**KENYA STANDARD** **KS 104: 2017**

# Cold rolled steel sections— Specification



Third Edition 2015

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5. Architectural association of Kenya
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7. Devki Steel Mills Ltd
8. Steel Makers Ltd
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10. Doshi Group of Companies
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In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

**KENYA STANDARD** **KS 104: 2017**

# Cold rolled steel sections— Specification


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## Foreword

This Kenya Standard was prepared by the Steel Technical Committee under the guidance of the Standards Projects Committee and it is in accordance with the procedures of the Kenya Bureau of Standards.

This standard contains tables of section properties and dimensions of cold rolled steel sections which are available in Kenya.
During the preparation of this standard, reference was made to the following documents:

ISO 10799-1:2011 Cold-formed welded structural hollow sections of non-alloy and fine grain steels -- Part 1: Technical delivery conditions

ISO 10799-2:2011 Cold-formed welded structural hollow sections of non-alloy and fine grain steels -- Part 2: Dimensions and sectional properties

BS EN 10162:2003 Cold rolled steel sections. Technical delivery conditions. Dimensional and cross-sectional tolerances

Acknowledgement is hereby made for the assistance received from these sources.

# Cold rolled steel sections — Specification

## 1 Scope

This Kenya Standard specifies the dimensions and sectional properties of cold rolled steel sections of thicknesses up to 8 mm for use in structural and general purpose applications. The sections are listed in Tables 5 to 17.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the Kenya Bureau of Standards.

KS 02-103, *Specification for the use of cold formed steel structural members*

KS ISO 6892-1, *Metallic materials-Tensile testing — Part 1: Method of test at room temperature*

## 3 Nomenclature

The following nomenclature standard in the industry shall be used. Dimensions are usually in mm units and section properties in cm units.

| | | |
|---|---|---|
| B,C,D | Dimensions of section | mm |
| t | Sheet thickness | mm |
| P | Distance from edge to section centre of gravity | mm |
| A | Sectional area | $cm^2$ |
| Z | Section modulus of section I/p | $cm^3$ |
| I | Second moment of area | $cm^4$ |
| r | Radius of gyration of section $\sqrt{1/A}$ | cm |
| x,y | With reference to x or y axis | |
| w | Mass per linear metre | kg/m |
| L | Length | m |

## 4 Dimensions and tolerances

### 4.1 Dimensions

Dimensions of sections shall be in accordance with the tables of this standard.

### 4.2 Tolerances

**4.2.1.1** Tolerances in dimensions shall be as specified in Table 1.

**4.2.2** Tolerances in weight shall be as specified in Clause 5.

**Table 1 — Tolerances in dimensions**

| Characteristic | Tolerance |
|---|---|
| Outside dimension [(a)] | ± 1.5 mm or 2 %, whichever is less |
| Deviation from straightness | 0.17 % of total length |
| Squareness of corners | 90° ± 2° |
| Twist (see Figure 1) | Not to exceed 2 mm ± 0.5 mm per metre |

| Characteristic | Tolerance |
|---|---|
| Concavity/convexity | i) lower than 5mm±10% or 0.5 mm whichever is lower<br>ii) above 5mm ± 0.5mm |
| Outside bend radii for right angle bends | 3t max |
| Length (6 metres) – exact<br>- standard | -0 and + 10 mm<br>-10 mm and +100 mm |
| Thickness | ± 3% for 1mm<br>above 1mm ± 7.5% |
| [a] This tolerance shall be measured at a distance of not less than 100 mm from the end of the section. | |

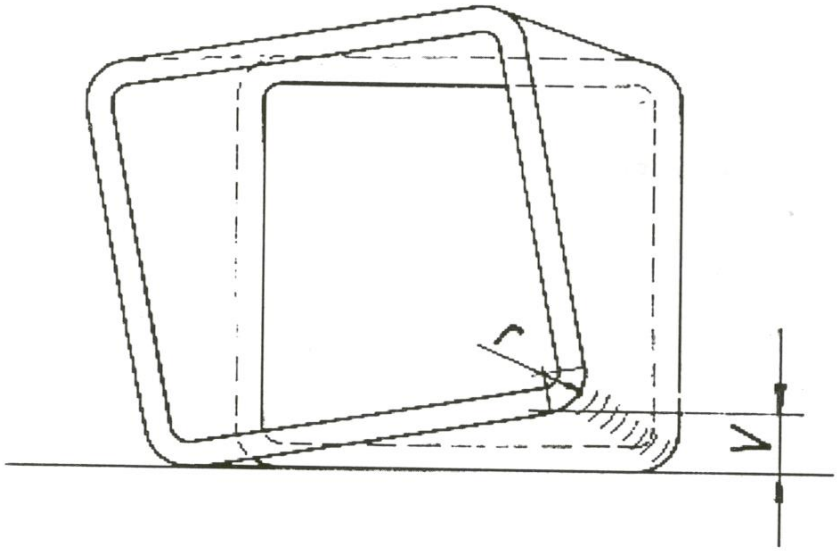



**Figure 1 — Measurement of twist (V)**

## 5 Tolerances in weight

Tolerances in weight shall be:

— ± 7.5% for individual lengths of over 1 metre.

— ± 5% for batches of 5 tonnes and above.

## 6 Compound sections

Compound sections may be formed by suitably connecting two or more simple sections. For example, an 'I' section can be made from two channels back-to-lip, a 'T' from two angles, etc. Methods of joining sections are specified in Clauses 29, 30 and 37 of KS 02-103.

Section properties of compound sections may be calculated using the properties of simple sections.

Compound sections shall be flush at matching joints within 2.0 mm.

## 7 Manufacture

### 7.1 Manufacture of steel

Unless otherwise agreed at the time of enquiry and/or order, the steel-making process shall be at the option of the manufacturer. If so requested in the order, the purchaser shall be informed about the steel-making process used.

### 7.2 Grade designation

The designation of the grades of material shall be based on minimum permissible yield stress and shall be in accordance with Table 2.

**Table 2 — Grade designation**

| Minimum yield stress N/mm$^2$ | Designation of grade |
|---|---|
| 210 | 210 |
| 250 | 250 |
| 360 | 360 |

### 7.3 Chemical composition

The results of ladle chemical analysis of steel in accordance with KS ISO 6892-1 from which a hollow section is manufactured shall comply with appropriate limits given in Table 3.

For grade 360, it shall be permissible to add suitable grain-refining elements to achieve the minimum specified tensile stress, but the total content of these elements shall not exceed 0.15 %.

**Table 3 — Ladle chemical analysis limits**

| Grade of steel | Maximum content (%) | | |
|---|---|---|---|
| | Carbon | Phosphorus | Sulphur |
| 210 | 0.20 | 0.05 | 0.05 |
| 250 | 0.25 | 0.06 | 0.06 |
| 360 | — | — | 0.04 |

### 7.4 Mechanical properties

The mechanical properties obtained from test samples taken from the steel section in accordance with 8, shall comply with Table 4. If other grades of steel are used, their mechanical properties shall be agreed on between the purchaser and the manufacturer.

**Table 4 — Tensile test requirements**

| Grade of steel | Minimum yield stress N/mm$^2$ | Ultimate tensile stress N/mm$^2$ | Minimum elongation as a proportion of gauge length per cent |
|---|---|---|---|
| 210 | 210 | 340 | 24 |
| 250 | 250 | 420 | 22 |
| 360 | 360 | 480 | 20 |

## 8 Sampling

At least one sample shall be selected from the following batch sizes:

i) A 20 tonne or less batch of sections having outside diameter of less than 90 mm.

ii) A batch of less than 40 tonne for all other sections.

If the test fails, two more samples shall be drawn from the batch and tested. If one or both test specimens re-tested fail, the whole batch shall be deemed not to have complied with the specification unless all sections in the batch are tested individually.

## 9 Test piece

The test piece shall consist of a strip taken from the section. The strip shall be taken longitudinally at any point of the section except for welded sections when it shall not be taken from the weld zone. The strip shall comply with the following conditions:

i) Sides of the test piece shall be parallel within a maximum variation, along parallel length, of ± 0.2 % of nominal width.

i) The tripped ends and parallel lengths of the test piece shall be coaxial.

iii) $L_o = 5.65\ A$ and shall be within $\pm$ 5 % of the nominal value.

where,

$L_o$ = gauge length, and

$A$ = sectional area.

iv) Minimum parallel length $L_p = L_o + 2D$ for circular sections, and $L_p + B_n$ for square or rectangular sections.

where,

$L_o$ = gauge length; and

$B_n$ = nominal width, the lesser dimension of $B$ and $D$.

v) The width of the test piece shall be less than 6 mm, unless the product width precludes use of wider pieces.

vi) The test piece shall not be flattened and machined between the gauge marks except for the purposes of gripping the test piece in a test machine.

