | 7.88               | 7.88  | 283                     | 283    | 330                     | 330     | 4,460                      | 426                        | 0.779                             | 27.9                     |
|              | 6.3       | 37.2   | 47.45 | 2,920                 | 2,920  | 7.85               | 7.85  | 292                     | 292    | 341                     | 341     | 4,680                      | 444                        | 0.773                             | 26.8                     |
|              | 8.0       | 46.5   | 59.24 | 3,570                 | 3,570  | 7.76               | 7.76  | 357                     | 357    | 421                     | 421     | 5,820                      | 544                        | 0.766                             | 21.5                     |
|              | 9.0       | 51.8   | 65.98 | 3,920                 | 3,920  | 7.71               | 7.71  | 392                     | 392    | 465                     | 465     | 6,450                      | 599                        | 0.761                             | 19.3                     |
|              | 10.0      | 57.0   | 72.57 | 4,250                 | 4,250  | 7.65               | 7.65  | 425                     | 425    | 508                     | 508     | 7,070                      | 652                        | 0.757                             | 17.6                     |
|              | 12.0      | 66.0   | 84.06 | 4,730                 | 4,730  | 7.50               | 7.50  | 473                     | 473    | 576                     | 576     | 8,230                      | 743                        | 0.738                             | 15.2                     |
|              | 12.5      | 68.3   | 87.04 | 4,860                 | 4,860  | 7.47               | 7.47  | 486                     | 486    | 594                     | 594     | 8,500                      | 766                        | 0.736                             | 14.6                     |
| 16.0         | 83.8      | 106.8  | 5,620 | 5,620                 | 7.26   | 7.26               | 562   | 562                     | 706    | 706                     | 10,200  | 901                        | 0.718                      | 11.9                              |                          |
| 250 x 250    | 6.0       | 45.2   | 57.63 | 5,670                 | 5,670  | 9.92               | 9.92  | 454                     | 454    | 524                     | 524     | 8,840                      | 681                        | 0.979                             | 22.1                     |
|              | 6.3       | 47.1   | 60.05 | 5,870                 | 5,870  | 9.89               | 9.89  | 470                     | 470    | 544                     | 544     | 9,290                      | 711                        | 0.973                             | 21.2                     |
|              | 8.0       | 59.1   | 75.24 | 7,230                 | 7,230  | 9.80               | 9.80  | 578                     | 578    | 676                     | 676     | 11,600                     | 878                        | 0.966                             | 16.9                     |
|              | 9.0       | 65.9   | 83.98 | 7,980                 | 7,980  | 9.75               | 9.75  | 639                     | 639    | 750                     | 750     | 12,900                     | 972                        | 0.961                             | 15.2                     |
|              | 10.0      | 72.7   | 92.57 | 8,710                 | 8,710  | 9.70               | 9.70  | 697                     | 697    | 822                     | 822     | 14,200                     | 1,060                      | 0.957                             | 13.8                     |
|              | 12.0      | 84.8   | 108.1 | 9,860                 | 9,860  | 9.55               | 9.55  | 789                     | 789    | 944                     | 944     | 16,700                     | 1,230                      | 0.938                             | 11.8                     |
|              | 12.5      | 88.0   | 112.0 | 10,200                | 10,200 | 9.52               | 9.52  | 813                     | 813    | 975                     | 975     | 17,300                     | 1,270                      | 0.936                             | 11.4                     |
|              | 16.0      | 109    | 138.8 | 12,000                | 12,000 | 9.32               | 9.32  | 964                     | 964    | 1,180                   | 1,180   | 21,100                     | 1,520                      | 0.918                             | 9.18                     |
|              | 19.0      | 126    | 160.1 | 13,400                | 13,400 | 9.13               | 9.13  | 1,070                   | 1,070  | 1,330                   | 1,330   | 24,000                     | 1,710                      | 0.902                             | 7.96                     |
| 300 x 300    | 6.0       | 54.7   | 69.63 | 9,960                 | 9,960  | 12.0               | 12.0  | 664                     | 664    | 764                     | 764     | 15,400                     | 997                        | 1.18                              | 18.3                     |
|              | 6.3       | 57.0   | 72.65 | 10,300                | 10,300 | 11.9               | 11.9  | 689                     | 689    | 795                     | 795     | 16,200                     | 1,040                      | 1.17                              | 17.5                     |
|              | 8.0       | 71.6   | 91.24 | 12,800                | 12,800 | 11.8               | 11.8  | 853                     | 853    | 991                     | 991     | 20,300                     | 1,290                      | 1.17                              | 14.0                     |
|              | 9.0       | 80.1   | 102.0 | 14,200                | 14,200 | 11.8               | 11.8  | 946                     | 946    | 1,100                   | 1,100   | 22,700                     | 1,430                      | 1.16                              | 12.5                     |
|              | 10.0      | 88.4   | 112.6 | 15,500                | 15,500 | 11.7               | 11.7  | 1,030                   | 1,030  | 1,210                   | 1,210   | 25,000                     | 1,570                      | 1.16                              | 11.3                     |
|              | 12.0      | 104    | 132.1 | 17,800                | 17,800 | 11.6               | 11.6  | 1,180                   | 1,180  | 1,400                   | 1,400   | 29,500                     | 1,830                      | 1.14                              | 9.65                     |
|              | 12.5      | 108    | 137.0 | 18,300                | 18,300 | 11.6               | 11.6  | 1,220                   | 1,220  | 1,450                   | 1,450   | 30,600                     | 1,890                      | 1.14                              | 9.30                     |
|              | 16.0      | 134    | 170.8 | 22,100                | 22,100 | 11.4               | 11.4  | 1,470                   | 1,470  | 1,770                   | 1,770   | 37,800                     | 2,300                      | 1.12                              | 7.46                     |
|              | 19.0      | 155    | 198.1 | 24,800                | 24,800 | 11.2               | 11.2  | 1,650                   | 1,650  | 2,020                   | 2,020   | 43,500                     | 2,610                      | 1.10                              | 6.43                     |
| 350 x 350    | 9.0       | 94.2   | 120.0 | 23,000                | 23,000 | 13.8               | 13.8  | 1,310                   | 1,310  | 1,520                   | 1,520   | 36,400                     | 1,990                      | 1.36                              | 10.6                     |
|              | 10.0      | 104    | 132.6 | 25,200                | 25,200 | 13.8               | 13.8  | 1,440                   | 1,440  | 1,670                   | 1,670   | 40,100                     | 2,180                      | 1.36                              | 9.61                     |
|              | 12.0      | 123    | 156.1 | 29,100                | 29,100 | 13.6               | 13.6  | 1,660                   | 1,660  | 1,950                   | 1,950   | 47,600                     | 2,550                      | 1.34                              | 8.16                     |
|              | 12.5      | 127    | 162.0 | 30,000                | 30,000 | 13.6               | 13.6  | 1,720                   | 1,720  | 2,020                   | 2,020   | 49,400                     | 2,640                      | 1.34                              | 7.86                     |
|              | 16.0      | 159    | 202.8 | 36,500                | 36,500 | 13.4               | 13.4  | 2,090                   | 2,090  | 2,490                   | 2,490   | 61,500                     | 3,240                      | 1.32                              | 6.28                     |
|              | 19.0      | 185    | 236.1 | 41,400                | 41,400 | 13.2               | 13.2  | 2,370                   | 2,370  | 2,860                   | 2,860   | 71,100                     | 3,700                      | 1.30                              | 5.40                     |
|              | 20.0      | 194    | 246.8 | 42,900                | 42,900 | 13.2               | 13.2  | 2,450                   | 2,450  | 2,970                   | 2,970   | 74,200                     | 3,850                      | 1.30                              | 5.16                     |
|              | 22.0      | 210    | 267.9 | 45,700                | 45,700 | 13.1               | 13.1  | 2,610                   | 2,610  | 3,190                   | 3,190   | 80,100                     | 4,120                      | 1.29                              | 4.76                     |

Section properties    Square : 400 mm x 400 mm to 550 mm x 550 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 400 x 400    | 9.0       | 108    | 138.0             | 34,800                         | 34,800                         | 15.9               | 15.9              | 1,740                          | 1,740                          | 2,010                           | 2,010                           | 54,700                     | 2,630                      | 1.56                              | 9.23                     |
|              | 10.0      | 120    | 152.6             | 38,200                         | 38,200                         | 15.8               | 15.8              | 1,910                          | 1,910                          | 2,210                           | 2,210                           | 60,400                     | 2,890                      | 1.56                              | 8.35                     |
|              | 12.0      | 141    | 180.1             | 44,300                         | 44,300                         | 15.7               | 15.7              | 2,220                          | 2,220                          | 2,590                           | 2,590                           | 71,800                     | 3,400                      | 1.54                              | 7.07                     |
|              | 12.5      | 147    | 187.0             | 45,900                         | 45,900                         | 15.7               | 15.7              | 2,290                          | 2,290                          | 2,680                           | 2,680                           | 74,600                     | 3,520                      | 1.54                              | 6.81                     |
|              | 16.0      | 184    | 234.8             | 56,200                         | 56,200                         | 15.5               | 15.5              | 2,810                          | 2,810                          | 3,320                           | 3,320                           | 93,300                     | 4,340                      | 1.52                              | 5.43                     |
|              | 19.0      | 215    | 274.1             | 64,100                         | 64,100                         | 15.3               | 15.3              | 3,210                          | 3,210                          | 3,830                           | 3,830                           | 108,000                    | 4,980                      | 1.50                              | 4.65                     |
|              | 20.0      | 225    | 286.8             | 66,600                         | 66,600                         | 15.2               | 15.2              | 3,330                          | 3,330                          | 3,990                           | 3,990                           | 113,000                    | 5,190                      | 1.50                              | 4.44                     |
|              | 22.0      | 245    | 311.9             | 71,300                         | 71,300                         | 15.1               | 15.1              | 3,570                          | 3,570                          | 4,310                           | 4,310                           | 123,000                    | 5,580                      | 1.49                              | 4.08                     |
| 450 x 450    | 9.0       | 122    | 156.0             | 50,100                         | 50,100                         | 17.9               | 17.9              | 2,230                          | 2,230                          | 2,560                           | 2,560                           | 78,400                     | 3,360                      | 1.76                              | 8.17                     |
|              | 10.0      | 136    | 172.6             | 55,100                         | 55,100                         | 17.9               | 17.9              | 2,450                          | 2,450                          | 2,830                           | 2,830                           | 86,600                     | 3,700                      | 1.76                              | 7.38                     |
|              | 12.0      | 160    | 204.1             | 64,200                         | 64,200                         | 17.7               | 17.7              | 2,850                          | 2,850                          | 3,320                           | 3,320                           | 103,000                    | 4,360                      | 1.74                              | 6.24                     |
|              | 12.5      | 167    | 212.0             | 66,500                         | 66,500                         | 17.7               | 17.7              | 2,950                          | 2,950                          | 3,440                           | 3,440                           | 107,000                    | 4,520                      | 1.74                              | 6.01                     |
|              | 16.0      | 209    | 266.8             | 81,800                         | 81,800                         | 17.5               | 17.5              | 3,640                          | 3,640                          | 4,280                           | 4,280                           | 134,000                    | 5,600                      | 1.72                              | 4.78                     |
|              | 19.0      | 245    | 312.1             | 93,900                         | 93,900                         | 17.3               | 17.3              | 4,170                          | 4,170                          | 4,950                           | 4,950                           | 157,000                    | 6,450                      | 1.70                              | 4.08                     |
|              | 20.0      | 257    | 326.8             | 97,700                         | 97,700                         | 17.3               | 17.3              | 4,340                          | 4,340                          | 5,170                           | 5,170                           | 164,000                    | 6,730                      | 1.70                              | 3.90                     |
|              | 22.0      | 279    | 355.9             | 105,000                        | 105,000                        | 17.2               | 17.2              | 4,660                          | 4,660                          | 5,590                           | 5,590                           | 178,000                    | 7,260                      | 1.70                              | 3.58                     |
| 500 x 500    | 9.0       | 137    | 174.0             | 69,300                         | 69,300                         | 20.0               | 20.0              | 2,770                          | 2,770                          | 3,190                           | 3,190                           | 108,000                    | 4,190                      | 1.96                              | 7.32                     |
|              | 10.0      | 151    | 192.6             | 76,300                         | 76,300                         | 19.9               | 19.9              | 3,050                          | 3,050                          | 3,520                           | 3,520                           | 119,000                    | 4,610                      | 1.96                              | 6.62                     |
|              | 12.0      | 179    | 228.1             | 89,200                         | 89,200                         | 19.8               | 19.8              | 3,570                          | 3,570                          | 4,130                           | 4,130                           | 142,000                    | 5,440                      | 1.94                              | 5.59                     |
|              | 12.5      | 186    | 237.0             | 92,400                         | 92,400                         | 19.7               | 19.7              | 3,700                          | 3,700                          | 4,290                           | 4,290                           | 148,000                    | 5,640                      | 1.94                              | 5.37                     |
|              | 16.0      | 235    | 298.8             | 114,000                        | 114,000                        | 19.6               | 19.6              | 4,570                          | 4,570                          | 5,350                           | 5,350                           | 186,000                    | 7,010                      | 1.92                              | 4.26                     |
|              | 19.0      | 275    | 350.1             | 132,000                        | 132,000                        | 19.4               | 19.4              | 5,260                          | 5,260                          | 6,210                           | 6,210                           | 218,000                    | 8,120                      | 1.90                              | 3.64                     |
|              | 20.0      | 288    | 366.8             | 137,000                        | 137,000                        | 19.3               | 19.3              | 5,480                          | 5,480                          | 6,490                           | 6,490                           | 228,000                    | 8,470                      | 1.90                              | 3.47                     |
|              | 22.0      | 314    | 399.9             | 148,000                        | 148,000                        | 19.2               | 19.2              | 5,910                          | 5,910                          | 7,030                           | 7,030                           | 248,000                    | 9,150                      | 1.89                              | 3.19                     |
| 550 x 550    | 12.0      | 198    | 252.1             | 120,000                        | 120,000                        | 21.8               | 21.8              | 4,360                          | 4,360                          | 5,040                           | 5,040                           | 191,000                    | 6,640                      | 2.14                              | 5.05                     |
|              | 12.5      | 206    | 262.0             | 124,000                        | 124,000                        | 21.8               | 21.8              | 4,520                          | 4,520                          | 5,230                           | 5,230                           | 198,000                    | 6,890                      | 2.14                              | 4.86                     |
|              | 16.0      | 260    | 330.8             | 154,000                        | 154,000                        | 21.6               | 21.6              | 5,610                          | 5,610                          | 6,540                           | 6,540                           | 250,000                    | 8,590                      | 2.12                              | 3.85                     |
|              | 19.0      | 305    | 388.1             | 178,000                        | 178,000                        | 21.4               | 21.4              | 6,480                          | 6,480                          | 7,610                           | 7,610                           | 292,000                    | 9,970                      | 2.10                              | 3.28                     |
|              | 20.0      | 319    | 406.8             | 186,000                        | 186,000                        | 21.4               | 21.4              | 6,760                          | 6,760                          | 7,960                           | 7,960                           | 306,000                    | 10,400                     | 2.10                              | 3.13                     |
|              | 22.0      | 348    | 443.9             | 201,000                        | 201,000                        | 21.3               | 21.3              | 7,300                          | 7,300                          | 8,640                           | 8,640                           | 333,000                    | 11,300                     | 2.09                              | 2.87                     |

Section properties    Rectangular : 60 mm x 30 mm to 75 mm x 50 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 60 x 30      | 1.6       | 2.13   | 2.712             | 12.5                           | 4.25                           | 2.15               | 1.25              | 4.16                           | 2.83                           | 5.19                            | 3.20                            | 10.3                       | 4.90                       | 0.175                             | 470                      |
|              | 2.0       | 2.62   | 3.337             | 15.1                           | 5.08                           | 2.12               | 1.23              | 5.02                           | 3.39                           | 6.31                            | 3.89                            | 12.6                       | 5.88                       | 0.173                             | 382                      |
|              | 2.3       | 2.98   | 3.792             | 16.8                           | 5.65                           | 2.11               | 1.22              | 5.61                           | 3.76                           | 7.11                            | 4.37                            | 14.1                       | 6.56                       | 0.172                             | 336                      |
|              | 2.5       | 3.21   | 4.089             | 17.9                           | 6.00                           | 2.09               | 1.21              | 5.98                           | 4.00                           | 7.62                            | 4.67                            | 15.1                       | 6.98                       | 0.171                             | 312                      |
|              | 3.0       | 3.77   | 4.808             | 20.5                           | 6.80                           | 2.07               | 1.19              | 6.84                           | 4.53                           | 8.82                            | 5.39                            | 17.5                       | 7.95                       | 0.170                             | 265                      |
|              | 3.2       | 3.99   | 5.087             | 21.5                           | 7.08                           | 2.05               | 1.18              | 7.15                           | 4.72                           | 9.27                            | 5.66                            | 18.4                       | 8.30                       | 0.169                             | 250                      |
|              | 4.0       | 4.83   | 6.148             | 24.7                           | 8.06                           | 2.01               | 1.14              | 8.25                           | 5.37                           | 10.9                            | 6.62                            | 21.5                       | 9.52                       | 0.166                             | 207                      |
|              | 4.5       | 5.31   | 6.769             | 26.4                           | 8.53                           | 1.98               | 1.12              | 8.80                           | 5.69                           | 11.8                            | 7.14                            | 23.1                       | 10.1                       | 0.165                             | 188                      |
| 60 x 40      | 1.6       | 2.38   | 3.032             | 15.2                           | 8.16                           | 2.24               | 1.64              | 5.07                           | 4.08                           | 6.12                            | 4.64                            | 16.9                       | 6.72                       | 0.195                             | 420                      |
|              | 2.0       | 2.93   | 3.737             | 18.4                           | 9.83                           | 2.22               | 1.62              | 6.14                           | 4.92                           | 7.47                            | 5.65                            | 20.7                       | 8.12                       | 0.193                             | 341                      |
|              | 2.3       | 3.34   | 4.252             | 20.7                           | 11.0                           | 2.20               | 1.61              | 6.88                           | 5.50                           | 8.44                            | 6.38                            | 23.4                       | 9.10                       | 0.192                             | 300                      |
|              | 2.5       | 3.60   | 4.589             | 22.1                           | 11.7                           | 2.19               | 1.60              | 7.36                           | 5.87                           | 9.06                            | 6.84                            | 25.1                       | 9.72                       | 0.191                             | 278                      |
|              | 3.0       | 4.25   | 5.408             | 25.4                           | 13.4                           | 2.17               | 1.58              | 8.46                           | 6.72                           | 10.5                            | 7.94                            | 29.3                       | 11.2                       | 0.190                             | 236                      |
|              | 3.2       | 4.50   | 5.727             | 26.6                           | 14.1                           | 2.16               | 1.57              | 8.87                           | 7.03                           | 11.1                            | 8.36                            | 30.9                       | 11.7                       | 0.189                             | 222                      |
|              | 4.0       | 5.45   | 6.948             | 31.0                           | 16.3                           | 2.11               | 1.53              | 10.3                           | 8.14                           | 13.2                            | 9.89                            | 36.7                       | 13.7                       | 0.186                             | 183                      |
|              | 4.5       | 6.02   | 7.669             | 33.3                           | 17.4                           | 2.09               | 1.51              | 11.1                           | 8.72                           | 14.3                            | 10.7                            | 39.9                       | 14.7                       | 0.185                             | 166                      |
| 70 x 40      | 1.6       | 2.63   | 3.352             | 22.1                           | 9.34                           | 2.57               | 1.67              | 6.32                           | 4.67                           | 7.72                            | 5.25                            | 21.0                       | 7.90                       | 0.215                             | 380                      |
|              | 2.0       | 3.25   | 4.137             | 26.9                           | 11.3                           | 2.55               | 1.65              | 7.67                           | 5.64                           | 9.44                            | 6.41                            | 25.7                       | 9.56                       | 0.213                             | 308                      |
|              | 2.3       | 3.70   | 4.712             | 30.2                           | 12.6                           | 2.53               | 1.64              | 8.63                           | 6.32                           | 10.7                            | 7.24                            | 29.1                       | 10.7                       | 0.212                             | 270                      |
|              | 2.5       | 3.99   | 5.089             | 32.3                           | 13.5                           | 2.52               | 1.63              | 9.24                           | 6.75                           | 11.5                            | 7.78                            | 31.3                       | 11.5                       | 0.211                             | 250                      |
|              | 3.0       | 4.72   | 6.008             | 37.3                           | 15.5                           | 2.49               | 1.61              | 10.7                           | 7.75                           | 13.4                            | 9.05                            | 36.5                       | 13.2                       | 0.210                             | 212                      |
|              | 3.2       | 5.00   | 6.367             | 39.2                           | 16.2                           | 2.48               | 1.60              | 11.2                           | 8.12                           | 14.1                            | 9.54                            | 38.5                       | 13.9                       | 0.209                             | 200                      |
|              | 4.0       | 6.08   | 7.748             | 46.0                           | 18.9                           | 2.44               | 1.56              | 13.1                           | 9.44                           | 16.8                            | 11.3                            | 45.8                       | 16.2                       | 0.206                             | 164                      |
|              | 4.5       | 6.73   | 8.569             | 49.7                           | 20.3                           | 2.41               | 1.54              | 14.2                           | 10.1                           | 18.4                            | 12.3                            | 50.0                       | 17.5                       | 0.205                             | 149                      |
| 75 x 45      | 1.6       | 2.88   | 3.672             | 28.4                           | 12.9                           | 2.78               | 1.88              | 7.56                           | 5.75                           | 9.16                            | 6.46                            | 28.2                       | 9.63                       | 0.235                             | 347                      |
|              | 2.0       | 3.56   | 4.537             | 34.5                           | 15.7                           | 2.76               | 1.86              | 9.20                           | 6.96                           | 11.2                            | 7.90                            | 34.6                       | 11.7                       | 0.233                             | 281                      |
|              | 2.3       | 4.06   | 5.172             | 38.9                           | 17.6                           | 2.74               | 1.84              | 10.4                           | 7.82                           | 12.7                            | 8.94                            | 39.3                       | 13.2                       | 0.232                             | 246                      |
|              | 2.5       | 4.39   | 5.589             | 41.7                           | 18.8                           | 2.73               | 1.84              | 11.1                           | 8.37                           | 13.7                            | 9.61                            | 42.3                       | 14.1                       | 0.231                             | 228                      |
|              | 3.0       | 5.19   | 6.608             | 48.3                           | 21.7                           | 2.70               | 1.81              | 12.9                           | 9.66                           | 16.0                            | 11.2                            | 49.4                       | 16.3                       | 0.230                             | 193                      |
|              | 3.2       | 5.50   | 7.007             | 50.8                           | 22.8                           | 2.69               | 1.80              | 13.5                           | 10.1                           | 16.9                            | 11.8                            | 52.2                       | 17.2                       | 0.229                             | 182                      |
|              | 4.0       | 6.71   | 8.548             | 59.9                           | 26.7                           | 2.65               | 1.77              | 16.0                           | 11.9                           | 20.2                            | 14.1                            | 62.6                       | 20.2                       | 0.226                             | 149                      |
|              | 4.5       | 7.43   | 9.469             | 65.0                           | 28.9                           | 2.62               | 1.75              | 17.3                           | 12.8                           | 22.2                            | 15.5                            | 68.5                       | 21.9                       | 0.225                             | 135                      |
| 75 x 50      | 5.0       | 8.13   | 10.36             | 69.6                           | 30.8                           | 2.59               | 1.72              | 18.6                           | 13.7                           | 24.0                            | 16.7                            | 74.0                       | 23.4                       | 0.223                             | 123                      |
|              | 6.0       | 9.45   | 12.03             | 77.3                           | 33.9                           | 2.53               | 1.68              | 20.6                           | 15.1                           | 27.2                            | 18.8                            | 83.7                       | 26.0                       | 0.219                             | 106                      |
|              | 2.3       | 4.24   | 5.402             | 41.9                           | 22.4                           | 2.79               | 2.04              | 11.2                           | 8.96                           | 13.6                            | 10.3                            | 46.9                       | 14.8                       | 0.242                             | 236                      |
|              | 2.5       | 4.58   | 5.839             | 45.0                           | 24.0                           | 2.77               | 2.03              | 12.0                           | 9.60                           | 14.6                            | 11.0                            | 50.5                       | 15.9                       | 0.241                             | 218                      |
|              | 3.0       | 5.42   | 6.908             | 52.2                           | 27.8                           | 2.75               | 2.00              | 13.9                           | 11.1                           | 17.1                            | 12.9                            | 59.3                       | 18.4                       | 0.240                             | 184                      |
|              | 3.2       | 5.75   | 7.327             | 54.9                           | 29.2                           | 2.74               | 2.00              | 14.6                           | 11.7                           | 18.0                            | 13.6                            | 62.6                       | 19.3                       | 0.239                             | 174                      |

Section properties    Rectangular : 100 mm x 40 mm to 150 mm x 80 mm

| Dimensions   |           | Mass  | Area   | Second moment of area |                                | Radius of gyration             |                   | Elastic section modulus |                                | Plastic section modulus        |                                 | Torsional inertia constant      | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |   |
|--------------|-----------|-------|--------|-----------------------|--------------------------------|--------------------------------|-------------------|-------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|-----------------------------------|--------------------------|---|
| Nominal size | Thickness |       |        | I <sub>x</sub>        | I <sub>y</sub>                 | I <sub>x</sub>                 | I <sub>y</sub>    | Z <sub>x</sub>          | Z <sub>y</sub>                 | Z <sub>px</sub>                | Z <sub>py</sub>                 |                                 |                            |                                   |                          |   |
| A mm         | x B mm    | t mm  | M kg/m | A cm <sup>2</sup>     | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm | i <sub>y</sub> cm       | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>                   | m <sup>2</sup> /m        | m |
| 100 x 40     | 1.6       | 3.39  | 4,312  | 53.6                  | 12.9                           | 3.52                           | 1.73              | 10.7                    | 6.44                           | 13.5                           | 7.10                            | 33.9                            | 11.4                       | 0.28                              | 295                      |   |
|              | 2.0       | 4.19  | 5,337  | 65.4                  | 15.6                           | 3.50                           | 1.71              | 13.1                    | 7.81                           | 16.5                           | 8.69                            | 41.5                            | 13.9                       | 0.27                              | 239                      |   |
|              | 2.3       | 4.78  | 6,092  | 73.9                  | 17.5                           | 3.48                           | 1.70              | 14.8                    | 8.77                           | 18.8                           | 9.85                            | 47.0                            | 15.6                       | 0.272                             | 209                      |   |
|              | 2.5       | 5.17  | 6,589  | 79.3                  | 18.8                           | 3.47                           | 1.69              | 15.9                    | 9.39                           | 20.2                           | 10.6                            | 50.5                            | 16.8                       | 0.271                             | 193                      |   |
|              | 3.0       | 6.13  | 7,808  | 92.4                  | 21.7                           | 3.44                           | 1.67              | 18.5                    | 10.8                           | 23.7                           | 12.4                            | 59.0                            | 19.4                       | 0.270                             | 163                      |   |
|              | 3.2       | 6.51  | 8,287  | 97.3                  | 22.8                           | 3.43                           | 1.66              | 19.5                    | 11.4                           | 25.1                           | 13.1                            | 62.3                            | 20.4                       | 0.269                             | 154                      |   |
| 100 x 50     | 1.6       | 3.64  | 4,632  | 61.3                  | 21.1                           | 3.64                           | 2.13              | 12.3                    | 8.43                           | 15.0                           | 9.33                            | 50.1                            | 14.5                       | 0.295                             | 275                      |   |
|              | 2.0       | 4.50  | 5,737  | 75.0                  | 25.7                           | 3.62                           | 2.12              | 15.0                    | 10.3                           | 18.5                           | 11.5                            | 61.6                            | 17.7                       | 0.293                             | 222                      |   |
|              | 2.3       | 5.14  | 6,552  | 84.8                  | 29.0                           | 3.60                           | 2.10              | 17.0                    | 11.6                           | 21.0                           | 13.0                            | 69.9                            | 20.0                       | 0.292                             | 194                      |   |
|              | 2.5       | 5.56  | 7,089  | 91.2                  | 31.1                           | 3.59                           | 2.09              | 18.2                    | 12.4                           | 22.7                           | 14.0                            | 75.4                            | 21.5                       | 0.291                             | 180                      |   |
|              | 3.0       | 6.60  | 8,408  | 106                   | 36.1                           | 3.56                           | 2.07              | 21.3                    | 14.4                           | 26.7                           | 16.4                            | 88.6                            | 25.0                       | 0.290                             | 152                      |   |
|              | 3.2       | 7.01  | 8,927  | 112                   | 38.0                           | 3.55                           | 2.06              | 22.5                    | 15.2                           | 28.2                           | 17.4                            | 93.7                            | 26.4                       | 0.289                             | 143                      |   |
|              | 4.0       | 8.59  | 10.95  | 134                   | 44.9                           | 3.50                           | 2.03              | 26.8                    | 18.0                           | 34.1                           | 20.9                            | 113                             | 31.4                       | 0.286                             | 116                      |   |
|              | 4.5       | 9.55  | 12.17  | 147                   | 48.9                           | 3.47                           | 2.00              | 29.3                    | 19.5                           | 37.6                           | 23.0                            | 124                             | 34.2                       | 0.285                             | 105                      |   |
|              | 5.0       | 10.5  | 13.36  | 158                   | 52.5                           | 3.44                           | 1.98              | 31.7                    | 21.0                           | 40.8                           | 25.0                            | 135                             | 36.8                       | 0.283                             | 95.4                     |   |
| 6.0          | 12.3      | 15.63 | 179    | 58.7                  | 3.38                           | 1.94                           | 35.8              | 23.5                    | 46.9                           | 28.5                           | 154                             | 41.4                            | 0.279                      | 81.5                              |                          |   |
| 125 x 40     | 1.6       | 4.01  | 5,112  | 94.4                  | 15.8                           | 4.30                           | 1.76              | 15.1                    | 7.91                           | 19.4                           | 8.63                            | 44.9                            | 14.4                       | 0.325                             | 249                      |   |
|              | 2.0       | 4.97  | 6,337  | 116                   | 19.2                           | 4.27                           | 1.74              | 18.5                    | 9.61                           | 23.8                           | 10.6                            | 55.1                            | 17.5                       | 0.323                             | 201                      |   |
|              | 2.3       | 5.69  | 7,242  | 131                   | 21.6                           | 4.25                           | 1.73              | 20.9                    | 10.8                           | 27.1                           | 12.0                            | 62.4                            | 19.7                       | 0.322                             | 176                      |   |
|              | 2.5       | 6.15  | 7,839  | 141                   | 23.2                           | 4.24                           | 1.72              | 22.5                    | 11.6                           | 29.3                           | 12.9                            | 67.1                            | 21.2                       | 0.321                             | 163                      |   |
|              | 3.0       | 7.31  | 9,308  | 165                   | 26.8                           | 4.21                           | 1.70              | 26.4                    | 13.4                           | 34.4                           | 15.2                            | 78.5                            | 24.5                       | 0.320                             | 137                      |   |
|              | 3.2       | 7.76  | 9,887  | 174                   | 28.2                           | 4.19                           | 1.69              | 27.8                    | 14.1                           | 36.5                           | 16.0                            | 82.8                            | 25.8                       | 0.319                             | 129                      |   |
|              | 4.0       | 9.54  | 12.15  | 208                   | 33.2                           | 4.14                           | 1.65              | 33.3                    | 16.6                           | 44.2                           | 19.3                            | 99.2                            | 30.5                       | 0.316                             | 105                      |   |
| 4.5          | 10.6      | 13.52 | 228    | 36.0                  | 4.11                           | 1.63                           | 36.5              | 18.0                    | 48.8                           | 21.1                           | 109                             | 33.2                            | 0.315                      | 94.2                              |                          |   |
| 125 x 50     | 2.3       | 6.05  | 7,702  | 148                   | 35.5                           | 4.39                           | 2.15              | 23.7                    | 14.2                           | 29.9                           | 15.7                            | 93.9                            | 25.3                       | 0.342                             | 165                      |   |
|              | 2.5       | 6.55  | 8,339  | 160                   | 38.1                           | 4.38                           | 2.14              | 25.5                    | 15.2                           | 32.3                           | 17.0                            | 101                             | 27.1                       | 0.341                             | 153                      |   |
|              | 3.0       | 7.78  | 9,908  | 187                   | 44.4                           | 4.34                           | 2.12              | 29.9                    | 17.7                           | 38.1                           | 20.0                            | 119                             | 31.6                       | 0.340                             | 129                      |   |
|              | 3.2       | 8.26  | 10,53  | 198                   | 46.7                           | 4.33                           | 2.11              | 31.6                    | 18.7                           | 40.4                           | 21.1                            | 126                             | 33.4                       | 0.339                             | 121                      |   |
|              | 4.0       | 10.2  | 12.95  | 238                   | 55.6                           | 4.28                           | 2.07              | 38.0                    | 22.2                           | 49.0                           | 25.5                            | 152                             | 39.8                       | 0.336                             | 98.4                     |   |
|              | 4.5       | 11.3  | 14.42  | 261                   | 60.6                           | 4.25                           | 2.05              | 41.7                    | 24.2                           | 54.2                           | 28.1                            | 167                             | 43.5                       | 0.335                             | 88.4                     |   |
|              | 5.0       | 12.4  | 15.86  | 283                   | 65.2                           | 4.22                           | 2.03              | 45.2                    | 26.1                           | 59.1                           | 30.6                            | 182                             | 47.0                       | 0.333                             | 80.3                     |   |
| 6.0          | 14.6      | 18.63 | 322    | 73.3                  | 4.16                           | 1.98                           | 51.6              | 29.3                    | 68.3                           | 35.1                           | 209                             | 53.1                            | 0.329                      | 68.4                              |                          |   |
| 125 x 75     | 1.6       | 4.89  | 6,232  | 137                   | 62.8                           | 4.69                           | 3.18              | 21.9                    | 16.8                           | 26.3                           | 18.6                            | 135                             | 28.0                       | 0.395                             | 204                      |   |
|              | 2.0       | 6.07  | 7,737  | 169                   | 77.1                           | 4.67                           | 3.16              | 27.0                    | 20.6                           | 32.5                           | 22.9                            | 167                             | 34.4                       | 0.393                             | 165                      |   |
|              | 2.3       | 6.95  | 8,852  | 192                   | 87.5                           | 4.65                           | 3.14              | 30.6                    | 23.3                           | 37.0                           | 26.1                            | 190                             | 39.1                       | 0.392                             | 144                      |   |
|              | 2.5       | 7.53  | 9,589  | 207                   | 94.2                           | 4.64                           | 3.14              | 33.0                    | 25.1                           | 40.0                           | 28.2                            | 205                             | 42.1                       | 0.391                             | 133                      |   |
|              | 3.0       | 8.96  | 11.41  | 243                   | 111                            | 4.61                           | 3.11              | 38.9                    | 29.5                           | 47.3                           | 33.3                            | 243                             | 49.5                       | 0.390                             | 112                      |   |
|              | 3.2       | 9.52  | 12.13  | 257                   | 117                            | 4.60                           | 3.10              | 41.1                    | 31.1                           | 50.1                           | 35.3                            | 258                             | 52.3                       | 0.389                             | 105                      |   |
|              | 4.0       | 11.7  | 14.95  | 311                   | 141                            | 4.56                           | 3.07              | 49.7                    | 37.5                           | 61.1                           | 43.0                            | 315                             | 63.1                       | 0.386                             | 85.2                     |   |
|              | 4.5       | 13.1  | 16.67  | 342                   | 155                            | 4.53                           | 3.04              | 54.8                    | 41.2                           | 67.7                           | 47.5                            | 349                             | 69.5                       | 0.385                             | 76.4                     |   |
|              | 5.0       | 14.4  | 18.36  | 373                   | 168                            | 4.51                           | 3.02              | 59.6                    | 44.7                           | 74.1                           | 52.0                            | 382                             | 75.6                       | 0.383                             | 69.4                     |   |
|              | 6.0       | 17.0  | 21.63  | 428                   | 192                            | 4.45                           | 2.98              | 68.6                    | 51.1                           | 86.2                           | 60.3                            | 444                             | 86.8                       | 0.379                             | 58.9                     |   |
|              | 6.3       | 17.5  | 22.25  | 431                   | 194                            | 4.40                           | 2.95              | 68.9                    | 51.6                           | 87.5                           | 61.4                            | 462                             | 89.3                       | 0.373                             | 57.3                     |   |
| 8.0          | 21.4      | 27.24 | 502    | 224                   | 4.29                           | 2.87                           | 80.2              | 59.7                    | 104                            | 72.9                           | 551                             | 105                             | 0.366                      | 46.8                              |                          |   |
| 9.0          | 23.5      | 29.98 | 535    | 238                   | 4.22                           | 2.82                           | 85.6              | 63.5                    | 113                            | 78.7                           | 596                             | 112                             | 0.361                      | 42.5                              |                          |   |
| 150 x 50     | 2.3       | 6.95  | 8,852  | 236                   | 42.0                           | 5.16                           | 2.18              | 31.4                    | 16.8                           | 40.3                           | 18.5                            | 118                             | 30.5                       | 0.392                             | 144                      |   |
|              | 2.5       | 7.53  | 9,589  | 254                   | 45.2                           | 5.15                           | 2.17              | 33.9                    | 18.1                           | 43.5                           | 19.9                            | 128                             | 32.8                       | 0.391                             | 133                      |   |
|              | 3.0       | 8.96  | 11.41  | 299                   | 52.6                           | 5.12                           | 2.15              | 39.8                    | 21.1                           | 51.4                           | 23.5                            | 150                             | 38.3                       | 0.390                             | 112                      |   |
|              | 3.2       | 9.52  | 12.13  | 316                   | 55.5                           | 5.10                           | 2.14              | 42.1                    | 22.2                           | 54.5                           | 24.9                            | 159                             | 40.4                       | 0.389                             | 105                      |   |
|              | 4.0       | 11.7  | 14.95  | 381                   | 66.2                           | 5.05                           | 2.10              | 50.9                    | 26.5                           | 66.5                           | 30.1                            | 192                             | 48.3                       | 0.386                             | 85.2                     |   |
|              | 4.5       | 13.1  | 16.67  | 420                   | 72.2                           | 5.02                           | 2.08              | 56.0                    | 28.9                           | 73.6                           | 33.2                            | 212                             | 52.9                       | 0.385                             | 76.4                     |   |
|              | 5.0       | 14.4  | 18.36  | 456                   | 77.9                           | 4.99                           | 2.06              | 60.9                    | 31.1                           | 80.5                           | 36.2                            | 230                             | 57.1                       | 0.383                             | 69.4                     |   |
| 6.0          | 17.0      | 21.63 | 524    | 87.9                  | 4.92                           | 2.02                           | 69.8              | 35.2                    | 93.5                           | 41.7                           | 264                             | 64.8                            | 0.379                      | 58.9                              |                          |   |
| 150 x 75     | 3.0       | 10.1  | 12.91  | 380                   | 130                            | 5.42                           | 3.17              | 50.6                    | 34.7                           | 62.5                           | 38.7                            | 312                             | 59.8                       | 0.440                             | 98.7                     |   |
|              | 3.2       | 10.8  | 13.73  | 402                   | 137                            | 5.41                           | 3.16              | 53.6                    | 36.6                           | 66.3                           | 41.0                            | 331                             | 63.3                       | 0.439                             | 92.8                     |   |
|              | 4.0       | 13.3  | 16.95  | 488                   | 166                            | 5.37                           | 3.13              | 65.1                    | 44.2                           | 81.1                           | 50.1                            | 404                             | 76.6                       | 0.436                             | 75.2                     |   |
|              | 4.5       | 14.9  | 18.92  | 539                   | 183                            | 5.34                           | 3.11              | 71.9                    | 48.7                           | 90.0                           | 55.5                            | 448                             | 84.4                       | 0.435                             | 67.3                     |   |
|              | 5.0       | 16.4  | 20.86  | 588                   | 198                            | 5.31                           | 3.08              | 78.4                    | 52.9                           | 98.6                           | 60.7                            | 491                             | 91.9                       | 0.433                             | 61.1                     |   |
|              | 6.0       | 19.3  | 24.63  | 679                   | 228                            | 5.25                           | 3.04              | 90.6                    | 60.7                           | 115                            | 70.6                            | 572                             | 106                        | 0.429                             | 51.7                     |   |
|              | 6.3       | 19.9  | 25.40  | 686                   | 231                            | 5.20                           | 3.01              | 91.4                    | 61.6                           | 117                            | 72.2                            | 596                             | 109                        | 0.423                             | 50.2                     |   |
|              | 8.0       | 24.5  | 31.24  | 807                   | 269                            | 5.08                           | 2.93              | 108                     | 71.7                           | 141                            | 86.3                            | 714                             | 129                        | 0.416                             | 40.8                     |   |
|              | 9.0       | 27.1  | 34.48  | 866                   | 287                            | 5.01                           | 2.89              | 116                     | 76.6                           | 153                            | 93.6                            | 775                             | 138                        | 0.411                             | 36.9                     |   |
| 150 x 80     | 3.0       | 10.4  | 13.21  | 396                   | 150                            | 5.47                           | 3.37              | 52.8                    | 37.5                           | 64.7                           | 41.9                            | 349                             | 64.1                       | 0.450                             | 96.4                     |   |
|              | 3.2       | 11.0  | 14.05  | 419                   | 159                            | 5.46                           | 3.36              | 55.9                    | 39.7                           | 68.6                           | 44.5                            | 370                             | 67.9                       | 0.449                             | 90.7                     |   |
|              | 4.0       | 13.6  | 17.35  | 509                   | 192                            | 5.42                           | 3.33              | 67.9                    | 48.0                           | 84.0                           | 54.4                            | 453                             | 82.3                       | 0.446                             | 73.4                     |   |
|              | 4.5       | 15.2  | 19.37  | 563                   | 211                            | 5.39                           | 3.30              | 75.0                    | 52.9                           | 93.2                           | 60.3                            | 502                             | 90.7                       | 0.445                             | 65.8                     |   |
|              | 5.0       | 16.8  | 21.36  | 614                   | 230                            | 5.36                           | 3.28              | 81.9                    | 57.5                           | 102                            | 66.0                            | 551                             | 98.9                       | 0.443                             | 59.6                     |   |
|              | 6.0       | 19.8  | 25.23  | 710                   | 264                            | 5.31                           | 3.24              | 94.7                    | 66.1                           | 119                            | 76.9                            | 643                             | 114                        | 0.439                             | 50.5                     |   |



