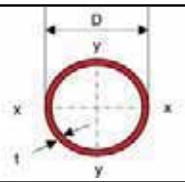
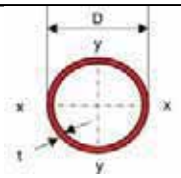
# Circular



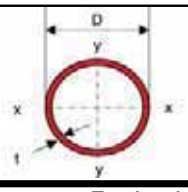

| Designation Outside Diameter D | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Inertia I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **21.3** | 2.3 | 1.08 | 1.37 | 0.629 | 0.677 | 0.590 | 0.834 | 1.26 | 1.18 | 0.0669 |
| | 3.2 | 1.43 | 1.82 | 0.768 | 0.650 | 0.722 | 1.06 | 1.54 | 1.44 | 0.0669 |
| **26.9** | 2.3 | 1.40 | 1.78 | 1.36 | 0.874 | 1.01 | 1.40 | 2.71 | 2.02 | 0.0845 |
| | 3.2 | 1.87 | 2.38 | 1.70 | 0.846 | 1.27 | 1.81 | 3.41 | 2.53 | 0.0845 |
| **33.7** | 2.6 | 1.99 | 2.54 | 3.09 | 1.10 | 1.84 | 2.52 | 6.19 | 3.67 | 0.106 |
| | 2.9 | 2.20 | 2.81 | 3.36 | 1.09 | 1.99 | 2.76 | 6.71 | 3.98 | 0.106 |
| | 3.0 | 2.27 | 2.89 | 3.44 | 1.09 | 2.04 | 2.84 | 6.88 | 4.08 | 0.106 |
| | 3.2 | 2.41 | 3.07 | 3.60 | 1.08 | 2.14 | 2.99 | 7.21 | 4.28 | 0.106 |
| | 4.0 | 2.93 | 3.73 | 4.19 | 1.06 | 2.49 | 3.55 | 8.38 | 4.97 | 0.106 |
| | 5.0 | 3.54 | 4.51 | 4.78 | 1.03 | 2.84 | 4.16 | 9.57 | 5.68 | 0.106 |
| **42.4** | 2.6 | 2.55 | 3.25 | 6.46 | 1.41 | 3.05 | 4.12 | 12.9 | 6.10 | 0.133 |
| | 2.9 | 2.82 | 3.60 | 7.06 | 1.40 | 3.33 | 4.53 | 14.1 | 6.66 | 0.133 |
| | 3.0 | 2.91 | 3.71 | 7.25 | 1.40 | 3.42 | 4.67 | 14.5 | 6.84 | 0.133 |
| | 3.2 | 3.09 | 3.94 | 7.62 | 1.39 | 3.59 | 4.93 | 15.2 | 7.19 | 0.133 |
| | 3.6 | 3.44 | 4.39 | 8.33 | 1.38 | 3.93 | 5.44 | 16.7 | 7.86 | 0.133 |
| | 4.0 | 3.79 | 4.83 | 8.99 | 1.36 | 4.24 | 5.92 | 18.0 | 8.48 | 0.133 |
| | 5.0 | 4.61 | 5.87 | 10.5 | 1.33 | 4.93 | 7.04 | 20.9 | 9.86 | 0.133 |
| | 6.3 | 5.61 | 7.14 | 12.0 | 1.30 | 5.66 | 8.29 | 24.0 | 11.3 | 0.133 |
| | 8.0 | 6.79 | 8.65 | 13.5 | 1.25 | 6.36 | 9.64 | 27.0 | 12.7 | 0.133 |
| **48.3** | 2.5 | 2.82 | 3.60 | 9.46 | 1.62 | 3.92 | 5.25 | 18.9 | 7.83 | 0.152 |
| | 2.6 | 2.93 | 3.73 | 9.78 | 1.62 | 4.05 | 5.44 | 19.6 | 8.10 | 0.152 |
| | 2.9 | 3.25 | 4.14 | 10.7 | 1.61 | 4.43 | 5.99 | 21.4 | 8.86 | 0.152 |