## 10 Marking

Each piece shall be indelibly and legibly marked /printed at least once in every 6 meters piecewith the Manufacturer's Name or Registered Trademark and the outside dimension and nominal thickness

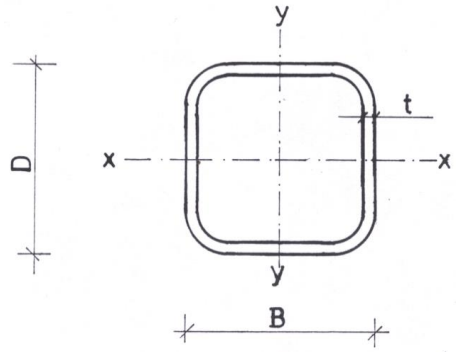



**Table 5 — Dimensions and properties for cold rolled square hollow sections**

| Size B X D mm | Thickness t mm | A $cm^2$ | Mass w kg/m | Axis X-X and Y-Y | | |
|---|---|---|---|---|---|---|
| | | | | $I_x = I_y$ $cm^4$ | $Z_x = Z_y$ $cm^3$ | $r_x = r_y$ cm |
| 12 x 12 | 1.0 | 0.44 | 0.35 | 0.09 | 0.15 | 0.45 |
| 12 x 12 | 1.2 | 0.51 | 0.41 | 0.10 | 0.17 | 0.44 |
| 12 x 12 | 1.5 | 0.63 | 0.49 | 0.12 | 0.20 | 0.43 |
| 16 x 16 | 1.0 | 0.60 | 0.47 | 0.23 | 0.28 | 0.61 |
| 16 x 16 | 1.2 | 0.71 | 0.56 | 0.26 | 0.33 | 0.60 |
| 16 x 16 | 1.5 | 0.87 | 0.68 | 0.31 | 0.39 | 0.59 |
| 16 x 16 | 2 | 1.12 | 0.88 | 0.37 | 0.47 | 0.57 |
| 20 x 20 | 1.0 | 0.76 | 0.58 | 0.46 | 0.46 | 0.78 |
| 20 x 20 | 1.2 | 0.90 | 0.071 | 0.53 | 0.53 | 0.77 |
| 20 x 20 | 1.5 | 1.11 | 0.87 | 0.64 | 0.64 | 0.75 |
| 20 x 20 | 2 | 1.44 | 1.13 | 0.79 | 0.79 | 0.73 |
| 25 X 25 | 1.0 | 0.96 | 0.75 | 0.92 | 0.74 | 0.98 |
| 25 X 25 | 1.2 | 1.14 | 0.90 | 1.08 | 0.86 | 0.97 |
| 25 X 25 | 1.5 | 1.41 | 1.11 | 1.30 | 1.04 | 0.96 |
| 25 X 25 | 2 | 1.84 | 1.44 | 1.63 | 1.31 | 0.94 |
| 25 X 25 | 3 | 2.64 | 2.07 | 2.17 | 1.74 | 0.90 |
| 30 X 30 | 1.0 | 1.16 | 0.91 | 1.63 | 1.09 | 1.18 |
| 30 X 30 | 1.2 | 1.38 | 1.08 | 1.91 | 1.28 | 1.17 |
| 30 X 30 | 1.5 | 1.71 | 1.34 | 2.32 | 1.55 | 1.16 |
| 30 x 30 | 2 | 2.24 | 1.75 | 2.94 | 1.96 | 1.14 |
| 30 x 30 | 3 | 3.24 | 2.54 | 3.99 | 2.66 | 1.11 |
| 40 x 40 | 1.0 | 1.56 | 1.22 | 3.96 | 1.98 | 1.59 |
| 40 x 40 | 1.2 | 1.86 | 1.46 | 4.68 | 2.34 | 1.58 |
| 40 x 40 | 1.5 | 2.31 | 1.81 | 5.72 | 2.86 | 1.57 |
| 40 x 40 | 2 | 3.04 | 2.39 | 7.34 | 3.67 | 1.55 |
| 40 x 40 | 2.5 | 3.75 | 2.94 | 8.83 | 4.41 | 1.53 |
| 40 x 40 | 3 | 4.44 | 3.48 | 10.19 | 5.10 | 1.51 |
| 40 x 40 | 4 | 5.76 | 4.52 | 12.60 | 6.30 | 1.48 |
| 50 x 50 | 1.2 | 2.34 | 1.84 | 9.30 | 3.72 | 1.99 |
| 50 x 50 | 1.5 | 2.91 | 2.28 | 11.42 | 4.57 | 1.98 |
| 50 x 50 | 2 | 3.84 | 3.01 | 14.77 | 5.91 | 1.96 |
| 50 x 50 | 2.5 | 4.75 | 3.73 | 17.91 | 7.16 | 1.94 |
| 50 x 50 | 3 | 5.64 | 4.43 | 20.85 | 8.34 | 1.92 |
| 50 x 50 | 4 | 7.36 | 5.78 | 26.15 | 10.46 | 1.88 |

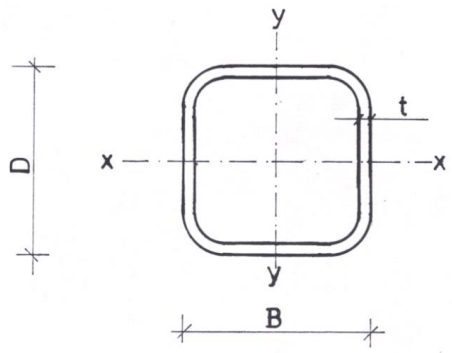



**Table 5 — Dimensions and properties for cold rolled square hollow sections** *(Contd)*

| Size B X D mm | Thickness t mm | A $cm^2$ | Mass w kg/m | Axis X - X and Y – Y | | |
|---|---|---|---|---|---|---|
| | | | | $I_x = I_y$ $cm^4$ | $Z_x = Z_y$ $cm^3$ | $r_x = r_y$ cm |
| 60 x 60 | 1.5 | 3.51 | 2.75 | 20.03 | 6.67 | 2.38 |
| 60 x 60 | 2 | 4.64 | 3.64 | 26.04 | 8.68 | 2.37 |
| 60 x 60 | 3 | 6.84 | 5.37 | 37.14 | 12.38 | 2.33 |
| 60 x 60 | 4 | 8.96 | 7.03 | 47.07 | 15.69 | 2.29 |
| 75 x 75 | 2.5 | 7.25 | 5.69 | 63.59 | 16.96 | 2.96 |
| 75 x 75 | 3 | 8.64 | 6.78 | 74.78 | 19.94 | 2.94 |
| 75 x 75 | 4 | 11.36 | 8.92 | 95.75 | 25.53 | 2.90 |
| 75 x 75 | 5 | 14.00 | 11.00 | 114.92 | 30.65 | 2.87 |
| 75 x 75 | 6 | 16.56 | 13.00 | 132.0 | 35.31 | 2.83 |
| 100 x 100 | 3 | 11.64 | 9.14 | 182.70 | 36.54 | 3.96 |
| 100 x 100 | 4 | 15.36 | 12.18 | 236.34 | 47.26 | 3.91 |
| 100 x 100 | 5 | 19.00 | 14.92 | 286.58 | 57.32 | 3.88 |
| 100 x 100 | 6 | 22.56 | 17.71 | 333.59 | 66.72 | 3.85 |
| 100 x 100 | 8 | 29.44 | 23.11 | 418.44 | 83.69 | 3.77 |
| 120 x 120 | 3 | 14.04 | 11.02 | 320.53 | 53.42 | 4.77 |
| 120 x 120 | 4 | 18.56 | 14.57 | 416.73 | 69.45 | 4.74 |
| 120 x 120 | 6 | 27.36 | 21.48 | 594.26 | 99.04 | 4.66 |
| 125 x 125 | 3 | 14.64 | 11.49 | 363.39 | 58.14 | 3.05 |
| 125 x 125 | 4 | 19.36 | 15.20 | 472.93 | 75.67 | 4.94 |
| 125 x 125 | 5 | 24.00 | 18.84 | 577.00 | 92.32 | 4.90 |
| 125 x 125 | 6 | 28.56 | 22.42 | 675.78 | 108.12 | 4.90 |
| 125 x 125 | 8 | 37.44 | 29.39 | 858.19 | 137.31 | 4.79 |
| 150 x 150 | 3 | 17.64 | 13.85 | 635.57 | 84.74 | 6.00 |
| 150 x 150 | 4 | 23.36 | 18.34 | 830.53 | 110.74 | 5.96 |
| 150 x 150 | 5 | 29.00 | 22.76 | 1017.42 | 135.66 | 5.92 |
| 150 x 150 | 6 | 34.56 | 27.13 | 196.47 | 159.53 | 5.88 |
| 150 x 150 | 8 | 45.44 | 35.67 | 1531.93 | 204.26 | 5.81 |
| 175 x 175 | 4 | 27.36 | 21.48 | 1334.12 | 152.47 | 6.98 |
| 175 x 175 | 5 | 34 | 29.69 | 1639.08 | 187.32 | 6.94 |
| 175 x 175 | 6 | 40.56 | 31.84 | 1932.45 | 220.85 | 6.90 |
| 175 x 175 | 8 | 53.44 | 41.95 | 2489.68 | 284.53 | 6.83 |
| 200 x 200 | 4 | 31.36 | 24.62 | 2008.71 | 200.80 | 8.00 |
| 200 x 200 | 6 | 46.46 | 36.55 | 2923.34 | 292.35 | 7.92 |
| 200 x 200 | 8 | 61.44 | 48.23 | 3781.43 | 378.14 | 7.85 |
| 250 x 250 | 4 | 39.36 | 30.90 | 3970.90 | 317.67 | 10.04 |