Section properties    Rectangular : 150 mm x 100 mm to 300 mm x 100 mm

| Dimensions   |           | Mass | Area  | Second moment of area |       | Radius of gyration |      | Elastic section modulus |      | Plastic section modulus |      | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|------|-------|-----------------------|-------|--------------------|------|-------------------------|------|-------------------------|------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |      |       |                       |       |                    |      |                         |      |                         |      |                            |                            |                                   |                          |
| A x B<br>mm  | t<br>mm   |      |       |                       |       |                    |      |                         |      |                         |      |                            |                            |                                   |                          |
| 150 x 100    | 2.3       | 8.75 | 11.15 | 361                   | 195   | 5.69               | 4.18 | 48.2                    | 38.9 | 57.3                    | 43.5 | 395                        | 63.9                       | 0.492                             | 114                      |
|              | 2.5       | 9.49 | 12.09 | 390                   | 210   | 5.68               | 4.17 | 52.0                    | 42.0 | 62.0                    | 47.0 | 427                        | 69.0                       | 0.491                             | 105                      |
|              | 3.0       | 11.3 | 14.41 | 461                   | 248   | 5.65               | 4.15 | 61.4                    | 49.5 | 73.5                    | 55.8 | 507                        | 81.4                       | 0.490                             | 88.4                     |
|              | 3.2       | 12.0 | 15.33 | 488                   | 262   | 5.64               | 4.14 | 65.1                    | 52.5 | 78.0                    | 59.2 | 539                        | 86.3                       | 0.489                             | 83.1                     |
|              | 4.0       | 14.9 | 18.95 | 595                   | 319   | 5.60               | 4.10 | 79.3                    | 63.7 | 95.7                    | 72.5 | 662                        | 105                        | 0.486                             | 67.2                     |
|              | 4.5       | 16.6 | 21.17 | 658                   | 352   | 5.58               | 4.08 | 87.8                    | 70.4 | 106                     | 80.5 | 736                        | 116                        | 0.485                             | 60.2                     |
|              | 5.0       | 18.3 | 23.36 | 719                   | 384   | 5.55               | 4.05 | 95.9                    | 76.8 | 117                     | 88.3 | 809                        | 127                        | 0.483                             | 54.5                     |
|              | 6.0       | 21.7 | 27.63 | 835                   | 444   | 5.50               | 4.01 | 111                     | 88.8 | 137                     | 103  | 948                        | 147                        | 0.479                             | 46.1                     |
|              | 6.3       | 22.4 | 28.55 | 848                   | 453   | 5.45               | 3.98 | 113                     | 90.5 | 140                     | 106  | 992                        | 152                        | 0.473                             | 44.6                     |
|              | 8.0       | 27.7 | 35.24 | 1,010                 | 536   | 5.35               | 3.90 | 134                     | 107  | 169                     | 128  | 1,210                      | 182                        | 0.466                             | 36.1                     |
|              | 9.0       | 30.6 | 38.98 | 1,090                 | 577   | 5.29               | 3.85 | 145                     | 115  | 185                     | 140  | 1,320                      | 197                        | 0.461                             | 32.7                     |
|              | 10.0      | 33.4 | 42.57 | 1,160                 | 614   | 5.23               | 3.80 | 155                     | 123  | 199                     | 150  | 1,430                      | 211                        | 0.457                             | 29.9                     |
|              | 12.0      | 37.7 | 48.06 | 1,210                 | 642   | 5.01               | 3.65 | 161                     | 128  | 215                     | 163  | 1,570                      | 229                        | 0.438                             | 26.5                     |
| 175 x 125    | 4.5       | 20.1 | 25.67 | 1,120                 | 669   | 6.61               | 5.11 | 128                     | 107  | 153                     | 122  | 1,330                      | 174                        | 0.585                             | 49.6                     |
|              | 5.0       | 22.3 | 28.36 | 1,230                 | 733   | 6.59               | 5.08 | 141                     | 117  | 169                     | 134  | 1,460                      | 191                        | 0.583                             | 44.9                     |
|              | 6.0       | 26.4 | 33.63 | 1,440                 | 853   | 6.53               | 5.04 | 164                     | 137  | 198                     | 158  | 1,720                      | 222                        | 0.579                             | 37.9                     |
|              | 6.3       | 27.4 | 34.85 | 1,470                 | 875   | 6.49               | 5.01 | 168                     | 140  | 204                     | 162  | 1,810                      | 231                        | 0.573                             | 36.6                     |
|              | 8.0       | 33.9 | 43.24 | 1,770                 | 1,050 | 6.39               | 4.93 | 202                     | 168  | 249                     | 198  | 2,220                      | 279                        | 0.566                             | 29.5                     |
|              | 9.0       | 37.7 | 47.98 | 1,930                 | 1,140 | 6.34               | 4.88 | 220                     | 183  | 274                     | 217  | 2,450                      | 305                        | 0.561                             | 26.6                     |
|              | 10.0      | 41.3 | 52.57 | 2,070                 | 1,220 | 6.28               | 4.83 | 237                     | 196  | 297                     | 235  | 2,660                      | 329                        | 0.557                             | 24.2                     |
|              | 12.0      | 47.1 | 60.06 | 2,220                 | 1,320 | 6.08               | 4.69 | 254                     | 211  | 328                     | 260  | 3,020                      | 365                        | 0.538                             | 21.2                     |
| 200 x 100    | 3.2       | 14.5 | 18.53 | 981                   | 337   | 7.28               | 4.27 | 98.1                    | 67.5 | 120                     | 74.7 | 801                        | 116                        | 0.589                             | 68.8                     |
|              | 4.0       | 18.0 | 22.95 | 1,200                 | 411   | 7.23               | 4.23 | 120                     | 82.2 | 148                     | 91.7 | 985                        | 142                        | 0.586                             | 55.5                     |
|              | 4.5       | 20.1 | 25.67 | 1,330                 | 455   | 7.20               | 4.21 | 133                     | 90.9 | 165                     | 102  | 1,100                      | 157                        | 0.585                             | 49.6                     |
|              | 5.0       | 22.3 | 28.36 | 1,460                 | 497   | 7.17               | 4.19 | 146                     | 99.4 | 181                     | 112  | 1,210                      | 172                        | 0.583                             | 44.9                     |
|              | 6.0       | 26.4 | 33.63 | 1,700                 | 577   | 7.12               | 4.14 | 170                     | 115  | 213                     | 132  | 1,420                      | 200                        | 0.579                             | 37.9                     |
|              | 6.3       | 27.4 | 34.85 | 1,740                 | 591   | 7.07               | 4.12 | 174                     | 118  | 219                     | 135  | 1,480                      | 208                        | 0.573                             | 36.6                     |
|              | 8.0       | 33.9 | 43.24 | 2,090                 | 705   | 6.95               | 4.04 | 209                     | 141  | 267                     | 165  | 1,810                      | 250                        | 0.566                             | 29.5                     |
|              | 9.0       | 37.7 | 47.98 | 2,280                 | 764   | 6.89               | 3.99 | 228                     | 153  | 293                     | 180  | 1,990                      | 272                        | 0.561                             | 26.6                     |
|              | 10.0      | 41.3 | 52.57 | 2,450                 | 818   | 6.82               | 3.94 | 245                     | 164  | 318                     | 195  | 2,150                      | 292                        | 0.557                             | 24.2                     |
|              | 12.0      | 47.1 | 60.06 | 2,610                 | 876   | 6.59               | 3.82 | 261                     | 175  | 350                     | 215  | 2,410                      | 322                        | 0.538                             | 21.2                     |
|              | 12.5      | 48.7 | 62.04 | 2,660                 | 892   | 6.55               | 3.79 | 266                     | 178  | 359                     | 221  | 2,470                      | 329                        | 0.536                             | 20.5                     |
| 200 x 150    | 4.5       | 23.7 | 30.17 | 1,760                 | 1,130 | 7.64               | 6.13 | 176                     | 151  | 209                     | 172  | 2,170                      | 243                        | 0.685                             | 42.2                     |
|              | 5.0       | 26.2 | 33.36 | 1,930                 | 1,250 | 7.62               | 6.11 | 193                     | 166  | 230                     | 189  | 2,390                      | 267                        | 0.683                             | 38.2                     |
|              | 6.0       | 31.1 | 39.63 | 2,270                 | 1,460 | 7.57               | 6.06 | 227                     | 194  | 271                     | 223  | 2,830                      | 313                        | 0.679                             | 32.1                     |
|              | 6.3       | 32.3 | 41.15 | 2,330                 | 1,500 | 7.53               | 6.04 | 233                     | 200  | 280                     | 230  | 2,970                      | 326                        | 0.673                             | 31.0                     |
|              | 8.0       | 40.2 | 51.24 | 2,830                 | 1,820 | 7.43               | 5.95 | 283                     | 242  | 344                     | 283  | 3,660                      | 396                        | 0.666                             | 24.9                     |
|              | 9.0       | 44.7 | 56.98 | 3,100                 | 1,990 | 7.37               | 5.90 | 310                     | 265  | 379                     | 312  | 4,050                      | 435                        | 0.661                             | 22.4                     |
|              | 10.0      | 49.1 | 62.57 | 3,350                 | 2,140 | 7.32               | 5.85 | 335                     | 286  | 413                     | 339  | 4,430                      | 471                        | 0.657                             | 20.4                     |
|              | 12.0      | 56.6 | 72.06 | 3,670                 | 2,350 | 7.14               | 5.71 | 367                     | 314  | 463                     | 380  | 5,100                      | 532                        | 0.638                             | 17.7                     |
|              | 12.5      | 58.5 | 74.54 | 3,760                 | 2,410 | 7.10               | 5.69 | 376                     | 321  | 476                     | 392  | 5,260                      | 547                        | 0.636                             | 17.1                     |
| 250 x 100    | 4.5       | 23.7 | 30.17 | 2,330                 | 557   | 8.78               | 4.30 | 186                     | 111  | 235                     | 124  | 1,470                      | 198                        | 0.685                             | 42.2                     |
|              | 5.0       | 26.2 | 33.36 | 2,550                 | 610   | 8.75               | 4.28 | 204                     | 122  | 259                     | 136  | 1,620                      | 217                        | 0.683                             | 38.2                     |
|              | 6.0       | 31.1 | 39.63 | 2,990                 | 710   | 8.69               | 4.23 | 239                     | 142  | 305                     | 160  | 1,900                      | 253                        | 0.679                             | 32.1                     |
|              | 6.3       | 32.3 | 41.15 | 3,070                 | 730   | 8.63               | 4.21 | 245                     | 146  | 314                     | 165  | 1,990                      | 263                        | 0.673                             | 31.0                     |
|              | 8.0       | 40.2 | 51.24 | 3,720                 | 875   | 8.52               | 4.13 | 297                     | 175  | 385                     | 201  | 2,440                      | 317                        | 0.666                             | 24.9                     |
|              | 9.0       | 44.7 | 56.98 | 4,060                 | 951   | 8.44               | 4.09 | 325                     | 190  | 425                     | 221  | 2,680                      | 346                        | 0.661                             | 22.4                     |
|              | 10.0      | 49.1 | 62.57 | 4,390                 | 1,020 | 8.37               | 4.04 | 351                     | 204  | 462                     | 240  | 2,910                      | 373                        | 0.657                             | 20.4                     |
|              | 12.0      | 56.6 | 72.06 | 4,760                 | 1,110 | 8.13               | 3.92 | 381                     | 222  | 515                     | 268  | 3,290                      | 415                        | 0.638                             | 17.7                     |
| 225 x 175    | 4.5       | 27.2 | 34.67 | 2,610                 | 1,780 | 8.67               | 7.16 | 232                     | 203  | 273                     | 230  | 3,300                      | 323                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 2,870                 | 1,950 | 8.64               | 7.13 | 255                     | 223  | 301                     | 254  | 3,640                      | 356                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 3,370                 | 2,290 | 8.59               | 7.09 | 300                     | 262  | 356                     | 300  | 4,310                      | 418                        | 0.779                             | 27.9                     |
| 250 x 150    | 4.5       | 27.2 | 34.67 | 3,000                 | 1,370 | 9.31               | 6.29 | 240                     | 183  | 290                     | 205  | 2,980                      | 307                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 3,300                 | 1,510 | 9.28               | 6.27 | 264                     | 201  | 320                     | 225  | 3,280                      | 337                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 3,890                 | 1,770 | 9.23               | 6.23 | 311                     | 236  | 378                     | 266  | 3,890                      | 396                        | 0.779                             | 27.9                     |
|              | 6.3       | 37.2 | 47.45 | 4,000                 | 1,820 | 9.18               | 6.20 | 320                     | 243  | 391                     | 276  | 4,080                      | 412                        | 0.773                             | 26.8                     |
|              | 8.0       | 46.5 | 59.24 | 4,890                 | 2,220 | 9.08               | 6.12 | 391                     | 296  | 482                     | 340  | 5,050                      | 504                        | 0.766                             | 21.5                     |
|              | 9.0       | 51.8 | 65.98 | 5,370                 | 2,430 | 9.02               | 6.07 | 430                     | 324  | 533                     | 375  | 5,600                      | 554                        | 0.761                             | 19.3                     |
|              | 10.0      | 57.0 | 72.57 | 5,830                 | 2,630 | 8.96               | 6.02 | 466                     | 351  | 582                     | 409  | 6,120                      | 602                        | 0.757                             | 17.6                     |
|              | 12.0      | 66.0 | 84.06 | 6,460                 | 2,930 | 8.77               | 5.90 | 517                     | 390  | 658                     | 463  | 7,090                      | 684                        | 0.738                             | 15.2                     |
|              | 12.5      | 68.3 | 87.04 | 6,640                 | 3,000 | 8.73               | 5.87 | 531                     | 400  | 678                     | 477  | 7,310                      | 704                        | 0.736                             | 14.6                     |
| 300 x 100    | 4.5       | 27.2 | 34.67 | 3,700                 | 660   | 10.3               | 4.36 | 246                     | 132  | 316                     | 145  | 1,860                      | 239                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 4,070                 | 723   | 10.3               | 4.34 | 271                     | 145  | 348                     | 160  | 2,040                      | 262                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 4,780                 | 842   | 10.2               | 4.30 | 319                     | 168  | 411                     | 188  | 2,400                      | 306                        | 0.779                             | 27.9                     |
|              | 6.3       | 37.2 | 47.45 | 4,910                 | 868   | 10.2               | 4.28 | 327                     | 174  | 425                     | 194  | 2,520                      | 318                        | 0.773                             | 26.8                     |
|              | 8.0       | 46.5 | 59.24 | 5,980                 | 1,040 | 10.0               | 4.20 | 399                     | 209  | 523                     | 238  | 3,080                      | 385                        | 0.766                             | 21.5                     |
|              | 9.0       | 51.8 | 65.98 | 6,560                 | 1,140 | 9.97               | 4.15 | 437                     | 228  | 578                     | 262  | 3,390                      | 421                        | 0.761                             | 19.3                     |

Section properties    Rectangular : 250 mm x 200 mm to 600 mm x 300 mm

| Dimensions   |           | Mass | Area  | Second moment of area |       | Radius of gyration |      | Elastic section modulus |     | Plastic section modulus |     | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|------|-------|-----------------------|-------|--------------------|------|-------------------------|-----|-------------------------|-----|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |      |       |                       |       |                    |      |                         |     |                         |     |                            |                            |                                   |                          |
| A x B<br>mm  | t<br>mm   |      |       |                       |       |                    |      |                         |     |                         |     |                            |                            |                                   |                          |
| 250 x 200    | 6.0       | 40.5 | 51.63 | 4,780                 | 3,400 | 9.62               | 8.11 | 382                     | 340 | 451                     | 388 | 6,240                      | 538                        | 0.879                             | 24.7                     |
|              | 6.3       | 42.2 | 53.75 | 4,940                 | 3,510 | 9.58               | 8.08 | 395                     | 351 | 468                     | 402 | 6,550                      | 562                        | 0.873                             | 23.7                     |
|              | 8.0       | 52.8 | 67.24 | 6,060                 | 4,300 | 9.49               | 8.00 | 485                     | 430 | 579                     | 498 | 8,160                      | 691                        | 0.866                             | 18.9                     |
|              | 9.0       | 58.9 | 74.98 | 6,680                 | 4,740 | 9.44               | 7.95 | 534                     | 474 | 642                     | 551 | 9,070                      | 763                        | 0.861                             | 17.0                     |
|              | 10.0      | 64.8 | 82.57 | 7,270                 | 5,150 | 9.38               | 7.90 | 581                     | 515 | 702                     | 603 | 9,950                      | 832                        | 0.857                             | 15.4                     |
|              | 12.0      | 75.4 | 96.06 | 8,160                 | 5,790 | 9.22               | 7.77 | 653                     | 579 | 801                     | 688 | 11,600                     | 955                        | 0.838                             | 13.3                     |
|              | 12.5      | 78.1 | 99.54 | 8,400                 | 5,960 | 9.19               | 7.74 | 672                     | 596 | 827                     | 711 | 12,000                     | 985                        | 0.836                             | 12.8                     |
| 300 x 150    | 6.0       | 40.5 | 51.63 | 6,070                 | 2,080 | 10.8               | 6.35 | 405                     | 277 | 500                     | 309 | 4,990                      | 479                        | 0.879                             | 24.7                     |

AS/NZS 1163 “Cold-formed structural steel hollow sections”

Mechanical properties and chemical composition

Refer to page 7-8.

Tolerances

The tolerances on dimensions are established in accordance with AS/NZS 1163

| Characteristics         |                                 | Tolerances                                                                                    |
|-------------------------|---------------------------------|-----------------------------------------------------------------------------------------------|
| External dimensions     |                                 | ±1%, with minimum of ±0.5mm                                                                   |
| Thickness (t)           |                                 | ±10%                                                                                          |
| Concavity/Convexity     |                                 | Max. 0.8% or 0.5mm, whichever is greater                                                      |
| Squareness of sides     |                                 | 90°±1°                                                                                        |
| External corner profile |                                 | (Equivalent to 50x50 or less) 1.5t to 3.0t<br>(Equivalent to greater than 50x50) 1.8t to 3.0t |
| Twist                   |                                 | 2mm+0.5mm/m length                                                                            |
| Straightness            |                                 | 0.15% of total length                                                                         |
| Mass per unit length    |                                 | Not less than 0.96 times the specified mass on individual lengths                             |
| Length                  | Mill (or ‘unspecified’ ) length | 0, +100mm                                                                                     |
|                         | Precision length L<6,000mm      | 0, +5mm                                                                                       |
|                         | 6,000mm≤L≤10,000mm              | 0, +15mm                                                                                      |
|                         | 10,000mm<L                      | 0, +5mm+1mm/m                                                                                 |

NOTE

1)The External dimensions are measured across the flats at positions at least 50mm from the end of the HSS.

Packing

In bare bundle (steel banded) or in bulk. Standard lengths are 8 and 12 meter.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.  
If you need additional requirements, please contact us.

- a)Manufacturer's Name   b)Standard & Grade   c)Manufacturing Date & Time
- b)Mill Identification   e)Country of Origin

Inspection and Testing

AS/NZS 1163 is subject to tensile testing in accordance with AS 1391,  
Charpy impact test in accordance with AS 1544.

Available size range

Dimensions (mm-size)

| Size(mm)  |             | Wall thickness(mm) |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |
|-----------|-------------|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| Square    | Rectangular | 1.6                | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 5.0 | 6.0 | 8.0 | 9.0 | 10.0 | 12.0 | 12.5 | 16.0 | 19.0 | 22.0 |
|           | 60 x 30     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●   |     |     |     |     |      |      |      |      |      |      |
| 50 x 50   | 60 x 40     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 70 x 40     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |     |     |      |      |      |      |      |      |
| 60 x 60   | 75 x 45     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 75 x 50     |                    | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 100 x 40    | ●▲                 | ●▲  | ●▲  | ●▲  | ●   |     |     |     |     |     |      |      |      |      |      |      |
| 75 x 75   | 100 x 50    |                    | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ○   |     |      |      |      |      |      |      |
| 80 x 80   |             |                    | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 125 x 40    | ●▲                 | ●▲  | ●▲  | ●▲  |     |     |     |     |     |     |      |      |      |      |      |      |
|           | 102 x 76    |                    |     |     |     |     |     | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
| 89 x 89   |             |                    |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
| 90 x 90   |             |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
| 100 x 100 | 125 x 75    |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ○    | ○    |      |      |      |      |
|           | 150 x 50    |                    |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 150 x 75    |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●   | ●   |      |      |      |      |      |      |
|           | 152 x 76    |                    |     |     |     |     |     | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
|           | 150 x 80    |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |      |      |
| 120 x 120 |             |                    |     |     |     |     |     |     |     |     | ●   |      |      |      |      |      |      |
| 125 x 125 |             |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 150 x 100   |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
| 150 x 150 |             |                    |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 200 x 100   |                    |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
| 175 x 175 | 200 x 150   |                    |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ○    |      |      |      |
|           | 250 x 100   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ○    | ○    |      |      |      |      |
| 200 x 200 |             |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ○△   |      |      |      |
|           | 250 x 150   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ○    |      |      |      |
|           | 300 x 100   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 250 x 200   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
|           | 300 x 150   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |      |      |
| 250 x 250 | 300 x 200   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ○    |      |      |      |
|           | 350 x 150   |                    |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   | ○△   |      |      |      |      |
| 300 x 300 | 350 x 250   |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲   | ●▲   | ○    |      |      |      |
|           | 400 x 200   |                    |     |     |     |     |     |     | ●▲  | ●▲  | ●▲  | ●▲   | ○△   |      |      |      |      |
| 350 x 350 |             |                    |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ○    | ○    | ○    |      |
|           | 400 x 300   |                    |     |     |     |     |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ○    |      |      |      |
| 400 x 400 |             |                    |     |     |     |     |     |     |     |     | ●▲  | ●▲   | ●▲   | ○    | ○    | ○    |      |
|           | 500 x 300   |                    |     |     |     |     |     |     |     |     |     | ●▲   | ●▲   | ○    | ○    |      |      |
| 450 x 450 |             |                    |     |     |     |     |     |     |     |     |     |      | ●▲   | ●▲   | ○    | ○    | ○    |
|           | 600 x 300   |                    |     |     |     |     |     |     |     |     |     |      | ●▲   | ●▲   | ○    | ○    | ○    |
| 500 x 500 |             |                    |     |     |     |     |     |     |     |     |     |      |      | ●▲   | ○    | ○    | ○    |
| 550 x 550 |             |                    |     |     |     |     |     |     |     |     |     |      |      |      |      | ○    | ○    |

● C350/C350L0 available  
▲ C450 available  
□ Color painted

○ C350/C350L0 to be confirmed  
△ C450 to be confirmed  
■ C350 pre-galv (pure zinc & SuperDyma®)  
■ C350 pre-galv (pure zinc only)

If you require other sizes, please consult us.