| | 3.0 | 3.35 | 4.27 | 11.0 | 1.61 | 4.55 | 6.17 | 22.0 | 9.11 | 0.152 |
| | 3.2 | 3.56 | 4.53 | 11.6 | 1.60 | 4.80 | 6.52 | 23.2 | 9.59 | 0.152 |
| | 4.0 | 4.37 | 5.57 | 13.8 | 1.57 | 5.70 | 7.87 | 27.5 | 11.4 | 0.152 |
| | 5.0 | 5.34 | 6.80 | 16.2 | 1.54 | 6.69 | 9.42 | 32.3 | 13.4 | 0.152 |
| | 6.3 | 6.53 | 8.31 | 18.7 | 1.50 | 7.76 | 11.2 | 37.5 | 15.5 | 0.152 |
| | 8.0 | 7.95 | 10.1 | 21.4 | 1.45 | 8.85 | 13.2 | 42.7 | 17.7 | 0.152 |
| **60.3** | 2.5 | 3.56 | 4.54 | 19.0 | 2.05 | 6.30 | 8.36 | 38.0 | 12.6 | 0.189 |
| | 2.6 | 3.70 | 4.71 | 19.7 | 2.04 | 6.52 | 8.66 | 39.3 | 13.0 | 0.189 |
| | 3.0 | 4.24 | 5.40 | 22.2 | 2.03 | 7.37 | 9.86 | 44.4 | 14.7 | 0.189 |
| | 3.2 | 4.51 | 5.74 | 23.5 | 2.02 | 7.78 | 10.4 | 46.9 | 15.6 | 0.189 |
| | 4.0 | 5.55 | 7.07 | 28.2 | 2.00 | 9.34 | 12.7 | 56.3 | 18.7 | 0.189 |
| | 5.0 | 6.82 | 8.69 | 33.5 | 1.96 | 11.1 | 15.3 | 67.0 | 22.2 | 0.189 |
| | 6.3 | 8.39 | 10.7 | 39.5 | 1.92 | 13.1 | 18.5 | 79.0 | 26.2 | 0.189 |
| | 8.0 | 10.32 | 13.1 | 46.0 | 1.87 | 15.3 | 22.1 | 92.0 | 30.5 | 0.189 |
| | 10.0 | 12.40 | 15.8 | 52.0 | 1.81 | 17.2 | 25.6 | 104 | 34.5 | 0.189 |
| **76.1** | 2.5 | 4.54 | 5.78 | 39.2 | 2.60 | 10.3 | 13.5 | 78.4 | 20.6 | 0.239 |
| | 2.6 | 4.71 | 6.00 | 40.6 | 2.60 | 10.7 | 14.1 | 81.2 | 21.3 | 0.239 |
| | 3.0 | 5.41 | 6.89 | 46.1 | 2.59 | 12.1 | 16.0 | 92.2 | 24.2 | 0.239 |
| | 3.2 | 5.75 | 7.33 | 48.8 | 2.58 | 12.8 | 17.0 | 97.6 | 25.6 | 0.239 |
| | 4.0 | 7.11 | 9.06 | 59.1 | 2.55 | 15.5 | 20.8 | 118 | 31.0 | 0.239 |
| | 5.0 | 8.77 | 11.2 | 70.9 | 2.52 | 18.6 | 25.3 | 142 | 37.3 | 0.239 |
| | 6.0 | 10.37 | 13.2 | 81.8 | 2.49 | 21.5 | 29.6 | 164 | 43.0 | 0.239 |
| | 6.3 | 10.84 | 13.8 | 84.8 | 2.48 | 22.3 | 30.8 | 170 | 44.6 | 0.239 |
| | 8.0 | 13.44 | 17.1 | 101 | 2.42 | 26.4 | 37.3 | 201 | 52.9 | 0.239 |
| | 10.0 | 16.30 | 20.8 | 116 | 2.36 | 30.5 | 44.0 | 232 | 61.0 | 0.239 |
| | 12.0 | 18.97 | 24.2 | 128 | 2.31 | 33.8 | 49.9 | 257 | 67.5 | 0.239 |