| Size B X D mm | Thickness t mm | A cm$^2$ | Mass w kg/m | Axis X - X and Y – Y | | |
|---|---|---|---|---|---|---|
| | | | | $I_x = I_y$ cm$^4$ | $Z_x = Z_y$ cm$^3$ | $r_x = r_y$ cm |
| 250 x 250 | 5 | 49.00 | 38.47 | 4904.08 | 392.33 | 10.00 |
| 250 x 250 | 6 | 58.56 | 45.97 | 5814.23 | 465.14 | 9.96 |
| 250 x 250 | 8 | 77.44 | 60.79 | 7566.92 | 605.35 | 9.89 |

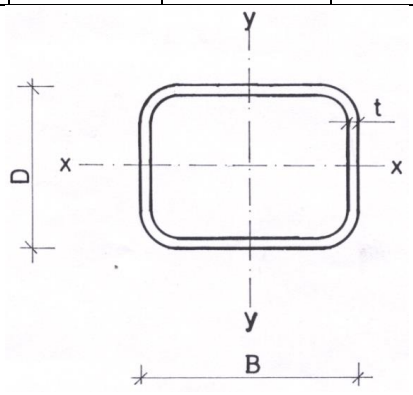



**Table 6 — Dimensions and properties for cold rolled rectangular hollow sections**

| DIMENSIONS B X D mm | t mm | A cm$^2$ | MASS w kg/m | AXIS X - X | | | AXIS Y - Y | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $I_x$cm$^4$ | $Z_x$ cm$^3$ | $r_x$ cm | $I_y$ cm$^4$ | $Z_y$ cm$^3$ | $r_y$ cm |
| 30 x 10 | 1 | 0.76 | 0.60 | 0.13 | 0.26 | 0.41 | 0.79 | 0.52 | 1.02 |
| 30 x 10 | 1.2 | 0.90 | 0.71 | 0.15 | 0.30 | 0.41 | 0.92 | 0.61 | 1.01 |
| 30 x 10 | 1.5 | 1.11 | 0.87 | 0.17 | 0.35 | 0.39 | 1.10 | 0.73 | 1.00 |
| 30 x 20 | 1 | 0.96 | 0.75 | 0.64 | 0.64 | 0.82 | 1.21 | 0.80 | 1.12 |
| 30 x 20 | 1.2 | 1.14 | 0.90 | 0.75 | 0.75 | 0.81 | 1.42 | 0.94 | 1.11 |
| 30 x 20 | 1.5 | 1.41 | 1.11 | 0.89 | 0.89 | 0.80 | 1.71 | 1.14 | 1.10 |
| 40 x 10 | 1 | 0.96 | 0.75 | 0.17 | 0.34 | 0.42 | 1.68 | 0.84 | 1.32 |
| 40 x 10 | 1.2 | 1.14 | 0.90 | 0.19 | 0.38 | 0.41 | 1.96 | 0.98 | 1.31 |
| 40 x 10 | 1.5 | 1.41 | 1.11 | 0.22 | 0.45 | 0.40 | 2.37 | 1.18 | 1.30 |
| 40 x 10 | 2 | 1.83 | 1.44 | 0.26 | 0.52 | 0.38 | 3.00 | 1.50 | 1.28 |
| 40 x 20 | 1 | 1.16 | 0.91 | 0.82 | 0.82 | 0.84 | 2.44 | 1.22 | 1.45 |
| 40 x 20 | 1.2 | 1.37 | 1.08 | 0.95 | 0.95 | 0.83 | 2.87 | 1.43 | 1.44 |
| 40 x 20 | 1.5 | 1.70 | 1.34 | 1.15 | 1.15 | 0.82 | 3.49 | 1.74 | 1.43 |
| 40 x 20 | 2 | 2.24 | 1.76 | 1.44 | 1.43 | 0.80 | 4.44 | 2.22 | 1.41 |
| 40 x 20 | 3 | 3.23 | 2.54 | 1.88 | 1.88 | 0.76 | 6.08 | 3.04 | 1.37 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 40 x 25 | 1 | 1.26 | 0.99 | 1.36 | 1.08 | 1.04 | 2.82 | 1.41 | 1.50 |
| 40 x 25 | 1.2 | 1.50 | 1.18 | 1.59 | 1.27 | 1.03 | 3.32 | 1.66 | 1.49 |
| 40 x 25 | 1.5 | 1.85 | 1.46 | 1.92 | 1.53 | 1.02 | 4.04 | 2.02 | 1.48 |
| 40 x 25 | 2 | 2.43 | 1.91 | 2.43 | 1.94 | 1.00 | 5.16 | 2.58 | 1.46 |
| 40 x 25 | 3 | 3.54 | 2.78 | 3.26 | 2.60 | 0.96 | 7.11 | 3.55 | 1.42 |
| 50 x 10 | 1 | 1.16 | 0.91 | 0.21 | 0.42 | 0.43 | 3.04 | 1.22 | 1.62 |
| 50 x 10 | 1.2 | 1.37 | 1.08 | 0.24 | 0.48 | 0.42 | 3.58 | 1.43 | 1.61 |
| 50 x 10 | 1.5 | 1.70 | 1.34 | 0.28 | 0.56 | 0.41 | 4.36 | 1.74 | 1.60 |
| 50 x 10 | 2 | 2.24 | 1.76 | 0.33 | 0.66 | 0.38 | 5.54 | 2.21 | 1.58 |
| 50 x 25 | 1 | 1.46 | 1.15 | 1.64 | 1.31 | 1.06 | 4.84 | 1.94 | 1.82 |
| 50 x 25 | 1.2 | 1.74 | 1.37 | 1.93 | 1.54 | 1.05 | 5.72 | 2.28 | 1.81 |
| 50 x 25 | 1.5 | 2.15 | 1.69 | 2.34 | 1.87 | 1.04 | 7.00 | 2.80 | 1.80 |
| 50 x 25 | 2 | 2.84 | 2.23 | 2.96 | 2.36 | 1.02 | 9.00 | 3.60 | 1.78 |
| 50 x 25 | 3 | 4.14 | 3.25 | 3.99 | 3.19 | 0.98 | 12.55 | 5.02 | 1.74 |