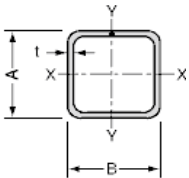
Section properties Square : 50 mm x 50 mm to 125 mm x 125 mm

| Dimensions   |                   | Mass                           | Area                           | Second moment of area |                   | Radius of gyration             |                                | Elastic section modulus         |                                 | Plastic section modulus |                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-------------------|--------------------------------|--------------------------------|-----------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|-------------------------|-----------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness         |                                |                                |                       |                   |                                |                                |                                 |                                 |                         |                 |                            |                            |                                   |                          |
| A mm x B mm  | t mm              |                                |                                |                       |                   |                                |                                |                                 |                                 |                         |                 |                            |                            |                                   |                          |
| M kg/m       | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm     | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>         | cm <sup>3</sup> | m <sup>2</sup> /m          | m                          |                                   |                          |
| 50 x 50      | 1.6               | 2.38                           | 3.032                          | 11.7                  | 11.7              | 1.96                           | 1.96                           | 4.68                            | 4.68                            | 5.46                    | 5.46            | 18.5                       | 7.03                       | 0.195                             | 420                      |
|              | 2.0               | 2.93                           | 3.737                          | 14.1                  | 14.1              | 1.95                           | 1.95                           | 5.66                            | 5.66                            | 6.66                    | 6.66            | 22.6                       | 8.51                       | 0.193                             | 341                      |
|              | 2.5               | 3.60                           | 4.589                          | 16.9                  | 16.9              | 1.92                           | 1.92                           | 6.78                            | 6.78                            | 8.07                    | 8.07            | 27.5                       | 10.2                       | 0.191                             | 278                      |
|              | 3.0               | 4.25                           | 5.408                          | 19.5                  | 19.5              | 1.90                           | 1.90                           | 7.79                            | 7.79                            | 9.39                    | 9.39            | 32.1                       | 11.8                       | 0.190                             | 236                      |
|              | 3.5               | 4.78                           | 6.089                          | 21.1                  | 21.1              | 1.86                           | 1.86                           | 8.43                            | 8.43                            | 10.3                    | 10.3            | 36.4                       | 13.1                       | 0.185                             | 209                      |
|              | 4.0               | 5.35                           | 6.811                          | 22.9                  | 22.9              | 1.83                           | 1.83                           | 9.15                            | 9.15                            | 11.4                    | 11.4            | 40.3                       | 14.3                       | 0.183                             | 187                      |
|              | 5.0               | 6.39                           | 8.142                          | 25.7                  | 25.7              | 1.78                           | 1.78                           | 10.3                            | 10.3                            | 13.2                    | 13.2            | 46.9                       | 16.3                       | 0.179                             | 156                      |
| 60 x 60      | 6.0               | 7.32                           | 9.324                          | 27.5                  | 27.5              | 1.72                           | 1.72                           | 11.0                            | 11.0                            | 14.5                    | 14.5            | 51.8                       | 17.7                       | 0.174                             | 137                      |
|              | 1.6               | 2.88                           | 3.672                          | 20.7                  | 20.7              | 2.37                           | 2.37                           | 6.89                            | 6.89                            | 7.99                    | 7.99            | 32.4                       | 10.4                       | 0.235                             | 347                      |
|              | 2.0               | 3.56                           | 4.537                          | 25.1                  | 25.1              | 2.35                           | 2.35                           | 8.38                            | 8.38                            | 9.79                    | 9.79            | 39.8                       | 12.6                       | 0.233                             | 281                      |
|              | 2.5               | 4.39                           | 5.589                          | 30.3                  | 30.3              | 2.33                           | 2.33                           | 10.1                            | 10.1                            | 11.9                    | 11.9            | 48.7                       | 15.2                       | 0.231                             | 228                      |
|              | 3.0               | 5.19                           | 6.608                          | 35.1                  | 35.1              | 2.31                           | 2.31                           | 11.7                            | 11.7                            | 14.0                    | 14.0            | 57.1                       | 17.7                       | 0.230                             | 193                      |
|              | 3.5               | 5.88                           | 7.489                          | 38.6                  | 38.6              | 2.27                           | 2.27                           | 12.9                            | 12.9                            | 15.5                    | 15.5            | 65.2                       | 19.8                       | 0.225                             | 170                      |
|              | 4.0               | 6.60                           | 8.411                          | 42.3                  | 42.3              | 2.24                           | 2.24                           | 14.1                            | 14.1                            | 17.2                    | 17.2            | 72.7                       | 21.8                       | 0.223                             | 151                      |
| 75 x 75      | 5.0               | 7.96                           | 10.14                          | 48.6                  | 48.6              | 2.19                           | 2.19                           | 16.2                            | 16.2                            | 20.2                    | 20.2            | 86.0                       | 25.3                       | 0.219                             | 126                      |
|              | 6.0               | 9.20                           | 11.72                          | 53.3                  | 53.3              | 2.13                           | 2.13                           | 17.8                            | 17.8                            | 22.7                    | 22.7            | 97.2                       | 28.1                       | 0.214                             | 109                      |
|              | 2.0               | 4.50                           | 5.737                          | 50.5                  | 50.5              | 2.97                           | 2.97                           | 13.5                            | 13.5                            | 15.6                    | 15.6            | 79.0                       | 20.2                       | 0.293                             | 222                      |
|              | 2.5               | 5.56                           | 7.089                          | 61.4                  | 61.4              | 2.94                           | 2.94                           | 16.4                            | 16.4                            | 19.1                    | 19.1            | 97.1                       | 24.6                       | 0.291                             | 180                      |
|              | 3.0               | 6.60                           | 8.408                          | 71.6                  | 71.6              | 2.92                           | 2.92                           | 19.1                            | 19.1                            | 22.5                    | 22.5            | 115                        | 28.7                       | 0.290                             | 152                      |
|              | 3.5               | 7.53                           | 9.589                          | 79.7                  | 79.7              | 2.88                           | 2.88                           | 21.3                            | 21.3                            | 25.3                    | 25.3            | 132                        | 32.5                       | 0.285                             | 133                      |
|              | 4.0               | 8.49                           | 10.81                          | 88.2                  | 88.2              | 2.86                           | 2.86                           | 23.5                            | 23.5                            | 28.2                    | 28.2            | 148                        | 36.1                       | 0.283                             | 118                      |
| 80 x 80      | 5.0               | 10.3                           | 13.14                          | 103                   | 103               | 2.80                           | 2.80                           | 27.5                            | 27.5                            | 33.6                    | 33.6            | 177                        | 42.6                       | 0.279                             | 96.9                     |
|              | 6.0               | 12.0                           | 15.32                          | 116                   | 116               | 2.75                           | 2.75                           | 30.9                            | 30.9                            | 38.4                    | 38.4            | 204                        | 48.2                       | 0.274                             | 83.1                     |
|              | 8.0               | 15.1                           | 19.24                          | 134                   | 134               | 2.64                           | 2.64                           | 35.7                            | 35.7                            | 46.1                    | 46.1            | 247                        | 56.7                       | 0.266                             | 66.2                     |
|              | 2.0               | 4.82                           | 6.137                          | 61.7                  | 61.7              | 3.17                           | 3.17                           | 15.4                            | 15.4                            | 17.8                    | 17.8            | 96.3                       | 23.2                       | 0.313                             | 208                      |
|              | 2.5               | 5.96                           | 7.589                          | 75.1                  | 75.1              | 3.15                           | 3.15                           | 18.8                            | 18.8                            | 21.9                    | 21.9            | 119                        | 28.2                       | 0.311                             | 168                      |
|              | 3.0               | 7.07                           | 9.008                          | 87.8                  | 87.8              | 3.12                           | 3.12                           | 22.0                            | 22.0                            | 25.8                    | 25.8            | 140                        | 33.0                       | 0.310                             | 141                      |
|              | 3.5               | 8.08                           | 10.29                          | 98.1                  | 98.1              | 3.09                           | 3.09                           | 24.5                            | 24.5                            | 29.1                    | 29.1            | 161                        | 37.5                       | 0.305                             | 124                      |
| 89 x 89      | 4.0               | 9.11                           | 11.61                          | 109                   | 109               | 3.06                           | 3.06                           | 27.2                            | 27.2                            | 32.5                    | 32.5            | 181                        | 41.7                       | 0.303                             | 110                      |
|              | 5.0               | 11.1                           | 14.14                          | 128                   | 128               | 3.01                           | 3.01                           | 32.0                            | 32.0                            | 38.9                    | 38.9            | 218                        | 49.4                       | 0.299                             | 90.1                     |
|              | 6.0               | 13.0                           | 16.52                          | 144                   | 144               | 2.95                           | 2.95                           | 36.0                            | 36.0                            | 44.5                    | 44.5            | 252                        | 56.1                       | 0.294                             | 77.1                     |
|              | 3.5               | 9.07                           | 11.55                          | 138                   | 138               | 3.46                           | 3.46                           | 31.0                            | 31.0                            | 36.5                    | 36.5            | 225                        | 47.2                       | 0.341                             | 110                      |
|              | 4.0               | 10.2                           | 13.05                          | 154                   | 154               | 3.43                           | 3.43                           | 34.5                            | 34.5                            | 41.0                    | 41.0            | 253                        | 52.7                       | 0.339                             | 97.6                     |
|              | 5.0               | 12.5                           | 15.94                          | 182                   | 182               | 3.38                           | 3.38                           | 40.8                            | 40.8                            | 49.2                    | 49.2            | 306                        | 62.8                       | 0.335                             | 79.9                     |
|              | 6.0               | 14.7                           | 18.68                          | 206                   | 206               | 3.32                           | 3.32                           | 46.4                            | 46.4                            | 56.7                    | 56.7            | 355                        | 71.8                       | 0.330                             | 68.2                     |
| 90 x 90      | 2.0               | 5.45                           | 6.937                          | 88.9                  | 88.9              | 3.58                           | 3.58                           | 19.7                            | 19.7                            | 22.8                    | 22.8            | 138                        | 29.6                       | 0.353                             | 184                      |
|              | 2.5               | 6.74                           | 8.589                          | 109                   | 109               | 3.56                           | 3.56                           | 24.1                            | 24.1                            | 28.0                    | 28.0            | 170                        | 36.2                       | 0.351                             | 148                      |
|              | 3.0               | 8.01                           | 10.21                          | 127                   | 127               | 3.53                           | 3.53                           | 28.3                            | 28.3                            | 33.0                    | 33.0            | 201                        | 42.5                       | 0.350                             | 125                      |
|              | 3.5               | 9.18                           | 11.69                          | 143                   | 143               | 3.50                           | 3.50                           | 31.8                            | 31.8                            | 37.4                    | 37.4            | 233                        | 48.4                       | 0.345                             | 109                      |
|              | 4.0               | 10.4                           | 13.21                          | 159                   | 159               | 3.47                           | 3.47                           | 35.4                            | 35.4                            | 42.0                    | 42.0            | 262                        | 54.0                       | 0.343                             | 96.4                     |
|              | 5.0               | 12.7                           | 16.14                          | 189                   | 189               | 3.42                           | 3.42                           | 41.9                            | 41.9                            | 50.4                    | 50.4            | 317                        | 64.4                       | 0.339                             | 78.9                     |
|              | 6.0               | 14.9                           | 18.92                          | 214                   | 214               | 3.36                           | 3.36                           | 47.6                            | 47.6                            | 58.1                    | 58.1            | 368                        | 73.7                       | 0.334                             | 67.3                     |
| 100 x 100    | 2.0               | 6.07                           | 7.737                          | 123                   | 123               | 3.99                           | 3.99                           | 24.6                            | 24.6                            | 28.3                    | 28.3            | 191                        | 36.9                       | 0.393                             | 165                      |
|              | 2.5               | 7.53                           | 9.589                          | 151                   | 151               | 3.96                           | 3.96                           | 30.1                            | 30.1                            | 34.9                    | 34.9            | 235                        | 45.2                       | 0.391                             | 133                      |
|              | 3.0               | 8.96                           | 11.41                          | 177                   | 177               | 3.94                           | 3.94                           | 35.4                            | 35.4                            | 41.2                    | 41.2            | 279                        | 53.2                       | 0.390                             | 112                      |
|              | 3.5               | 10.3                           | 13.09                          | 200                   | 200               | 3.91                           | 3.91                           | 39.9                            | 39.9                            | 46.8                    | 46.8            | 322                        | 60.7                       | 0.385                             | 97.3                     |
|              | 4.0               | 11.6                           | 14.81                          | 223                   | 223               | 3.88                           | 3.88                           | 44.6                            | 44.6                            | 52.6                    | 52.6            | 363                        | 68.0                       | 0.383                             | 86.0                     |
|              | 5.0               | 14.2                           | 18.14                          | 266                   | 266               | 3.83                           | 3.83                           | 53.1                            | 53.1                            | 63.5                    | 63.5            | 442                        | 81.4                       | 0.379                             | 70.2                     |
|              | 6.0               | 16.7                           | 21.32                          | 304                   | 304               | 3.77                           | 3.77                           | 60.7                            | 60.7                            | 73.5                    | 73.5            | 515                        | 93.6                       | 0.374                             | 59.7                     |
|              | 8.0               | 21.4                           | 27.24                          | 366                   | 366               | 3.67                           | 3.67                           | 73.2                            | 73.2                            | 91.1                    | 91.1            | 645                        | 114                        | 0.366                             | 46.8                     |
|              | 9.0               | 23.5                           | 29.98                          | 391                   | 391               | 3.61                           | 3.61                           | 78.1                            | 78.1                            | 98.6                    | 98.6            | 700                        | 123                        | 0.361                             | 42.5                     |
|              | 10.0              | 25.6                           | 32.57                          | 411                   | 411               | 3.55                           | 3.55                           | 82.2                            | 82.2                            | 105                     | 105             | 750                        | 130                        | 0.357                             | 39.1                     |
|              | 12.0              | 29.3                           | 37.30                          | 440                   | 440               | 3.44                           | 3.44                           | 88.1                            | 88.1                            | 116                     | 116             | 830                        | 141                        | 0.348                             | 34.2                     |
|              | 120 x 120         | 6.0                            | 20.5                           | 26.12                 | 551               | 551                            | 4.59                           | 4.59                            | 91.8                            | 91.8                    | 110             | 110                        | 916                        | 141                               | 0.454                    |
| 8.0          |                   | 26.4                           | 33.64                          | 677                   | 677               | 4.49                           | 4.49                           | 113                             | 113                             | 138                     | 138             | 1,160                      | 175                        | 0.446                             | 37.9                     |
| 9.0          |                   | 29.2                           | 37.18                          | 730                   | 730               | 4.43                           | 4.43                           | 122                             | 122                             | 150                     | 150             | 1,270                      | 189                        | 0.441                             | 34.3                     |
| 10.0         |                   | 31.8                           | 40.57                          | 777                   | 777               | 4.38                           | 4.38                           | 129                             | 129                             | 162                     | 162             | 1,380                      | 203                        | 0.437                             | 31.4                     |
| 12.0         |                   | 36.8                           | 46.90                          | 852                   | 852               | 4.26                           | 4.26                           | 142                             | 142                             | 182                     | 182             | 1,550                      | 225                        | 0.428                             | 27.2                     |
| 125 x 125    | 3.0               | 11.3                           | 14.41                          | 355                   | 355               | 4.96                           | 4.96                           | 56.7                            | 56.7                            | 65.6                    | 65.6            | 553                        | 85.1                       | 0.490                             | 88.4                     |
|              | 3.5               | 13.0                           | 16.59                          | 403                   | 403               | 4.93                           | 4.93                           | 64.4                            | 64.4                            | 74.9                    | 74.9            | 641                        | 97.6                       | 0.485                             | 76.8                     |
|              | 4.0               | 14.8                           | 18.81                          | 452                   | 452               | 4.90                           | 4.90                           | 72.3                            | 72.3                            | 84.5                    | 84.5            | 725                        | 110                        | 0.483                             | 67.7                     |
|              | 5.0               | 18.2                           | 23.14                          | 544                   | 544               | 4.85                           | 4.85                           | 87.1                            | 87.1                            | 103                     | 103             | 887                        | 133                        | 0.479                             | 55.0                     |
|              | 6.0               | 21.4                           | 27.32                          | 629                   | 629               | 4.80                           | 4.80                           | 101                             | 101                             | 120                     | 120             | 1,040                      | 154                        | 0.474                             | 46.6                     |
|              | 8.0               | 27.7                           | 35.24                          | 775                   | 775               | 4.69                           | 4.69                           | 124                             | 124                             | 151                     | 151             | 1,330                      | 192                        | 0.466                             | 36.1                     |
|              | 9.0               | 30.6                           | 38.98                          | 838                   | 838               | 4.64                           | 4.64                           | 134                             | 134                             | 165                     | 165             | 1,450                      | 208                        | 0.461                             | 32.7                     |
|              | 10.0              | 33.4                           | 42.57                          | 893                   | 893               | 4.58                           | 4.58                           | 143                             | 143                             | 178                     | 178             | 1,570                      | 223                        | 0.457                             | 29.9                     |
|              | 12.0              | 38.7                           | 49.30                          | 985                   | 985               | 4.47                           | 4.47                           | 158                             | 158                             | 201                     | 201             | 1,780                      | 249                        | 0.448                             | 25.8                     |
|              | 12.5              | 39.9                           | 50.89                          | 1,000                 | 1,000             | 4.44                           | 4.44                           | 161                             | 161                             | 206                     | 206             | 1,830                      | 254                        | 0.446                             | 25.0                     |

NOTE

The calculation of section properties are based on the following corner geometry, as standard.

| Thickness(T)     | Inside corner profile | Outside corner profile |
|------------------|-----------------------|------------------------|
| 3mm and less     | 1.0T                  | 2.0T                   |
| greater than 3mm | 1.5T                  | 2.5T                   |



Section properties Square : 150mm x 150mm to 550 mm x 550 mm

| Dimensions   |           | Mass | Area   | Second moment of area |                                | Radius of gyration             |                   | Elastic section modulus |                                | Plastic section modulus        |                                 | Torsional inertia constant      | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |      |
|--------------|-----------|------|--------|-----------------------|--------------------------------|--------------------------------|-------------------|-------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|-----------------------------------|--------------------------|------|
| Nominal size | Thickness |      |        |                       |                                |                                |                   |                         |                                |                                |                                 |                                 |                            |                                   |                          |      |
| A mm         | x B mm    | t mm | M kg/m | A cm <sup>2</sup>     | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm | i <sub>y</sub> cm       | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>                   | m <sup>2</sup> /m        | m    |
| 150 x 150    | 4.0       | 17.9 | 22.81  | 800                   | 800                            | 5.92                           | 5.92              | 107                     | 107                            | 124                            | 124                             | 1,270                           | 162                        | 0.583                             | 55.8                     |      |
|              | 5.0       | 22.1 | 28.14  | 970                   | 970                            | 5.87                           | 5.87              | 129                     | 129                            | 151                            | 151                             | 1,560                           | 197                        | 0.579                             | 45.3                     |      |
|              | 6.0       | 26.2 | 33.32  | 1,130                 | 1,130                          | 5.82                           | 5.82              | 150                     | 150                            | 178                            | 178                             | 1,840                           | 229                        | 0.574                             | 38.2                     |      |
|              | 8.0       | 33.9 | 43.24  | 1,410                 | 1,410                          | 5.71                           | 5.71              | 188                     | 188                            | 226                            | 226                             | 2,360                           | 289                        | 0.566                             | 29.5                     |      |
|              | 9.0       | 37.7 | 47.98  | 1,540                 | 1,540                          | 5.66                           | 5.66              | 205                     | 205                            | 248                            | 248                             | 2,610                           | 316                        | 0.561                             | 26.6                     |      |
|              | 10.0      | 41.3 | 52.57  | 1,650                 | 1,650                          | 5.61                           | 5.61              | 220                     | 220                            | 269                            | 269                             | 2,840                           | 341                        | 0.557                             | 24.2                     |      |
|              | 12.0      | 48.1 | 61.30  | 1,850                 | 1,850                          | 5.50                           | 5.50              | 247                     | 247                            | 307                            | 307                             | 3,260                           | 386                        | 0.548                             | 20.8                     |      |
|              | 12.5      | 49.8 | 63.39  | 1,900                 | 1,900                          | 5.47                           | 5.47              | 253                     | 253                            | 316                            | 316                             | 3,360                           | 396                        | 0.546                             | 20.1                     |      |
| 175 x 175    | 4.0       | 21.0 | 26.81  | 1,290                 | 1,290                          | 6.94                           | 6.94              | 148                     | 148                            | 171                            | 171                             | 2,030                           | 223                        | 0.683                             | 47.5                     |      |
|              | 5.0       | 26.0 | 33.14  | 1,570                 | 1,570                          | 6.89                           | 6.89              | 180                     | 180                            | 209                            | 209                             | 2,510                           | 273                        | 0.679                             | 38.4                     |      |
|              | 6.0       | 30.9 | 39.32  | 1,840                 | 1,840                          | 6.84                           | 6.84              | 210                     | 210                            | 246                            | 246                             | 2,970                           | 320                        | 0.674                             | 32.4                     |      |
|              | 8.0       | 40.2 | 51.24  | 2,330                 | 2,330                          | 6.74                           | 6.74              | 266                     | 266                            | 316                            | 316                             | 3,840                           | 406                        | 0.666                             | 24.9                     |      |
|              | 9.0       | 44.7 | 56.98  | 2,550                 | 2,550                          | 6.68                           | 6.68              | 291                     | 291                            | 348                            | 348                             | 4,250                           | 446                        | 0.661                             | 22.4                     |      |
|              | 10.0      | 49.1 | 62.57  | 2,750                 | 2,750                          | 6.63                           | 6.63              | 314                     | 314                            | 379                            | 379                             | 4,640                           | 484                        | 0.657                             | 20.4                     |      |
|              | 12.0      | 57.5 | 73.30  | 3,120                 | 3,120                          | 6.52                           | 6.52              | 356                     | 356                            | 437                            | 437                             | 5,380                           | 552                        | 0.648                             | 17.4                     |      |
|              | 12.5      | 59.6 | 75.89  | 3,200                 | 3,200                          | 6.50                           | 6.50              | 366                     | 366                            | 450                            | 450                             | 5,550                           | 568                        | 0.646                             | 16.8                     |      |
| 200 x 200    | 4.0       | 24.2 | 30.81  | 1,950                 | 1,950                          | 7.96                           | 7.96              | 195                     | 195                            | 225                            | 225                             | 3,060                           | 295                        | 0.783                             | 41.3                     |      |
|              | 5.0       | 29.9 | 38.14  | 2,390                 | 2,390                          | 7.91                           | 7.91              | 239                     | 239                            | 277                            | 277                             | 3,780                           | 362                        | 0.779                             | 33.4                     |      |
|              | 6.0       | 35.6 | 45.32  | 2,800                 | 2,800                          | 7.86                           | 7.86              | 280                     | 280                            | 327                            | 327                             | 4,480                           | 425                        | 0.774                             | 28.1                     |      |
|              | 8.0       | 46.5 | 59.24  | 3,570                 | 3,570                          | 7.76                           | 7.76              | 357                     | 357                            | 421                            | 421                             | 5,820                           | 544                        | 0.766                             | 21.5                     |      |
|              | 9.0       | 51.8 | 65.98  | 3,920                 | 3,920                          | 7.71                           | 7.71              | 392                     | 392                            | 465                            | 465                             | 6,450                           | 599                        | 0.761                             | 19.3                     |      |
|              | 10.0      | 57.0 | 72.57  | 4,250                 | 4,250                          | 7.65                           | 7.65              | 425                     | 425                            | 508                            | 508                             | 7,070                           | 651                        | 0.757                             | 17.6                     |      |
|              | 12.0      | 67.0 | 85.30  | 4,860                 | 4,860                          | 7.55                           | 7.55              | 486                     | 486                            | 588                            | 588                             | 8,240                           | 749                        | 0.748                             | 14.9                     |      |
|              | 12.5      | 69.4 | 88.39  | 5,000                 | 5,000                          | 7.52                           | 7.52              | 500                     | 500                            | 607                            | 607                             | 8,520                           | 772                        | 0.746                             | 14.4                     |      |
| 250 x 250    | 6.0       | 45.0 | 57.32  | 5,620                 | 5,620                          | 9.90                           | 9.90              | 450                     | 450                            | 521                            | 521                             | 8,870                           | 681                        | 0.974                             | 22.2                     |      |
|              | 8.0       | 59.1 | 75.24  | 7,230                 | 7,230                          | 9.80                           | 9.80              | 578                     | 578                            | 676                            | 676                             | 11,600                          | 878                        | 0.966                             | 16.9                     |      |
|              | 9.0       | 65.9 | 83.98  | 7,980                 | 7,980                          | 9.75                           | 9.75              | 639                     | 639                            | 750                            | 750                             | 12,900                          | 972                        | 0.961                             | 15.2                     |      |
|              | 10.0      | 72.7 | 92.57  | 8,710                 | 8,710                          | 9.70                           | 9.70              | 697                     | 697                            | 822                            | 822                             | 14,200                          | 1,060                      | 0.957                             | 13.8                     |      |
|              | 12.0      | 85.8 | 109.3  | 10,100                | 10,100                         | 9.59                           | 9.59              | 805                     | 805                            | 959                            | 959                             | 16,700                          | 1,230                      | 0.948                             | 11.7                     |      |
|              | 12.5      | 89.0 | 113.4  | 10,400                | 10,400                         | 9.57                           | 9.57              | 830                     | 830                            | 992                            | 992                             | 17,300                          | 1,270                      | 0.946                             | 11.2                     |      |
|              | 16.0      | 111  | 141.0  | 12,400                | 12,400                         | 9.38                           | 9.38              | 992                     | 992                            | 1,210                          | 1,210                           | 21,200                          | 1,530                      | 0.931                             | 9.04                     |      |
|              | 300 x 300 | 6.0  | 54.4   | 69.32                 | 9,890                          | 9,890                          | 11.9              | 11.9                    | 660                            | 660                            | 760                             | 760                             | 15,500                     | 996                               | 1.17                     | 18.4 |
| 8.0          |           | 71.6 | 91.24  | 12,800                | 12,800                         | 11.8                           | 11.8              | 853                     | 853                            | 991                            | 991                             | 20,300                          | 1,290                      | 1.17                              | 14.0                     |      |
| 9.0          |           | 80.1 | 102.0  | 14,200                | 14,200                         | 11.8                           | 11.8              | 946                     | 946                            | 1,100                          | 1,100                           | 22,700                          | 1,430                      | 1.16                              | 12.5                     |      |
| 10.0         |           | 88.4 | 112.6  | 15,500                | 15,500                         | 11.7                           | 11.7              | 1,030                   | 1,030                          | 1,210                          | 1,210                           | 25,000                          | 1,570                      | 1.16                              | 11.3                     |      |
| 12.0         |           | 105  | 133.3  | 18,100                | 18,100                         | 11.6                           | 11.6              | 1,200                   | 1,200                          | 1,420                          | 1,420                           | 29,400                          | 1,830                      | 1.15                              | 9.56                     |      |
| 12.5         |           | 109  | 138.4  | 18,700                | 18,700                         | 11.6                           | 11.6              | 1,240                   | 1,240                          | 1,470                          | 1,470                           | 30,500                          | 1,900                      | 1.15                              | 9.21                     |      |
| 16.0         |           | 136  | 173.0  | 22,600                | 22,600                         | 11.4                           | 11.4              | 1,510                   | 1,510                          | 1,810                          | 1,810                           | 37,800                          | 2,310                      | 1.13                              | 7.36                     |      |
| 19.0         |           | 158  | 201.2  | 25,500                | 25,500                         | 11.3                           | 11.3              | 1,700                   | 1,700                          | 2,070                          | 2,070                           | 43,600                          | 2,630                      | 1.12                              | 6.33                     |      |
| 350 x 350    | 9.0       | 94.2 | 120.0  | 23,000                | 23,000                         | 13.8                           | 13.8              | 1,310                   | 1,310                          | 1,520                          | 1,520                           | 36,400                          | 1,990                      | 1.36                              | 10.6                     |      |
|              | 10.0      | 104  | 132.6  | 25,200                | 25,200                         | 13.8                           | 13.8              | 1,440                   | 1,440                          | 1,670                          | 1,670                           | 40,100                          | 2,180                      | 1.36                              | 9.61                     |      |
|              | 12.0      | 123  | 157.3  | 29,400                | 29,400                         | 13.7                           | 13.7              | 1,680                   | 1,680                          | 1,970                          | 1,970                           | 47,500                          | 2,560                      | 1.35                              | 8.10                     |      |
|              | 12.5      | 128  | 163.4  | 30,500                | 30,500                         | 13.7                           | 13.7              | 1,740                   | 1,740                          | 2,040                          | 2,040                           | 49,300                          | 2,650                      | 1.35                              | 7.80                     |      |
|              | 16.0      | 161  | 205.0  | 37,200                | 37,200                         | 13.5                           | 13.5              | 2,130                   | 2,130                          | 2,530                          | 2,530                           | 61,400                          | 3,250                      | 1.33                              | 6.21                     |      |
|              | 19.0      | 188  | 239.2  | 42,400                | 42,400                         | 13.3                           | 13.3              | 2,420                   | 2,420                          | 2,910                          | 2,910                           | 71,100                          | 3,720                      | 1.32                              | 5.33                     |      |
|              | 22.0      | 214  | 272.0  | 47,100                | 47,100                         | 13.2                           | 13.2              | 2,690                   | 2,690                          | 3,270                          | 3,270                           | 80,300                          | 4,150                      | 1.31                              | 4.68                     |      |
|              | 400 x 400 | 9.0  | 108    | 138.0                 | 34,800                         | 34,800                         | 15.9              | 15.9                    | 1,740                          | 1,740                          | 2,010                           | 2,010                           | 54,700                     | 2,630                             | 1.56                     | 9.23 |
| 10.0         |           | 120  | 152.6  | 38,200                | 38,200                         | 15.8                           | 15.8              | 1,910                   | 1,910                          | 2,210                          | 2,210                           | 60,400                          | 2,890                      | 1.56                              | 8.35                     |      |
| 12.0         |           | 142  | 181.3  | 44,800                | 44,800                         | 15.7                           | 15.7              | 2,240                   | 2,240                          | 2,610                          | 2,610                           | 71,600                          | 3,400                      | 1.55                              | 7.03                     |      |
| 12.5         |           | 148  | 188.4  | 46,400                | 46,400                         | 15.7                           | 15.7              | 2,320                   | 2,320                          | 2,710                          | 2,710                           | 74,400                          | 3,520                      | 1.55                              | 6.76                     |      |
| 16.0         |           | 186  | 237.0  | 57,100                | 57,100                         | 15.5                           | 15.5              | 2,850                   | 2,850                          | 3,370                          | 3,370                           | 93,000                          | 4,350                      | 1.53                              | 5.38                     |      |
| 19.0         |           | 218  | 277.2  | 65,400                | 65,400                         | 15.4                           | 15.4              | 3,270                   | 3,270                          | 3,900                          | 3,900                           | 108,000                         | 5,000                      | 1.52                              | 4.60                     |      |
| 22.0         |           | 248  | 316.0  | 73,000                | 73,000                         | 15.2                           | 15.2              | 3,650                   | 3,650                          | 4,390                          | 4,390                           | 123,000                         | 5,610                      | 1.51                              | 4.03                     |      |
| 450 x 450    |           | 12.0 | 161    | 205.3                 | 64,800                         | 64,800                         | 17.8              | 17.8                    | 2,880                          | 2,880                          | 3,340                           | 3,340                           | 103,000                    | 4,360                             | 1.75                     | 6.21 |
|              | 12.5      | 168  | 213.4  | 67,200                | 67,200                         | 17.7                           | 17.7              | 2,990                   | 2,990                          | 3,470                          | 3,470                           | 107,000                         | 4,520                      | 1.75                              | 5.97                     |      |
|              | 16.0      | 211  | 269.0  | 82,900                | 82,900                         | 17.6                           | 17.6              | 3,690                   | 3,690                          | 4,330                          | 4,330                           | 134,000                         | 5,610                      | 1.73                              | 4.74                     |      |
|              | 19.0      | 247  | 315.2  | 95,500                | 95,500                         | 17.4                           | 17.4              | 4,240                   | 4,240                          | 5,020                          | 5,020                           | 156,000                         | 6,480                      | 1.72                              | 4.04                     |      |
|              | 22.0      | 283  | 360.0  | 107,000               | 107,000                        | 17.2                           | 17.2              | 4,760                   | 4,760                          | 5,680                          | 5,680                           | 178,000                         | 7,290                      | 1.71                              | 3.54                     |      |
| 500 x 500    | 12.0      | 180  | 229.3  | 90,000                | 90,000                         | 19.8                           | 19.8              | 3,600                   | 3,600                          | 4,160                          | 4,160                           | 142,000                         | 5,450                      | 1.95                              | 5.56                     |      |
|              | 12.5      | 187  | 238.4  | 93,300                | 93,300                         | 19.8                           | 19.8              | 3,730                   | 3,730                          | 4,320                          | 4,320                           | 148,000                         | 5,650                      | 1.95                              | 5.34                     |      |
|              | 16.0      | 236  | 301.0  | 116,000               | 116,000                        | 19.6                           | 19.6              | 4,630                   | 4,630                          | 5,410                          | 5,410                           | 186,000                         | 7,030                      | 1.93                              | 4.23                     |      |
|              | 19.0      | 277  | 353.2  | 134,000               | 134,000                        | 19.4                           | 19.4              | 5,340                   | 5,340                          | 6,290                          | 6,290                           | 217,000                         | 8,140                      | 1.92                              | 3.61                     |      |
|              | 22.0      | 317  | 404.0  | 150,000               | 150,000                        | 19.3                           | 19.3              | 6,010                   | 6,010                          | 7,130                          | 7,130                           | 247,000                         | 9,190                      | 1.91                              | 3.15                     |      |
| 550 x 550    | 19.0      | 307  | 391.2  | 181,000               | 181,000                        | 21.5                           | 21.5              | 6,570                   | 6,570                          | 7,700                          | 7,700                           | 291,000                         | 9,990                      | 2.12                              | 3.26                     |      |
|              | 22.0      | 352  | 448.0  | 204,000               | 204,000                        | 21.3                           | 21.3              | 7,420                   | 7,420                          | 8,750                          | 8,750                           | 333,000                         | 11,300                     | 2.11                              | 2.84                     |      |