# Circular



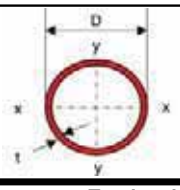

| Designation Outside Diameter D | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Inertia I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **88.9** | 2.5 | 5.33 | 6.79 | 63.4 | 3.06 | 14.3 | 18.7 | 127 | 28.5 | 0.279 |
| | 3.0 | 6.36 | 8.10 | 74.8 | 3.04 | 16.8 | 22.1 | 150 | 33.6 | 0.279 |
| | 3.2 | 6.76 | 8.62 | 79.2 | 3.03 | 17.8 | 23.5 | 158 | 35.6 | 0.279 |
| | 3.6 | 7.57 | 9.65 | 87.9 | 3.02 | 19.8 | 26.2 | 176 | 39.5 | 0.279 |
| | 4.0 | 8.38 | 10.7 | 96.3 | 3.00 | 21.7 | 28.9 | 193 | 43.3 | 0.279 |
| | 5.0 | 10.35 | 13.2 | 116 | 2.97 | 26.2 | 35.2 | 233 | 52.4 | 0.279 |
| | 6.0 | 12.27 | 15.6 | 135 | 2.94 | 30.4 | 41.3 | 270 | 60.7 | 0.279 |
| | 6.3 | 12.83 | 16.3 | 140 | 2.93 | 31.5 | 43.1 | 280 | 63.1 | 0.279 |
| | 8.0 | 15.96 | 20.3 | 168 | 2.87 | 37.8 | 52.5 | 336 | 75.6 | 0.279 |
| | 10.0 | 19.46 | 24.8 | 196 | 2.81 | 44.1 | 62.6 | 392 | 88.2 | 0.279 |
| | 12.0 | 22.76 | 29.0 | 220 | 2.75 | 49.4 | 71.5 | 439 | 98.8 | 0.279 |
| | 14.0 | 25.86 | 32.9 | 239 | 2.69 | 53.8 | 79.5 | 478 | 108 | 0.279 |
| **101.6** | 3.6 | 8.70 | 11.1 | 133 | 3.47 | 26.2 | 34.6 | 266 | 52.5 | 0.319 |
| | 5.0 | 11.91 | 15.2 | 177 | 3.42 | 34.9 | 46.7 | 355 | 69.9 | 0.319 |
| | 6.3 | 14.81 | 18.9 | 215 | 3.38 | 42.3 | 57.3 | 430 | 84.7 | 0.319 |
| | 8.0 | 18.47 | 23.5 | 260 | 3.32 | 51.1 | 70.3 | 519 | 102 | 0.319 |
| | 10.0 | 22.59 | 28.8 | 305 | 3.26 | 60.1 | 84.2 | 611 | 120 | 0.319 |
| | 12.0 | 26.52 | 33.8 | 345 | 3.20 | 67.9 | 96.9 | 690 | 136 | 0.319 |
| | 14.0 | 30.24 | 38.5 | 379 | 3.14 | 74.6 | 108 | 758 | 149 | 0.319 |