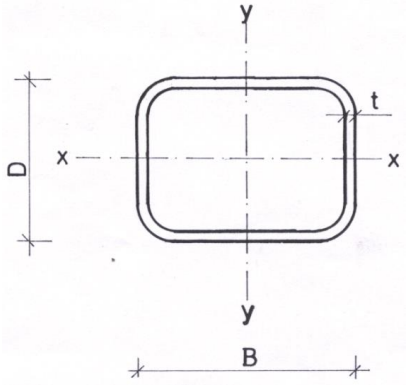



**Table 6 — Dimensions and properties for cold rolled rectangular hollow sections** *(Contd)*

| Dimensions B X D mm | t mm | A $cm^2$ | Mass w kg/m | Axis X - X | | | Axis Y - Y | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $I_x$ $cm^4$ | $Z_x$ $cm^3$ | $r_x$ cm | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_y$ cm |
| 60 x 40 | 1.2 | 2.34 | 1.84 | 6.48 | 3.24 | 1.66 | 12.12 | 4.04 | 2.27 |
| 60 x 40 | 1.5 | 2.90 | 2.28 | 7.93 | 3.96 | 1.65 | 14.89 | 4.96 | 2.26 |
| 60 x 40 | 2 | 3.83 | 3.01 | 10.22 | 5.11 | 1.63 | 19.31 | 6.43 | 2.24 |
| 60 x 40 | 3 | 5.64 | 4.43 | 14.31 | 7.10 | 1.59 | 27.38 | 9.12 | 2.21 |
| 60 x 40 | 4 | 7.36 | 5.78 | 17.80 | 8.90 | 1.57 | 34.50 | 11.50 | 2.16 |
| 75 x 50 | 2 | 4.84 | 7.33 | 20.53 | 8.21 | 2.06 | 38.58 | 10.29 | 2.83 |
| 75 x 50 | 3 | 7.14 | 5.60 | 29.14 | 11.66 | 2.02 | 55.33 | 14.75 | 2.78 |
| 75 x 50 | 4 | 9.36 | 7.34 | 36.76 | 14.70 | 1.98 | 70.51 | 18.80 | 2.74 |
| 75 x 50 | 5 | 11.50 | 9.03 | 43.46 | 17.38 | 1.94 | 84.24 | 22.46 | 2.71 |
| 80 x 40 | 2 | 4.63 | 3.64 | 13.11 | 6.55 | 1.68 | 38.97 | 9.47 | 2.90 |
| 80 x 40 | 3 | 6.84 | 5.37 | 18.42 | 9.21 | 1.64 | 55.85 | 13.96 | 2.86 |
| 80 x 40 | 4 | 8.98 | 7.08 | 23.00 | 11.50 | 1.60 | 71.13 | 17.78 | 2.82 |
| 100 x 50 | 2.5 | 7.25 | 5.69 | 32.02 | 12.81 | 2.10 | 95.15 | 19.03 | 3.62 |
| 100 x 50 | 3 | 8.63 | 6.78 | 37.43 | 14.97 | 2.08 | 112.11 | 22.42 | 3.60 |
| 100 x 50 | 4 | 11.36 | 8.92 | 47.36 | 18.94 | 2.04 | 144.12 | 28.82 | 3.56 |
| 100 x 50 | 5 | 14.00 | 11.00 | 56.17 | 22.47 | 2.00 | 173.67 | 34.73 | 3.52 |
| 100 x 50 | 6 | 16.56 | 13.00 | 63.93 | 25.57 | 1.96 | 200.87 | 40.17 | 3.48 |

| Dimensions B X D mm | t mm | A $cm^2$ | Mass w kg/m | Axis X - X | | | Axis Y - Y | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $I_x$ $cm^4$ | $Z_x$ $cm^3$ | $r_x$ cm | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_y$ cm |
| 120 x 60 | 3 | 10.44 | 8.20 | 66.41 | 22.14 | 2.52 | 197.31 | 32.88 | 4.35 |
| 120 x 60 | 4 | 13.76 | 10.80 | 84.77 | 28.26 | 2.48 | 255.20 | 42.53 | 4.31 |
| 125 x 75 | 3 | 11.64 | 9.14 | 113.68 | 30.32 | 3.13 | 251.74 | 40.28 | 4.65 |
| 125 x 75 | 4 | 15.36 | 12.06 | 146.21 | 38.99 | 3.09 | 326.47 | 52.23 | 4.61 |
| 125 x 75 | 5 | 19.00 | 14.92 | 176.27 | 47.01 | 3.05 | 396.90 | 63.50 | 4.57 |
| 125 x 75 | 6 | 22.56 | 17.71 | 203.99 | 54.40 | 3.01 | 463.18 | 74.11 | 4.53 |
| 150 x 50 | 3 | 11.64 | 9.14 | 54.02 | 21.60 | 2.16 | 311.38 | 41.51 | 5.17 |
| 150 x 50 | 4 | 15.36 | 12.06 | 68.57 | 27.42 | 2.12 | 404.09 | 53.87 | 5.13 |
| 150 x 50 | 5 | 19.00 | 14.92 | 81.58 | 32.63 | 2.07 | 491.58 | 65.54 | 5.09 |
| 150 x 50 | 6 | 22.56 | 17.71 | 93.15 | 37.26 | 2.03 | 574.03 | 76.54 | 5.04 |
| 150 x 75 | 3.0 | 13.14 | 10.31 | 133.13 | 35.50 | 3.18 | 392.43 | 52.32 | 5.46 |
| 150 x 75 | 4.0 | 17.36 | 13.63 | 171.44 | 45.72 | 3.14 | 510.71 | 68.09 | 5.42 |
| 150 x 75 | 5.0 | 21.50 | 16.88 | 206.95 | 55.19 | 3.10 | 623.04 | 83.07 | 5.38 |
| 150 x 75 | 6.0 | 25.56 | 20.06 | 239.79 | 63.94 | 3.06 | 729.64 | 97.28 | 5.34 |
| 150 x 100 | 3.0 | 14.64 | 14.49 | 253.30 | 50.66 | 4.16 | 473.48 | 63.13 | 5.69 |
| 150 x 100 | 4.0 | 19.36 | 15.20 | 328.55 | 65.71 | 4.12 | 617.31 | 82.31 | 5.65 |
| 150 x 100 | 5.0 | 24.00 | 18.84 | 399.50 | 79.90 | 4.08 | 754.50 | 100.60 | 5.61 |
| 150 x 100 | 6.0 | 28.56 | 28.56 | 466.31 | 93.26 | 4.04 | 885.25 | 118.03 | 5.57 |
| 150 x 100 | 8.0 | 37.44 | 29.39 | 588.15 | 117.63 | 3.96 | 1128.23 | 150.43 | 5.49 |
| 200 x 50 | 3.0 | 14.63 | 11.48 | 70.62 | 28.25 | 2.20 | 656.16 | 65.62 | 6.69 |
| 200 x 50 | 4.0 | 19.36 | 15.20 | 328.55 | 35.92 | 2.15 | 856.07 | 85.61 | 6.65 |
| 200 x 50 | 6.0 | 28.56 | 22.42 | 122.37 | 48.95 | 2.07 | 1229.19 | 122.92 | 6.56 |
| 200 x 50 | 8.0 | 37.44 | 29.39 | 148.07 | 59.23 | 1.99 | 1568.31 | 156.83 | 6.47 |
| 200 x 100 | 3.0 | 17.64 | 13.85 | 323.89 | 64.78 | 4.28 | 947.25 | 94.72 | 7.33 |
| 200 x 100 | 4.0 | 23.36 | 18.33 | 420.77 | 84.15 | 4.24 | 1240.29 | 124.63 | 7.29 |
| 200 x 100 | 5.0 | 29.00 | 22.77 | 512.42 | 102.48 | 4.20 | 1522.42 | 152.24 | 7.25 |
| 200 x 100 | 6.0 | 35.56 | 27.13 | 599.03 | 119.805 | 4.16 | 1793.91 | 179.39 | 7.14 |
| 200 x 100 | 8.0 | 45.44 | 36.93 | 757.85 | 151.57 | 4.09 | 2306.10 | 230.60 | 7.00 |
| 200 x 150 | 4.0 | 27.36 | 21.48 | 1043.73 | 143.37 | 6.17 | 1624.49 | 216.59 | 7.70 |
| 200 x 150 | 5.0 | 34.00 | 26.69 | 1280.3 | 170.7 | 6.14 | 1997.8 | 199.78 | 7.67 |