Section properties    Rectangular : 60 mm x 30 mm to 125 mm x 50 mm

| Dimensions   |                   | Mass                           | Area                           | Second moment of area |                   | Radius of gyration             |                                | Elastic section modulus         |                                 | Plastic section modulus |                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-------------------|--------------------------------|--------------------------------|-----------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|-------------------------|-----------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness         |                                |                                |                       |                   |                                |                                |                                 |                                 |                         |                 |                            |                            |                                   |                          |
| A mm         | x B mm            |                                |                                |                       |                   |                                |                                |                                 |                                 |                         |                 |                            |                            |                                   |                          |
| M kg/m       | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm     | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>         | cm <sup>3</sup> | m <sup>2</sup> /m          | m                          |                                   |                          |
| 60 x 30      | 1.6               | 2.13                           | 2.712                          | 12.5                  | 4.25              | 2.15                           | 1.25                           | 4.16                            | 2.83                            | 5.19                    | 3.20            | 10.3                       | 4.90                       | 0.175                             | 470                      |
|              | 2.0               | 2.62                           | 3.337                          | 15.1                  | 5.08              | 2.12                           | 1.23                           | 5.02                            | 3.39                            | 6.31                    | 3.89            | 12.6                       | 5.88                       | 0.173                             | 382                      |
|              | 2.5               | 3.21                           | 4.089                          | 17.9                  | 6.00              | 2.09                           | 1.21                           | 5.98                            | 4.00                            | 7.62                    | 4.67            | 15.1                       | 6.98                       | 0.171                             | 312                      |
|              | 3.0               | 3.77                           | 4.808                          | 20.5                  | 6.80              | 2.07                           | 1.19                           | 6.84                            | 4.53                            | 8.82                    | 5.39            | 17.5                       | 7.95                       | 0.170                             | 265                      |
|              | 3.5               | 4.23                           | 5.389                          | 21.8                  | 7.24              | 2.01                           | 1.16                           | 7.27                            | 4.83                            | 9.60                    | 5.88            | 19.5                       | 8.69                       | 0.165                             | 236                      |
|              | 4.0               | 4.72                           | 6.011                          | 23.5                  | 7.75              | 1.98                           | 1.14                           | 7.83                            | 5.17                            | 10.5                    | 6.41            | 21.2                       | 9.37                       | 0.163                             | 212                      |
| 60 x 40      | 1.6               | 2.38                           | 3.032                          | 15.2                  | 8.16              | 2.24                           | 1.64                           | 5.07                            | 4.08                            | 6.12                    | 4.64            | 16.9                       | 6.72                       | 0.195                             | 420                      |
|              | 2.0               | 2.93                           | 3.737                          | 18.4                  | 9.83              | 2.22                           | 1.62                           | 6.14                            | 4.92                            | 7.47                    | 5.65            | 20.7                       | 8.12                       | 0.193                             | 341                      |
|              | 2.5               | 3.60                           | 4.589                          | 22.1                  | 11.7              | 2.19                           | 1.60                           | 7.36                            | 5.87                            | 9.06                    | 6.84            | 25.1                       | 9.72                       | 0.191                             | 278                      |
|              | 3.0               | 4.25                           | 5.408                          | 25.4                  | 13.4              | 2.17                           | 1.58                           | 8.46                            | 6.72                            | 10.5                    | 7.94            | 29.3                       | 11.2                       | 0.190                             | 236                      |
|              | 3.5               | 4.78                           | 6.089                          | 27.4                  | 14.5              | 2.12                           | 1.54                           | 9.14                            | 7.26                            | 11.6                    | 8.75            | 33.1                       | 12.4                       | 0.185                             | 209                      |
|              | 4.0               | 5.35                           | 6.811                          | 29.8                  | 15.7              | 2.09                           | 1.52                           | 9.92                            | 7.86                            | 12.7                    | 9.62            | 36.5                       | 13.5                       | 0.183                             | 187                      |
| 70 x 40      | 1.6               | 2.63                           | 3.352                          | 22.1                  | 9.34              | 2.57                           | 1.67                           | 6.32                            | 4.67                            | 7.72                    | 5.25            | 21.0                       | 7.90                       | 0.215                             | 380                      |
|              | 2.0               | 3.25                           | 4.137                          | 26.9                  | 11.3              | 2.55                           | 1.65                           | 7.67                            | 5.64                            | 9.44                    | 6.41            | 25.7                       | 9.56                       | 0.213                             | 308                      |
|              | 2.5               | 3.99                           | 5.089                          | 32.3                  | 13.5              | 2.52                           | 1.63                           | 9.24                            | 6.75                            | 11.5                    | 7.78            | 31.3                       | 11.5                       | 0.211                             | 250                      |
|              | 3.0               | 4.72                           | 6.008                          | 37.3                  | 15.5              | 2.49                           | 1.61                           | 10.7                            | 7.75                            | 13.4                    | 9.05            | 36.5                       | 13.2                       | 0.210                             | 212                      |
|              | 3.5               | 5.33                           | 6.789                          | 40.6                  | 16.9              | 2.44                           | 1.58                           | 11.6                            | 8.43                            | 14.8                    | 10.0            | 41.3                       | 14.7                       | 0.205                             | 188                      |
|              | 4.0               | 5.97                           | 7.611                          | 44.3                  | 18.3              | 2.41                           | 1.55                           | 12.7                            | 9.17                            | 16.4                    | 11.1            | 45.7                       | 16.1                       | 0.203                             | 167                      |
| 75 x 45      | 1.6               | 2.88                           | 3.672                          | 28.4                  | 12.9              | 2.78                           | 1.88                           | 7.56                            | 5.75                            | 9.16                    | 6.46            | 28.2                       | 9.63                       | 0.235                             | 347                      |
|              | 2.0               | 3.56                           | 4.537                          | 34.5                  | 15.7              | 2.76                           | 1.86                           | 9.20                            | 6.96                            | 11.2                    | 7.90            | 34.6                       | 11.7                       | 0.233                             | 281                      |
|              | 2.5               | 4.39                           | 5.589                          | 41.7                  | 18.8              | 2.73                           | 1.84                           | 11.1                            | 8.37                            | 13.7                    | 9.61            | 42.3                       | 14.1                       | 0.231                             | 228                      |
|              | 3.0               | 5.19                           | 6.608                          | 48.3                  | 21.7              | 2.70                           | 1.81                           | 12.9                            | 9.66                            | 16.0                    | 11.2            | 49.4                       | 16.3                       | 0.230                             | 193                      |
|              | 3.5               | 5.88                           | 7.489                          | 52.9                  | 23.8              | 2.66                           | 1.78                           | 14.1                            | 10.6                            | 17.8                    | 12.5            | 56.3                       | 18.3                       | 0.225                             | 170                      |
|              | 4.0               | 6.60                           | 8.411                          | 58.0                  | 26.0              | 2.63                           | 1.76                           | 15.5                            | 11.6                            | 19.7                    | 13.8            | 62.5                       | 20.1                       | 0.223                             | 151                      |
| 75 x 50      | 5.0               | 7.96                           | 10.14                          | 66.5                  | 29.7              | 2.56                           | 1.71                           | 17.7                            | 13.2                            | 23.1                    | 16.2            | 73.5                       | 23.1                       | 0.219                             | 126                      |
|              | 6.0               | 9.20                           | 11.72                          | 72.9                  | 32.3              | 2.49                           | 1.66                           | 19.5                            | 14.4                            | 26.0                    | 18.1            | 82.4                       | 25.5                       | 0.214                             | 109                      |
|              | 2.0               | 3.72                           | 4.737                          | 37.2                  | 19.9              | 2.80                           | 2.05                           | 9.91                            | 7.96                            | 12.0                    | 9.06            | 41.4                       | 13.1                       | 0.243                             | 269                      |
|              | 2.5               | 4.58                           | 5.839                          | 45.0                  | 24.0              | 2.77                           | 2.03                           | 12.0                            | 9.60                            | 14.6                    | 11.0            | 50.5                       | 15.9                       | 0.241                             | 218                      |
|              | 3.0               | 5.42                           | 6.908                          | 52.2                  | 27.8              | 2.75                           | 2.00                           | 13.9                            | 11.1                            | 17.1                    | 12.9            | 59.3                       | 18.4                       | 0.240                             | 184                      |
|              | 3.5               | 6.15                           | 7.839                          | 57.4                  | 30.5              | 2.70                           | 1.97                           | 15.3                            | 12.2                            | 19.0                    | 14.4            | 67.7                       | 20.6                       | 0.235                             | 162                      |
| 100 x 40     | 4.0               | 6.92                           | 8.811                          | 63.0                  | 33.5              | 2.67                           | 1.95                           | 16.8                            | 13.4                            | 21.1                    | 16.0            | 75.4                       | 22.7                       | 0.233                             | 145                      |
|              | 5.0               | 8.35                           | 10.64                          | 72.7                  | 38.4              | 2.61                           | 1.90                           | 19.4                            | 15.4                            | 24.9                    | 18.8            | 89.1                       | 26.4                       | 0.229                             | 120                      |
|              | 6.0               | 9.67                           | 12.32                          | 80.1                  | 42.1              | 2.55                           | 1.85                           | 21.4                            | 16.9                            | 28.1                    | 21.1            | 101                        | 29.3                       | 0.224                             | 103                      |
|              | 1.6               | 3.38                           | 4.312                          | 53.6                  | 12.9              | 3.52                           | 1.73                           | 10.7                            | 6.44                            | 13.5                    | 7.10            | 33.9                       | 11.4                       | 0.275                             | 295                      |
|              | 2.0               | 4.19                           | 5.337                          | 65.4                  | 15.6              | 3.50                           | 1.71                           | 13.1                            | 7.81                            | 16.5                    | 8.69            | 41.5                       | 13.9                       | 0.273                             | 239                      |
|              | 2.5               | 5.17                           | 6.589                          | 79.3                  | 18.8              | 3.47                           | 1.69                           | 15.9                            | 9.39                            | 20.2                    | 10.6            | 50.5                       | 16.8                       | 0.271                             | 193                      |
| 100 x 50     | 3.0               | 6.13                           | 7.808                          | 92.4                  | 21.7              | 3.44                           | 1.67                           | 18.5                            | 10.8                            | 23.7                    | 12.4            | 59.0                       | 19.4                       | 0.270                             | 163                      |
|              | 3.5               | 6.98                           | 8.889                          | 102                   | 23.9              | 3.38                           | 1.64                           | 20.4                            | 11.9                            | 26.6                    | 13.9            | 67.1                       | 21.7                       | 0.265                             | 143                      |
|              | 2.0               | 4.50                           | 5.737                          | 75.0                  | 25.7              | 3.62                           | 2.12                           | 15.0                            | 10.3                            | 18.5                    | 11.5            | 61.6                       | 17.7                       | 0.293                             | 222                      |
|              | 2.5               | 5.56                           | 7.089                          | 91.2                  | 31.1              | 3.59                           | 2.09                           | 18.2                            | 12.4                            | 22.7                    | 14.0            | 75.4                       | 21.5                       | 0.291                             | 180                      |
|              | 3.0               | 6.60                           | 8.408                          | 106                   | 36.1              | 3.56                           | 2.07                           | 21.3                            | 14.4                            | 26.7                    | 16.4            | 88.6                       | 25.0                       | 0.290                             | 152                      |
|              | 3.5               | 7.53                           | 9.589                          | 118                   | 40.0              | 3.51                           | 2.04                           | 23.6                            | 16.0                            | 29.9                    | 18.5            | 101                        | 28.2                       | 0.285                             | 133                      |
| 125 x 40     | 4.0               | 8.49                           | 10.81                          | 131                   | 44.1              | 3.48                           | 2.02                           | 26.1                            | 17.6                            | 33.4                    | 20.6            | 113                        | 31.2                       | 0.283                             | 118                      |
|              | 5.0               | 10.3                           | 13.14                          | 153                   | 51.1              | 3.41                           | 1.97                           | 30.6                            | 20.4                            | 39.8                    | 24.4            | 135                        | 36.5                       | 0.279                             | 96.9                     |
|              | 6.0               | 12.0                           | 15.32                          | 171                   | 56.7              | 3.34                           | 1.92                           | 34.2                            | 22.7                            | 45.3                    | 27.7            | 153                        | 40.9                       | 0.274                             | 83.1                     |
|              | 1.6               | 4.01                           | 5.112                          | 94.4                  | 15.8              | 4.30                           | 1.76                           | 15.1                            | 7.91                            | 19.4                    | 8.63            | 44.9                       | 14.4                       | 0.325                             | 249                      |
|              | 2.0               | 4.97                           | 6.337                          | 116                   | 19.2              | 4.27                           | 1.74                           | 18.5                            | 9.61                            | 23.8                    | 10.6            | 55.1                       | 17.5                       | 0.323                             | 201                      |
|              | 2.5               | 6.15                           | 7.839                          | 141                   | 23.2              | 4.24                           | 1.72                           | 22.5                            | 11.6                            | 29.3                    | 12.9            | 67.1                       | 21.2                       | 0.321                             | 163                      |
| 125 x 50     | 3.0               | 7.31                           | 9.308                          | 165                   | 26.8              | 4.21                           | 1.70                           | 26.4                            | 13.4                            | 34.4                    | 15.2            | 78.5                       | 24.5                       | 0.320                             | 137                      |
|              | 3.5               | 8.35                           | 10.64                          | 183                   | 29.7              | 4.15                           | 1.67                           | 29.3                            | 14.9                            | 38.8                    | 17.1            | 89.3                       | 27.6                       | 0.315                             | 120                      |
|              | 2.0               | 5.29                           | 6.737                          | 131                   | 31.4              | 4.41                           | 2.16                           | 20.9                            | 12.6                            | 26.3                    | 13.9            | 82.7                       | 22.3                       | 0.343                             | 189                      |
|              | 2.5               | 6.55                           | 8.339                          | 160                   | 38.1              | 4.38                           | 2.14                           | 25.5                            | 15.2                            | 32.3                    | 17.0            | 101                        | 27.1                       | 0.341                             | 153                      |
|              | 3.0               | 7.78                           | 9.908                          | 187                   | 44.4              | 4.34                           | 2.12                           | 29.9                            | 17.7                            | 38.1                    | 20.0            | 119                        | 31.6                       | 0.340                             | 129                      |
|              | 3.5               | 8.90                           | 11.34                          | 209                   | 49.5              | 4.29                           | 2.09                           | 33.4                            | 19.8                            | 43.0                    | 22.5            | 136                        | 35.8                       | 0.335                             | 112                      |
| 125 x 50     | 4.0               | 10.1                           | 12.81                          | 232                   | 54.7              | 4.26                           | 2.07                           | 37.2                            | 21.9                            | 48.2                    | 25.2            | 152                        | 39.7                       | 0.333                             | 99.4                     |
|              | 5.0               | 12.3                           | 15.64                          | 274                   | 63.8              | 4.19                           | 2.02                           | 43.9                            | 25.5                            | 57.7                    | 30.0            | 182                        | 46.7                       | 0.329                             | 81.4                     |
|              | 6.0               | 14.4                           | 18.32                          | 310                   | 71.4              | 4.11                           | 1.97                           | 49.6                            | 28.5                            | 66.4                    | 34.3            | 208                        | 52.6                       | 0.324                             | 69.5                     |

Section properties    Rectangular : 102 mm x 76 mm to 175 mm x 125 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 102 x 76     | 3.5       | 9.07   | 11.55             | 168                            | 107                            | 3.82               | 3.05              | 33.0                           | 28.2                           | 39.9                            | 32.6                            | 214                        | 46.1                       | 0.341                             | 110                      |
|              | 4.0       | 10.2   | 13.05             | 187                            | 119                            | 3.79               | 3.02              | 36.8                           | 31.3                           | 44.7                            | 36.6                            | 241                        | 51.4                       | 0.339                             | 97.6                     |
|              | 5.0       | 12.5   | 15.94             | 222                            | 141                            | 3.73               | 2.97              | 43.6                           | 37.0                           | 53.7                            | 43.9                            | 291                        | 61.2                       | 0.335                             | 79.9                     |
|              | 6.0       | 14.7   | 18.68             | 252                            | 159                            | 3.67               | 2.92              | 49.5                           | 42.0                           | 61.9                            | 50.5                            | 338                        | 69.8                       | 0.330                             | 68.2                     |
| 127 x 51     | 3.5       | 9.07   | 11.55             | 220                            | 52.6                           | 4.37               | 2.13              | 34.7                           | 20.6                           | 44.6                            | 23.4                            | 144                        | 37.2                       | 0.341                             | 110                      |
|              | 4.0       | 10.2   | 13.05             | 245                            | 58.1                           | 4.33               | 2.11              | 38.6                           | 22.8                           | 50.0                            | 26.2                            | 161                        | 41.3                       | 0.339                             | 97.6                     |
|              | 5.0       | 12.5   | 15.94             | 290                            | 67.9                           | 4.26               | 2.06              | 45.6                           | 26.6                           | 59.9                            | 31.3                            | 193                        | 48.6                       | 0.335                             | 79.9                     |
|              | 6.0       | 14.7   | 18.68             | 328                            | 76.1                           | 4.19               | 2.02              | 51.6                           | 29.8                           | 68.9                            | 35.8                            | 220                        | 54.9                       | 0.330                             | 68.2                     |
| 125 x 75     | 2.0       | 6.07   | 7.737             | 169                            | 77.1                           | 4.67               | 3.16              | 27.0                           | 20.6                           | 32.5                            | 22.9                            | 167                        | 34.4                       | 0.393                             | 165                      |
|              | 2.5       | 7.53   | 9.589             | 207                            | 94.2                           | 4.64               | 3.14              | 33.0                           | 25.1                           | 40.0                            | 28.2                            | 205                        | 42.1                       | 0.391                             | 133                      |
|              | 3.0       | 8.96   | 11.41             | 243                            | 111                            | 4.61               | 3.11              | 38.9                           | 29.5                           | 47.3                            | 33.3                            | 243                        | 49.5                       | 0.390                             | 112                      |
|              | 3.5       | 10.3   | 13.09             | 273                            | 124                            | 4.57               | 3.08              | 43.8                           | 33.2                           | 53.6                            | 37.8                            | 280                        | 56.4                       | 0.385                             | 97.3                     |
|              | 4.0       | 11.6   | 14.81             | 305                            | 139                            | 4.54               | 3.06              | 48.9                           | 37.0                           | 60.3                            | 42.4                            | 316                        | 63.0                       | 0.383                             | 86.0                     |
|              | 5.0       | 14.2   | 18.14             | 364                            | 165                            | 4.48               | 3.01              | 58.3                           | 43.9                           | 72.7                            | 51.1                            | 383                        | 75.3                       | 0.379                             | 70.2                     |
|              | 6.0       | 16.7   | 21.32             | 416                            | 187                            | 4.42               | 2.96              | 66.6                           | 50.0                           | 84.2                            | 59.1                            | 444                        | 86.2                       | 0.374                             | 59.7                     |
|              | 8.0       | 21.4   | 27.24             | 502                            | 224                            | 4.29               | 2.87              | 80.2                           | 59.7                           | 104                             | 72.9                            | 551                        | 105                        | 0.366                             | 46.8                     |
| 150 x 50     | 2.0       | 6.07   | 7.737             | 208                            | 37.2                           | 5.18               | 2.19              | 27.7                           | 14.9                           | 35.3                            | 16.3                            | 104                        | 26.9                       | 0.393                             | 165                      |
|              | 2.5       | 7.53   | 9.589             | 254                            | 45.2                           | 5.15               | 2.17              | 33.9                           | 18.1                           | 43.5                            | 19.9                            | 128                        | 32.8                       | 0.391                             | 133                      |
|              | 3.0       | 8.96   | 11.41             | 299                            | 52.6                           | 5.12               | 2.15              | 39.8                           | 21.1                           | 51.4                            | 23.5                            | 150                        | 38.3                       | 0.390                             | 112                      |
|              | 3.5       | 10.3   | 13.09             | 335                            | 59.0                           | 5.06               | 2.12              | 44.7                           | 23.6                           | 58.3                            | 26.6                            | 172                        | 43.3                       | 0.385                             | 97.3                     |
|              | 4.0       | 11.6   | 14.81             | 374                            | 65.3                           | 5.02               | 2.10              | 49.8                           | 26.1                           | 65.4                            | 29.8                            | 193                        | 48.2                       | 0.383                             | 86.0                     |
|              | 5.0       | 14.2   | 18.14             | 444                            | 76.5                           | 4.95               | 2.05              | 59.2                           | 30.6                           | 78.9                            | 35.7                            | 230                        | 56.8                       | 0.379                             | 70.2                     |
| 150 x 75     | 6.0       | 16.7   | 21.32             | 506                            | 86.0                           | 4.87               | 2.01              | 67.5                           | 34.4                           | 91.2                            | 40.9                            | 263                        | 64.3                       | 0.374                             | 59.7                     |
|              | 3.0       | 10.1   | 12.91             | 380                            | 130                            | 5.42               | 3.17              | 50.6                           | 34.7                           | 62.5                            | 38.7                            | 312                        | 59.8                       | 0.440                             | 98.7                     |
|              | 3.5       | 11.6   | 14.84             | 429                            | 147                            | 5.38               | 3.15              | 57.2                           | 39.2                           | 71.1                            | 44.1                            | 360                        | 68.3                       | 0.435                             | 85.8                     |
|              | 4.0       | 13.2   | 16.81             | 480                            | 164                            | 5.35               | 3.12              | 64.0                           | 43.7                           | 80.0                            | 49.5                            | 406                        | 76.4                       | 0.433                             | 75.8                     |
|              | 5.0       | 16.2   | 20.64             | 576                            | 195                            | 5.28               | 3.08              | 76.8                           | 52.1                           | 97.0                            | 59.9                            | 492                        | 91.6                       | 0.429                             | 61.7                     |
|              | 6.0       | 19.1   | 24.32             | 662                            | 223                            | 5.22               | 3.03              | 88.2                           | 59.5                           | 113                             | 69.5                            | 573                        | 105                        | 0.424                             | 52.4                     |
|              | 8.0       | 24.5   | 31.24             | 807                            | 269                            | 5.08               | 2.93              | 108                            | 71.7                           | 141                             | 86.3                            | 714                        | 129                        | 0.416                             | 40.8                     |
|              | 9.0       | 27.1   | 34.48             | 866                            | 287                            | 5.01               | 2.89              | 116                            | 76.6                           | 153                             | 93.6                            | 775                        | 138                        | 0.411                             | 36.9                     |
| 152 x 76     | 5.0       | 16.4   | 20.94             | 601                            | 204                            | 5.36               | 3.12              | 79.0                           | 53.7                           | 99.8                            | 61.6                            | 513                        | 94.3                       | 0.435                             | 60.8                     |
|              | 6.0       | 19.4   | 24.68             | 691                            | 233                            | 5.29               | 3.07              | 90.9                           | 61.4                           | 116                             | 71.5                            | 598                        | 108                        | 0.430                             | 51.6                     |
| 150 x 80     | 3.0       | 10.4   | 13.21             | 396                            | 150                            | 5.47               | 3.37              | 52.8                           | 37.5                           | 64.7                            | 41.9                            | 349                        | 64.1                       | 0.450                             | 96.4                     |
|              | 3.5       | 11.9   | 15.19             | 448                            | 170                            | 5.43               | 3.34              | 59.7                           | 42.5                           | 73.7                            | 47.8                            | 403                        | 73.3                       | 0.445                             | 83.9                     |
|              | 4.0       | 13.5   | 17.21             | 502                            | 190                            | 5.40               | 3.32              | 66.9                           | 47.4                           | 83.0                            | 53.8                            | 454                        | 82.1                       | 0.443                             | 74.0                     |
|              | 5.0       | 16.6   | 21.14             | 602                            | 227                            | 5.34               | 3.27              | 80.3                           | 56.6                           | 101                             | 65.1                            | 552                        | 98.6                       | 0.439                             | 60.3                     |
| 150 x 100    | 6.0       | 19.6   | 24.92             | 693                            | 259                            | 5.27               | 3.23              | 92.4                           | 64.9                           | 117                             | 75.6                            | 644                        | 114                        | 0.434                             | 51.1                     |
|              | 3.0       | 11.3   | 14.41             | 461                            | 248                            | 5.65               | 4.15              | 61.4                           | 49.5                           | 73.5                            | 55.8                            | 507                        | 81.4                       | 0.490                             | 88.4                     |
|              | 3.5       | 13.0   | 16.59             | 523                            | 281                            | 5.61               | 4.12              | 69.7                           | 56.2                           | 83.9                            | 63.7                            | 588                        | 93.3                       | 0.485                             | 76.8                     |
|              | 4.0       | 14.8   | 18.81             | 587                            | 315                            | 5.59               | 4.09              | 78.3                           | 63.0                           | 94.6                            | 71.8                            | 664                        | 105                        | 0.483                             | 67.7                     |
|              | 5.0       | 18.2   | 23.14             | 707                            | 379                            | 5.53               | 4.04              | 94.3                           | 75.7                           | 115                             | 87.3                            | 812                        | 127                        | 0.479                             | 55.0                     |
|              | 6.0       | 21.4   | 27.32             | 817                            | 436                            | 5.47               | 4.00              | 109                            | 87.3                           | 134                             | 102                             | 951                        | 147                        | 0.474                             | 46.6                     |
|              | 8.0       | 27.7   | 35.24             | 1,010                          | 536                            | 5.35               | 3.90              | 134                            | 107                            | 169                             | 128                             | 1,210                      | 182                        | 0.466                             | 36.1                     |
|              | 9.0       | 30.6   | 38.98             | 1,090                          | 577                            | 5.29               | 3.85              | 145                            | 115                            | 185                             | 140                             | 1,320                      | 197                        | 0.461                             | 32.7                     |
| 175 x 125    | 10.0      | 33.4   | 42.57             | 1,160                          | 614                            | 5.23               | 3.80              | 155                            | 123                            | 199                             | 150                             | 1,430                      | 211                        | 0.457                             | 29.9                     |
|              | 12.0      | 38.7   | 49.30             | 1,280                          | 674                            | 5.10               | 3.70              | 171                            | 135                            | 224                             | 169                             | 1,610                      | 234                        | 0.448                             | 25.8                     |
|              | 12.5      | 39.9   | 50.89             | 1,310                          | 686                            | 5.07               | 3.67              | 174                            | 137                            | 230                             | 173                             | 1,650                      | 239                        | 0.446                             | 25.0                     |
|              | 4.0       | 17.9   | 22.81             | 1,000                          | 598                            | 6.62               | 5.12              | 114                            | 95.7                           | 136                             | 109                             | 1,200                      | 157                        | 0.583                             | 55.8                     |
|              | 5.0       | 22.1   | 28.14             | 1,210                          | 724                            | 6.57               | 5.07              | 139                            | 116                            | 167                             | 133                             | 1,470                      | 190                        | 0.579                             | 45.3                     |
|              | 6.0       | 26.2   | 33.32             | 1,410                          | 841                            | 6.51               | 5.02              | 161                            | 135                            | 196                             | 156                             | 1,730                      | 222                        | 0.574                             | 38.2                     |
| 175 x 125    | 8.0       | 33.9   | 43.24             | 1,770                          | 1,050                          | 6.39               | 4.93              | 202                            | 168                            | 249                             | 198                             | 2,220                      | 279                        | 0.566                             | 29.5                     |
|              | 9.0       | 37.7   | 47.98             | 1,930                          | 1,140                          | 6.34               | 4.88              | 220                            | 183                            | 274                             | 217                             | 2,450                      | 305                        | 0.561                             | 26.6                     |
|              | 10.0      | 41.3   | 52.57             | 2,070                          | 1,220                          | 6.28               | 4.83              | 237                            | 196                            | 297                             | 235                             | 2,660                      | 329                        | 0.557                             | 24.2                     |
|              | 12.0      | 48.1   | 61.30             | 2,320                          | 1,370                          | 6.15               | 4.73              | 265                            | 219                            | 339                             | 268                             | 3,050                      | 371                        | 0.548                             | 20.8                     |



Section properties    Rectangular : 200 mm x 100 mm to 350 mm x 150 mm

| Dimensions     |           | Mass      | Area                 | Second moment of area             |                                   | Radius of gyration   |                      | Elastic section modulus           |                                   | Plastic section modulus            |                                    | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|----------------|-----------|-----------|----------------------|-----------------------------------|-----------------------------------|----------------------|----------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size   | Thickness |           |                      |                                   |                                   |                      |                      |                                   |                                   |                                    |                                    |                            |                            |                                   |                          |
| A x B<br>mm mm | t<br>mm   | M<br>kg/m | A<br>cm <sup>2</sup> | I <sub>x</sub><br>cm <sup>4</sup> | I <sub>y</sub><br>cm <sup>4</sup> | i <sub>x</sub><br>cm | i <sub>y</sub><br>cm | Z <sub>x</sub><br>cm <sup>3</sup> | Z <sub>y</sub><br>cm <sup>3</sup> | Z <sub>px</sub><br>cm <sup>3</sup> | Z <sub>py</sub><br>cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 200 x 100      | 4.0       | 17.9      | 22.81                | 1,190                             | 407                               | 7.21                 | 4.23                 | 119                               | 81.5                              | 147                                | 91                                 | 989                        | 142                        | 0.583                             | 55.8                     |
|                | 5.0       | 22.1      | 28.14                | 1,440                             | 492                               | 7.15                 | 4.18                 | 144                               | 98.3                              | 179                                | 111                                | 1,210                      | 172                        | 0.579                             | 45.3                     |
|                | 6.0       | 26.2      | 33.32                | 1,670                             | 569                               | 7.08                 | 4.13                 | 167                               | 114                               | 210                                | 130                                | 1,420                      | 200                        | 0.574                             | 38.2                     |
|                | 8.0       | 33.9      | 43.24                | 2,090                             | 705                               | 6.95                 | 4.04                 | 209                               | 141                               | 267                                | 165                                | 1,810                      | 250                        | 0.566                             | 29.5                     |
|                | 9.0       | 37.7      | 47.98                | 2,280                             | 764                               | 6.89                 | 3.99                 | 228                               | 153                               | 293                                | 180                                | 1,990                      | 272                        | 0.561                             | 26.6                     |
| 200 x 150      | 4.0       | 21.0      | 26.81                | 1,570                             | 1,010                             | 7.65                 | 6.15                 | 157                               | 135                               | 186                                | 153                                | 1,950                      | 218                        | 0.683                             | 47.5                     |
|                | 5.0       | 26.0      | 33.14                | 1,910                             | 1,230                             | 7.60                 | 6.10                 | 191                               | 164                               | 228                                | 188                                | 2,400                      | 267                        | 0.679                             | 38.4                     |
|                | 6.0       | 30.9      | 39.32                | 2,240                             | 1,440                             | 7.54                 | 6.05                 | 224                               | 192                               | 268                                | 221                                | 2,840                      | 312                        | 0.674                             | 32.4                     |
|                | 8.0       | 40.2      | 51.24                | 2,830                             | 1,820                             | 7.43                 | 5.95                 | 283                               | 242                               | 344                                | 283                                | 3,660                      | 396                        | 0.666                             | 24.9                     |
|                | 9.0       | 44.7      | 56.98                | 3,100                             | 1,990                             | 7.37                 | 5.90                 | 310                               | 265                               | 379                                | 312                                | 4,050                      | 435                        | 0.661                             | 22.4                     |
|                | 10.0      | 49.1      | 62.57                | 3,350                             | 2,140                             | 7.32                 | 5.85                 | 335                               | 286                               | 413                                | 339                                | 4,430                      | 471                        | 0.657                             | 20.4                     |
|                | 12.0      | 57.5      | 73.30                | 3,800                             | 2,430                             | 7.20                 | 5.75                 | 380                               | 323                               | 476                                | 390                                | 5,130                      | 538                        | 0.648                             | 17.4                     |
| 250 x 100      | 12.5      | 59.6      | 75.89                | 3,900                             | 2,490                             | 7.17                 | 5.73                 | 390                               | 332                               | 490                                | 402                                | 5,290                      | 553                        | 0.646                             | 16.8                     |
|                | 5.0       | 26.0      | 33.14                | 2,520                             | 604                               | 8.72                 | 4.27                 | 202                               | 121                               | 256                                | 135                                | 1,630                      | 217                        | 0.679                             | 38.4                     |
|                | 6.0       | 30.9      | 39.32                | 2,940                             | 702                               | 8.65                 | 4.22                 | 236                               | 140                               | 301                                | 158                                | 1,910                      | 253                        | 0.674                             | 32.4                     |
|                | 8.0       | 40.2      | 51.24                | 3,720                             | 875                               | 8.52                 | 4.13                 | 297                               | 175                               | 385                                | 201                                | 2,440                      | 317                        | 0.666                             | 24.9                     |
|                | 9.0       | 44.7      | 56.98                | 4,060                             | 951                               | 8.44                 | 4.09                 | 325                               | 190                               | 425                                | 221                                | 2,680                      | 346                        | 0.661                             | 22.4                     |
|                | 10.0      | 49.1      | 62.57                | 4,390                             | 1,020                             | 8.37                 | 4.04                 | 351                               | 204                               | 462                                | 240                                | 2,910                      | 373                        | 0.657                             | 20.4                     |
|                | 12.0      | 57.5      | 73.30                | 4,960                             | 1,140                             | 8.23                 | 3.95                 | 397                               | 228                               | 531                                | 275                                | 3,320                      | 421                        | 0.648                             | 17.4                     |
| 225 x 175      | 4.0       | 24.2      | 30.81                | 2,320                             | 1,590                             | 8.68                 | 7.17                 | 206                               | 181                               | 243                                | 205                                | 2,960                      | 290                        | 0.783                             | 41.3                     |
|                | 5.0       | 29.9      | 38.14                | 2,840                             | 1,940                             | 8.63                 | 7.12                 | 252                               | 221                               | 298                                | 252                                | 3,650                      | 355                        | 0.779                             | 33.4                     |
|                | 6.0       | 35.6      | 45.32                | 3,330                             | 2,270                             | 8.57                 | 7.08                 | 296                               | 259                               | 352                                | 297                                | 4,330                      | 418                        | 0.774                             | 28.1                     |
| 250 x 150      | 4.0       | 24.2      | 30.81                | 2,680                             | 1,230                             | 9.32                 | 6.31                 | 214                               | 164                               | 258                                | 182                                | 2,670                      | 275                        | 0.783                             | 41.3                     |
|                | 5.0       | 29.9      | 38.14                | 3,270                             | 1,500                             | 9.26                 | 6.26                 | 262                               | 199                               | 317                                | 224                                | 3,300                      | 337                        | 0.779                             | 33.4                     |
|                | 6.0       | 35.6      | 45.32                | 3,840                             | 1,750                             | 9.20                 | 6.22                 | 307                               | 233                               | 374                                | 264                                | 3,900                      | 395                        | 0.774                             | 28.1                     |
|                | 8.0       | 46.5      | 59.24                | 4,890                             | 2,220                             | 9.08                 | 6.12                 | 391                               | 296                               | 482                                | 340                                | 5,050                      | 504                        | 0.766                             | 21.5                     |
|                | 9.0       | 51.8      | 65.98                | 5,370                             | 2,430                             | 9.02                 | 6.07                 | 430                               | 324                               | 533                                | 375                                | 5,600                      | 554                        | 0.761                             | 19.3                     |
|                | 10.0      | 57.0      | 72.57                | 5,830                             | 2,630                             | 8.96                 | 6.02                 | 466                               | 351                               | 582                                | 409                                | 6,120                      | 602                        | 0.757                             | 17.6                     |
|                | 12.0      | 67.0      | 85.30                | 6,660                             | 3,000                             | 8.84                 | 5.93                 | 533                               | 400                               | 674                                | 473                                | 7,110                      | 690                        | 0.748                             | 14.9                     |
| 300 x 100      | 12.5      | 69.4      | 88.39                | 6,850                             | 3,080                             | 8.81                 | 5.90                 | 548                               | 411                               | 695                                | 488                                | 7,340                      | 710                        | 0.746                             | 14.4                     |
|                | 4.0       | 24.2      | 30.81                | 3,290                             | 592                               | 10.3                 | 4.38                 | 219                               | 118                               | 281                                | 129                                | 1,670                      | 215                        | 0.783                             | 41.3                     |
|                | 5.0       | 29.9      | 38.14                | 4,020                             | 717                               | 10.3                 | 4.34                 | 268                               | 143                               | 345                                | 159                                | 2,050                      | 262                        | 0.779                             | 33.4                     |
|                | 6.0       | 35.6      | 45.32                | 4,710                             | 835                               | 10.2                 | 4.29                 | 314                               | 167                               | 407                                | 186                                | 2,410                      | 306                        | 0.774                             | 28.1                     |
|                | 8.0       | 46.5      | 59.24                | 5,980                             | 1,040                             | 10.0                 | 4.20                 | 399                               | 209                               | 523                                | 238                                | 3,080                      | 385                        | 0.766                             | 21.5                     |
|                | 9.0       | 51.8      | 65.98                | 6,560                             | 1,140                             | 9.97                 | 4.15                 | 437                               | 228                               | 578                                | 262                                | 3,390                      | 421                        | 0.761                             | 19.3                     |
|                | 12.0      | 67.0      | 85.30                | 7,600                             | 1,330                             | 9.80                 | 4.04                 | 500                               | 264                               | 674                                | 317                                | 4,000                      | 495                        | 0.748                             | 14.9                     |
| 250 x 200      | 12.5      | 69.4      | 88.39                | 6,850                             | 3,080                             | 8.81                 | 5.90                 | 548                               | 411                               | 695                                | 488                                | 7,340                      | 710                        | 0.746                             | 14.4                     |
|                | 6.0       | 40.3      | 51.32                | 4,730                             | 3,370                             | 9.60                 | 8.10                 | 378                               | 337                               | 447                                | 385                                | 6,260                      | 538                        | 0.874                             | 24.8                     |
|                | 8.0       | 52.8      | 67.24                | 6,060                             | 4,300                             | 9.49                 | 8.00                 | 485                               | 430                               | 579                                | 498                                | 8,160                      | 691                        | 0.866                             | 18.9                     |
|                | 9.0       | 58.9      | 74.98                | 6,680                             | 4,740                             | 9.44                 | 7.95                 | 534                               | 474                               | 642                                | 551                                | 9,070                      | 763                        | 0.861                             | 17.0                     |
|                | 10.0      | 64.8      | 82.57                | 7,270                             | 5,150                             | 9.38                 | 7.90                 | 581                               | 515                               | 702                                | 603                                | 9,950                      | 832                        | 0.857                             | 15.4                     |
| 300 x 150      | 12.0      | 76.4      | 97.30                | 8,360                             | 5,920                             | 9.27                 | 7.80                 | 669                               | 592                               | 817                                | 701                                | 11,600                     | 961                        | 0.848                             | 13.1                     |
|                | 12.5      | 79.2      | 100.9                | 8,620                             | 6,100                             | 9.24                 | 7.78                 | 689                               | 610                               | 844                                | 725                                | 12,000                     | 991                        | 0.846                             | 12.6                     |
|                | 6.0       | 40.3      | 51.32                | 6,000                             | 2,060                             | 10.8                 | 6.34                 | 400                               | 275                               | 495                                | 307                                | 5,010                      | 478                        | 0.874                             | 24.8                     |
|                | 8.0       | 52.8      | 67.24                | 7,680                             | 2,620                             | 10.7                 | 6.25                 | 512                               | 350                               | 640                                | 396                                | 6,490                      | 612                        | 0.866                             | 18.9                     |
|                | 9.0       | 58.9      | 74.98                | 8,470                             | 2,880                             | 10.6                 | 6.20                 | 564                               | 384                               | 709                                | 439                                | 7,200                      | 674                        | 0.861                             | 17.0                     |
| 300 x 200      | 10.0      | 64.8      | 82.57                | 9,210                             | 3,130                             | 10.6                 | 6.15                 | 614                               | 417                               | 776                                | 479                                | 7,880                      | 733                        | 0.857                             | 15.4                     |
|                | 12.0      | 76.4      | 97.30                | 10,600                            | 3,570                             | 10.4                 | 6.06                 | 706                               | 476                               | 902                                | 556                                | 9,170                      | 842                        | 0.848                             | 13.1                     |
|                | 12.5      | 79.2      | 100.9                | 10,900                            | 3,670                             | 10.4                 | 6.03                 | 727                               | 490                               | 932                                | 574                                | 9,470                      | 868                        | 0.846                             | 12.6                     |
|                | 6.0       | 45.0      | 57.32                | 7,300                             | 3,930                             | 11.3                 | 8.28                 | 487                               | 393                               | 583                                | 443                                | 8,140                      | 651                        | 0.974                             | 22.2                     |
|                | 8.0       | 59.1      | 75.24                | 9,390                             | 5,040                             | 11.2                 | 8.19                 | 626                               | 504                               | 757                                | 574                                | 10,600                     | 838                        | 0.966                             | 16.9                     |
| 350 x 150      | 9.0       | 65.9      | 83.98                | 10,400                            | 5,560                             | 11.1                 | 8.14                 | 692                               | 556                               | 840                                | 637                                | 11,800                     | 927                        | 0.961                             | 15.2                     |
|                | 10.0      | 72.7      | 92.57                | 11,300                            | 6,060                             | 11.1                 | 8.09                 | 754                               | 606                               | 921                                | 698                                | 13,000                     | 1,010                      | 0.957                             | 13.8                     |
|                | 12.0      | 85.8      | 109.3                | 13,100                            | 6,980                             | 10.9                 | 7.99                 | 872                               | 698                               | 1,070                              | 814                                | 15,200                     | 1,170                      | 0.948                             | 11.7                     |
|                | 12.5      | 89.0      | 113.4                | 13,500                            | 7,200                             | 10.9                 | 7.97                 | 900                               | 720                               | 1,110                              | 842                                | 15,800                     | 1,210                      | 0.946                             | 11.2                     |
|                | 6.0       | 45.0      | 57.32                | 8,810                             | 2,370                             | 12.4                 | 6.43                 | 504                               | 316                               | 631                                | 350                                | 6,140                      | 561                        | 0.974                             | 22.2                     |
| 350 x 150      | 8.0       | 59.1      | 75.24                | 11,300                            | 3,030                             | 12.3                 | 6.34                 | 647                               | 404                               | 818                                | 453                                | 7,970                      | 719                        | 0.966                             | 16.9                     |
|                | 9.0       | 65.9      | 83.98                | 12,500                            | 3,330                             | 12.2                 | 6.30                 | 714                               | 444                               | 908                                | 502                                | 8,840                      | 793                        | 0.961                             | 15.2                     |
|                | 10.0      | 72.7      | 92.57                | 13,600                            | 3,620                             | 12.1                 | 6.25                 | 779                               | 482                               | 995                                | 549                                | 9,680                      | 864                        | 0.957                             | 13.8                     |
|                | 12.0      | 85.8      | 109.3                | 15,700                            | 4,140                             | 12.0                 | 6.16                 | 899                               | 552                               | 1,160                              | 638                                | 11,300                     | 995                        | 0.948                             | 11.7                     |
|                | 12.5      | 89.0      | 113.4                | 16,200                            | 4,270                             | 12.0                 | 6.13                 | 927                               | 569                               | 1,200                              | 660                                | 11,700                     | 1,030                      | 0.946                             | 11.2                     |