| **114.3** | 3.0 | 8.23 | 10.5 | 163 | 3.94 | 28.4 | 37.2 | 325 | 56.9 | 0.359 |
| | 3.2 | 8.77 | 11.2 | 172 | 3.93 | 30.2 | 39.5 | 345 | 60.4 | 0.359 |
| | 3.6 | 9.83 | 12.5 | 192 | 3.92 | 33.6 | 44.1 | 384 | 67.2 | 0.359 |
| | 4.0 | 10.88 | 13.9 | 211 | 3.90 | 36.9 | 48.7 | 422 | 73.9 | 0.359 |
| | 5.0 | 13.48 | 17.2 | 257 | 3.87 | 45.0 | 59.8 | 514 | 89.9 | 0.359 |
| | 6.0 | 16.03 | 20.4 | 300 | 3.83 | 52.5 | 70.4 | 600 | 105 | 0.359 |
| | 6.3 | 16.78 | 21.4 | 313 | 3.82 | 54.7 | 73.6 | 625 | 109 | 0.359 |
| | 8.0 | 20.97 | 26.7 | 379 | 3.77 | 66.4 | 90.6 | 759 | 133 | 0.359 |
| | 10.0 | 25.72 | 32.8 | 450 | 3.70 | 78.7 | 109 | 899 | 157 | 0.359 |
| | 12.0 | 30.27 | 38.6 | 511 | 3.64 | 89.5 | 126 | 1023 | 179 | 0.359 |
| | 14.0 | 34.63 | 44.1 | 566 | 3.58 | 99.0 | 142 | 1131 | 198 | 0.359 |
| | 16.0 | 38.79 | 49.4 | 613 | 3.52 | 107 | 156 | 1225 | 214 | 0.359 |
| **139.7** | 3.2 | 10.77 | 13.7 | 320 | 4.83 | 45.8 | 59.6 | 640 | 91.6 | 0.439 |
| | 3.6 | 12.08 | 15.4 | 357 | 4.81 | 51.1 | 66.7 | 713 | 102 | 0.439 |
| | 4.0 | 13.39 | 17.1 | 393 | 4.80 | 56.2 | 73.7 | 786 | 112 | 0.439 |
| | 5.0 | 16.61 | 21.2 | 481 | 4.77 | 68.8 | 90.8 | 961 | 138 | 0.439 |
| | 6.0 | 19.78 | 25.2 | 564 | 4.73 | 80.8 | 107 | 1129 | 162 | 0.439 |
| | 6.3 | 20.73 | 26.4 | 589 | 4.72 | 84.3 | 112 | 1177 | 169 | 0.439 |
| | 8.0 | 25.98 | 33.1 | 720 | 4.66 | 103 | 139 | 1441 | 206 | 0.439 |
| | 10.0 | 31.99 | 40.7 | 862 | 4.60 | 123 | 169 | 1724 | 247 | 0.439 |
| | 12.0 | 37.79 | 48.1 | 990 | 4.53 | 142 | 196 | 1980 | 283 | 0.439 |
| | 14.0 | 43.40 | 55.3 | 1105 | 4.47 | 158 | 222 | 2211 | 317 | 0.439 |