## KS 104:2017

| Dimensions B X D mm | t mm | A $cm^2$ | Mass w kg/m | Axis X - X | | | Axis Y - Y | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $I_x$ $cm^4$ | $Z_x$ $cm^3$ | $r_x$ cm | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_y$ cm |
| | | | | 3 | 1 | | 3 | | |
| 250 x 150 | 6.0 | 40.56 | 31.84 | 1507.69 | 201.02 | 6.10 | 2358.63 | 235.86 | 7.63 |
| 250 x 150 | 8.0 | 53.44 | 41.95 | 1935.64 | 258.09 | 6.02 | 3043.72 | 304.37 | 7.55 |
| 300 x 100 | 4.0 | 31.36 | 24.62 | 605.19 | 121.04 | 4.39 | 3412.23 | 227.48 | 10.43 |
| 300 x 100 | 6.0 | 46.56 | 36.55 | 864.47 | 172.89 | 4.31 | 4982.23 | 332.15 | 10.34 |
| 300 x 100 | 8.0 | 61.44 | 48.23 | 1097.27 | 219.45 | 4.23 | 6465.59 | 431.04 | 10.26 |
| 300 x 200 | 4.0 | 39.36 | 30.90 | 2777.14 | 277.71 | 8.40 | 5164.66 | 344.31 | 11.45 |
| 300 x 200 | 6.0 | 58.56 | 45.97 | 4052.79 | 405.28 | 8.32 | 7575.67 | 505.04 | 11.37 |
| 300 x 200 | 8.0 | 77.44 | 60.79 | 5256.84 | 525.68 | 8.24 | 9877.00 | 658.47 | 11.29 |
| 350 x 150 | 4.0 | 39.36 | 30.90 | 1683.38 | 224.45 | 6.54 | 6258.42 | 357.62 | 12.61 |
| 350 x 150 | 6.0 | 58.56 | 45.97 | 2441.35 | 325.51 | 6.46 | 9187.11 | 524.98 | 12.53 |
| 350 x 150 | 8.0 | 77.44 | 60.79 | 3146.76 | 419.57 | 6.37 | 11987.08 | 684.98 | 12.44 |
| 400 x 100 | 6.0 | 58.56 | 45.97 | 1129.91 | 225.98 | 4.39 | 10498.55 | 524.93 | 13.39 |
| 400 x 100 | 8.0 | 77.44 | 60.79 | 1436.68 | 287.34 | 4.31 | 13697.16 | 684.86 | 13.30 |

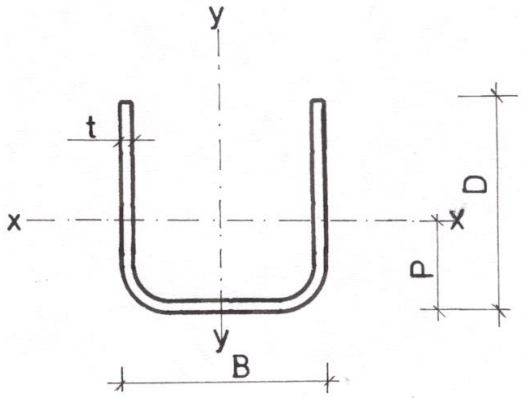



**Table 7 — Dimensions and properties for cold rolled plain channels**

| Size B X D mm | Thick Ness t mm | Area A $cm^2$ | Mass w kg/m | P Cm | Axis Y - Y | | | Axis X - X | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_y$ cm | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_x$ cm |
| 50 x 25 | 3 | 2.70 | 2.12 | 0.77 | 1.56 | 0.90 | 0.77 | 9.45 | 3.78 | 1.89 |
| 50 x 25 | 3 | 2.70 | 2.12 | 0.77 | 1.56 | 0.90 | 0.77 | 9.45 | 3.78 | 1.89 |
| 60 x 40 | 3 | 3.90 | 3.06 | 1.30 | 6.33 | 2.34 | 1.27 | 22.05 | 7.35 | 2.38 |
| 60 x 40 | 4 | 5.07 | 3.98 | 1.36 | 7.99 | 3.02 | 1.26 | 27.32 | 9.10 | 2.34 |
| 75 x 40 | 2 | | | | | | | | | |
| 75 x 40 | 3 | 4.34 | 4.41 | 1.13 | 39.33 | 10.49 | 3.01 | 7.02 | 2.45 | 1.27 |
| 75 x 40 | 4 | 5.64 | 4.43 | 1.12 | 50.40 | 13.44 | 2.99 | 7.74 | 2.69 | 1.17 |
| 100 x 50 | 2 | 3.92 | 3.08 | | 62.77 | 12.55 | 4.00 | 9.82 | 3.93 | 1.58 |
| 100 x 50 | 3 | 5.70 | 4.47 | 1.40 | 14.05 | 3.90 | 1.57 | 87.30 | 17.46 | 3.91 |
| 100 x 50 | 4 | 7.42 | 5.82 | 1.45 | 18.07 | 5.08 | 1.56 | 111.12 | 22.21 | 3.86 |
| 100 x 50 | 6 | 10.81 | 8.49 | 1.56 | 24.74 | 7.19 | 1.52 | 152.58 | 30.51 | 3.75 |
| 120 x 50 | 2 | 4.32 | 3.39 | | 95.64 | 15.94 | 4.71 | 10.36 | 4.14 | 1.55 |
| 120 x 50 | 3 | 6.42 | 5.04 | | 139.73 | 23.29 | 4.67 | 15.10 | 6.04 | 1.53 |
| 120 x 50 | 4 | 8.48 | 6.66 | | 181.44 | 30.24 | 4.63 | 19.57 | 7.83 | 1.52 |
| 120 x 50 | 6 | 12.01 | 9.43 | 1.44 | 26.49 | 7.44 | 1.48 | 238.17 | 39.69 | 4.45 |
| 125 x 65 | 4 | 9.88 | 7.76 | | 243.79 | 39.01 | 4.97 | 41.28 | 12.70 | 2.04 |
| 125 x 65 | 6 | 14.04 | 11.02 | 1.86 | 348.52 | 55.76 | 4.98 | 59.34 | 12.79 | 2.06 |
| 150 x 50 | 6 | 13.81 | 10.84 | 1.29 | 28.53 | 7.69 | 1.43 | 412.33 | 54.97 | 5.46 |
| 150 x 70 | 4 | 10.90 | 8.61 | 1.88 | 53.03 | 10.35 | 2.19 | 376.90 | 50.25 | 5.85 |
| 150 x 70 | 6 | 16.21 | 12.72 | 1.99 | 74.71 | 14.91 | 2.15 | 536.82 | 71.57 | 5.75 |
| 150 x 75 | 4 | 11.68 | 9.17 | | 415.26 | 55.37 | 5.96 | 64.97 | 17.33 | 2.36 |
| 150 x 75 | 6 | 16.74 | 13.14 | 2.07 | 598.23 | 79.76 | 5.98 | 93.78 | 17.27 | 2.37 |

| Size B X D mm | Thick Ness t mm | Area A $cm^2$ | Mass w kg/m | P Cm | Axis Y - Y | | | Axis X - X | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 200 x 75 | 4 | 13.68 | 10.74 | | 812.25 | 81.22 | 7.71 | 70.68 | 18.85 | 2.27 |
| 200 x 75 | 5 | 16.63 | 13.03 | 1.72 | 1006.25 | 100.63 | 7.78 | 99.85 | 17.28 | 2.45 |
| 200 x 75 | 6 | 19.74 | 15.05 | 1.80 | 1179.31 | 117.93 | 7.73 | 102.13 | 17.92 | 2.27 |
| 200 x 100 | 6 | 22.64 | 17.77 | 2.79 | 224.98 | 31.20 | 3.15 | 1393.93 | 139.39 | 7.84 |