Section properties    Rectangular : 350 mm x 250 mm to 600 mm x 300 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A mm         | x B mm    | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 350 x 250    | 6.0       | 54.4   | 69.32             | 12,400                         | 7,410                          | 13.4               | 10.3              | 706                            | 593                            | 837                             | 667                             | 14,600                     | 966                        | 1.17                              | 18.4                     |
|              | 8.0       | 71.6   | 91.24             | 16,000                         | 9,570                          | 13.2               | 10.2              | 914                            | 766                            | 1,090                           | 869                             | 19,100                     | 1,250                      | 1.17                              | 14.0                     |
|              | 9.0       | 80.1   | 102.0             | 17,700                         | 10,600                         | 13.2               | 10.2              | 1,010                          | 848                            | 1,210                           | 967                             | 21,300                     | 1,390                      | 1.16                              | 12.5                     |
|              | 10.0      | 88.4   | 112.6             | 19,400                         | 11,600                         | 13.1               | 10.1              | 1,110                          | 927                            | 1,330                           | 1,060                           | 23,500                     | 1,520                      | 1.16                              | 11.3                     |
|              | 12.0      | 105    | 133.3             | 22,600                         | 13,500                         | 13.0               | 10.0              | 1,290                          | 1,080                          | 1,570                           | 1,240                           | 27,700                     | 1,780                      | 1.15                              | 9.56                     |
|              | 12.5      | 109    | 138.4             | 23,300                         | 13,900                         | 13.0               | 10.0              | 1,330                          | 1,110                          | 1,620                           | 1,290                           | 28,700                     | 1,840                      | 1.15                              | 9.21                     |
|              | 16.0      | 136    | 173.0             | 28,300                         | 16,800                         | 12.8               | 9.85              | 1,620                          | 1,340                          | 1,990                           | 1,580                           | 35,500                     | 2,230                      | 1.13                              | 7.36                     |
| 400 x 200    | 6.0       | 54.4   | 69.32             | 14,700                         | 5,060                          | 14.5               | 8.54              | 733                            | 506                            | 900                             | 559                             | 12,100                     | 877                        | 1.17                              | 18.4                     |
|              | 8.0       | 71.6   | 91.24             | 19,000                         | 6,520                          | 14.4               | 8.45              | 949                            | 652                            | 1,170                           | 728                             | 15,800                     | 1,130                      | 1.17                              | 14.0                     |
|              | 9.0       | 80.1   | 102.0             | 21,000                         | 7,200                          | 14.4               | 8.40              | 1,050                          | 720                            | 1,310                           | 809                             | 17,600                     | 1,260                      | 1.16                              | 12.5                     |
|              | 10.0      | 88.4   | 112.6             | 23,000                         | 7,860                          | 14.3               | 8.36              | 1,150                          | 786                            | 1,430                           | 888                             | 19,400                     | 1,370                      | 1.16                              | 11.3                     |
|              | 12.0      | 105    | 133.3             | 26,800                         | 9,110                          | 14.2               | 8.27              | 1,340                          | 911                            | 1,680                           | 1,040                           | 22,700                     | 1,600                      | 1.15                              | 9.56                     |
| 400 x 300    | 12.5      | 109    | 138.4             | 27,700                         | 9,400                          | 14.1               | 8.24              | 1,380                          | 940                            | 1,740                           | 1,080                           | 23,600                     | 1,650                      | 1.15                              | 9.21                     |
|              | 9.0       | 94.2   | 120.0             | 27,900                         | 18,000                         | 15.3               | 12.2              | 1,400                          | 1,200                          | 1,660                           | 1,360                           | 34,800                     | 1,940                      | 1.36                              | 10.6                     |
|              | 10.0      | 104    | 132.6             | 30,600                         | 19,700                         | 15.2               | 12.2              | 1,530                          | 1,320                          | 1,820                           | 1,500                           | 38,400                     | 2,130                      | 1.36                              | 9.61                     |
|              | 12.0      | 123    | 157.3             | 35,800                         | 23,000                         | 15.1               | 12.1              | 1,790                          | 1,540                          | 2,150                           | 1,770                           | 45,400                     | 2,500                      | 1.35                              | 8.10                     |
|              | 12.5      | 128    | 163.4             | 37,000                         | 23,800                         | 15.1               | 12.1              | 1,850                          | 1,590                          | 2,230                           | 1,830                           | 47,100                     | 2,590                      | 1.35                              | 7.80                     |
| 500 x 300    | 16.0      | 161    | 205.0             | 45,300                         | 29,000                         | 14.9               | 11.9              | 2,260                          | 1,940                          | 2,750                           | 2,260                           | 58,600                     | 3,170                      | 1.33                              | 6.21                     |
|              | 12.0      | 142    | 181.3             | 61,400                         | 28,000                         | 18.4               | 12.4              | 2,460                          | 1,870                          | 2,990                           | 2,110                           | 62,400                     | 3,160                      | 1.55                              | 7.03                     |
|              | 12.5      | 148    | 188.4             | 63,600                         | 29,000                         | 18.4               | 12.4              | 2,540                          | 1,930                          | 3,100                           | 2,190                           | 64,800                     | 3,270                      | 1.55                              | 6.76                     |
|              | 16.0      | 186    | 237.0             | 78,200                         | 35,500                         | 18.2               | 12.2              | 3,130                          | 2,370                          | 3,860                           | 2,720                           | 80,800                     | 4,030                      | 1.53                              | 5.38                     |
| 600 x 300    | 12.0      | 161    | 205.3             | 96,100                         | 33,000                         | 21.6               | 12.7              | 3,200                          | 2,200                          | 3,960                           | 2,460                           | 80,100                     | 3,820                      | 1.75                              | 6.21                     |
|              | 12.5      | 168    | 213.4             | 99,600                         | 34,200                         | 21.6               | 12.7              | 3,320                          | 2,280                          | 4,110                           | 2,550                           | 83,100                     | 3,960                      | 1.75                              | 5.97                     |
|              | 16.0      | 211    | 269.0             | 123,000                        | 42,000                         | 21.4               | 12.5              | 4,100                          | 2,800                          | 5,120                           | 3,170                           | 104,000                    | 4,890                      | 1.73                              | 4.74                     |
|              | 19.0      | 247    | 315.2             | 142,000                        | 48,100                         | 21.2               | 12.4              | 4,720                          | 3,210                          | 5,940                           | 3,670                           | 121,000                    | 5,630                      | 1.72                              | 4.04                     |

JIS G 3466 “Carbon steel square and rectangular tubes for general structure”

Mechanical properties and chemical composition

Refer to page 7-8.

Tolerances

The tolerances on dimensions are established in accordance with standard JIS G 3466.

| Characteristics                              |  | Tolerances                            |                   |  |
|----------------------------------------------|--|---------------------------------------|-------------------|--|
| Outside dimensions of side                   |  | (H,B≤100mm)                           | ±1.5mm            |  |
| H : Longest side                             |  | (100mm<H,B)                           | ±1.5%             |  |
| B : Shortest side                            |  |                                       |                   |  |
| Wall thickness(T)                            |  | (T<3mm)                               | ±0.3mm            |  |
|                                              |  | (3mm≤T)                               | ±10% in thickness |  |
| Unevenness of the flat portions of each side |  | (H,B≤100mm)                           | ±0.5mm            |  |
|                                              |  | (100mm<H,B)                           | ±0.5%             |  |
| Squareness of sides                          |  | 90°±1.5°                              |                   |  |
| Corner dimension(S)                          |  | S≤3T                                  |                   |  |
| Straightness                                 |  | 0.3% in total length                  |                   |  |
| Length                                       |  | 0, +50mm (Private standard tolerance) |                   |  |

NOTE

1)The outside dimensions are measured across the flats at positions at least 50mm from the end of the HSS.

Packing

In bare bundle (steel banded) or in bulk. Standard lengths are 6, 8 and 12 meter.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.

- a)Manufacturer's Name b)Standard & Grade c)Size d)Manufacturing Date e)Heat No.  
f)Country of Origin

Inspection and Testing

JIS G 3466 is subject to tensile testing in accordance with JIS Z 2241.

The general matters of inspection shall be in accordance with JIS G 0404.

If you need additional requirements, please consult us.

Available size range

Dimensions (mm-size)

| Size(mm)  |             | Wall thickness(mm) |     |     |     |     |     |      |      |      |      |
|-----------|-------------|--------------------|-----|-----|-----|-----|-----|------|------|------|------|
| SQUARE    | RECTANGULAR | 1.6                | 2.3 | 3.2 | 4.5 | 6.0 | 9.0 | 12.0 | 16.0 | 19.0 | 22.0 |
|           | 60 x 30     | ●▲                 | ●▲  | ●▲  | ●   |     |     |      |      |      |      |
| 50 x 50   |             | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 60 x 40     | ●▲                 | ●▲  | ●▲  |     |     |     |      |      |      |      |
|           | 70 x 40     | ●▲                 | ●▲  | ●▲  | ●▲  |     |     |      |      |      |      |
| 60 x 60   |             | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 75 x 45     | ●▲                 | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 75 x 50     |                    | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 100 x 40    | ●▲                 | ●▲  | ●▲  | ●   |     |     |      |      |      |      |
| 75 x 75   |             | ●                  | ●▲  | ●▲  | ●▲  | ●▲  | ●   |      |      |      |      |
|           | 100 x 50    | ●                  | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
| 80 x 80   |             | ●                  | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           |             | ●                  | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 125 x 40    | ●▲                 | ●▲  | ●▲  |     |     |     |      |      |      |      |
| 90 x 90   |             |                    | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
| 100 x 100 |             | ●                  | ●▲  | ●▲  | ●▲  | ●▲  | ●▲  | ●    |      |      |      |
|           | 125 x 75    |                    | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 150 x 50    |                    | ●▲  | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
|           | 150 x 75    |                    |     | ●▲  | ●▲  | ●▲  | ●▲  |      |      |      |      |
|           | 150 x 80    |                    |     | ●▲  | ●▲  | ●▲  |     |      |      |      |      |
| 120 x 120 |             |                    |     |     |     | ●▲  | ●▲  | ●    |      |      |      |
| 125 x 125 |             |                    | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 150 x 100   |                    | ●   | ●▲  | ●▲  | ●▲  | ●▲  | ●    |      |      |      |
| 150 x 150 |             |                    |     | ●   | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 175 x 125   |                    |     |     | ●▲  | ●▲  | ●▲  | ●    |      |      |      |
|           | 200 x 100   |                    |     | ●   | ●▲  | ●▲  | ●▲  | ●    |      |      |      |
| 175 x 175 |             |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 200 x 150   |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 250 x 100   |                    |     |     | ●   | ●▲  | ●▲  | ●    |      |      |      |
| 200 x 200 |             |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲   | ●    |      |      |
|           | 225 x 175   |                    |     |     | ●   | ●▲  |     |      |      |      |      |
|           | 250 x 150   |                    |     |     | ●▲  | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 300 x 100   |                    |     |     | ●   | ●▲  | ●▲  |      |      |      |      |
|           | 250 x 200   |                    |     |     |     | ●▲  | ●▲  | ●▲   |      |      |      |
|           | 300 x 150   |                    |     |     |     | ●▲  | ●▲  | ●▲   |      |      |      |
| 250 x 250 |             |                    |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ●    |      |
|           | 300 x 200   |                    |     |     |     | ●▲  | ●▲  | ●▲   | ●    |      |      |
|           | 350 x 150   |                    |     |     |     | ●▲  | ●▲  | ●▲   |      |      |      |
| 300 x 300 |             |                    |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   | ●▲   |      |
|           | 350 x 250   |                    |     |     |     | ●▲  | ●▲  | ●▲   | ●▲   |      |      |
|           | 400 x 200   |                    |     |     |     | ●▲  | ●▲  | ●▲   |      |      |      |
| 350 x 350 |             |                    |     |     |     |     | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   |
|           | 400 x 300   |                    |     |     |     |     | ●▲  | ●▲   | ●    |      |      |
| 400 x 400 |             |                    |     |     |     |     | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   |
|           | 500 x 300   |                    |     |     |     |     |     | ●▲   | ●▲   | ●▲   |      |
| 450 x 450 |             |                    |     |     |     |     | ●▲  | ●▲   | ●▲   | ●▲   |      |
|           | 600 x 300   |                    |     |     |     |     |     | ●▲   | ●▲   | ●▲   |      |
| 500 x 500 |             |                    |     |     |     |     | ●▲  | ●▲   | ●▲   | ●▲   | ●▲   |
| 550 x 550 |             |                    |     |     |     |     |     |      | ●▲   | ●▲   | ●▲   |

● STKR400 available  
▲ STKR490 available  
If you require other sizes, please consult us.



**Section properties** Square : 125 mm x 125 mm to 350 mm x 350 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |      |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|------|
| Nominal size | Thickness |        |                   | I <sub>x</sub>                 | I <sub>y</sub>                 | r <sub>x</sub>     | r <sub>y</sub>    | Z <sub>x</sub>                 | Z <sub>y</sub>                 | Z <sub>px</sub>                 | Z <sub>py</sub>                 |                            |                            |                                   |                          |      |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | r <sub>x</sub> cm  | r <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |      |
| 125 x 125    | 2.3       | 8.75   | 11.15             | 278                            | 278                            | 4.99               | 4.99              | 44.5                           | 44.5                           | 51.1                            | 51.1                            | 430                        | 66.8                       | 0.492                             | 114                      |      |
|              | 2.5       | 9.49   | 12.09             | 300                            | 300                            | 4.98               | 4.98              | 48.1                           | 48.1                           | 55.3                            | 55.3                            | 465                        | 72.1                       | 0.491                             | 105                      |      |
|              | 3.0       | 11.3   | 14.41             | 355                            | 355                            | 4.96               | 4.96              | 56.7                           | 56.7                           | 65.6                            | 65.6                            | 553                        | 85.1                       | 0.490                             | 88.4                     |      |
|              | 3.2       | 12.0   | 15.33             | 376                            | 376                            | 4.95               | 4.95              | 60.1                           | 60.1                           | 69.6                            | 69.6                            | 587                        | 90.2                       | 0.489                             | 83.1                     |      |
|              | 4.0       | 14.9   | 18.95             | 457                            | 457                            | 4.91               | 4.91              | 73.2                           | 73.2                           | 85.3                            | 85.3                            | 722                        | 110                        | 0.486                             | 67.2                     |      |
|              | 4.5       | 16.6   | 21.17             | 506                            | 506                            | 4.89               | 4.89              | 80.9                           | 80.9                           | 94.8                            | 94.8                            | 804                        | 122                        | 0.485                             | 60.2                     |      |
|              | 5.0       | 18.3   | 23.36             | 553                            | 553                            | 4.86               | 4.86              | 88.4                           | 88.4                           | 104                             | 104                             | 884                        | 133                        | 0.483                             | 54.5                     |      |
|              | 6.0       | 21.7   | 27.63             | 641                            | 641                            | 4.82               | 4.82              | 103                            | 103                            | 122                             | 122                             | 1,040                      | 154                        | 0.479                             | 46.1                     |      |
|              | 6.3       | 22.7   | 28.89             | 666                            | 666                            | 4.80               | 4.80              | 107                            | 107                            | 127                             | 127                             | 1,080                      | 161                        | 0.478                             | 44.1                     |      |
|              | 8.0       | 28.1   | 35.79             | 797                            | 797                            | 4.72               | 4.72              | 128                            | 128                            | 154                             | 154                             | 1,320                      | 193                        | 0.473                             | 35.6                     |      |
|              | 9.0       | 31.1   | 39.67             | 865                            | 865                            | 4.67               | 4.67              | 138                            | 138                            | 169                             | 169                             | 1,460                      | 210                        | 0.469                             | 32.1                     |      |
|              | 10.0      | 34.1   | 43.43             | 927                            | 927                            | 4.62               | 4.62              | 148                            | 148                            | 183                             | 183                             | 1,580                      | 225                        | 0.466                             | 29.3                     |      |
| 12.0         | 39.7      | 50.53  | 1,030             | 1,030                          | 4.52                           | 4.52               | 165               | 165                            | 208                            | 208                             | 1,800                           | 253                        | 0.459                      | 25.2                              |                          |      |
| 12.5         | 41.0      | 52.23  | 1,060             | 1,060                          | 4.50                           | 4.50               | 169               | 169                            | 214                            | 214                             | 1,850                           | 259                        | 0.457                      | 24.4                              |                          |      |
| 150 x 150    | 3.2       | 14.5   | 18.53             | 661                            | 661                            | 5.97               | 5.97              | 88.1                           | 88.1                           | 101                             | 101                             | 1,030                      | 132                        | 0.589                             | 68.8                     |      |
|              | 4.0       | 18.0   | 22.95             | 808                            | 808                            | 5.93               | 5.93              | 108                            | 108                            | 125                             | 125                             | 1,260                      | 162                        | 0.586                             | 55.5                     |      |
|              | 4.5       | 20.2   | 25.67             | 896                            | 896                            | 5.91               | 5.91              | 120                            | 120                            | 139                             | 139                             | 1,410                      | 180                        | 0.585                             | 49.6                     |      |
|              | 5.0       | 22.3   | 28.36             | 982                            | 982                            | 5.89               | 5.89              | 131                            | 131                            | 153                             | 153                             | 1,550                      | 197                        | 0.583                             | 44.9                     |      |
|              | 6.0       | 26.4   | 33.63             | 1,150                          | 1,150                          | 5.84               | 5.84              | 153                            | 153                            | 180                             | 180                             | 1,830                      | 230                        | 0.579                             | 37.9                     |      |
|              | 6.3       | 27.6   | 35.19             | 1,190                          | 1,190                          | 5.82               | 5.82              | 159                            | 159                            | 188                             | 188                             | 1,910                      | 239                        | 0.578                             | 36.2                     |      |
|              | 8.0       | 34.4   | 43.79             | 1,440                          | 1,440                          | 5.74               | 5.74              | 192                            | 192                            | 230                             | 230                             | 2,360                      | 290                        | 0.573                             | 29.1                     |      |
|              | 9.0       | 38.2   | 48.67             | 1,580                          | 1,580                          | 5.69               | 5.69              | 210                            | 210                            | 253                             | 253                             | 2,600                      | 318                        | 0.569                             | 26.2                     |      |
|              | 10.0      | 41.9   | 53.43             | 1,700                          | 1,700                          | 5.64               | 5.64              | 227                            | 227                            | 276                             | 276                             | 2,840                      | 343                        | 0.566                             | 23.8                     |      |
|              | 12.0      | 49.1   | 62.53             | 1,920                          | 1,920                          | 5.54               | 5.54              | 256                            | 256                            | 317                             | 317                             | 3,270                      | 390                        | 0.559                             | 20.4                     |      |
|              | 12.5      | 50.8   | 64.73             | 1,970                          | 1,970                          | 5.52               | 5.52              | 263                            | 263                            | 326                             | 326                             | 3,380                      | 400                        | 0.557                             | 19.7                     |      |
|              | 175 x 175 | 4.5    | 23.7              | 30.17                          | 1,450                          | 1,450              | 6.93              | 6.93                           | 166                            | 166                             | 192                             | 192                        | 2,260                      | 249                               | 0.685                    | 42.2 |
| 5.0          |           | 26.2   | 33.36             | 1,590                          | 1,590                          | 6.91               | 6.91              | 182                            | 182                            | 211                             | 211                             | 2,500                      | 273                        | 0.683                             | 38.2                     |      |
| 6.0          |           | 31.1   | 39.63             | 1,860                          | 1,860                          | 6.86               | 6.86              | 213                            | 213                            | 249                             | 249                             | 2,950                      | 320                        | 0.679                             | 32.1                     |      |
| 6.3          |           | 32.6   | 41.49             | 1,940                          | 1,940                          | 6.84               | 6.84              | 222                            | 222                            | 260                             | 260                             | 3,090                      | 334                        | 0.678                             | 30.7                     |      |
| 8.0          |           | 40.7   | 51.79             | 2,370                          | 2,370                          | 6.76               | 6.76              | 271                            | 271                            | 321                             | 321                             | 3,820                      | 408                        | 0.673                             | 24.6                     |      |
| 9.0          |           | 45.3   | 57.67             | 2,600                          | 2,600                          | 6.71               | 6.71              | 297                            | 297                            | 354                             | 354                             | 4,230                      | 448                        | 0.669                             | 22.1                     |      |
| 10.0         |           | 49.8   | 63.43             | 2,820                          | 2,820                          | 6.66               | 6.66              | 322                            | 322                            | 387                             | 387                             | 4,630                      | 486                        | 0.666                             | 20.1                     |      |
| 12.0         |           | 58.5   | 74.53             | 3,210                          | 3,210                          | 6.57               | 6.57              | 367                            | 367                            | 447                             | 447                             | 5,380                      | 556                        | 0.659                             | 17.1                     |      |
| 12.5         |           | 60.6   | 77.23             | 3,310                          | 3,310                          | 6.54               | 6.54              | 378                            | 378                            | 462                             | 462                             | 5,560                      | 573                        | 0.657                             | 16.5                     |      |
| 200 x 200    |           | 4.5    | 27.2              | 34.67                          | 2,190                          | 2,190              | 7.95              | 7.95                           | 219                            | 219                             | 253                             | 253                        | 3,410                      | 329                               | 0.785                    | 36.7 |
|              |           | 5.0    | 30.1              | 38.36                          | 2,410                          | 2,410              | 7.93              | 7.93                           | 241                            | 241                             | 279                             | 279                        | 3,760                      | 362                               | 0.783                    | 33.2 |
|              |           | 6.0    | 35.8              | 45.63                          | 2,830                          | 2,830              | 7.88              | 7.88                           | 283                            | 283                             | 330                             | 330                        | 4,460                      | 426                               | 0.779                    | 27.9 |
|              | 6.3       | 37.5   | 47.79             | 2,960                          | 2,960                          | 7.86               | 7.86              | 296                            | 296                            | 345                             | 345                             | 4,660                      | 444                        | 0.778                             | 26.7                     |      |
|              | 8.0       | 46.9   | 59.79             | 3,620                          | 3,620                          | 7.78               | 7.78              | 362                            | 362                            | 426                             | 426                             | 5,790                      | 545                        | 0.773                             | 21.3                     |      |
|              | 9.0       | 52.3   | 66.67             | 3,990                          | 3,990                          | 7.73               | 7.73              | 399                            | 399                            | 472                             | 472                             | 6,430                      | 601                        | 0.769                             | 19.1                     |      |
|              | 10.0      | 57.6   | 73.43             | 4,340                          | 4,340                          | 7.69               | 7.69              | 434                            | 434                            | 517                             | 517                             | 7,050                      | 654                        | 0.766                             | 17.3                     |      |
|              | 12.0      | 67.9   | 86.53             | 4,980                          | 4,980                          | 7.59               | 7.59              | 498                            | 498                            | 601                             | 601                             | 8,230                      | 753                        | 0.759                             | 14.7                     |      |
|              | 12.5      | 70.4   | 89.73             | 5,130                          | 5,130                          | 7.56               | 7.56              | 513                            | 513                            | 621                             | 621                             | 8,510                      | 776                        | 0.757                             | 14.2                     |      |
|              | 16.0      | 87.3   | 111.2             | 6,080                          | 6,080                          | 7.39               | 7.39              | 608                            | 608                            | 751                             | 751                             | 10,300                     | 924                        | 0.745                             | 11.5                     |      |
|              | 250 x 250 | 6.0    | 45.2              | 57.63                          | 5,670                          | 5,670              | 9.92              | 9.92                           | 454                            | 454                             | 524                             | 524                        | 8,840                      | 681                               | 0.979                    | 22.1 |
|              |           | 6.3    | 47.4              | 60.39                          | 5,930                          | 5,930              | 9.91              | 9.91                           | 474                            | 474                             | 549                             | 549                        | 9,260                      | 712                               | 0.978                    | 21.1 |
| 8.0          |           | 59.5   | 75.79             | 7,320                          | 7,320                          | 9.82               | 9.82              | 585                            | 585                            | 683                             | 683                             | 11,600                     | 879                        | 0.973                             | 16.8                     |      |
| 9.0          |           | 66.5   | 84.67             | 8,090                          | 8,090                          | 9.78               | 9.78              | 647                            | 647                            | 759                             | 759                             | 12,900                     | 973                        | 0.969                             | 15.0                     |      |
| 10.0         |           | 73.3   | 93.43             | 8,840                          | 8,840                          | 9.73               | 9.73              | 707                            | 707                            | 833                             | 833                             | 14,100                     | 1,060                      | 0.966                             | 13.6                     |      |
| 12.0         |           | 86.8   | 110.5             | 10,300                         | 10,300                         | 9.63               | 9.63              | 820                            | 820                            | 975                             | 975                             | 16,600                     | 1,240                      | 0.959                             | 11.5                     |      |
| 12.5         |           | 90.1   | 114.7             | 10,600                         | 10,600                         | 9.61               | 9.61              | 847                            | 847                            | 1,010                           | 1,010                           | 17,200                     | 1,280                      | 0.957                             | 11.1                     |      |
| 16.0         |           | 112    | 143.2             | 12,800                         | 12,800                         | 9.44               | 9.44              | 1,020                          | 1,020                          | 1,240                           | 1,240                           | 21,200                     | 1,540                      | 0.945                             | 8.90                     |      |
| 19.0         |           | 131    | 166.3             | 14,400                         | 14,400                         | 9.29               | 9.29              | 1,150                          | 1,150                          | 1,410                           | 1,410                           | 24,300                     | 1,740                      | 0.935                             | 7.66                     |      |
| 300 x 300    |           | 6.0    | 54.7              | 69.63                          | 9,960                          | 9,960              | 12.0              | 12.0                           | 664                            | 664                             | 764                             | 764                        | 15,400                     | 997                               | 1.18                     | 18.3 |
|              |           | 6.3    | 57.3              | 72.99                          | 10,400                         | 10,400             | 11.9              | 11.9                           | 695                            | 695                             | 800                             | 800                        | 16,200                     | 1,040                             | 1.18                     | 17.5 |
|              |           | 8.0    | 72.1              | 91.79                          | 12,900                         | 12,900             | 11.9              | 11.9                           | 862                            | 862                             | 999                             | 999                        | 20,200                     | 1,290                             | 1.17                     | 13.9 |
|              | 9.0       | 80.6   | 102.7             | 14,300                         | 14,300                         | 11.8               | 11.8              | 956                            | 956                            | 1,110                           | 1,110                           | 22,600                     | 1,440                      | 1.17                              | 12.4                     |      |
|              | 10.0      | 89.0   | 113.4             | 15,700                         | 15,700                         | 11.8               | 11.8              | 1,050                          | 1,050                          | 1,220                           | 1,220                           | 24,900                     | 1,570                      | 1.17                              | 11.2                     |      |
|              | 12.0      | 106    | 134.5             | 18,300                         | 18,300                         | 11.7               | 11.7              | 1,220                          | 1,220                          | 1,440                           | 1,440                           | 29,300                     | 1,840                      | 1.16                              | 9.47                     |      |
|              | 12.5      | 110    | 139.7             | 19,000                         | 19,000                         | 11.6               | 11.6              | 1,260                          | 1,260                          | 1,490                           | 1,490                           | 30,400                     | 1,900                      | 1.16                              | 9.12                     |      |
|              | 16.0      | 138    | 175.2             | 23,100                         | 23,100                         | 11.5               | 11.5              | 1,540                          | 1,540                          | 1,840                           | 1,840                           | 37,700                     | 2,320                      | 1.15                              | 7.27                     |      |
|              | 19.0      | 160    | 204.3             | 26,200                         | 26,200                         | 11.3               | 11.3              | 1,750                          | 1,750                          | 2,120                           | 2,120                           | 43,500                     | 2,650                      | 1.13                              | 6.24                     |      |
|              | 350 x 350 | 9.0    | 94.7              | 120.7                          | 23,200                         | 23,200             | 13.9              | 13.9                           | 1,320                          | 1,320                           | 1,530                           | 1,530                      | 36,200                     | 1,990                             | 1.37                     | 10.6 |
|              |           | 10.0   | 105               | 133.4                          | 25,500                         | 25,500             | 13.8              | 13.8                           | 1,450                          | 1,450                           | 1,690                           | 1,690                      | 40,000                     | 2,180                             | 1.37                     | 9.55 |
|              |           | 12.0   | 124               | 158.5                          | 29,800                         | 29,800             | 13.7              | 13.7                           | 1,700                          | 1,700                           | 1,990                           | 1,990                      | 47,300                     | 2,560                             | 1.36                     | 8.04 |
| 12.5         |           | 129    | 164.7             | 30,900                         | 30,900                         | 13.7               | 13.7              | 1,760                          | 1,760                          | 2,070                           | 2,070                           | 49,100                     | 2,650                      | 1.36                              | 7.73                     |      |
| 16.0         |           | 163    | 207.2             | 37,900                         | 37,900                         | 13.5               | 13.5              | 2,160                          | 2,160                          | 2,570                           | 2,570                           | 61,100                     | 3,260                      | 1.35                              | 6.15                     |      |
| 19.0         |           | 190    | 242.3             | 43,400                         | 43,400                         | 13.4               | 13.4              | 2,480                          | 2,480                          | 2,970                           | 2,970                           | 70,900                     | 3,740                      | 1.33                              | 5.26                     |      |
| 22.0         |           | 217    | 276.2             | 48,400                         | 48,400                         | 13.2               | 13.2              | 2,760                          | 2,760                          | 3,340                           | 3,340                           | 80,200                     | 4,180                      | 1.32                              | 4.61                     |      |

The calculation of section properties are based on the following corner geometry, as standard.

A diagram of a square cross-section of a pipe. The outer side length is labeled  $A$  and the inner side length is labeled  $B$ . The wall thickness is labeled  $t$ . The center is marked with  $X$  and  $Y$  axes.