# Circular



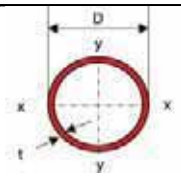

| Designation Outside Diameter D | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Inertia I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **168.3** | 3.2 | 13.03 | 16.6 | 566 | 5.84 | 67.2 | 87.2 | 1131 | 134 | 0.529 |
| | 3.6 | 14.62 | 18.6 | 632 | 5.82 | 75.1 | 97.7 | 1264 | 150 | 0.529 |
| | 4.0 | 16.21 | 20.6 | 697 | 5.81 | 82.8 | 108 | 1394 | 166 | 0.529 |
| | 4.5 | 18.18 | 23.2 | 777 | 5.79 | 92.4 | 121 | 1554 | 185 | 0.529 |
| | 5.0 | 20.14 | 25.7 | 856 | 5.78 | 102 | 133 | 1712 | 203 | 0.529 |
| | 6.0 | 24.02 | 30.6 | 1009 | 5.74 | 120 | 158 | 2017 | 240 | 0.529 |
| | 6.3 | 25.17 | 32.1 | 1053 | 5.73 | 125 | 165 | 2107 | 250 | 0.529 |
| | 8.0 | 31.63 | 40.3 | 1297 | 5.67 | 154 | 206 | 2595 | 308 | 0.529 |
| | 10.0 | 39.04 | 49.7 | 1564 | 5.61 | 186 | 251 | 3128 | 372 | 0.529 |
| | 12.0 | 46.26 | 58.9 | 1810 | 5.54 | 215 | 294 | 3620 | 430 | 0.529 |
| | 12.5 | 48.03 | 61.2 | 1868 | 5.53 | 222 | 304 | 3737 | 444 | 0.529 |
| | 14.0 | 53.27 | 67.9 | 2036 | 5.48 | 242 | 334 | 4073 | 484 | 0.529 |
| **177.8** | 4.5 | 19.23 | 24.5 | 920 | 6.13 | 104 | 135 | 1841 | 207 | 0.559 |
| | 5.0 | 21.31 | 27.1 | 1014 | 6.11 | 114 | 149 | 2028 | 228 | 0.559 |
| | 6.3 | 26.65 | 33.9 | 1250 | 6.07 | 141 | 185 | 2499 | 281 | 0.559 |
| | 8.0 | 33.50 | 42.7 | 1541 | 6.01 | 173 | 231 | 3083 | 347 | 0.559 |
| | 10.0 | 41.38 | 52.7 | 1862 | 5.94 | 209 | 282 | 3724 | 419 | 0.559 |
| | 12.0 | 49.07 | 62.5 | 2159 | 5.88 | 243 | 330 | 4318 | 486 | 0.559 |
| | 14.0 | 56.55 | 72.0 | 2434 | 5.81 | 274 | 377 | 4868 | 548 | 0.559 |
| **193.7** | 3.6 | 16.88 | 21.5 | 972 | 6.72 | 100 | 130 | 1943 | 201 | 0.609 |
| | 5.0 | 23.27 | 29.6 | 1320 | 6.67 | 136 | 178 | 2640 | 273 | 0.609 |
| | 6.0 | 27.77 | 35.4 | 1560 | 6.64 | 161 | 211 | 3119 | 322 | 0.609 |
| | 6.3 | 29.12 | 37.1 | 1630 | 6.63 | 168 | 221 | 3260 | 337 | 0.609 |
| | 8.0 | 36.64 | 46.7 | 2016 | 6.57 | 208 | 276 | 4031 | 416 | 0.609 |
| | 10.0 | 45.30 | 57.7 | 2442 | 6.50 | 252 | 338 | 4883 | 504 | 0.609 |
| | 12.0 | 53.77 | 68.5 | 2839 | 6.44 | 293 | 397 | 5678 | 586 | 0.609 |
| | 12.5 | 55.86 | 71.2 | 2934 | 6.42 | 303 | 411 | 5869 | 606 | 0.609 |
| | 14.0 | 62.04 | 79.0 | 3210 | 6.37 | 331 | 453 | 6419 | 663 | 0.609 |
| | 16.0 | 70.12 | 89.3 | 3554 | 6.31 | 367 | 507 | 7109 | 734 | 0.609 |
| **219.1** | 3.6 | 19.13 | 24.4 | 1415 | 7.62 | 129 | 167 | 2830 | 258 | 0.688 |
| | 5.0 | 26.40 | 33.6 | 1928 | 7.57 | 176 | 229 | 3856 | 352 | 0.688 |
| | 6.0 | 31.53 | 40.2 | 2282 | 7.54 | 208 | 273 | 4564 | 417 | 0.688 |
| | 6.3 | 33.06 | 42.1 | 2386 | 7.53 | 218 | 285 | 4772 | 436 | 0.688 |
| | 8.0 | 41.65 | 53.1 | 2960 | 7.47 | 270 | 357 | 5919 | 540 | 0.688 |
| | 10.0 | 51.57 | 65.7 | 3598 | 7.40 | 328 | 438 | 7197 | 657 | 0.688 |
| | 12.0 | 61.29 | 78.1 | 4200 | 7.33 | 383 | 515 | 8400 | 767 | 0.688 |
| | 12.5 | 63.69 | 81.1 | 4345 | 7.32 | 397 | 534 | 8689 | 793 | 0.688 |
| | 14.2 | 71.75 | 91.4 | 4820 | 7.26 | 440 | 597 | 9640 | 880 | 0.688 |
| | 16.0 | 80.14 | 102 | 5297 | 7.20 | 483 | 661 | 10590 | 967 | 0.688 |
| | 20.0 | 98.20 | 125 | 6261 | 7.07 | 572 | 795 | 12520 | 1143 | 0.688 |