ZED PURLINS TO BE ADDED

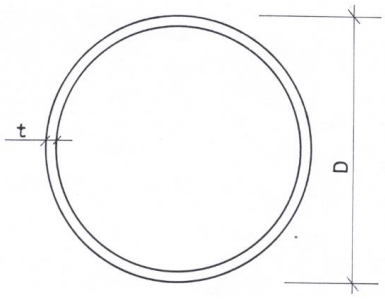



**Table 11 — Dimensions and properties for cold rolled circular tubes**

| Dimensions D mm | t mm | A $cm^2$ | Mass w kg/m | I $cm^4$ | Z $cm^3$ | r cm |
|---|---|---|---|---|---|---|
| **16** | **1.0** | 0.47 | 0.37 | 0.13 | 0.17 | 0.53 |
| 16 | 1.2 | 0.56 | 0.44 | 0.15 | 0.19 | 0.52 |
| 16 | 1.5 | 0.68 | 0.55 | 0.18 | 0.23 | 0.52 |
| 16 | 2 | 0.88 | 0.71 | 0.22 | 0.27 | 0.50 |
| 20 | 1.0 | | | | | |
| 20 | 1.2 | 0.71 | 0.56 | 0.31 | 0.31 | 0.67 |
| 20 | 1.5 | 0.87 | 0.69 | 0.38 | 0.38 | 0.66 |
| 20 | 2 | 1.13 | 0.90 | 0.46 | 0.46 | 0.64 |
| 22 | 1.0 | 0.66 | 0.52 | 0.36 | 0.33 | 0.74 |
| 22 | 1.2 | 0.78 | 0.62 | 0.43 | 0.39 | 0.74 |
| 22 | 1.5 | 0.97 | 0.78 | 0.51 | 0.46 | 0.73 |
| 22 | 2 | 1.26 | 0.99 | 0.63 | 0.58 | 0.71 |
| 25 | 1.0 | 0.75 | 0.59 | 0.54 | 0.44 | 0.85 |
| 25 | 1.2 | 0.89 | 0.70 | 0.64 | 0.51 | 0.84 |
| 25 | 1.5 | 1.10 | 0.87 | 0.77 | 0.61 | 0.83 |
| 25 | 2 | 1.43 | 1.13 | 0.96 | 0.77 | 0.82 |
| 27 | 1.0 | | | | | |
| 27 | 1.2 | 0.95 | 0.75 | 0.79 | 0.59 | 0.91 |
| 27 | 1.5 | 1.18 | 0.93 | 0.95 | 0.72 | 0.90 |
| 27 | 2 | 1.55 | 1.22 | 1.19 | 0.90 | 0.88 |
| 32 | 1.0 | 0.97 | 0.76 | 1.17 | 0.73 | 1.10 |
| 32 | 1.2 | 1.15 | 0.91 | 1.37 | 0.86 | 1.09 |
| 32 | 1.5 | 1.43 | 1.13 | 1.67 | 1.04 | 1.08 |
| 32 | 2 | 1.88 | 1.48 | 2.13 | 1.33 | 1.05 |
| 32 | 3 | 2.72 | 2.14 | 2.90 | 1.81 | 1.03 |
| 38 | 1.0 | 1.16 | 0.91 | 1.99 | 1.05 | 1.31 |
| 38 | 1.2 | 1.42 | 1.12 | 2.48 | 1.28 | 1.32 |
| 38 | 1.5 | 1.75 | 1.38 | 3.03 | 1.57 | 1.31 |
| 38 | 2 | 2.31 | 1.82 | 3.89 | 2.01 | 1.30 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 38 | 3 | 3.37 | 2.65 | 5.39 | 2.79 | 1.26 |

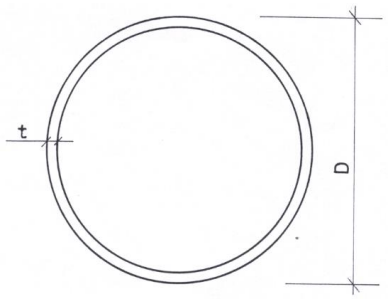



**Table 11 — Dimensions and properties for cold rolled circular tubes**
*(Contd)*

| Dimensions D mm | t mm | A $cm^2$ | Mass w kg/m | I $cm^4$ | Z $cm^3$ | r cm |
|---|---|---|---|---|---|---|
| 42 | 1.0 | 1.29 | 1.01 | 2.71 | 1.29 | 1.45 |
| 42 | 1.2 | 1.54 | 1.21 | 3.26 | 1.54 | 1.47 |
| 42 | 1.5 | 1.96 | 1.54 | 3.99 | 1.89 | 1.42 |
| 42 | 2 | 2.52 | 1.98 | 5.13 | 2.43 | 1.42 |
| 48 | 1.0 | 1.48 | 1.16 | 4.08 | 1.70 | 1.66 |
| 48 | 1.2 | 1.77 | 1.39 | 4.84 | 2.02 | 1.66 |
| 48 | 1.5 | 2.19 | 1.72 | 5.93 | 2.47 | 1.65 |
| 48 | 2 | 2.89 | 2.27 | 7.66 | 3.19 | 1.63 |
| 50 | 1.2 | 1.84 | 1.45 | 5.48 | 2.19 | 1.73 |
| 50 | 1.5 | 2.29 | 1.80 | 6.73 | 2.69 | 1.72 |
| 50 | 2 | 3.02 | 2.37 | 8.70 | 3.48 | 1.70 |
| 60 | 1.2 | 2.21 | 1.74 | 9.58 | 3.19 | 2.08 |
| 60 | 1.5 | 2.75 | 2.16 | 11.80 | 3.93 | 2.07 |
| 60 | 2 | 3.64 | 2.86 | 15.34 | 5.11 | 2.06 |
| 76 | 1.2 | 2.82 | 2.21 | 19.73 | 5.19 | 2.64 |
| 76 | 1.5 | 3.51 | 2.76 | 24.38 | 6.41 | 2.63 |
| 76 | 2.0 | 4.65 | 3.65 | 31.86 | 8.38 | 2.62 |
| 89 | 2 | 5.46 | 4.29 | 51.75 | 11.63 | 3.08 |
| 114 | 2 | 7.04 | 5.53 | 110.42 | 19.37 | 3.96 |
| 114 | 3 | 10.47 | 8.22 | 161.30 | 28.30 | 3.93 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 165 | 3 | 15.27 | 11.99 | 501.24 | 60.76 | 5.73 |
| 165 | 4 | 20.24 | 15.89 | 656.21 | 79.54 | 5.69 |