Section properties    Square : 400 mm x 400 mm to 550 mm x 550 mm

| Dimensions   |           |      | Mass   | Area              | Second moment of area |                    | Radius of gyration |       | Elastic section modulus |                    | Plastic section modulus |                     | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|------|--------|-------------------|-----------------------|--------------------|--------------------|-------|-------------------------|--------------------|-------------------------|---------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |      |        |                   |                       |                    |                    |       |                         |                    |                         |                     |                            |                            |                                   |                          |
| A mm         | x B mm    | t mm | M kg/m | A cm <sup>2</sup> | Ix cm <sup>4</sup>    | Iy cm <sup>4</sup> | ix cm              | iy cm | Zx cm <sup>3</sup>      | Zy cm <sup>3</sup> | Zpx cm <sup>3</sup>     | Zpy cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 400 x 400    |           | 9.0  | 109    | 138.7             | 35,100                | 35,100             | 15.9               | 15.9  | 1,750                   | 1,750              | 2,020                   | 2,020               | 54,500                     | 2,630                      | 1.57                              | 9.19                     |
|              |           | 10.0 | 120    | 153.4             | 38,600                | 38,600             | 15.9               | 15.9  | 1,930                   | 1,930              | 2,230                   | 2,230               | 60,200                     | 2,890                      | 1.57                              | 8.30                     |
|              |           | 12.0 | 143    | 182.5             | 45,300                | 45,300             | 15.8               | 15.8  | 2,270                   | 2,270              | 2,640                   | 2,640               | 71,300                     | 3,400                      | 1.56                              | 6.98                     |
|              |           | 12.5 | 149    | 189.7             | 47,000                | 47,000             | 15.7               | 15.7  | 2,350                   | 2,350              | 2,740                   | 2,740               | 74,100                     | 3,530                      | 1.56                              | 6.71                     |
|              |           | 16.0 | 188    | 239.2             | 57,900                | 57,900             | 15.6               | 15.6  | 2,900                   | 2,900              | 3,410                   | 3,410               | 92,700                     | 4,360                      | 1.55                              | 5.33                     |
|              |           | 19.0 | 220    | 280.3             | 66,600                | 66,600             | 15.4               | 15.4  | 3,330                   | 3,330              | 3,960                   | 3,960               | 108,000                    | 5,020                      | 1.53                              | 4.55                     |
|              |           | 22.0 | 251    | 320.2             | 74,700                | 74,700             | 15.3               | 15.3  | 3,740                   | 3,740              | 4,480                   | 4,480               | 122,000                    | 5,640                      | 1.52                              | 3.98                     |
| 450 x 450    |           | 9.0  | 123    | 156.7             | 50,400                | 50,400             | 17.9               | 17.9  | 2,240                   | 2,240              | 2,580                   | 2,580               | 78,100                     | 3,360                      | 1.77                              | 8.13                     |
|              |           | 10.0 | 136    | 173.4             | 55,500                | 55,500             | 17.9               | 17.9  | 2,470                   | 2,470              | 2,850                   | 2,850               | 86,300                     | 3,700                      | 1.77                              | 7.35                     |
|              |           | 12.0 | 162    | 206.5             | 65,400                | 65,400             | 17.8               | 17.8  | 2,910                   | 2,910              | 3,370                   | 3,370               | 102,000                    | 4,370                      | 1.76                              | 6.17                     |
|              |           | 12.5 | 169    | 214.7             | 67,800                | 67,800             | 17.8               | 17.8  | 3,020                   | 3,020              | 3,500                   | 3,500               | 106,000                    | 4,530                      | 1.76                              | 5.93                     |
|              |           | 16.0 | 213    | 271.2             | 84,100                | 84,100             | 17.6               | 17.6  | 3,740                   | 3,740              | 4,380                   | 4,380               | 134,000                    | 5,620                      | 1.75                              | 4.70                     |
|              |           | 19.0 | 250    | 318.3             | 97,100                | 97,100             | 17.5               | 17.5  | 4,310                   | 4,310              | 5,090                   | 5,090               | 156,000                    | 6,490                      | 1.73                              | 4.00                     |
|              |           | 22.0 | 286    | 364.2             | 109,000               | 109,000            | 17.3               | 17.3  | 4,850                   | 4,850              | 5,780                   | 5,780               | 177,000                    | 7,310                      | 1.72                              | 3.50                     |
| 500 x 500    |           | 9.0  | 137    | 174.7             | 69,800                | 69,800             | 20.0               | 20.0  | 2,790                   | 2,790              | 3,200                   | 3,200               | 108,000                    | 4,190                      | 1.97                              | 7.29                     |
|              |           | 10.0 | 152    | 193.4             | 76,900                | 76,900             | 19.9               | 19.9  | 3,080                   | 3,080              | 3,540                   | 3,540               | 119,000                    | 4,610                      | 1.97                              | 6.59                     |
|              |           | 12.0 | 181    | 230.5             | 90,800                | 90,800             | 19.8               | 19.8  | 3,630                   | 3,630              | 4,200                   | 4,200               | 141,000                    | 5,450                      | 1.96                              | 5.53                     |
|              |           | 12.5 | 188    | 239.7             | 94,100                | 94,100             | 19.8               | 19.8  | 3,770                   | 3,770              | 4,360                   | 4,360               | 147,000                    | 5,650                      | 1.96                              | 5.31                     |
|              |           | 16.0 | 238    | 303.2             | 117,000               | 117,000            | 19.6               | 19.6  | 4,680                   | 4,680              | 5,460                   | 5,460               | 185,000                    | 7,030                      | 1.95                              | 4.20                     |
|              |           | 19.0 | 280    | 356.3             | 136,000               | 136,000            | 19.5               | 19.5  | 5,420                   | 5,420              | 6,370                   | 6,370               | 216,000                    | 8,150                      | 1.93                              | 3.58                     |
|              |           | 22.0 | 320    | 408.2             | 153,000               | 153,000            | 19.4               | 19.4  | 6,120                   | 6,120              | 7,240                   | 7,240               | 246,000                    | 9,210                      | 1.92                              | 3.12                     |
| 550 x 550    |           | 12.0 | 200    | 254.5             | 122,000               | 122,000            | 21.9               | 21.9  | 4,430                   | 4,430              | 5,110                   | 5,110               | 189,000                    | 6,650                      | 2.16                              | 5.00                     |
|              |           | 12.5 | 208    | 264.7             | 126,000               | 126,000            | 21.9               | 21.9  | 4,600                   | 4,600              | 5,310                   | 5,310               | 197,000                    | 6,900                      | 2.16                              | 4.81                     |
|              |           | 16.0 | 263    | 335.2             | 158,000               | 158,000            | 21.7               | 21.7  | 5,730                   | 5,730              | 6,670                   | 6,670               | 248,000                    | 8,610                      | 2.15                              | 3.80                     |
|              |           | 19.0 | 310    | 394.3             | 183,000               | 183,000            | 21.5               | 21.5  | 6,660                   | 6,660              | 7,790                   | 7,790               | 290,000                    | 10,000                     | 2.13                              | 3.23                     |
|              |           | 22.0 | 355    | 452.2             | 207,000               | 207,000            | 21.4               | 21.4  | 7,530                   | 7,530              | 8,870                   | 8,870               | 331,000                    | 11,300                     | 2.12                              | 2.82                     |

Section properties    Rectangular : 60 mm x 30 mm to 75 mm x 50 mm

| Dimensions   |           | Mass | Area   | Second moment of area |                                | Radius of gyration             |                   | Elastic section modulus |                                | Plastic section modulus        |                                 | Torsional inertia constant      | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |     |
|--------------|-----------|------|--------|-----------------------|--------------------------------|--------------------------------|-------------------|-------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|-----------------------------------|--------------------------|-----|
| Nominal size | Thickness |      |        |                       |                                |                                |                   |                         |                                |                                |                                 |                                 |                            |                                   |                          |     |
| A mm         | x B mm    | t mm | M kg/m | A cm <sup>2</sup>     | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm | i <sub>y</sub> cm       | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>                   | m <sup>2</sup> /m        | m   |
| 60 x 30      | 1.6       | 1.6  | 2.13   | 2.712                 | 12.5                           | 4.25                           | 2.15              | 1.25                    | 4.16                           | 2.83                           | 5.19                            | 3.20                            | 10.3                       | 4.90                              | 0.175                    | 470 |
|              | 2.0       | 2.0  | 2.62   | 3.337                 | 15.1                           | 5.08                           | 2.12              | 1.23                    | 5.02                           | 3.39                           | 6.31                            | 3.89                            | 12.6                       | 5.88                              | 0.173                    | 382 |
|              | 2.3       | 2.3  | 2.98   | 3.792                 | 16.8                           | 5.65                           | 2.11              | 1.22                    | 5.61                           | 3.76                           | 7.11                            | 4.37                            | 14.1                       | 6.56                              | 0.172                    | 336 |
|              | 2.5       | 2.5  | 3.21   | 4.089                 | 17.9                           | 6.00                           | 2.09              | 1.21                    | 5.98                           | 4.00                           | 7.62                            | 4.67                            | 15.1                       | 6.98                              | 0.171                    | 312 |
|              | 3.0       | 3.0  | 3.77   | 4.808                 | 20.5                           | 6.80                           | 2.07              | 1.19                    | 6.84                           | 4.53                           | 8.82                            | 5.39                            | 17.5                       | 7.95                              | 0.170                    | 265 |
|              | 3.2       | 3.2  | 3.99   | 5.087                 | 21.5                           | 7.08                           | 2.05              | 1.18                    | 7.15                           | 4.72                           | 9.27                            | 5.66                            | 18.4                       | 8.30                              | 0.169                    | 250 |
|              | 4.0       | 4.0  | 4.83   | 6.148                 | 24.7                           | 8.06                           | 2.01              | 1.14                    | 8.25                           | 5.37                           | 10.9                            | 6.62                            | 21.5                       | 9.52                              | 0.166                    | 207 |
| 60 x 40      | 4.5       | 4.5  | 5.31   | 6.769                 | 26.4                           | 8.53                           | 1.98              | 1.12                    | 8.80                           | 5.69                           | 11.8                            | 7.14                            | 23.1                       | 10.1                              | 0.165                    | 188 |
|              | 1.6       | 1.6  | 2.38   | 3.032                 | 15.2                           | 8.16                           | 2.24              | 1.64                    | 5.07                           | 4.08                           | 6.12                            | 4.64                            | 16.9                       | 6.72                              | 0.195                    | 420 |
|              | 2.0       | 2.0  | 2.93   | 3.737                 | 18.4                           | 9.83                           | 2.22              | 1.62                    | 6.14                           | 4.92                           | 7.47                            | 5.65                            | 20.7                       | 8.12                              | 0.193                    | 341 |
|              | 2.3       | 2.3  | 3.34   | 4.252                 | 20.7                           | 11.0                           | 2.20              | 1.61                    | 6.88                           | 5.50                           | 8.44                            | 6.38                            | 23.4                       | 9.10                              | 0.192                    | 300 |
|              | 2.5       | 2.5  | 3.60   | 4.589                 | 22.1                           | 11.7                           | 2.19              | 1.60                    | 7.36                           | 5.87                           | 9.06                            | 6.84                            | 25.1                       | 9.72                              | 0.191                    | 278 |
|              | 3.0       | 3.0  | 4.25   | 5.408                 | 25.4                           | 13.4                           | 2.17              | 1.58                    | 8.46                           | 6.72                           | 10.5                            | 7.94                            | 29.3                       | 11.2                              | 0.190                    | 236 |
|              | 3.2       | 3.2  | 4.50   | 5.727                 | 26.6                           | 14.1                           | 2.16              | 1.57                    | 8.87                           | 7.03                           | 11.1                            | 8.36                            | 30.9                       | 11.7                              | 0.189                    | 222 |
| 70 x 40      | 4.0       | 4.0  | 5.45   | 6.948                 | 31.0                           | 16.3                           | 2.11              | 1.53                    | 10.3                           | 8.14                           | 13.2                            | 9.89                            | 36.7                       | 13.7                              | 0.186                    | 183 |
|              | 4.5       | 4.5  | 6.02   | 7.669                 | 33.3                           | 17.4                           | 2.09              | 1.51                    | 11.1                           | 8.72                           | 14.3                            | 10.7                            | 39.9                       | 14.7                              | 0.185                    | 166 |
|              | 1.6       | 1.6  | 2.63   | 3.352                 | 22.1                           | 9.34                           | 2.57              | 1.67                    | 6.32                           | 4.67                           | 7.72                            | 5.25                            | 21.0                       | 7.90                              | 0.215                    | 380 |
|              | 2.0       | 2.0  | 3.25   | 4.137                 | 26.9                           | 11.3                           | 2.55              | 1.65                    | 7.67                           | 5.64                           | 9.44                            | 6.41                            | 25.7                       | 9.56                              | 0.213                    | 308 |
|              | 2.3       | 2.3  | 3.70   | 4.712                 | 30.2                           | 12.6                           | 2.53              | 1.64                    | 8.63                           | 6.32                           | 10.7                            | 7.24                            | 29.1                       | 10.7                              | 0.212                    | 270 |
|              | 2.5       | 2.5  | 4.00   | 5.089                 | 32.3                           | 13.5                           | 2.52              | 1.63                    | 9.24                           | 6.75                           | 11.5                            | 7.78                            | 31.3                       | 11.5                              | 0.211                    | 250 |
|              | 3.0       | 3.0  | 4.72   | 6.008                 | 37.3                           | 15.5                           | 2.49              | 1.61                    | 10.7                           | 7.75                           | 13.4                            | 9.05                            | 36.5                       | 13.2                              | 0.210                    | 212 |
| 75 x 45      | 3.2       | 3.2  | 5.00   | 6.367                 | 39.2                           | 16.2                           | 2.48              | 1.60                    | 11.2                           | 8.12                           | 14.1                            | 9.54                            | 38.5                       | 13.9                              | 0.209                    | 200 |
|              | 4.0       | 4.0  | 6.08   | 7.748                 | 46.0                           | 18.9                           | 2.44              | 1.56                    | 13.1                           | 9.44                           | 16.8                            | 11.3                            | 45.8                       | 16.2                              | 0.206                    | 164 |
|              | 4.5       | 4.5  | 6.73   | 8.569                 | 49.7                           | 20.3                           | 2.41              | 1.54                    | 14.2                           | 10.1                           | 18.4                            | 12.3                            | 50.0                       | 17.5                              | 0.205                    | 149 |
|              | 1.6       | 1.6  | 2.88   | 3.672                 | 28.4                           | 12.9                           | 2.78              | 1.88                    | 7.56                           | 5.75                           | 9.16                            | 6.46                            | 28.2                       | 9.63                              | 0.235                    | 347 |
|              | 2.0       | 2.0  | 3.56   | 4.537                 | 34.5                           | 15.7                           | 2.76              | 1.86                    | 9.20                           | 6.96                           | 11.2                            | 7.90                            | 34.6                       | 11.7                              | 0.233                    | 281 |
|              | 2.3       | 2.3  | 4.06   | 5.172                 | 38.9                           | 17.6                           | 2.74              | 1.84                    | 10.4                           | 7.82                           | 12.7                            | 8.94                            | 39.3                       | 13.2                              | 0.232                    | 246 |
|              | 2.5       | 2.5  | 4.39   | 5.589                 | 41.7                           | 18.8                           | 2.73              | 1.84                    | 11.1                           | 8.37                           | 13.7                            | 9.61                            | 42.3                       | 14.1                              | 0.231                    | 228 |
| 75 x 50      | 3.0       | 3.0  | 5.19   | 6.608                 | 48.3                           | 21.7                           | 2.70              | 1.81                    | 12.9                           | 9.66                           | 16.0                            | 11.2                            | 49.4                       | 16.3                              | 0.230                    | 193 |
|              | 3.2       | 3.2  | 5.50   | 7.007                 | 50.8                           | 22.8                           | 2.69              | 1.80                    | 13.5                           | 10.1                           | 16.9                            | 11.8                            | 52.2                       | 17.2                              | 0.229                    | 182 |
|              | 4.0       | 4.0  | 6.71   | 8.548                 | 59.9                           | 26.7                           | 2.65              | 1.77                    | 16.0                           | 11.9                           | 20.2                            | 14.1                            | 62.6                       | 20.2                              | 0.226                    | 149 |
|              | 4.5       | 4.5  | 7.43   | 9.469                 | 65.0                           | 28.9                           | 2.62              | 1.75                    | 17.3                           | 12.8                           | 22.2                            | 15.5                            | 68.5                       | 21.9                              | 0.225                    | 135 |
|              | 5.0       | 5.0  | 8.13   | 10.36                 | 69.6                           | 30.8                           | 2.59              | 1.72                    | 18.6                           | 13.7                           | 24.0                            | 16.7                            | 74.0                       | 23.4                              | 0.223                    | 123 |
|              | 6.0       | 6.0  | 9.45   | 12.03                 | 77.3                           | 33.9                           | 2.53              | 1.68                    | 20.6                           | 15.1                           | 27.2                            | 18.8                            | 83.7                       | 26.0                              | 0.219                    | 106 |
|              | 2.3       | 2.3  | 4.24   | 5.402                 | 41.9                           | 22.4                           | 2.79              | 2.04                    | 11.2                           | 8.96                           | 13.6                            | 10.3                            | 46.9                       | 14.8                              | 0.242                    | 236 |
| 75 x 50      | 2.5       | 2.5  | 4.58   | 5.839                 | 45.0                           | 24.0                           | 2.77              | 2.03                    | 12.0                           | 9.60                           | 14.6                            | 11.0                            | 50.5                       | 15.9                              | 0.241                    | 218 |
|              | 3.0       | 3.0  | 5.42   | 6.908                 | 52.2                           | 27.8                           | 2.75              | 2.00                    | 13.9                           | 11.1                           | 17.1                            | 12.9                            | 59.3                       | 18.4                              | 0.240                    | 184 |
|              | 3.2       | 3.2  | 5.75   | 7.327                 | 54.9                           | 29.2                           | 2.74              | 2.00                    | 14.6                           | 11.7                           | 18.0                            | 13.6                            | 62.6                       | 19.3                              | 0.239                    | 174 |
|              | 4.0       | 4.0  | 7.02   | 8.948                 | 65.0                           | 34.3                           | 2.69              | 1.96                    | 17.3                           | 13.7                           | 21.7                            | 16.3                            | 75.3                       | 22.9                              | 0.236                    | 142 |
|              | 4.5       | 4.5  | 7.79   | 9.919                 | 70.6                           | 37.2                           | 2.67              | 1.94                    | 18.8                           | 14.9                           | 23.8                            | 17.9                            | 82.7                       | 24.9                              | 0.235                    | 128 |
|              | 5.0       | 5.0  | 8.52   | 10.86                 | 75.7                           | 39.7                           | 2.64              | 1.91                    | 20.2                           | 15.9                           | 25.7                            | 19.3                            | 89.5                       | 26.7                              | 0.233                    | 117 |
|              | 6.0       | 6.0  | 9.92   | 12.63                 | 84.5                           | 44.1                           | 2.59              | 1.87                    | 22.5                           | 17.6                           | 29.2                            | 21.9                            | 102                        | 29.8                              | 0.229                    | 101 |



Section properties    Rectangular : 150 mm x 100 mm to 300 mm x 100 mm

| Dimensions   |           | Mass | Area  | Second moment of area |       | Radius of gyration |      | Elastic section modulus |      | Plastic section modulus |      | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|------|-------|-----------------------|-------|--------------------|------|-------------------------|------|-------------------------|------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |      |       |                       |       |                    |      |                         |      |                         |      |                            |                            |                                   |                          |
| A x B<br>mm  | t<br>mm   |      |       |                       |       |                    |      |                         |      |                         |      |                            |                            |                                   |                          |
| 150 x 100    | 2.3       | 8.75 | 11.15 | 361                   | 195   | 5.69               | 4.18 | 48.2                    | 38.9 | 57.3                    | 43.5 | 395                        | 63.9                       | 0.492                             | 114                      |
|              | 2.5       | 9.49 | 12.09 | 390                   | 210   | 5.68               | 4.17 | 52.0                    | 42.0 | 62.0                    | 47.0 | 427                        | 69.0                       | 0.491                             | 105                      |
|              | 3.0       | 11.3 | 14.41 | 461                   | 248   | 5.65               | 4.15 | 61.4                    | 49.5 | 73.5                    | 55.8 | 507                        | 81.4                       | 0.490                             | 88.4                     |
|              | 3.2       | 12.0 | 15.33 | 488                   | 262   | 5.64               | 4.14 | 65.1                    | 52.5 | 78.0                    | 59.2 | 539                        | 86.2                       | 0.489                             | 83.1                     |
|              | 4.0       | 14.9 | 18.95 | 595                   | 319   | 5.60               | 4.10 | 79.3                    | 63.7 | 95.7                    | 72.5 | 662                        | 105                        | 0.486                             | 67.2                     |
|              | 4.5       | 16.6 | 21.17 | 658                   | 352   | 5.58               | 4.08 | 87.8                    | 70.4 | 106                     | 80.5 | 736                        | 116                        | 0.485                             | 60.2                     |
|              | 5.0       | 18.3 | 23.36 | 719                   | 384   | 5.55               | 4.05 | 95.9                    | 76.8 | 117                     | 88.3 | 809                        | 127                        | 0.483                             | 54.5                     |
|              | 6.0       | 21.7 | 27.63 | 835                   | 444   | 5.50               | 4.01 | 111                     | 88.8 | 137                     | 103  | 948                        | 147                        | 0.479                             | 46.1                     |
|              | 6.3       | 22.7 | 28.89 | 868                   | 461   | 5.48               | 4.00 | 116                     | 92.2 | 142                     | 108  | 989                        | 153                        | 0.478                             | 44.1                     |
|              | 8.0       | 28.1 | 35.79 | 1,040                 | 549   | 5.39               | 3.92 | 139                     | 110  | 173                     | 131  | 1,210                      | 183                        | 0.473                             | 35.6                     |
|              | 9.0       | 31.1 | 39.67 | 1,130                 | 595   | 5.34               | 3.87 | 151                     | 119  | 190                     | 143  | 1,320                      | 199                        | 0.469                             | 32.1                     |
|              | 10.0      | 34.1 | 43.43 | 1,210                 | 636   | 5.28               | 3.83 | 161                     | 127  | 206                     | 155  | 1,430                      | 213                        | 0.466                             | 29.3                     |
|              | 12.0      | 39.7 | 50.53 | 1,350                 | 705   | 5.17               | 3.74 | 180                     | 141  | 234                     | 175  | 1,630                      | 238                        | 0.459                             | 25.2                     |
| 175 x 125    | 4.5       | 20.2 | 25.67 | 1,120                 | 669   | 6.61               | 5.11 | 128                     | 107  | 153                     | 122  | 1,330                      | 174                        | 0.585                             | 49.6                     |
|              | 5.0       | 22.3 | 28.36 | 1,230                 | 733   | 6.59               | 5.08 | 141                     | 117  | 169                     | 134  | 1,460                      | 191                        | 0.583                             | 44.9                     |
|              | 6.0       | 26.4 | 33.63 | 1,440                 | 853   | 6.53               | 5.04 | 164                     | 137  | 198                     | 158  | 1,720                      | 222                        | 0.579                             | 37.9                     |
|              | 6.3       | 27.6 | 35.19 | 1,490                 | 888   | 6.52               | 5.02 | 171                     | 142  | 207                     | 164  | 1,800                      | 232                        | 0.578                             | 36.2                     |
|              | 8.0       | 34.4 | 43.79 | 1,810                 | 1,070 | 6.43               | 4.95 | 207                     | 171  | 254                     | 201  | 2,210                      | 280                        | 0.573                             | 29.1                     |
|              | 9.0       | 38.2 | 48.67 | 1,980                 | 1,170 | 6.38               | 4.90 | 226                     | 187  | 280                     | 222  | 2,440                      | 307                        | 0.569                             | 26.2                     |
|              | 10.0      | 41.9 | 53.43 | 2,140                 | 1,260 | 6.32               | 4.85 | 244                     | 201  | 304                     | 241  | 2,660                      | 331                        | 0.566                             | 23.8                     |
|              | 12.0      | 49.1 | 62.53 | 2,420                 | 1,420 | 6.22               | 4.76 | 276                     | 227  | 350                     | 276  | 3,060                      | 375                        | 0.559                             | 20.4                     |
| 200 x 100    | 3.2       | 14.5 | 18.53 | 981                   | 337   | 7.28               | 4.27 | 98.1                    | 67.5 | 120                     | 74.7 | 801                        | 116                        | 0.589                             | 68.8                     |
|              | 4.0       | 18.0 | 22.95 | 1,200                 | 411   | 7.23               | 4.23 | 120                     | 82.2 | 148                     | 91.7 | 985                        | 142                        | 0.586                             | 55.5                     |
|              | 4.5       | 20.2 | 25.67 | 1,330                 | 455   | 7.20               | 4.21 | 133                     | 90.9 | 165                     | 102  | 1,100                      | 157                        | 0.585                             | 49.6                     |
|              | 5.0       | 22.3 | 28.36 | 1,460                 | 497   | 7.17               | 4.19 | 146                     | 99.4 | 181                     | 112  | 1,210                      | 172                        | 0.583                             | 44.9                     |
|              | 6.0       | 26.4 | 33.63 | 1,700                 | 577   | 7.12               | 4.14 | 170                     | 115  | 213                     | 132  | 1,420                      | 200                        | 0.579                             | 37.9                     |
|              | 6.3       | 27.6 | 35.19 | 1,770                 | 600   | 7.10               | 4.13 | 177                     | 120  | 223                     | 137  | 1,480                      | 208                        | 0.578                             | 36.2                     |
|              | 8.0       | 34.4 | 43.79 | 2,150                 | 719   | 7.00               | 4.05 | 215                     | 144  | 273                     | 167  | 1,810                      | 251                        | 0.573                             | 29.1                     |
|              | 9.0       | 38.2 | 48.67 | 2,350                 | 782   | 6.94               | 4.01 | 235                     | 156  | 300                     | 184  | 1,990                      | 273                        | 0.569                             | 26.2                     |
|              | 10.0      | 41.9 | 53.43 | 2,530                 | 839   | 6.89               | 3.96 | 253                     | 168  | 327                     | 200  | 2,160                      | 294                        | 0.566                             | 23.8                     |
|              | 12.0      | 49.1 | 62.53 | 2,860                 | 939   | 6.77               | 3.87 | 286                     | 188  | 375                     | 228  | 2,470                      | 331                        | 0.559                             | 20.4                     |
|              | 12.5      | 50.8 | 64.73 | 2,940                 | 961   | 6.74               | 3.85 | 294                     | 192  | 386                     | 235  | 2,540                      | 340                        | 0.557                             | 19.7                     |
|              | 12.5      | 50.8 | 64.73 | 2,940                 | 961   | 6.74               | 3.85 | 294                     | 192  | 386                     | 235  | 2,540                      | 340                        | 0.557                             | 19.7                     |
| 200 x 150    | 4.5       | 23.7 | 30.17 | 1,760                 | 1,130 | 7.64               | 6.13 | 176                     | 151  | 209                     | 172  | 2,170                      | 243                        | 0.685                             | 42.2                     |
|              | 5.0       | 26.2 | 33.36 | 1,930                 | 1,250 | 7.62               | 6.11 | 193                     | 166  | 230                     | 189  | 2,390                      | 267                        | 0.683                             | 38.2                     |
|              | 6.0       | 31.1 | 39.63 | 2,270                 | 1,460 | 7.57               | 6.06 | 227                     | 194  | 271                     | 223  | 2,830                      | 313                        | 0.679                             | 32.1                     |
|              | 6.3       | 32.6 | 41.49 | 2,360                 | 1,520 | 7.55               | 6.05 | 236                     | 202  | 284                     | 233  | 2,950                      | 326                        | 0.678                             | 30.7                     |
|              | 8.0       | 40.7 | 51.79 | 2,880                 | 1,850 | 7.46               | 5.97 | 288                     | 246  | 350                     | 287  | 3,650                      | 398                        | 0.673                             | 24.6                     |
|              | 9.0       | 45.3 | 57.67 | 3,170                 | 2,020 | 7.41               | 5.93 | 317                     | 270  | 386                     | 317  | 4,040                      | 437                        | 0.669                             | 22.1                     |
|              | 10.0      | 49.8 | 63.43 | 3,440                 | 2,190 | 7.36               | 5.88 | 344                     | 292  | 422                     | 346  | 4,420                      | 474                        | 0.666                             | 20.1                     |
|              | 12.0      | 58.5 | 74.53 | 3,920                 | 2,500 | 7.26               | 5.79 | 392                     | 333  | 488                     | 399  | 5,130                      | 542                        | 0.659                             | 17.1                     |
|              | 12.5      | 60.6 | 77.23 | 4,040                 | 2,560 | 7.23               | 5.76 | 404                     | 342  | 504                     | 412  | 5,290                      | 557                        | 0.657                             | 16.5                     |
|              | 12.5      | 60.6 | 77.23 | 4,040                 | 2,560 | 7.23               | 5.76 | 404                     | 342  | 504                     | 412  | 5,290                      | 557                        | 0.657                             | 16.5                     |
|              | 12.5      | 60.6 | 77.23 | 4,040                 | 2,560 | 7.23               | 5.76 | 404                     | 342  | 504                     | 412  | 5,290                      | 557                        | 0.657                             | 16.5                     |
|              | 12.5      | 60.6 | 77.23 | 4,040                 | 2,560 | 7.23               | 5.76 | 404                     | 342  | 504                     | 412  | 5,290                      | 557                        | 0.657                             | 16.5                     |
| 250 x 100    | 4.5       | 23.7 | 30.17 | 2,330                 | 557   | 8.78               | 4.30 | 186                     | 111  | 235                     | 124  | 1,470                      | 198                        | 0.685                             | 42.2                     |
|              | 5.0       | 26.2 | 33.36 | 2,550                 | 610   | 8.75               | 4.28 | 204                     | 122  | 259                     | 136  | 1,620                      | 217                        | 0.683                             | 38.2                     |
|              | 6.0       | 31.1 | 39.63 | 2,990                 | 710   | 8.69               | 4.23 | 239                     | 142  | 305                     | 160  | 1,900                      | 253                        | 0.679                             | 32.1                     |
|              | 6.3       | 32.6 | 41.49 | 3,120                 | 738   | 8.67               | 4.22 | 250                     | 148  | 318                     | 167  | 1,990                      | 264                        | 0.678                             | 30.7                     |
|              | 8.0       | 40.7 | 51.79 | 3,800                 | 889   | 8.57               | 4.14 | 304                     | 178  | 392                     | 204  | 2,430                      | 319                        | 0.673                             | 24.6                     |
|              | 9.0       | 45.3 | 57.67 | 4,170                 | 969   | 8.51               | 4.10 | 334                     | 194  | 433                     | 225  | 2,680                      | 348                        | 0.669                             | 22.1                     |
|              | 10.0      | 49.8 | 63.43 | 4,520                 | 1,040 | 8.44               | 4.05 | 362                     | 209  | 473                     | 245  | 2,910                      | 376                        | 0.666                             | 20.1                     |
|              | 12.0      | 58.5 | 74.53 | 5,160                 | 1,170 | 8.32               | 3.97 | 413                     | 235  | 547                     | 281  | 3,340                      | 425                        | 0.659                             | 17.1                     |
| 225 x 175    | 4.5       | 27.2 | 34.67 | 2,610                 | 1,780 | 8.67               | 7.16 | 232                     | 203  | 273                     | 230  | 3,300                      | 323                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 2,870                 | 1,950 | 8.64               | 7.13 | 255                     | 223  | 301                     | 254  | 3,640                      | 356                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 3,370                 | 2,290 | 8.59               | 7.09 | 300                     | 262  | 356                     | 300  | 4,310                      | 418                        | 0.779                             | 27.9                     |
| 250 x 150    | 4.5       | 27.2 | 34.67 | 3,000                 | 1,370 | 9.31               | 6.29 | 240                     | 183  | 290                     | 205  | 2,980                      | 306                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 3,300                 | 1,510 | 9.28               | 6.27 | 264                     | 201  | 320                     | 225  | 3,280                      | 337                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 3,890                 | 1,770 | 9.23               | 6.23 | 311                     | 236  | 378                     | 266  | 3,890                      | 396                        | 0.779                             | 27.9                     |
|              | 6.3       | 37.5 | 47.79 | 4,060                 | 1,840 | 9.21               | 6.21 | 324                     | 246  | 395                     | 278  | 4,060                      | 413                        | 0.778                             | 26.7                     |
|              | 8.0       | 46.9 | 59.79 | 4,970                 | 2,250 | 9.12               | 6.13 | 398                     | 300  | 489                     | 344  | 5,030                      | 505                        | 0.773                             | 21.3                     |
|              | 9.0       | 52.3 | 66.67 | 5,480                 | 2,470 | 9.07               | 6.09 | 438                     | 330  | 542                     | 380  | 5,580                      | 556                        | 0.769                             | 19.1                     |
|              | 10.0      | 57.6 | 73.43 | 5,960                 | 2,680 | 9.01               | 6.04 | 477                     | 358  | 593                     | 416  | 6,100                      | 604                        | 0.766                             | 17.3                     |
|              | 12.0      | 67.9 | 86.53 | 6,860                 | 3,070 | 8.90               | 5.95 | 548                     | 409  | 689                     | 482  | 7,100                      | 694                        | 0.759                             | 14.7                     |
|              | 12.5      | 70.4 | 89.73 | 7,060                 | 3,160 | 8.87               | 5.93 | 565                     | 421  | 712                     | 498  | 7,340                      | 715                        | 0.757                             | 14.2                     |
|              | 12.5      | 70.4 | 89.73 | 7,060                 | 3,160 | 8.87               | 5.93 | 565                     | 421  | 712                     | 498  | 7,340                      | 715                        | 0.757                             | 14.2                     |
|              | 12.5      | 70.4 | 89.73 | 7,060                 | 3,160 | 8.87               | 5.93 | 565                     | 421  | 712                     | 498  | 7,340                      | 715                        | 0.757                             | 14.2                     |
|              | 12.5      | 70.4 | 89.73 | 7,060                 | 3,160 | 8.87               | 5.93 | 565                     | 421  | 712                     | 498  | 7,340                      | 715                        | 0.757                             | 14.2                     |
| 300 x 100    | 4.5       | 27.2 | 34.67 | 3,700                 | 660   | 10.3               | 4.36 | 246                     | 132  | 316                     | 145  | 1,860                      | 239                        | 0.785                             | 36.7                     |
|              | 5.0       | 30.1 | 38.36 | 4,070                 | 723   | 10.3               | 4.34 | 271                     | 145  | 348                     | 160  | 2,040                      | 262                        | 0.783                             | 33.2                     |
|              | 6.0       | 35.8 | 45.63 | 4,780                 | 842   | 10.2               | 4.30 | 319                     | 168  | 411                     | 188  | 2,400                      | 306                        | 0.779                             | 27.9                     |
|              | 6.3       | 37.5 | 47.79 | 4,980                 | 877   | 10.2               | 4.28 | 332                     | 175  | 430                     | 196  | 2,510                      | 319                        | 0.778                             | 26.7                     |
|              | 8.0       | 46.9 | 59.79 | 6,100                 | 1,060 | 10.1               | 4.21 | 407                     | 212  | 532                     | 241  | 3,070                      | 386                        | 0.773                             | 21.3                     |
|              | 9.0       | 52.3 | 66.67 | 6,720                 | 1,160 | 10.0               | 4.16 | 448                     | 231  | 589                     | 266  | 3,390                      | 423                        | 0.769                             | 19.1                     |