# Circular



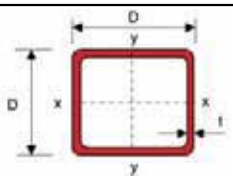

| Designation Outside Diameter D | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Inertia I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **244.5** | 5.0 | 29.53 | 37.6 | 2699 | 8.47 | 221 | 287 | 5397 | 441 | 0.768 |
| | 6.0 | 35.29 | 45.0 | 3199 | 8.43 | 262 | 341 | 6397 | 523 | 0.768 |
| | 6.3 | 37.01 | 47.1 | 3346 | 8.42 | 274 | 358 | 6692 | 547 | 0.768 |
| | 8.0 | 46.66 | 59.4 | 4160 | 8.37 | 340 | 448 | 8321 | 681 | 0.768 |
| | 10.0 | 57.83 | 73.7 | 5073 | 8.30 | 415 | 550 | 10150 | 830 | 0.768 |
| | 12.0 | 68.81 | 87.7 | 5938 | 8.23 | 486 | 649 | 11880 | 972 | 0.768 |
| | 12.5 | 71.52 | 91.1 | 6147 | 8.21 | 503 | 673 | 12300 | 1006 | 0.768 |
| | 14.0 | 79.58 | 101 | 6758 | 8.16 | 553 | 745 | 13520 | 1106 | 0.768 |
| | 14.2 | 80.65 | 103 | 6837 | 8.16 | 559 | 754 | 13670 | 1119 | 0.768 |
| | 16.0 | 90.16 | 115 | 7533 | 8.10 | 616 | 837 | 15070 | 1232 | 0.768 |
| | 20.0 | 110.73 | 141 | 8957 | 7.97 | 733 | 1011 | 17910 | 1465 | 0.768 |
| **273** | 5.0 | 33.05 | 42.1 | 3781 | 9.48 | 277 | 359 | 7562 | 554 | 0.858 |
| | 6.0 | 39.51 | 50.3 | 4487 | 9.44 | 329 | 428 | 8974 | 657 | 0.858 |
| | 6.3 | 41.44 | 52.8 | 4696 | 9.43 | 344 | 448 | 9392 | 688 | 0.858 |
| | 8.0 | 52.28 | 66.6 | 5852 | 9.37 | 429 | 562 | 11700 | 857 | 0.858 |
| | 10.0 | 64.86 | 82.6 | 7154 | 9.31 | 524 | 692 | 14310 | 1048 | 0.858 |
| | 12.0 | 77.24 | 98.4 | 8396 | 9.24 | 615 | 818 | 16790 | 1230 | 0.858 |
| | 12.5 | 80.30 | 102 | 8697 | 9.22 | 637 | 849 | 17400 | 1274 | 0.858 |
| | 14.0 | 89.42 | 114 | 9580 | 9.17 | 702 | 940 | 19160 | 1404 | 0.858 |
| | 14.2 | 90.63 | 115 | 9695 | 9.16 | 710 | 952 | 19390 | 1421 | 0.858 |
| | 16.0 | 101.41 | 129 | 10710 | 9.10 | 784 | 1058 | 21410 | 1569 | 0.858 |
| | 20.0 | 124.79 | 159 | 12800 | 8.97 | 938 | 1283 | 25600 | 1875 | 0.858 |
| | 25.0 | 152.90 | 195 | 15130 | 8.81 | 1108 | 1543 | 30250 | 2216 | 0.858 |
| **323.9** | 5.0 | 39.32 | 50.1 | 6369 | 11.3 | 393 | 509 | 12740 | 787 | 1.02 |
| | 6.0 | 47.04 | 59.9 | 7572 | 11.2 | 468 | 606 | 15150 | 935 | 1.02 |
| | 6.3 | 49.34 | 62.9 | 7929 | 11.2 | 490 | 636 | 15860 | 979 | 1.02 |
| | 8.0 | 62.32 | 79.4 | 9910 | 11.2 | 612 | 799 | 19820 | 1224 | 1.02 |