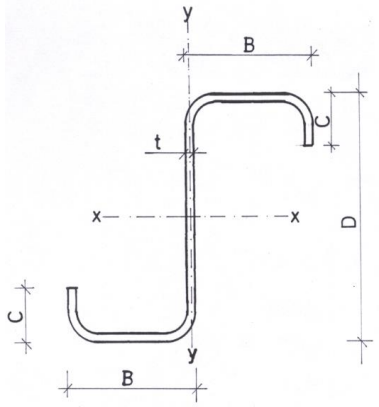



**Table 12 — Dimensions and properties of ZED purlins**

| Dimensions | | | | A | Mass w | $I_x$ | $Z_x$ | X - X axis | | Y - Y axis | | Imperial inch equivalents | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B mm | D mm | C mm | t mm | $cm^2$ | kg/m | $cm^4$ | $cm^3$ | $r_x$ cm | $I_y$ $cm^4$ | $Z_y$ $cm^3$ | $r_y$ cm | D | B | Gauge |
| 50.8 | 76 | 19 | 1.5 | | | | | | | | | 3” | 2” | 16 |
| 50.8 | 76 | 19 | 2.0 | | | | | | | | | 3” | 2” | 16 |
| 50.8 | 95.25 | 20 | 2.0 | 4.52 | 3.52 | 63.94 | 13.42 | 3.76 | 33.87 | 6.80 | 2.73 | $3^3/_4$” | 2” | 14 |
| 50.8 | 101.6 | 20 | 2.0 | 4.26 | 3.34 | 70.18 | 13.81 | 4.05 | 31.45 | 4.98 | 2.41 | 4” | 2” | 14 |
| 50.8 | 114.6 | 20 | 2.0 | 4.90 | 3.85 | 98.24 | 17.19 | 4.47 | 33.87 | 6.80 | 2.62 | $4^1/_2$” | 2” | 14 |
| 50.8 | 127.0 | 20 | 2.0 | 5.16 | 4.05 | 125.99 | 19.84 | 4.94 | 33.87 | 6.80 | 2.56 | 5” | 2” | 14 |
| 50.8 | 139.7 | 20 | 2.0 | 5.40 | 4.24 | 157.90 | 22.60 | 5.40 | 33.87 | 6.80 | 2.50 | $5^1/_2$” | 2” | 14 |
| 50.8 | 152.4 | 20 | 2.0 | 5.66 | 4.44 | 194.14 | 25.47 | 5.85 | 33.87 | 6.80 | 2.44 | 6” | 2” | 14 |
| 50.8 | 165.1 | 20 | 2.0 | 5.92 | 4.65 | 234.96 | 28.46 | 6.30 | 33.87 | 6.80 | 2.39 | $6^1/_2$” | 2” | 14 |
| 50.8 | 165.1 | 20 | 2.5 | 7.25 | 5.94 | 278.7 | 33.78 | 6.43 | 33.87 | 7.59 | 2.33 | $6^1/_2$” | 2” | 12 |
| 63.5 | 165.1 | 20 | 2.5 | 9.91 | 6.14 | 301.50 | 36.54 | 6.50 | 36.79 | 10.91 | 2.31 | $6^1/_2$” | $2^1/_2$” | 12 |
| 50.8 | 177.8 | 20 | 2.5 | 7.59 | 5.90 | 340.73 | 38.32 | 6.72 | 37.63 | 7.59 | 2.23 | 7” | 2” | 12 |
| 63.5 | 177.8 | 20 | 2.5 | 8.23 | 6.40 | 389.51 | 43.81 | 6.90 | 67.91 | 10.91 | 2.88 | 7” | 2” | 12 |
| 76.2 | 177.8 | 20 | 3.0 | 10.42 | 8.17 | 516.52 | 58.10 | 7.02 | 128.58 | 17.21 | 3.50 | 7” | 3” | 10 |
| 50.8 | 203.0 | 20 | 2.0 | | | | | | | | | 8” | 2” | 14 |
| 76.2 | 203.0 | 20 | 2.5 | | | | | | | | | 8” | 3” | 12 |
| 76.2 | 203.0 | 20 | 3.0 | | | | | | | | | 8” | 3” | 10 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 76.2 | 254.0 | 20 | 2.5 | | | | | | | | | 10” | 3” | 12 |
| 76.2 | 254.0 | 20 | 3.0 | 13.12 | 10.30 | 123.60 | 97.38 | 9.70 | 148.99 | 19.95 | 3.37 | 10” | 3” | 10 |
| 63.5 | 304.0 | 20 | 2.5 | | | | | | | | | 12” | $2^1/_2$” | 12 |
| 76.2 | 304.0 | 20 | 2.5 | | | | | | | | | | 3” | 12 |
| 63.5 | 304.0 | 20 | 3.0 | | | | | | | | | | $2^1/_2$” | 10 |
| 76.2 | 304.0 | 20 | 3.0 | | | | | | | | | | 3” | 10 |

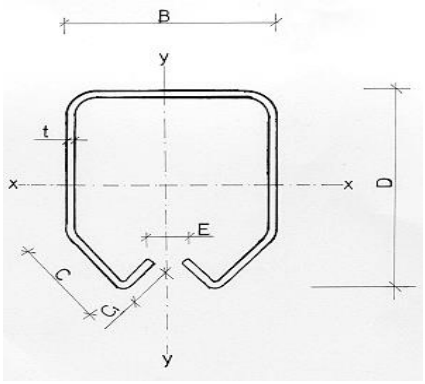
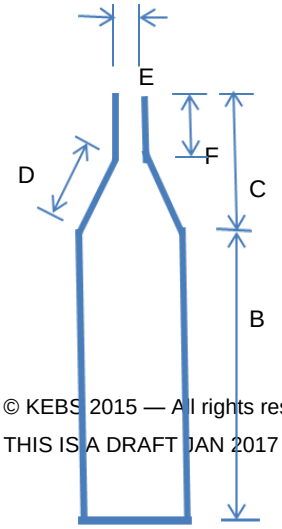



**Table 13 — Dimensions and properties for cold rolled mono rail sections**

| Dimensions | | | | | t | A | Mass w | | X - X axis | | | Y - Y axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | D | C | $C_1$ | E | mm | $cm^2$ | kg/m | $I_x$ $cm^4$ | $Z_x$ $cm^3$ | $R_x$ cm | $I_y$ cm | $Z_y$ $cm^3$ | $r_y$ cm |
| 57 | 67 | 15 | 10 | 13.7 | 3 | 6.27 | 4.92 | 34.34 | 9.19 | 2.34 | 31.63 | 11.10 | 2.25 |
| 42 | 54 | 12.5 | 8 | 8 | 2.5 | 3.97 | 3.12 | 14.35 | 4.64 | 1.90 | 11.11 | 5.29 | 1.67 |
| 33 | 34 | 9.5 | 6.5 | 10.5 | 2 | 2.22 | 1.74 | 3.22 | 1.65 | 1.20 | 3.67 | 2.22 | 1.28 |



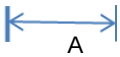
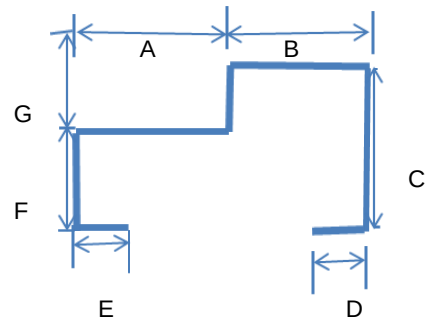



**Table 14—Dimensions and properties for cold rolled boutille door section**

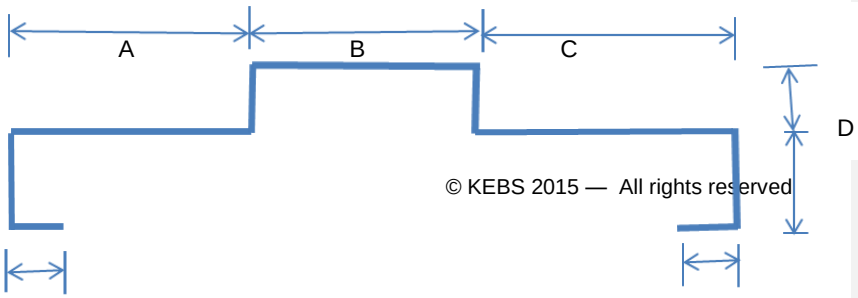
| Dimensions | | | | | t | A | Mass w | | X - X axis | | | Y - Y axis | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | mm | $cm^2$ | kg/m | $I_x$ $cm^4$ | $Z_x$ $cm^3$ | $R_x$ cm | $I_y$ cm | $Z_y$ $cm^3$ | $r_y$ cm |
| 33 | 64 | 30 | 15 | 2 | 1.0 | 6.27 | 4.92 | 34.34 | 9.19 | 2.34 | 31.63 | 11.10 | 2.25 |
| 42 | 54 | 12.5 | 8 | 8 | 2.5 | 3.97 | 3.12 | 14.35 | 4.64 | 1.90 | 11.11 | 5.29 | 1.67 |
| 33 | 34 | 9.5 | 6.5 | 10.5 | 2 | 2.22 | 1.74 | 3.22 | 1.65 | 1.20 | 3.67 | 2.22 | 1.28 |




T: Thickness

**Table 15 — Dimensions and properties for cold rolled half H door section**

| SR. | A | B | C | D | E | F | G | T | Mass (Kg/M) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 48 | 52 | 42 | 12 | 12 | 29 | 13 | 1.00 | 1.64 |
| 2 | 48 | 52 | 42 | 12 | 12 | 29 | 13 | 1.20 | 1.97 |
| 3 | 48 | 52 | 42 | 12 | 12 | 29 | 13 | 1.50 | 2.46 |



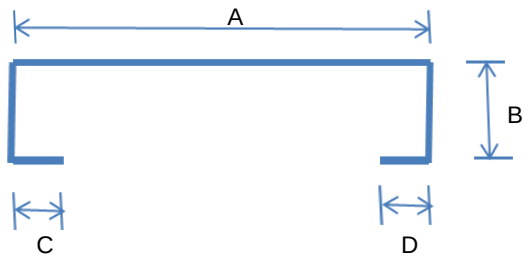
E

G F

T: Thickness

**Table 16 — Dimensions and properties for cold rolled full H door section**

| SR. | A | B | C | D | E | F | G | T | Mass (Kg/M) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 48 | 54 | 48 | 13 | 30 | 11 | 11 | 1.00 | 1.88 |
| 2 | 48 | 54 | 48 | 13 | 30 | 11 | 11 | 1.20 | 2.26 |
| 3 | 48 | 54 | 48 | 13 | 30 | 11 | 11 | 1.50 | 2.83 |
| 4 | 48 | 54 | 43 | 13 | 30 | 11 | 11 | 1.00 | 1.87 |
| 5 | 48 | 54 | 43 | 13 | 30 | 11 | 11 | 1.20 | 2.24 |
| 6 | 48 | 54 | 43 | 13 | 30 | 11 | 11 | 1.50 | 2.80 |