Section properties    Rectangular : 250 mm. x 200 mm to 600 mm x 300 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus         |                                 | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                 |                                 |                            |                            |                                   |                          |
| A mm         | x B mm    | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>px</sub> cm <sup>3</sup> | Z <sub>py</sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 250 x 200    | 6.0       | 40.5   | 51.63             | 4,780                          | 3,400                          | 9.62               | 8.11              | 382                            | 340                            | 451                             | 388                             | 6,240                      | 538                        | 0.879                             | 24.7                     |
|              | 6.3       | 42.5   | 54.09             | 4,990                          | 3,550                          | 9.61               | 8.10              | 399                            | 355                            | 472                             | 406                             | 6,530                      | 562                        | 0.878                             | 23.6                     |
|              | 8.0       | 53.2   | 67.79             | 6,140                          | 4,360                          | 9.52               | 8.02              | 492                            | 436                            | 586                             | 503                             | 8,120                      | 692                        | 0.873                             | 18.8                     |
|              | 9.0       | 59.4   | 75.67             | 6,790                          | 4,810                          | 9.47               | 7.97              | 543                            | 481                            | 650                             | 558                             | 9,030                      | 765                        | 0.869                             | 16.8                     |
|              | 10.0      | 65.5   | 83.43             | 7,400                          | 5,240                          | 9.42               | 7.93              | 592                            | 524                            | 713                             | 612                             | 9,910                      | 834                        | 0.866                             | 15.3                     |
|              | 12.0      | 77.4   | 98.53             | 8,550                          | 6,050                          | 9.32               | 7.83              | 684                            | 605                            | 832                             | 714                             | 11,600                     | 965                        | 0.859                             | 12.9                     |
|              | 12.5      | 80.3   | 102.2             | 8,830                          | 6,230                          | 9.29               | 7.81              | 706                            | 623                            | 861                             | 738                             | 12,000                     | 996                        | 0.857                             | 12.5                     |
| 300 x 150    | 6.0       | 40.5   | 51.63             | 6,070                          | 2,080                          | 10.8               | 6.35              | 405                            | 277                            | 500                             | 309                             | 4,990                      | 479                        | 0.879                             | 24.7                     |
|              | 6.3       | 42.5   | 54.09             | 6,340                          | 2,170                          | 10.8               | 6.33              | 423                            | 289                            | 523                             | 324                             | 5,220                      | 499                        | 0.878                             | 23.6                     |
|              | 8.0       | 53.2   | 67.79             | 7,810                          | 2,650                          | 10.7               | 6.26              | 521                            | 354                            | 649                             | 401                             | 6,470                      | 613                        | 0.873                             | 18.8                     |
|              | 9.0       | 59.4   | 75.67             | 8,620                          | 2,920                          | 10.7               | 6.21              | 575                            | 389                            | 720                             | 444                             | 7,170                      | 675                        | 0.869                             | 16.8                     |
|              | 10.0      | 65.5   | 83.43             | 9,410                          | 3,170                          | 10.6               | 6.17              | 627                            | 423                            | 789                             | 486                             | 7,860                      | 735                        | 0.866                             | 15.3                     |
|              | 12.0      | 77.4   | 98.53             | 10,900                         | 3,640                          | 10.5               | 6.08              | 725                            | 485                            | 921                             | 565                             | 9,150                      | 846                        | 0.859                             | 12.9                     |
|              | 12.5      | 80.3   | 102.2             | 11,200                         | 3,750                          | 10.5               | 6.06              | 748                            | 500                            | 952                             | 584                             | 9,460                      | 873                        | 0.857                             | 12.5                     |
| 300 x 200    | 6.0       | 45.2   | 57.63             | 7,370                          | 3,960                          | 11.3               | 8.29              | 491                            | 396                            | 588                             | 446                             | 8,120                      | 651                        | 0.979                             | 22.1                     |
|              | 6.3       | 47.4   | 60.39             | 7,700                          | 4,140                          | 11.3               | 8.28              | 513                            | 414                            | 615                             | 467                             | 8,490                      | 680                        | 0.978                             | 21.1                     |
|              | 8.0       | 59.5   | 75.79             | 9,510                          | 5,100                          | 11.2               | 8.20              | 634                            | 510                            | 765                             | 580                             | 10,600                     | 840                        | 0.973                             | 16.8                     |
|              | 9.0       | 66.5   | 84.67             | 10,500                         | 5,630                          | 11.2               | 8.16              | 702                            | 563                            | 851                             | 644                             | 11,800                     | 929                        | 0.969                             | 15.0                     |
|              | 10.0      | 73.3   | 93.43             | 11,500                         | 6,140                          | 11.1               | 8.11              | 767                            | 614                            | 934                             | 707                             | 12,900                     | 1,010                      | 0.966                             | 13.6                     |
|              | 12.0      | 86.8   | 110.5             | 13,400                         | 7,110                          | 11.0               | 8.02              | 891                            | 711                            | 1,090                           | 826                             | 15,200                     | 1,180                      | 0.959                             | 11.5                     |
|              | 12.5      | 90.1   | 114.7             | 13,800                         | 7,330                          | 11.0               | 8.00              | 920                            | 733                            | 1,130                           | 855                             | 15,700                     | 1,220                      | 0.957                             | 11.1                     |
| 350 x 150    | 6.0       | 45.2   | 57.63             | 8,910                          | 2,390                          | 12.4               | 6.44              | 509                            | 319                            | 636                             | 353                             | 6,120                      | 562                        | 0.979                             | 22.1                     |
|              | 6.3       | 47.4   | 60.39             | 9,310                          | 2,490                          | 12.4               | 6.43              | 532                            | 333                            | 666                             | 369                             | 6,400                      | 586                        | 0.978                             | 21.1                     |
|              | 8.0       | 59.5   | 75.79             | 11,500                         | 3,060                          | 12.3               | 6.35              | 657                            | 408                            | 828                             | 457                             | 7,940                      | 720                        | 0.973                             | 16.8                     |
|              | 9.0       | 66.5   | 84.67             | 12,700                         | 3,370                          | 12.3               | 6.31              | 727                            | 449                            | 920                             | 507                             | 8,810                      | 795                        | 0.969                             | 15.0                     |
|              | 10.0      | 73.3   | 93.43             | 13,900                         | 3,660                          | 12.2               | 6.26              | 794                            | 489                            | 1,010                           | 556                             | 9,650                      | 866                        | 0.966                             | 13.6                     |
|              | 12.0      | 86.8   | 110.5             | 16,100                         | 4,210                          | 12.1               | 6.17              | 921                            | 562                            | 1,180                           | 648                             | 11,300                     | 999                        | 0.959                             | 11.5                     |
|              | 12.5      | 90.1   | 114.7             | 16,600                         | 4,340                          | 12.0               | 6.15              | 951                            | 579                            | 1,220                           | 670                             | 11,600                     | 1,030                      | 0.957                             | 11.1                     |
| 350 x 250    | 6.0       | 54.7   | 69.63             | 12,500                         | 7,460                          | 13.4               | 10.3              | 712                            | 597                            | 843                             | 671                             | 14,600                     | 967                        | 1.18                              | 18.3                     |
|              | 6.3       | 57.3   | 72.99             | 13,000                         | 7,800                          | 13.4               | 10.3              | 744                            | 624                            | 882                             | 702                             | 15,200                     | 1010                       | 1.18                              | 17.5                     |
|              | 8.0       | 72.1   | 91.79             | 16,200                         | 9,660                          | 13.3               | 10.3              | 924                            | 773                            | 1,100                           | 876                             | 19,100                     | 1,250                      | 1.17                              | 13.9                     |
|              | 9.0       | 80.6   | 102.7             | 17,900                         | 10,700                         | 13.2               | 10.2              | 1,030                          | 857                            | 1,230                           | 976                             | 21,300                     | 1,390                      | 1.17                              | 12.4                     |
|              | 10.0      | 89.0   | 113.4             | 19,700                         | 11,700                         | 13.2               | 10.2              | 1,120                          | 938                            | 1,350                           | 1,070                           | 23,400                     | 1,520                      | 1.17                              | 11.2                     |
|              | 12.0      | 106    | 134.5             | 23,000                         | 13,700                         | 13.1               | 10.1              | 1,310                          | 1,090                          | 1,590                           | 1,260                           | 27,600                     | 1,780                      | 1.16                              | 9.47                     |
|              | 12.5      | 110    | 139.7             | 23,800                         | 14,100                         | 13.0               | 10.1              | 1,360                          | 1,130                          | 1,650                           | 1,310                           | 28,600                     | 1,840                      | 1.16                              | 9.12                     |
| 400 x 200    | 6.0       | 54.7   | 69.63             | 14,800                         | 5,090                          | 14.6               | 8.55              | 740                            | 509                            | 906                             | 562                             | 12,100                     | 877                        | 1.18                              | 18.3                     |
|              | 6.3       | 57.3   | 72.99             | 15,500                         | 5,320                          | 14.6               | 8.54              | 773                            | 532                            | 948                             | 589                             | 12,600                     | 917                        | 1.18                              | 17.5                     |
|              | 8.0       | 72.1   | 91.79             | 19,200                         | 6,570                          | 14.5               | 8.46              | 960                            | 657                            | 1,180                           | 734                             | 15,800                     | 1,130                      | 1.17                              | 13.9                     |
|              | 9.0       | 80.6   | 102.7             | 21,300                         | 7,270                          | 14.4               | 8.42              | 1,070                          | 727                            | 1,320                           | 816                             | 17,600                     | 1,260                      | 1.17                              | 12.4                     |
|              | 10.0      | 89.0   | 113.4             | 23,400                         | 7,950                          | 14.3               | 8.37              | 1,170                          | 795                            | 1,450                           | 897                             | 19,300                     | 1,380                      | 1.17                              | 11.2                     |
|              | 12.0      | 106    | 134.5             | 27,300                         | 9,230                          | 14.2               | 8.28              | 1,360                          | 923                            | 1,710                           | 1,050                           | 22,700                     | 1,600                      | 1.16                              | 9.47                     |
|              | 12.5      | 110    | 139.7             | 28,200                         | 9,540                          | 14.2               | 8.26              | 1,410                          | 954                            | 1,770                           | 1,090                           | 23,500                     | 1,650                      | 1.16                              | 9.12                     |
| 400 x 300    | 9.0       | 94.7   | 120.7             | 28,200                         | 18,200                         | 15.3               | 12.3              | 1,410                          | 1,210                          | 1,670                           | 1,370                           | 34,700                     | 1,940                      | 1.37                              | 10.6                     |
|              | 10.0      | 105    | 133.4             | 31,000                         | 19,900                         | 15.2               | 12.2              | 1,550                          | 1,330                          | 1,840                           | 1,510                           | 38,300                     | 2,130                      | 1.37                              | 9.55                     |
|              | 12.0      | 124    | 158.5             | 36,300                         | 23,300                         | 15.1               | 12.1              | 1,810                          | 1,550                          | 2,170                           | 1,780                           | 45,200                     | 2,500                      | 1.36                              | 8.04                     |
|              | 12.5      | 129    | 164.7             | 37,600                         | 24,100                         | 15.1               | 12.1              | 1,880                          | 1,610                          | 2,250                           | 1,850                           | 46,900                     | 2,590                      | 1.36                              | 7.73                     |
|              | 16.0      | 163    | 207.2             | 46,100                         | 29,500                         | 14.9               | 11.9              | 2,310                          | 1,970                          | 2,800                           | 2,300                           | 58,400                     | 3,180                      | 1.35                              | 6.15                     |
| 500 x 300    | 12.0      | 143    | 182.5             | 62,200                         | 28,300                         | 18.5               | 12.5              | 2,490                          | 1,890                          | 3,020                           | 2,130                           | 62,200                     | 3,170                      | 1.56                              | 6.98                     |
|              | 12.5      | 149    | 189.7             | 64,400                         | 29,300                         | 18.4               | 12.4              | 2,580                          | 1,950                          | 3,140                           | 2,210                           | 64,500                     | 3,280                      | 1.56                              | 6.71                     |
|              | 16.0      | 188    | 239.2             | 79,600                         | 36,000                         | 18.2               | 12.3              | 3,180                          | 2,400                          | 3,910                           | 2,750                           | 80,500                     | 4,040                      | 1.55                              | 5.33                     |
|              | 19.0      | 220    | 280.3             | 91,600                         | 41,300                         | 18.1               | 12.1              | 3,660                          | 2,750                          | 4,540                           | 3,190                           | 93,500                     | 4,640                      | 1.53                              | 4.55                     |
| 600 x 300    | 12.0      | 162    | 206.5             | 97,200                         | 33,300                         | 21.7               | 12.7              | 3,240                          | 2,220                          | 4,000                           | 2,480                           | 79,800                     | 3,830                      | 1.76                              | 6.17                     |
|              | 12.5      | 169    | 214.7             | 101,000                        | 34,500                         | 21.7               | 12.7              | 3,360                          | 2,300                          | 4,150                           | 2,570                           | 82,900                     | 3,970                      | 1.76                              | 5.93                     |
|              | 16.0      | 213    | 271.2             | 125,000                        | 42,500                         | 21.5               | 12.5              | 4,160                          | 2,830                          | 5,190                           | 3,200                           | 103,000                    | 4,900                      | 1.75                              | 4.70                     |
|              | 19.0      | 250    | 318.3             | 144,000                        | 48,800                         | 21.3               | 12.4              | 4,810                          | 3,250                          | 6,040                           | 3,720                           | 120,000                    | 5,640                      | 1.73                              | 4.00                     |
|              | 22.0      | 286    | 364.2             | 162,000                        | 54,600                         | 21.1               | 12.2              | 5,420                          | 3,640                          | 6,850                           | 4,210                           | 136,000                    | 6,340                      | 1.72                              | 3.50                     |

BCR295 and UBCR365 “Building Column Specification approved by the Minister of Land, Infrastructure, Transport and Tourism, Japan”

Mechanical properties and chemical composition

Refer to page 7-8. BCR295 and UBCR365 have different mechanical properties and chemical composition.

Tolerances

The tolerances on dimensions are established in accordance with BCR295 and UBCR365.

| Characteristics                              | Tolerances                                            |                        |
|----------------------------------------------|-------------------------------------------------------|------------------------|
| Outside dimensions of side                   | ±1.0% and ±3.0mm                                      |                        |
| H : Longest side                             |                                                       |                        |
| B : Shortest side                            |                                                       |                        |
| Wall thickness(T)                            | (6mm≤T<16mm)                                          | - 0.3mm,+1.0mm         |
|                                              | (16mm≤T)                                              | - 0.3mm,+1.2mm         |
| Unevenness of the flat portions of each side | ±0.5% and±3.0mm                                       |                        |
| Squareness of sides                          | 90°±1.0°                                              |                        |
| External corner radius                       | 2.5T±0.5T                                             |                        |
| Straightness                                 | (L<9m)                                                | 1/1500 in total length |
|                                              | (9m≤L)                                                | 1/1250 in total length |
| Twist                                        | [1.5 x Outside dimension(mm)/1000] x total length (m) |                        |
| Length                                       | 0, +50mm (Private standard tolerance)                 |                        |

NOTE

1)Outside dimensions are measured across the flats at positions at least 50mm from the end of the HSS.

Packing

In bare bundle, steel banded or in bulk. Standard lengths are 6, 8 and 12 meter.

Marking

Each of the square and rectangular hollow sections shall be marked with the following information.

- a)Manufacturer's Name b)Product's Name c)Standard d)Size e)Length f)Manufacturing Year and Month  
g)Manufacturing Mill h)Heat No. i)Country of Origin

Inspection and Testing

BCR295 and UBCR365 are subject to tensile testing in accordance with JIS Z 2241.

The general matters of inspection shall be in accordance with JIS G 0404.

If you need additional requirements, please consult us.

| Available of size range |                        |                    |     |     |      | Dimensions (mm-size) |      |      |      |
|-------------------------|------------------------|--------------------|-----|-----|------|----------------------|------|------|------|
| Size(mm)                |                        | Wall thickness(mm) |     |     |      |                      |      |      |      |
| SQUARE                  | RECTANGULAR            | 6.0                | 8.0 | 9.0 | 12.0 | 14.0                 | 16.0 | 19.0 | 22.0 |
| 150 x 150               | 175 x 125<br>200 x 100 | ●                  |     | ●   | ●    |                      |      |      |      |
|                         |                        | ●                  |     | ●   | ●    |                      |      |      |      |
|                         |                        | ●                  |     | ●   | ●    |                      |      |      |      |
| 175 x 175               | 200 x 150<br>250 x 100 | ●                  |     | ●   | ●    |                      |      |      |      |
|                         |                        | ●                  |     | ●   | ●    |                      |      |      |      |
|                         |                        | ●                  |     | ●   | ●    |                      |      |      |      |
| 200 x 200               | 250 x 150              | ●                  | ●   | ●   | ●    |                      |      |      |      |
|                         |                        | ●                  | ●   | ●   | ●    |                      |      |      |      |
| 250 x 250               | 300 x 200<br>350 x 150 | ●                  | ●   | ●   | ●    | ●                    | ●    |      |      |
|                         |                        | ●                  | ●   | ●   | ●    | ●                    | ●    |      |      |
|                         |                        | ●                  | ●   | ●   | ●    |                      |      |      |      |
| 300 x 300               | 400 x 200              | ●                  | ●   | ●   | ●    | ●                    | ●    | ●    |      |
|                         |                        | ●                  | ●   | ●   | ●    |                      |      |      |      |
| 350 x 350               |                        |                    |     | ●   | ●    | ●                    | ●    | ●    | ●    |
| 400 x 400               |                        |                    |     | ●   | ●    | ●                    | ●    | ●    | ●    |
| 450 x 450               | 600 x 300              |                    |     | ●   | ●    | ●                    | ●    | ●    | ●    |
|                         |                        |                    |     |     | ●    | ●                    | ●    | ●    |      |
| 500 x 500               |                        |                    |     | ●   | ●    | ●                    | ●    | ●    | ●    |
| 550 x 550               |                        |                    |     |     |      |                      | ●    | ●    | ●    |

● BCR295 Available  
If you require other sizes, please consult us.



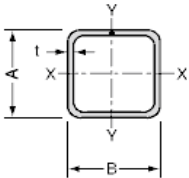
Section properties    Square : 150 mm x 150 mm to 550 mm x 550 mm

| Dimensions   |           | Mass   | Area  | Second moment of area |         | Radius of gyration |       | Elastic section modulus |        | Plastic section modulus |         | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------|-----------------------|---------|--------------------|-------|-------------------------|--------|-------------------------|---------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |       |                       |         |                    |       |                         |        |                         |         |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm² | Ix cm⁴                | Iy cm⁴  | ix cm              | iy cm | Zx cm³                  | Zy cm³ | Zpx cm³                 | Zpy cm³ | cm⁴                        | cm³                        | m²/m                              | m                        |
| 150 x 150    | 6.0       | 26.2   | 33.32 | 1,130                 | 1,130   | 5.82               | 5.82  | 150                     | 150    | 178                     | 178     | 1,840                      | 229                        | 0.574                             | 38.2                     |
|              | 9.0       | 37.7   | 47.98 | 1,540                 | 1,540   | 5.66               | 5.66  | 205                     | 205    | 248                     | 248     | 2,610                      | 316                        | 0.561                             | 26.6                     |
|              | 12.0      | 48.1   | 61.30 | 1,850                 | 1,850   | 5.50               | 5.50  | 247                     | 247    | 307                     | 307     | 3,260                      | 386                        | 0.548                             | 20.8                     |
| 175 x 175    | 6.0       | 30.9   | 39.32 | 1,840                 | 1,840   | 6.84               | 6.84  | 210                     | 210    | 246                     | 246     | 2,970                      | 320                        | 0.674                             | 32.4                     |
|              | 9.0       | 44.7   | 56.98 | 2,550                 | 2,550   | 6.68               | 6.68  | 291                     | 291    | 348                     | 348     | 4,250                      | 446                        | 0.661                             | 22.4                     |
|              | 12.0      | 57.5   | 73.30 | 3,120                 | 3,120   | 6.52               | 6.52  | 356                     | 356    | 437                     | 437     | 5,380                      | 552                        | 0.648                             | 17.4                     |
| 200 x 200    | 6.0       | 35.6   | 45.32 | 2,800                 | 2,800   | 7.86               | 7.86  | 280                     | 280    | 327                     | 327     | 4,480                      | 425                        | 0.774                             | 28.1                     |
|              | 8.0       | 46.5   | 59.24 | 3,570                 | 3,570   | 7.76               | 7.76  | 357                     | 357    | 421                     | 421     | 5,820                      | 544                        | 0.766                             | 21.5                     |
|              | 9.0       | 51.8   | 65.98 | 3,920                 | 3,920   | 7.71               | 7.71  | 392                     | 392    | 465                     | 465     | 6,450                      | 599                        | 0.761                             | 19.3                     |
|              | 12.0      | 67.0   | 85.30 | 4,860                 | 4,860   | 7.55               | 7.55  | 486                     | 486    | 588                     | 588     | 8,240                      | 749                        | 0.748                             | 14.9                     |
| 250 x 250    | 6.0       | 45.0   | 57.32 | 5,620                 | 5,620   | 9.90               | 9.90  | 450                     | 450    | 521                     | 521     | 8,870                      | 681                        | 0.974                             | 22.2                     |
|              | 8.0       | 59.1   | 75.24 | 7,230                 | 7,230   | 9.80               | 9.80  | 578                     | 578    | 676                     | 676     | 11,600                     | 878                        | 0.966                             | 16.9                     |
|              | 9.0       | 65.9   | 83.98 | 7,980                 | 7,980   | 9.75               | 9.75  | 639                     | 639    | 750                     | 750     | 12,900                     | 972                        | 0.961                             | 15.2                     |
|              | 12.0      | 85.8   | 109.3 | 10,100                | 10,100  | 9.59               | 9.59  | 805                     | 805    | 959                     | 959     | 16,700                     | 1,230                      | 0.948                             | 11.7                     |
|              | 14.0      | 98.5   | 125.4 | 11,300                | 11,300  | 9.49               | 9.49  | 903                     | 903    | 1,090                   | 1,090   | 19,000                     | 1,390                      | 0.940                             | 10.2                     |
|              | 16.0      | 111    | 141.0 | 12,400                | 12,400  | 9.38               | 9.38  | 992                     | 992    | 1,210                   | 1,210   | 21,200                     | 1,530                      | 0.931                             | 9.04                     |
| 300 x 300    | 6.0       | 54.4   | 69.32 | 9,890                 | 9,890   | 11.9               | 11.9  | 660                     | 660    | 760                     | 760     | 15,500                     | 996                        | 1.17                              | 18.4                     |
|              | 8.0       | 71.6   | 91.24 | 12,800                | 12,800  | 11.8               | 11.8  | 853                     | 853    | 991                     | 991     | 20,300                     | 1,290                      | 1.17                              | 14.0                     |
|              | 9.0       | 80.1   | 102.0 | 14,200                | 14,200  | 11.8               | 11.8  | 946                     | 946    | 1,100                   | 1,100   | 22,700                     | 1,430                      | 1.16                              | 12.5                     |
|              | 12.0      | 105    | 133.3 | 18,100                | 18,100  | 11.6               | 11.6  | 1,200                   | 1,200  | 1,420                   | 1,420   | 29,400                     | 1,830                      | 1.15                              | 9.56                     |
|              | 14.0      | 120    | 153.4 | 20,400                | 20,400  | 11.5               | 11.5  | 1,360                   | 1,360  | 1,620                   | 1,620   | 33,700                     | 2,080                      | 1.14                              | 8.30                     |
|              | 16.0      | 136    | 173.0 | 22,600                | 22,600  | 11.4               | 11.4  | 1,510                   | 1,510  | 1,810                   | 1,810   | 37,800                     | 2,310                      | 1.13                              | 7.36                     |
|              | 19.0      | 158    | 201.2 | 25,500                | 25,500  | 11.3               | 11.3  | 1,700                   | 1,700  | 2,070                   | 2,070   | 43,600                     | 2,630                      | 1.12                              | 6.33                     |
|              | 22.0      | 188    | 239.2 | 29,400                | 29,400  | 11.3               | 11.3  | 1,910                   | 1,910  | 2,260                   | 2,260   | 54,500                     | 2,910                      | 1.12                              | 5.33                     |
| 350 x 350    | 9.0       | 94.2   | 120.0 | 23,000                | 23,000  | 13.8               | 13.8  | 1,310                   | 1,310  | 1,520                   | 1,520   | 36,400                     | 1,990                      | 1.36                              | 10.6                     |
|              | 12.0      | 124    | 157.3 | 29,400                | 29,400  | 13.7               | 13.7  | 1,680                   | 1,680  | 1,970                   | 1,970   | 47,500                     | 2,560                      | 1.35                              | 8.10                     |
|              | 14.0      | 142    | 181.4 | 33,400                | 33,400  | 13.6               | 13.6  | 1,910                   | 1,910  | 2,260                   | 2,260   | 54,500                     | 2,910                      | 1.34                              | 7.02                     |
|              | 16.0      | 161    | 205.0 | 37,200                | 37,200  | 13.5               | 13.5  | 2,130                   | 2,130  | 2,530                   | 2,530   | 61,400                     | 3,250                      | 1.33                              | 6.21                     |
|              | 19.0      | 188    | 239.2 | 42,400                | 42,400  | 13.3               | 13.3  | 2,420                   | 2,420  | 2,910                   | 2,910   | 71,100                     | 3,720                      | 1.32                              | 5.33                     |
|              | 22.0      | 214    | 272.0 | 47,100                | 47,100  | 13.2               | 13.2  | 2,690                   | 2,690  | 3,270                   | 3,270   | 80,300                     | 4,150                      | 1.31                              | 4.68                     |
| 400 x 400    | 9.0       | 108    | 138.0 | 34,800                | 34,800  | 15.9               | 15.9  | 1,740                   | 1,740  | 2,010                   | 2,010   | 54,700                     | 2,630                      | 1.56                              | 9.23                     |
|              | 12.0      | 142    | 181.3 | 44,800                | 44,800  | 15.7               | 15.7  | 2,240                   | 2,240  | 2,610                   | 2,610   | 71,600                     | 3,400                      | 1.55                              | 7.03                     |
|              | 14.0      | 164    | 209.4 | 51,100                | 51,100  | 15.6               | 15.6  | 2,560                   | 2,560  | 3,000                   | 3,000   | 82,500                     | 3,890                      | 1.54                              | 6.08                     |
|              | 16.0      | 186    | 237.0 | 57,100                | 57,100  | 15.5               | 15.5  | 2,850                   | 2,850  | 3,370                   | 3,370   | 93,000                     | 4,350                      | 1.53                              | 5.38                     |
|              | 19.0      | 218    | 277.2 | 65,400                | 65,400  | 15.4               | 15.4  | 3,270                   | 3,270  | 3,900                   | 3,900   | 108,000                    | 5,000                      | 1.52                              | 4.60                     |
|              | 22.0      | 248    | 316.0 | 73,000                | 73,000  | 15.2               | 15.2  | 3,650                   | 3,650  | 4,390                   | 4,390   | 123,000                    | 5,610                      | 1.51                              | 4.03                     |
| 450 x 450    | 9.0       | 122    | 156.0 | 50,100                | 50,100  | 17.9               | 17.9  | 2,230                   | 2,230  | 2,560                   | 2,560   | 78,400                     | 3,360                      | 1.76                              | 8.17                     |
|              | 12.0      | 161    | 205.3 | 64,800                | 64,800  | 17.8               | 17.8  | 2,880                   | 2,880  | 3,340                   | 3,340   | 103,000                    | 4,360                      | 1.75                              | 6.21                     |
|              | 14.0      | 186    | 237.4 | 74,100                | 74,100  | 17.7               | 17.7  | 3,290                   | 3,290  | 3,840                   | 3,840   | 119,000                    | 5,000                      | 1.74                              | 5.37                     |
|              | 16.0      | 211    | 269.0 | 82,900                | 82,900  | 17.6               | 17.6  | 3,690                   | 3,690  | 4,330                   | 4,330   | 134,000                    | 5,610                      | 1.73                              | 4.74                     |
|              | 19.0      | 247    | 315.2 | 95,500                | 95,500  | 17.4               | 17.4  | 4,240                   | 4,240  | 5,020                   | 5,020   | 156,000                    | 6,480                      | 1.72                              | 4.04                     |
|              | 22.0      | 283    | 360.0 | 107,000               | 107,000 | 17.2               | 17.2  | 4,760                   | 4,760  | 5,680                   | 5,680   | 178,000                    | 7,290                      | 1.71                              | 3.54                     |
| 500 x 500    | 9.0       | 137    | 174.0 | 69,300                | 69,300  | 20.0               | 20.0  | 2,770                   | 2,770  | 3,190                   | 3,190   | 108,000                    | 4,190                      | 1.96                              | 7.32                     |
|              | 12.0      | 180    | 229.3 | 90,000                | 90,000  | 19.8               | 19.8  | 3,600                   | 3,600  | 4,160                   | 4,160   | 142,000                    | 5,450                      | 1.95                              | 5.56                     |
|              | 14.0      | 208    | 265.4 | 103,000               | 103,000 | 19.7               | 19.7  | 4,120                   | 4,120  | 4,790                   | 4,790   | 164,000                    | 6,250                      | 1.94                              | 4.80                     |
|              | 16.0      | 236    | 301.0 | 116,000               | 116,000 | 19.6               | 19.6  | 4,630                   | 4,630  | 5,410                   | 5,410   | 186,000                    | 7,030                      | 1.93                              | 4.23                     |
|              | 19.0      | 277    | 353.2 | 134,000               | 134,000 | 19.4               | 19.4  | 5,340                   | 5,340  | 6,290                   | 6,290   | 217,000                    | 8,140                      | 1.92                              | 3.61                     |
|              | 22.0      | 317    | 404.0 | 150,000               | 150,000 | 19.3               | 19.3  | 6,010                   | 6,010  | 7,130                   | 7,130   | 247,000                    | 9,190                      | 1.91                              | 3.15                     |
| 550 x 550    | 12.0      | 199    | 253.3 | 121,000               | 121,000 | 21.9               | 21.9  | 4,400                   | 4,400  | 5,080                   | 5,080   | 190,000                    | 6,650                      | 2.15                              | 5.03                     |
|              | 14.0      | 230    | 293.4 | 139,000               | 139,000 | 21.7               | 21.7  | 5,050                   | 5,050  | 5,850                   | 5,850   | 220,000                    | 7,640                      | 2.14                              | 4.34                     |
|              | 16.0      | 261    | 333.0 | 156,000               | 156,000 | 21.6               | 21.6  | 5,670                   | 5,670  | 6,610                   | 6,610   | 249,000                    | 8,600                      | 2.13                              | 3.83                     |
|              | 19.0      | 307    | 391.2 | 181,000               | 181,000 | 21.5               | 21.5  | 6,570                   | 6,570  | 7,700                   | 7,700   | 291,000                    | 9,990                      | 2.12                              | 3.26                     |
|              | 22.0      | 352    | 448.0 | 204,000               | 204,000 | 21.3               | 21.3  | 7,420                   | 7,420  | 8,750                   | 8,750   | 333,000                    | 11,300                     | 2.11                              | 2.84                     |

NOTE

The calculation of section properties are based on the following corner geometry, as standard.

| Thickness(T) | Inside corner profile | Outside corner profile |
|--------------|-----------------------|------------------------|
| nominal      | 1.5T                  | 2.5T                   |



Section properties    Rectangular : 175 mm x 125 mm to 600 mm x 300 mm

| Dimensions   |           | Mass   | Area              | Second moment of area          |                                | Radius of gyration |                   | Elastic section modulus        |                                | Plastic section modulus                    |                                            | Torsional inertia constant | Torsional modulus constant | Superficial area per meter length | Nominal length per tonne |
|--------------|-----------|--------|-------------------|--------------------------------|--------------------------------|--------------------|-------------------|--------------------------------|--------------------------------|--------------------------------------------|--------------------------------------------|----------------------------|----------------------------|-----------------------------------|--------------------------|
| Nominal size | Thickness |        |                   |                                |                                |                    |                   |                                |                                |                                            |                                            |                            |                            |                                   |                          |
| A x B mm     | t mm      | M kg/m | A cm <sup>2</sup> | I <sub>x</sub> cm <sup>4</sup> | I <sub>y</sub> cm <sup>4</sup> | i <sub>x</sub> cm  | i <sub>y</sub> cm | Z <sub>x</sub> cm <sup>3</sup> | Z <sub>y</sub> cm <sup>3</sup> | Z <sub>p<sub>x</sub></sub> cm <sup>3</sup> | Z <sub>p<sub>y</sub></sub> cm <sup>3</sup> | cm <sup>4</sup>            | cm <sup>3</sup>            | m <sup>2</sup> /m                 | m                        |
| 175 x 125    | 6.0       | 26.2   | 33.32             | 1,410                          | 841                            | 6.51               | 5.02              | 161                            | 135                            | 196                                        | 156                                        | 1,730                      | 222                        | 0.574                             | 38.2                     |
|              | 9.0       | 37.7   | 47.98             | 1,930                          | 1,140                          | 6.34               | 4.88              | 220                            | 183                            | 274                                        | 217                                        | 2,450                      | 305                        | 0.561                             | 26.6                     |
|              | 12.0      | 48.1   | 61.30             | 2,320                          | 1,370                          | 6.15               | 4.73              | 265                            | 219                            | 339                                        | 268                                        | 3,050                      | 371                        | 0.548                             | 20.8                     |
| 200 x 100    | 6.0       | 26.2   | 33.32             | 1,670                          | 569                            | 7.08               | 4.13              | 167                            | 114                            | 210                                        | 130                                        | 1,420                      | 200                        | 0.574                             | 38.2                     |
|              | 9.0       | 37.7   | 47.98             | 2,280                          | 764                            | 6.89               | 3.99              | 228                            | 153                            | 293                                        | 180                                        | 1,990                      | 272                        | 0.561                             | 26.6                     |
|              | 12.0      | 48.1   | 61.30             | 2,740                          | 908                            | 6.68               | 3.85              | 274                            | 182                            | 363                                        | 222                                        | 2,450                      | 327                        | 0.548                             | 20.8                     |
| 200 x 150    | 6.0       | 30.9   | 39.32             | 2,240                          | 1,440                          | 7.54               | 6.05              | 224                            | 192                            | 268                                        | 221                                        | 2,840                      | 312                        | 0.674                             | 32.4                     |
|              | 9.0       | 44.7   | 56.98             | 3,100                          | 1,990                          | 7.37               | 5.90              | 310                            | 265                            | 379                                        | 312                                        | 4,050                      | 435                        | 0.661                             | 22.4                     |
|              | 12.0      | 57.5   | 73.30             | 3,800                          | 2,430                          | 7.20               | 5.75              | 380                            | 323                            | 476                                        | 390                                        | 5,130                      | 538                        | 0.648                             | 17.4                     |
| 250 x 100    | 6.0       | 30.9   | 39.32             | 2,940                          | 702                            | 8.65               | 4.22              | 236                            | 140                            | 301                                        | 158                                        | 1,910                      | 253                        | 0.674                             | 32.4                     |
|              | 9.0       | 44.7   | 56.98             | 4,060                          | 951                            | 8.44               | 4.09              | 325                            | 190                            | 425                                        | 221                                        | 2,680                      | 346                        | 0.661                             | 22.4                     |
|              | 12.0      | 57.5   | 73.30             | 4,960                          | 1,140                          | 8.23               | 3.95              | 397                            | 228                            | 531                                        | 275                                        | 3,320                      | 421                        | 0.648                             | 17.4                     |
| 250 x 150    | 6.0       | 35.6   | 45.32             | 3,840                          | 1,750                          | 9.20               | 6.22              | 307                            | 233                            | 374                                        | 264                                        | 3,900                      | 395                        | 0.774                             | 28.1                     |
|              | 8.0       | 46.5   | 59.24             | 4,890                          | 2,220                          | 9.08               | 6.12              | 391                            | 296                            | 482                                        | 340                                        | 5,050                      | 504                        | 0.766                             | 21.5                     |
|              | 9.0       | 51.8   | 65.98             | 5,370                          | 2,430                          | 9.02               | 6.07              | 430                            | 324                            | 533                                        | 375                                        | 5,600                      | 554                        | 0.761                             | 19.3                     |
|              | 12.0      | 67.0   | 85.30             | 6,660                          | 3,000                          | 8.84               | 5.93              | 533                            | 400                            | 674                                        | 473                                        | 7,110                      | 690                        | 0.748                             | 14.9                     |
| 300 x 200    | 6.0       | 45.0   | 57.32             | 7,300                          | 3,930                          | 11.3               | 8.28              | 487                            | 393                            | 583                                        | 443                                        | 8,140                      | 651                        | 0.974                             | 22.2                     |
|              | 8.0       | 59.1   | 75.24             | 9,390                          | 5,040                          | 11.2               | 8.19              | 626                            | 504                            | 757                                        | 574                                        | 10,600                     | 838                        | 0.966                             | 16.9                     |
|              | 9.0       | 65.9   | 83.98             | 10,400                         | 5,560                          | 11.1               | 8.14              | 692                            | 556                            | 840                                        | 637                                        | 11,800                     | 927                        | 0.961                             | 15.2                     |
|              | 12.0      | 85.8   | 109.3             | 13,100                         | 6,980                          | 10.9               | 7.99              | 872                            | 698                            | 1,070                                      | 814                                        | 15,200                     | 1,170                      | 0.948                             | 11.7                     |
|              | 14.0      | 98.5   | 125.4             | 14,700                         | 7,820                          | 10.8               | 7.90              | 979                            | 782                            | 1,220                                      | 922                                        | 17,300                     | 1,320                      | 0.940                             | 10.2                     |
|              | 16.0      | 111    | 141.0             | 16,100                         | 8,570                          | 10.7               | 7.80              | 1,080                          | 857                            | 1,350                                      | 1,020                                      | 19,300                     | 1,450                      | 0.931                             | 9.04                     |
| 350 x 150    | 6.0       | 45.0   | 57.32             | 8,810                          | 2,370                          | 12.4               | 6.43              | 504                            | 316                            | 631                                        | 350                                        | 6,140                      | 561                        | 0.974                             | 22.2                     |
|              | 8.0       | 59.1   | 75.24             | 11,300                         | 3,030                          | 12.3               | 6.34              | 647                            | 404                            | 818                                        | 453                                        | 7,970                      | 719                        | 0.966                             | 16.9                     |
|              | 9.0       | 65.9   | 83.98             | 12,500                         | 3,330                          | 12.2               | 6.30              | 714                            | 444                            | 908                                        | 502                                        | 8,840                      | 793                        | 0.961                             | 15.2                     |
|              | 12.0      | 85.8   | 109.3             | 15,700                         | 4,140                          | 12.0               | 6.16              | 899                            | 552                            | 1,160                                      | 638                                        | 11,300                     | 995                        | 0.948                             | 11.7                     |
| 400 x 200    | 6.0       | 54.4   | 69.32             | 14,700                         | 5,060                          | 14.5               | 8.54              | 733                            | 506                            | 900                                        | 559                                        | 12,100                     | 877                        | 1.17                              | 18.4                     |
|              | 8.0       | 71.6   | 91.24             | 19,000                         | 6,520                          | 14.4               | 8.45              | 949                            | 652                            | 1,170                                      | 728                                        | 15,800                     | 1,130                      | 1.17                              | 14.0                     |
|              | 9.0       | 80.1   | 102.0             | 21,000                         | 7,200                          | 14.4               | 8.40              | 1,050                          | 720                            | 1,310                                      | 809                                        | 17,600                     | 1,260                      | 1.16                              | 12.5                     |
|              | 12.0      | 105    | 133.3             | 26,800                         | 9,110                          | 14.2               | 8.27              | 1,340                          | 911                            | 1,680                                      | 1,040                                      | 22,700                     | 1,600                      | 1.15                              | 9.56                     |
| 600 x 300    | 12.0      | 161    | 205.3             | 96,100                         | 33,000                         | 21.6               | 12.7              | 3,200                          | 2,200                          | 3,960                                      | 2,460                                      | 80,100                     | 3,820                      | 1.75                              | 6.21                     |
|              | 14.0      | 186    | 237.4             | 110,000                        | 37,600                         | 21.5               | 12.6              | 3,660                          | 2,510                          | 4,550                                      | 2,820                                      | 92,200                     | 4,370                      | 1.74                              | 5.37                     |
|              | 16.0      | 211    | 269.0             | 123,000                        | 42,000                         | 21.4               | 12.5              | 4,100                          | 2,800                          | 5,120                                      | 3,170                                      | 104,000                    | 4,890                      | 1.73                              | 4.74                     |
|              | 19.0      | 247    | 315.2             | 142,000                        | 48,100                         | 21.2               | 12.4              | 4,720                          | 3,210                          | 5,940                                      | 3,670                                      | 121,000                    | 5,630                      | 1.72                              | 4.04                     |



# Application





# Light Gauge Section

# Light Gauge Section

LGS

JIS Standard (JIS G 3350)

### Tolerances

| Characteristics                  |                             | Tolerance                        |
|----------------------------------|-----------------------------|----------------------------------|
| Height(H)                        | 150mm or under              | ±1.5mm                           |
|                                  | over 150 up to 300mm, incl. | ±2.0mm                           |
|                                  | over 300mm                  | ±3.0mm                           |
| Side (A)                         |                             | ±1.5mm                           |
| Lip (C)                          |                             | ±2.0mm                           |
| Squareness                       |                             | ±1.5°                            |
| Length                           |                             | +40<br>0mm                       |
| Straightness                     |                             | 0.2% or less of the whole length |
| Plate thickness of flat part (t) | 1.6mm                       | ±0.22mm                          |
|                                  | 2.3mm                       | ±0.25mm                          |
|                                  | 3.2mm                       | ±0.30mm                          |
|                                  | 4.0mm, 4.5mm                | ±0.45mm                          |
|                                  | 6.0mm                       | ±0.60mm                          |

### Chemical Composition

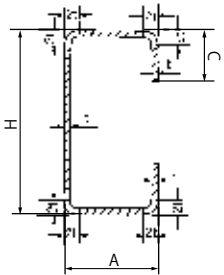
| Symbol | (%) max |       |       |
|--------|---------|-------|-------|
|        | C       | P     | S     |
| SSC400 | 0.25    | 0.050 | 0.050 |

### Mechanical Properties

| Symbol | Yield point (N/mm <sup>2</sup> ) | Tensile strength (N/mm <sup>2</sup> ) | Elongation     |            |         |
|--------|----------------------------------|---------------------------------------|----------------|------------|---------|
|        |                                  |                                       | Thickness (mm) | Test piece | %       |
| SSC400 | 245 min.                         | 400~540                               | 5 or less      | No.5       | 21 min. |
|        |                                  |                                       | over 5         | No.1A      | 17 min. |

### NOTE

- 1) The plate flat parts refer to the shaded portions of the illustration.
- 2) The bend refers to a large bend in the length direction of flat part.  
The measuring position of section size and squareness shall be an
- 3) arbitrary position except both ends of the Light gauge section.