T:Thickness

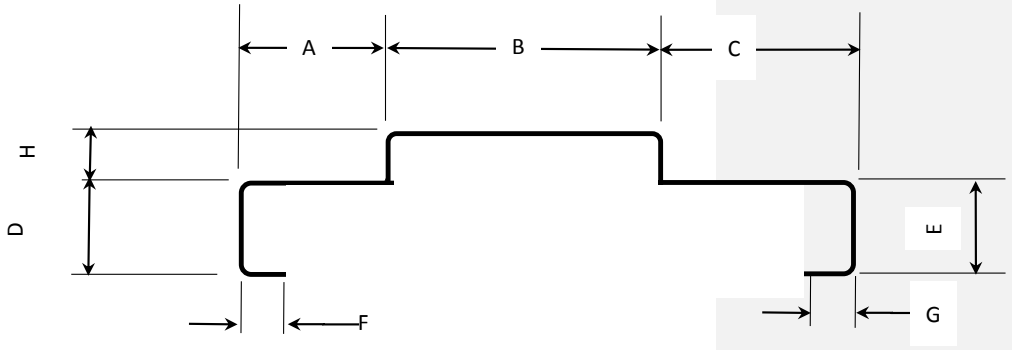
**Table 17— Dimensions and properties for cold rolled C door section**

| | A | B | C | D | T | Mass (Kg/M) |
|---|---|---|---|---|---|---|
| | 150 | 30 | 13 | 13 | 1.0 | 1.72 |
| | | | | | 1.2 | 2.07 |
| | | | | | 1.5 | 2.43 |
| | 100 | 25 | 20 | 20 | 1.2 | 1.50 |
| | 75 | 50 | 20 | 20 | 2.0 | 3.03 |
| | 100 | 50 | 20 | 20 | 2.0 | 3.42 |
| | 125 | 50 | 20 | 20 | 2.0 | 3.82 |
| | 150 | 50 | 20 | 20 | 2.0 | 4.25 |
| | 175 | 50 | 20 | 20 | 2.0 | 4.60 |
| | 125 | 75 | 20 | 20 | 2.0 | 4.43 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 150 | 75 | 20 | 20 | 2.0 | 4.81 |
| | | | | | | |

5) DIMENSIONS AND PROPERTIES FOR UNEQUAL H DOOR SECTION (SIZE-52X44X34X12M

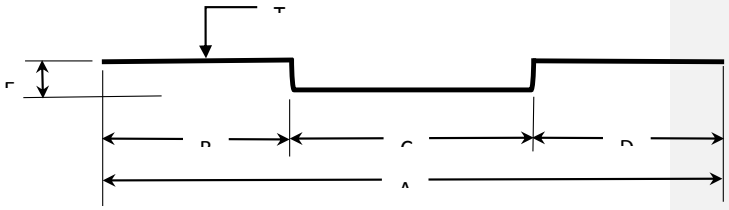
| A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|
| 34 | 52 | 44 | 33 | 33 | 12 | 12 | 13 | 13 |
| 34 | 52 | 44 | 33 | 33 | 12 | 12 | 13 | 13 |
| 34 | 52 | 44 | 33 | 33 | 12 | 12 | 13 | 13 |
| 34 | 52 | 44 | 33 | 33 | 12 | 12 | 13 | 13 |
| 34 | 52 | 44 | 33 | 33 | 12 | 12 | 13 | 13 |




DIMENSIONS AND PROPERTIES FOR PROFILE OMEGA

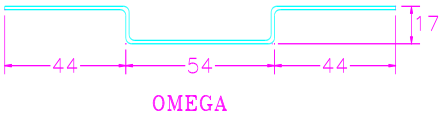
| A | B | C | D | E | T (MM) |
|---|---|---|---|---|---|
| 150 | 48 | 54 | 48 | 13 | 1.2 |
| 150 | 48 | 54 | 48 | 13 | 1.5 |

| 150 | 48 | 54 | 48 | 13 | 2.0 |
|---|---|---|---|---|---|



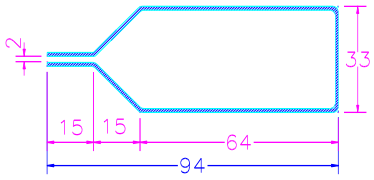
**KS 104:2017**

# DOOR PROFILES



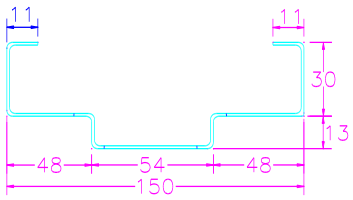

OMEGA

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 10.00 |
| 1.50mm | 13.25 |



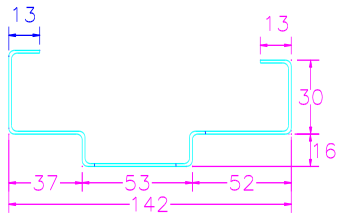

DOOR – BOTTLE SECTION

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 12.66 |
| 1.50mm | 18.85 |



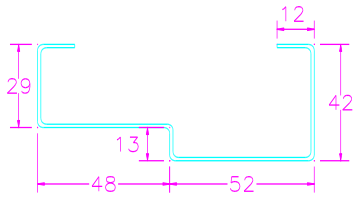

EQUAL H.S PROFILE FOR DOUBLE DOOR FRAME

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 13.22 |
| 1.50mm | 16.53 |



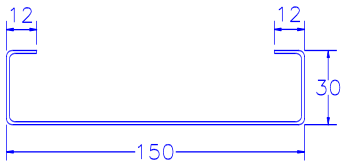

UNEQUAL H.S PROFILE FOR DOUBLE DOOR FRAME

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 13.00 |
| 1.50mm | 16.20 |




DOOR FRAME – SINGLE

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 10.86 |
| 1.50mm | 13.58 |




LIP CHANNEL

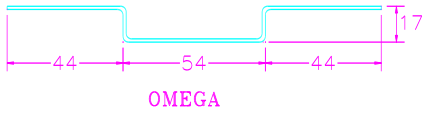
| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 12.50 |
| 1.50mm | 15.65 |

Please note that one standard piece is six metres in length.



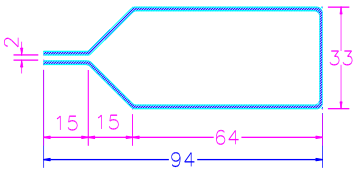
Field Code Changed

# DOOR PROFILES



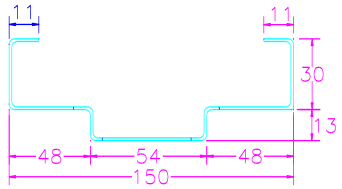

OMEGA

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 10.00 |
| 1.50mm | 13.25 |



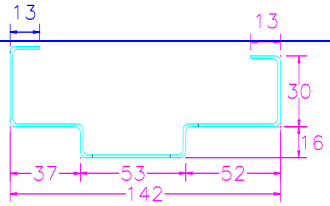

DOOR – BOTTLE SECTION

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 12.66 |
| 1.50mm | 18.85 |



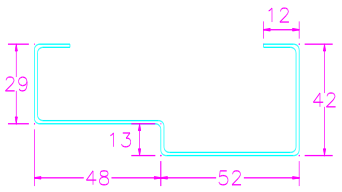

EQUAL H.S PROFILE FOR DOUBLE DOOR FRAME

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 13.22 |
| 1.50mm | 16.53 |



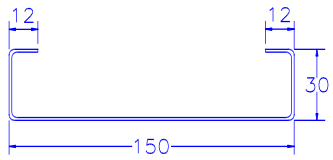

UNEQUAL H.S PROFILE FOR DOUBLE DOOR FRAME

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 13.00 |
| 1.50mm | 16.20 |




DOOR FRAME – SINGLE

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 10.86 |
| 1.50mm | 13.58 |




LIP CHANNEL

| Thickness | Kg/pc. |
|---|---|
| 1.20mm | 12.50 |
| 1.50mm | 15.65 |

Please note that one standard piece is six metres in length.