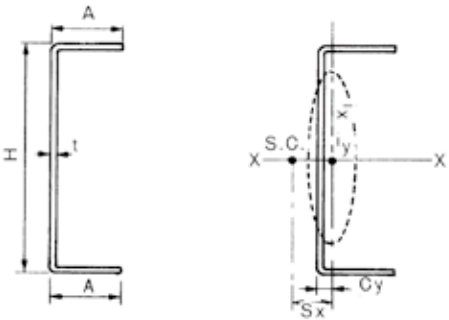
If you require other standards and requirements, please consult us.

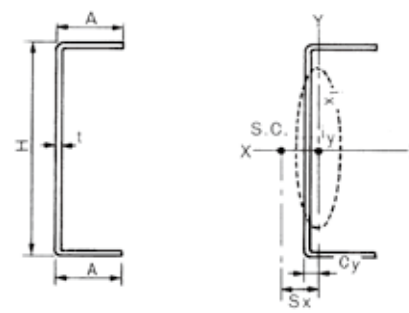
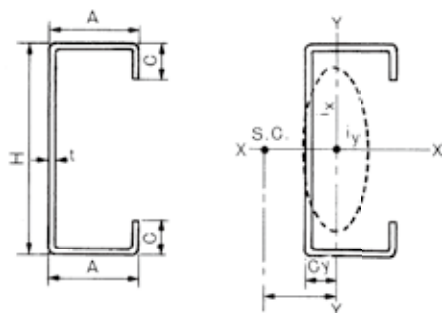
### Section Properties Lip channel section

Dimensions (mm-size)

| Dimensions |     | Mass  | Area            | Center of gravity |      | Moment of inertia |                 | Radius of gyration |      | Elastic section modulus |                 | Shear center |    |
|------------|-----|-------|-----------------|-------------------|------|-------------------|-----------------|--------------------|------|-------------------------|-----------------|--------------|----|
| H x A      | t   |       |                 | Cx                | Cy   | Ix                | Iy              | ix                 | iy   | Zx                      | Zy              | Sx           | Sy |
| mm         | mm  | kg /m | cm <sup>2</sup> | cm                | cm   | cm <sup>4</sup>   | cm <sup>4</sup> | cm                 | cm   | cm <sup>3</sup>         | cm <sup>3</sup> | cm           | cm |
| 100 x 50   | 3.2 | 4.76  | 6.063           | 0                 | 1.40 | 93.6              | 14.9            | 3.93               | 1.57 | 18.7                    | 4.15            | 3.1          | 0  |
|            | 2.3 | 3.47  | 4.426           | 0                 | 1.36 | 69.9              | 11.1            | 3.97               | 1.58 | 14.0                    | 3.04            | 3.1          | 0  |
| 100 x 40   | 3.2 | 4.26  | 5.423           | 0                 | 1.03 | 78.6              | 7.99            | 3.81               | 1.21 | 15.7                    | 2.69            | 2.2          | 0  |
|            | 2.3 | 3.11  | 3.966           | 0                 | 0.99 | 58.9              | 5.96            | 3.85               | 1.23 | 11.8                    | 1.98            | 2.2          | 0  |
| 80 x 40    | 2.3 | 2.75  | 3.506           | 0                 | 1.11 | 34.9              | 5.56            | 3.16               | 1.26 | 8.73                    | 1.92            | 2.4          | 0  |
| 60 x 30    | 2.3 | 2.03  | 2.586           | 0                 | 0.86 | 14.2              | 2.27            | 2.34               | 0.94 | 4.72                    | 1.06            | 1.8          | 0  |
|            | 1.6 | 1.44  | 1.836           | 0                 | 0.82 | 10.3              | 1.64            | 2.37               | 0.95 | 3.45                    | 0.75            | 1.8          | 0  |
| 40 x 40    | 3.2 | 2.75  | 3.503           | 0                 | 1.51 | 9.21              | 5.72            | 1.62               | 1.28 | 4.60                    | 2.30            | 3.0          | 0  |
| 40 x 20    | 2.3 | 1.31  | 1.666           | 0                 | 0.61 | 3.86              | 0.63            | 1.52               | 0.61 | 1.93                    | 0.45            | 1.2          | 0  |
|            | 1.6 | 0.939 | 1.196           | 0                 | 0.57 | 2.90              | 0.46            | 1.56               | 0.62 | 1.45                    | 0.32            | 1.2          | 0  |

If you require other sizes , please consult us.





Section Properties Lip channel section      Dimensions (mm-size)

| Dimensions    |     | Mass  | Area            | Center of gravity |      | Moment of inertia |                 | Radius of gyration |      | Elastic section modulus |                 | Shear center |    |
|---------------|-----|-------|-----------------|-------------------|------|-------------------|-----------------|--------------------|------|-------------------------|-----------------|--------------|----|
| H x A x C     | t   |       |                 | Cx                | Cy   | Ix                | Iy              | ix                 | iy   | Zx                      | Zy              | Sx           | Sy |
| mm            | mm  | kg /m | cm <sup>2</sup> | cm                | cm   | cm <sup>4</sup>   | cm <sup>4</sup> | cm                 | cm   | cm <sup>3</sup>         | cm <sup>3</sup> | cm           | cm |
| 250 x 75 x 25 | 4.5 | 14.9  | 18.92           | 0                 | 2.07 | 1,690             | 129             | 9.44               | 2.62 | 135                     | 23.8            | 5.1          | 0  |
|               | 4.0 | 13.3  | 16.95           | 0                 | 2.07 | 1,520             | 118             | 9.48               | 2.64 | 122                     | 21.8            | 5.2          | 0  |
| 250 x 75 x 20 | 4.5 | 14.5  | 18.47           | 0                 | 1.95 | 1,640             | 117             | 9.42               | 2.52 | 131                     | 21.0            | 4.9          | 0  |
|               | 4.0 | 13.0  | 16.55           | 0                 | 1.95 | 1,480             | 107             | 9.46               | 2.54 | 118                     | 19.3            | 4.8          | 0  |
| 200 x 75 x 25 | 4.5 | 13.1  | 16.67           | 0                 | 2.32 | 990               | 121             | 7.71               | 2.69 | 99.0                    | 23.3            | 5.6          | 0  |
|               | 4.0 | 11.7  | 14.95           | 0                 | 2.32 | 895               | 110             | 7.74               | 2.72 | 89.5                    | 21.3            | 5.7          | 0  |
|               | 3.2 | 9.52  | 12.13           | 0                 | 2.33 | 736               | 92.3            | 7.79               | 2.76 | 73.6                    | 17.8            | 5.7          | 0  |
| 200 x 75 x 20 | 4.5 | 12.7  | 16.22           | 0                 | 2.19 | 963               | 109             | 7.71               | 2.60 | 96.3                    | 20.6            | 5.3          | 0  |
|               | 4.0 | 11.4  | 14.55           | 0                 | 2.19 | 871               | 100             | 7.74               | 2.62 | 87.1                    | 18.9            | 5.3          | 0  |
|               | 3.2 | 9.27  | 11.81           | 0                 | 2.19 | 716               | 84.1            | 7.79               | 2.67 | 71.6                    | 15.8            | 5.4          | 0  |
| 175 x 50 x 20 | 3.2 | 7.38  | 9.407           | 0                 | 1.43 | 406               | 29.7            | 6.57               | 1.78 | 46.4                    | 8.31            | 3.6          | 0  |
|               | 2.3 | 5.41  | 6.897           | 0                 | 1.43 | 3.4               | 23.0            | 6.64               | 1.82 | 34.7                    | 6.43            | 3.6          | 0  |
|               | 4.5 | 11.3  | 14.42           | 0                 | 2.65 | 501               | 109             | 5.90               | 2.75 | 66.9                    | 22.5            | 6.3          | 0  |
| 150 x 75 x 25 | 4.0 | 10.2  | 12.95           | 0                 | 2.65 | 455               | 99.8            | 5.93               | 2.78 | 60.6                    | 20.6            | 6.3          | 0  |
|               | 3.2 | 8.27  | 10.53           | 0                 | 2.66 | 375               | 83.6            | 5.97               | 2.82 | 50.0                    | 17.3            | 6.4          | 0  |
|               | 4.5 | 11.0  | 13.97           | 0                 | 2.50 | 489               | 99.2            | 5.92               | 2.66 | 65.2                    | 19.8            | 6.0          | 0  |
| 150 x 75 x 20 | 4.0 | 9.85  | 12.55           | 0                 | 2.51 | 444               | 90.9            | 5.95               | 2.69 | 59.2                    | 18.2            | 6.0          | 0  |
|               | 3.2 | 8.01  | 10.21           | 0                 | 2.51 | 366               | 76.4            | 5.99               | 2.74 | 48.9                    | 15.3            | 6.1          | 0  |
|               | 2.3 | 5.87  | 7.472           | 0                 | 2.52 | 273               | 57.9            | 6.04               | 2.78 | 36.4                    | 11.6            | 6.1          | 0  |
| 150 x 65 x 20 | 4.5 | 10.3  | 13.07           | 0                 | 2.10 | 441               | 69.2            | 5.81               | 2.30 | 58.8                    | 15.7            | 5.1          | 0  |
|               | 4.0 | 9.22  | 11.75           | 0                 | 2.11 | 401               | 63.7            | 5.84               | 2.33 | 53.5                    | 14.5            | 5.1          | 0  |
|               | 3.2 | 7.51  | 9.567           | 0                 | 2.11 | 332               | 53.8            | 5.89               | 2.37 | 44.3                    | 12.2            | 5.1          | 0  |
| 150 x 50 x 20 | 2.3 | 5.50  | 7.012           | 0                 | 2.12 | 248               | 41.1            | 5.94               | 2.42 | 33.0                    | 9.37            | 5.2          | 0  |
|               | 4.5 | 9.20  | 11.72           | 0                 | 1.54 | 368               | 35.7            | 5.60               | 1.75 | 49.0                    | 10.5            | 3.7          | 0  |
|               | 4.0 | 8.28  | 10.55           | 0                 | 1.54 | 337               | 33.1            | 5.65               | 1.77 | 44.9                    | 9.57            | 3.8          | 0  |
| 125 x 50 x 20 | 3.2 | 6.76  | 8.607           | 0                 | 1.54 | 280               | 28.3            | 5.71               | 1.81 | 37.4                    | 8.19            | 3.8          | 0  |
|               | 2.3 | 4.96  | 6.322           | 0                 | 1.55 | 210               | 21.9            | 5.77               | 1.86 | 28.0                    | 6.33            | 3.8          | 0  |
|               | 4.5 | 8.32  | 10.59           | 0                 | 1.68 | 238               | 33.5            | 4.74               | 1.78 | 38.0                    | 10.0            | 4.0          | 0  |
| 120 x 60 x 25 | 4.0 | 7.50  | 9.548           | 0                 | 1.68 | 217               | 31.1            | 4.77               | 1.81 | 34.7                    | 9.38            | 4.0          | 0  |
|               | 3.2 | 6.13  | 7.807           | 0                 | 1.68 | 181               | 26.6            | 4.82               | 1.85 | 29.0                    | 8.02            | 4.0          | 0  |
|               | 2.3 | 4.51  | 5.747           | 0                 | 1.69 | 137               | 20.6            | 4.88               | 1.89 | 21.99                   | 6.22            | 4.1          | 0  |
| 120 x 60 x 20 | 3.2 | 6.76  | 8.607           | 0                 | 2.26 | 191               | 45.2            | 4.71               | 2.29 | 31.8                    | 12.1            | 5.4          | 0  |
|               | 2.3 | 4.96  | 6.322           | 0                 | 2.27 | 143               | 34.5            | 4.76               | 2.34 | 23.9                    | 9.23            | 5.5          | 0  |
|               | 4.5 | 8.85  | 11.27           | 0                 | 2.11 | 245               | 52.2            | 4.67               | 2.15 | 40.9                    | 13.4            | 4.9          | 0  |
| 100 x 50 x 20 | 4.0 | 7.97  | 10.15           | 0                 | 2.12 | 224               | 48.2            | 4.69               | 2.18 | 37.3                    | 12.4            | 4.9          | 0  |
|               | 3.2 | 6.51  | 8.287           | 0                 | 2.12 | 186               | 40.9            | 4.7                | 2.22 | 31.0                    | 10.5            | 4.9          | 0  |
|               | 2.3 | 4.78  | 6.092           | 0                 | 2.13 | 140               | 31.3            | 4.79               | 2.27 | 23.3                    | 8.10            | 5.1          | 0  |
| 75 x 45 x 15  | 3.2 | 5.50  | 7.007           | 0                 | 1.86 | 107               | 24.5            | 3.90               | 1.87 | 21.3                    | 7.81            | 4.4          | 0  |
|               | 2.3 | 4.06  | 5.172           | 0                 | 1.86 | 80.7              | 19.0            | 3.95               | 1.92 | 16.1                    | 6.06            | 4.4          | 0  |
|               | 1.6 | 2.88  | 3.672           | 0                 | 1.87 | 58.4              | 14.0            | 3.99               | 1.95 | 11.7                    | 4.47            | 4.5          | 0  |
| 60 x 30 x 10  | 2.3 | 3.25  | 4.137           | 0                 | 1.72 | 37.1              | 11.8            | 3.00               | 1.69 | 9.90                    | 4.24            | 4.0          | 0  |
|               | 1.6 | 2.32  | 2.952           | 0                 | 1.72 | 27.1              | 8.71            | 3.03               | 1.72 | 7.24                    | 3.13            | 4.1          | 0  |
|               | 2.3 | 2.25  | 2.872           | 0                 | 1.06 | 15.6              | 3.32            | 2.33               | 1.07 | 5.20                    | 1.71            | 2.5          | 0  |
|               | 1.6 | 1.63  | 2.072           | 0                 | 1.06 | 11.6              | 2.56            | 2.37               | 1.11 | 3.88                    | 1.32            | 2.5          | 0  |

If you require other sizes, please consult us.

Section Properties Light channel section      Dimensions (mm-size)

| Dimensions |     | Mass  | Area  | Center of gravity |       | Moment of inertia |      | Radius of gyration |      | Elastic section modulus |       | Shear center |    |
|------------|-----|-------|-------|-------------------|-------|-------------------|------|--------------------|------|-------------------------|-------|--------------|----|
| H x A      | t   |       |       | Cx                | Cy    | Ix                | Iy   | ix                 | iy   | Zx                      | Zy    | Sx           | Sy |
| mm         | mm  | kg /m | cm²   | cm                | cm    | cm⁴               | cm⁴  | cm                 | cm   | cm³                     | cm³   | cm           | cm |
| 450 x 75   | 6.0 | 27.3  | 34.82 | 0                 | 1.19  | 8,400             | 122  | 15.5               | 1.87 | 374                     | 19.4  | 2.7          | 0  |
|            | 4.5 | 20.7  | 26.33 | 0                 | 1.13  | 6,430             | 94.3 | 15.6               | 1.89 | 286                     | 14.8  | 2.7          | 0  |
|            | 4.0 | 18.4  | 23.47 | 0                 | 1.11  | 5,760             | 84.6 | 15.7               | 1.90 | 256                     | 13.2  | 2.7          | 0  |
| 450 x 50   | 6.0 | 25.0  | 31.82 | 0                 | 0.71  | 6,930             | 36.9 | 14.8               | 1.08 | 3.8                     | 8.61  | 1.4          | 0  |
|            | 4.5 | 18.9  | 24.08 | 0                 | 0.65  | 5,320             | 28.7 | 14.9               | 1.09 | 236                     | 6.59  | 1.4          | 0  |
|            | 4.0 | 16.9  | 21.47 | 0                 | 0.63  | 4,760             | 25.8 | 14.9               | 1.10 | 212                     | 5.90  | 1.4          | 0  |
| 400 x 75   | 6.0 | 25.0  | 31.82 | 0                 | 1.28  | 6,230             | 120  | 14.0               | 1.94 | 312                     | 19.2  | 2.9          | 0  |
|            | 4.5 | 18.9  | 24.08 | 0                 | 1.21  | 4,780             | 92.2 | 14.1               | 1.96 | 239                     | 14.7  | 2.9          | 0  |
|            | 4.0 | 16.9  | 21.47 | 0                 | 1.19  | 4,280             | 82.8 | 14.1               | 1.96 | 214                     | 13.1  | 2.9          | 0  |
| 400 x 50   | 6.0 | 22.6  | 28.82 | 0                 | 0.75  | 5,070             | 36.3 | 13.3               | 1.12 | 253                     | 8.54  | 1.5          | 0  |
|            | 4.5 | 17.1  | 21.83 | 0                 | 0.69  | 3,900             | 28.2 | 13.4               | 1.14 | 195                     | 6.54  | 1.5          | 0  |
|            | 4.0 | 15.3  | 19.47 | 0                 | 0.67  | 3,490             | 25.4 | 13.4               | 1.14 | 175                     | 5.86  | 1.5          | 0  |
| 350 x 75   | 6.0 | 22.6  | 28.82 | 0                 | 1.38  | 4,450             | 116  | 12.4               | 2.01 | 254                     | 19.0  | 3.2          | 0  |
|            | 4.5 | 17.1  | 21.83 | 0                 | 1.32  | 3,420             | 89.8 | 12.5               | 2.03 | 196                     | 14.5  | 3.2          | 0  |
|            | 4.0 | 15.3  | 19.47 | 0                 | 1.29  | 3,070             | 80.6 | 12.5               | 2.03 | 175                     | 13.0  | 3.2          | 0  |
|            | 3.2 | 12.3  | 15.66 | 0                 | 1.26  | 2,480             | 65.5 | 12.6               | 2.04 | 142                     | 10.5  | 3.2          | 0  |
| 350 x 50   | 6.0 | 20.3  | 25.82 | 0                 | 0.81  | 3,570             | 35.3 | 11.8               | 1.17 | 204                     | 8.44  | 1.6          | 0  |
|            | 4.5 | 15.4  | 19.58 | 0                 | 0.75  | 2,750             | 27.5 | 11.9               | 1.19 | 157                     | 6.48  | 1.6          | 0  |
|            | 4.0 | 13.7  | 17.47 | 0                 | 0.73  | 2,470             | 24.8 | 11.9               | 1.19 | 141                     | 5.81  | 1.6          | 0  |
|            | 3.2 | 11.0  | 14.06 | 0                 | 0.69  | 2,000             | 20.3 | 11.9               | 1.20 | 115                     | 4.71  | 1.7          | 0  |
| 300 x 75   | 6.0 | 20.3  | 25.82 | 0                 | 1.511 | 3,040             | 112  | 10.8               | 2.08 | 202                     | 18.7  | 3.5          | 0  |
|            | 4.5 | 15.4  | 19.58 | 0                 | 1.44  | 2,340             | 86.7 | 10.9               | 2.10 | 156                     | 14.3  | 3.5          | 0  |
|            | 4.0 | 13.7  | 17.47 | 0                 | 1.42  | 2,100             | 77.9 | 11.0               | 2.11 | 140                     | 12.8  | 3.5          | 0  |
|            | 3.2 | 11.0  | 14.06 | 0                 | 1.38  | 1,700             | 63.3 | 11.0               | 2.12 | 114                     | 10.4  | 3.5          | 0  |
| 300 x 50   | 6.0 | 17.9  | 22.82 | 0                 | 0.87  | 2,390             | 34.5 | 10.2               | 1.23 | 159                     | 8.36  | 1.8          | 0  |
|            | 4.5 | 13.6  | 17.33 | 0                 | 0.82  | 1,850             | 26.8 | 10.3               | 1.24 | 123                     | 6.41  | 1.8          | 0  |
|            | 4.0 | 12.1  | 15.47 | 0                 | 0.80  | 1,660             | 24.1 | 10.4               | 1.25 | 111                     | 5.74  | 1.8          | 0  |
|            | 3.2 | 9.78  | 12.46 | 0                 | 0.766 | 1,350             | 19.8 | 10.4               | 1.26 | 90.0                    | 4.66  | 1.8          | 0  |
| 250 x 75   | 6.0 | 17.9  | 22.82 | 0                 | 1.66  | 1,940             | 107  | 9.23               | 2.17 | 155                     | 18.4  | 3.7          | 0  |
|            | 4.5 | 13.6  | 17.33 | 0                 | 1.60  | 1,500             | 82.9 | 9.31               | 2.19 | 120                     | 14.0  | 3.8          | 0  |
|            | 4.0 | 12.1  | 15.47 | 0                 | 1.58  | 1,350             | 74.5 | 99.34              | 2.19 | 108                     | 12.6  | 3.8          | 0  |
| 250 x 50   | 6.0 | 15.6  | 19.82 | 0                 | 0.97  | 1,500             | 33.1 | 8.69               | 1.29 | 120                     | 8.20  | 2.0          | 0  |
|            | 4.5 | 11.8  | 15.08 | 0                 | 0.91  | 1,160             | 25.9 | 8.78               | 1.31 | 93.0                    | 6.31  | 2.0          | 0  |
|            | 4.0 | 10.6  | 13.47 | 0                 | 0.88  | 1,050             | 23.3 | 8.81               | 1.32 | 83.7                    | 5.66  | 2.0          | 0  |
| 200 x 75   | 6.0 | 15.6  | 19.82 | 0                 | 1.87  | 1,130             | 101  | 7.56               | 2.25 | 113                     | 17.9  | 4.1          | 0  |
|            | 4.5 | 11.8  | 15.08 | 0                 | 1.80  | 881               | 78.0 | 7.64               | 2.27 | 88.1                    | 13.7  | 4.2          | 0  |
|            | 4.0 | 10.6  | 13.47 | 0                 | 1.78  | 792               | 70.1 | 7.67               | 2.28 | 79.2                    | 12.3  | 4.2          | 0  |
| 200 x 50   | 3.2 | 8.53  | 10.86 | 0                 | 1.75  | 645               | 57.0 | 7.71               | 2.29 | 664.5                   | 99.92 | 4.2          | 0  |
|            | 6.0 | 13.2  | 16.82 | 0                 | 1.09  | 852               | 31.4 | 7.12               | 1.37 | 85.2                    | 8.03  | 2.2          | 0  |
|            | 4.5 | 10.1  | 12.83 | 0                 | 1.03  | 666               | 24.6 | 7.20               | 1.38 | 66.6                    | 6.19  | 2.2          | 0  |
|            | 4.0 | 9.00  | 11.47 | 0                 | 1.00  | 600               | 22.2 | 7.23               | 1.39 | 60.0                    | 5.55  | 2.2          | 0  |
| 150 x 75   | 3.2 | 7.27  | 9.263 | 0                 | 0.97  | 490               | 18.2 | 7.28               | 1.40 | 49.0                    | 4.51  | 2.3          | 0  |
|            | 6.0 | 13.2  | 16.82 | 0                 | 2.15  | 573               | 91.9 | 5.84               | 2.34 | 76.4                    | 17.2  | 4.6          | 0  |
|            | 4.5 | 10.1  | 12.83 | 0                 | 2.08  | 448               | 71.4 | 5.91               | 2.36 | 59.8                    | 13.2  | 4.6          | 0  |
|            | 4.0 | 9.00  | 11.47 | 0                 | 2.06  | 404               | 64.2 | 5.93               | 2.36 | 53.9                    | 11.8  | 4.6          | 0  |
| 150 x 50   | 3.2 | 7.27  | 9.263 | 0                 | 2.02  | 330               | 52.3 | 5.97               | 2.38 | 44.0                    | 9.55  | 4.7          | 0  |
|            | 6.0 | 10.8  | 13.82 | 0                 | 1.25  | 417               | 29.2 | 5.50               | 1.45 | 55.6                    | 7.77  | 2.6          | 0  |
|            | 4.5 | 8.31  | 10.58 | 0                 | 1.20  | 329               | 22.8 | 5.58               | 1.47 | 43.9                    | 5.99  | 2.6          | 0  |
|            | 4.0 | 7.44  | 9.474 | 0                 | 1.17  | 297               | 20.6 | 5.60               | 1.47 | 39.6                    | 5.38  | 2.6          | 0  |
|            | 3.2 | 6.02  | 7.663 | 0                 | 1.14  | 244               | 16.9 | 5.64               | 1.48 | 32.5                    | 4.37  | 2.6          | 0  |
| 120 x 40   | 2.3 | 4.38  | 5.576 | 0                 | 1.10  | 181               | 12.5 | 5.69               | 1.50 | 24.1                    | 3.20  | 2.6          | 0  |
|            | 3.2 | 4.76  | 6.063 | 0                 | 0.94  | 122               | 8.43 | 4.48               | 1.18 | 20.3                    | 2.75  | 2.1          | 0  |
|            | 2.3 | 3.47  | 4.426 | 0                 | 0.90  | 90.8              | 6.28 | 4.53               | 1.19 | 15.1                    | 2.02  | 2.11         | 0  |



# Primer painted Pre-Galvanized

## Primer painted

Primer painted industry preferred finish products are coated with our exclusive waterborne primer paint systems. Target of average coating thickness is 15micro,has rust simple prevention, but no warranted.

### Hollow structural section

| Correspond Specifications |                           |                                 |  |
|---------------------------|---------------------------|---------------------------------|--|
| Color                     |                           | Red,Gray                        |  |
| Reference standard        | ASTM A500                 | Grade B,Grade C                 |  |
|                           | EN 10219                  | S275J0H<br>S355J0H S355J2H      |  |
|                           | AS 1163                   | C350,C350L0<br>C450,C450L0      |  |
|                           | JIS G 3466                | STKR400<br>STKR490              |  |
|                           | Approved by MLIT of Japan | BCR 295                         |  |
| Dimension (mm)            | Square                    | 1.6 x 50 x 50 ~ 6.0 x 175 x 175 |  |
|                           | Rectangular               | 1.6 x 50 x 30 ~ 6.0 x 200 x 150 |  |
| Length                    |                           | 5.5m~12m                        |  |

### Light gauge section

| Specifications     |                             |                                                              |        |
|--------------------|-----------------------------|--------------------------------------------------------------|--------|
| Color              |                             | Red,Gray                                                     |        |
| Reference standard |                             | JIS G 3350                                                   | SSC400 |
| Dimension (mm)     | Ligth Gauge Channel Section | 100 x 50 ,100 x 40, 80 x 40<br>60 x 30, 40 x 40, 40 x 20     |        |
|                    |                             | 150x 50 x 20<br>125x 50 x 20<br>75 x 45 x 15<br>30 x 30 x 10 |        |
|                    | Lip Channel Section         |                                                              |        |
| Length             |                             | 5.5m~12m                                                     |        |

## Pre-Galvanized

HSS and LGS produced by pre-galvanized steel sheet has highly corrosion-resistant. Not only rust resistant on flat surfaces but also highly rust resistant on cut-end surfaces. In addition,extremely high alkaline resistance strongly resistant to rust at bends and in cylindrically-drawn sections fine finishes with fewer scratches after fabrication.

### Hollow structural section

| Correspond Specifications    |             |                                                        |                 |
|------------------------------|-------------|--------------------------------------------------------|-----------------|
| Pre-Galvanized <sup>1)</sup> |             | Zinc 120kg/m <sup>2</sup><br>Zinc 275kg/m <sup>2</sup> |                 |
| Reference standard           |             | ASTM A500                                              | Grade B,Grade C |
|                              |             | JIS G 3466                                             | STKR400,STKR490 |
| Dimension (mm)               | Square      | 50 x 50 x 1.6 ~ 50 x 50 x 3.2                          |                 |
|                              |             | 60 x 60 x 1.6 ~ 60 x 60 x 3.2                          |                 |
|                              |             | 75 x 75 x 2.3 ~ 75 x 75 x 4.5                          |                 |
|                              |             | 100 x 100 x 2.3 ~ 100 x 100 x 9.0                      |                 |
|                              |             | 125 x 125 x 3.2 ~ 125 x 125 x 6.0                      |                 |
|                              | Rectangular | 60 x 30 x 1.6 ~ 60 x 30 x 3.2                          |                 |
|                              |             | 75 x 45 x 1.6 ~ 75 x 45 x 3.2                          |                 |
|                              |             | 100 x 50 x 2.3 ~ 100 x 50 x 4.5                        |                 |
|                              |             | 125 x 75 x 2.3 ~ 125 x 75 x 9.0                        |                 |
|                              |             | 150 x 100 x 3.2 ~ 150 x 100 x 6.0                      |                 |
| Length                       |             | 5.5m~12m                                               |                 |

**NOTE**  
1)total mass on both surface.

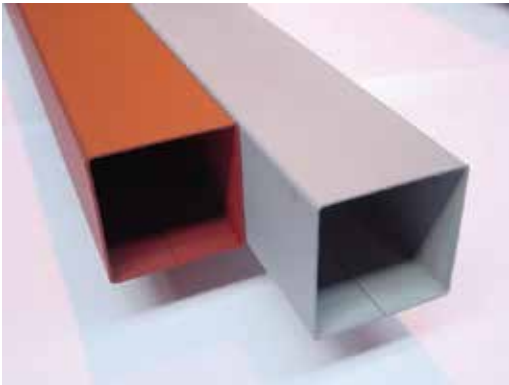
If you need additional requirements, please consult us.

### Light gauge section

| Specifications               |                             |                                                                |        |
|------------------------------|-----------------------------|----------------------------------------------------------------|--------|
| Pre-Galvanized <sup>1)</sup> |                             | Zinc 120kg/m <sup>2</sup><br>Zinc 275kg/m <sup>2</sup>         |        |
| Reference standard           |                             | JIS G 3350                                                     | SSC400 |
| Dimension (mm)<br>HxAxC      | Ligth Gauge Channel Section | 100 x 50 ,100 x 40, 80 x 40<br>60 x 30, 40 x 40, 40 x 20       |        |
|                              |                             | 150 x 50 x 20<br>125 x 50 x 20<br>75 x 45 x 15<br>30 x 30 x 10 |        |
|                              | Lip Channel Section         |                                                                |        |
| Length                       |                             | 5.5m~12m                                                       |        |

## Application

### Primer painted



### Pre-Galvanized



- Wall rails of plants and warehouses (in the areas of salt damage)
- Purlins and floor joists of long life house etc.