| | 10.0 | 77.41 | 98.6 | 12160 | 11.1 | 751 | 986 | 24320 | 1501 | 1.02 |
| | 12.0 | 92.30 | 118 | 14320 | 11.0 | 884 | 1168 | 28640 | 1768 | 1.02 |
| | 12.5 | 95.99 | 122 | 14850 | 11.0 | 917 | 1213 | 29690 | 1833 | 1.02 |
| | 14.0 | 107.00 | 136 | 16400 | 11.0 | 1012 | 1345 | 32790 | 2025 | 1.02 |
| | 14.2 | 108.45 | 138 | 16600 | 11.0 | 1025 | 1363 | 33200 | 2050 | 1.02 |
| | 16.0 | 121.49 | 155 | 18390 | 10.9 | 1136 | 1518 | 36780 | 2271 | 1.02 |
| | 20.0 | 149.89 | 191 | 22140 | 10.8 | 1367 | 1850 | 44280 | 2734 | 1.02 |
| | 25.0 | 184.28 | 235 | 26400 | 10.6 | 1630 | 2239 | 52800 | 3260 | 1.02 |
| **355.6** | 6.0 | 51.73 | 65.9 | 10070 | 12.4 | 566 | 733 | 20140 | 1133 | 1.12 |
| | 6.3 | 54.27 | 69.1 | 10550 | 12.4 | 593 | 769 | 21090 | 1186 | 1.12 |
| | 8.0 | 68.58 | 87.4 | 13200 | 12.3 | 742 | 967 | 26400 | 1485 | 1.12 |
| | 10.0 | 85.23 | 109 | 16220 | 12.2 | 912 | 1195 | 32450 | 1825 | 1.12 |
| | 12.0 | 101.68 | 130 | 19140 | 12.2 | 1076 | 1417 | 38280 | 2153 | 1.12 |
| | 12.5 | 105.77 | 135 | 19850 | 12.1 | 1117 | 1472 | 39700 | 2233 | 1.12 |
| | 14.0 | 117.94 | 150 | 21950 | 12.1 | 1235 | 1635 | 43900 | 2469 | 1.12 |
| | 14.2 | 119.56 | 152 | 22230 | 12.1 | 1250 | 1656 | 44460 | 2500 | 1.12 |
| | 16.0 | 134.00 | 171 | 24660 | 12.0 | 1387 | 1847 | 49330 | 2774 | 1.12 |
| | 20.0 | 165.53 | 211 | 29790 | 11.9 | 1676 | 2255 | 59580 | 3351 | 1.12 |
| | 25.0 | 203.83 | 260 | 35680 | 11.7 | 2007 | 2738 | 71350 | 4013 | 1.12 |

# Circular



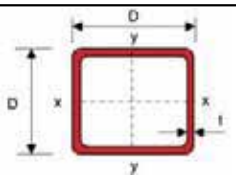

| Designation Outside Diameter D | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Inertia I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **406.4** | 6.0 | 59.25 | 75.5 | 15130 | 14.2 | 745 | 962 | 30260 | 1489 | 1.28 |
| | 6.3 | 62.16 | 79.2 | 15850 | 14.1 | 780 | 1009 | 31700 | 1560 | 1.28 |
| | 8.0 | 78.60 | 100 | 19870 | 14.1 | 978 | 1270 | 39750 | 1956 | 1.28 |
| | 10.0 | 97.76 | 125 | 24480 | 14.0 | 1205 | 1572 | 48950 | 2409 | 1.28 |
| | 12.0 | 116.72 | 149 | 28940 | 14.0 | 1424 | 1867 | 57870 | 2848 | 1.28 |
| | 12.5 | 121.43 | 155 | 30030 | 13.9 | 1478 | 1940 | 60060 | 2956 | 1.28 |
| | 14.0 | 135.48 | 173 | 33260 | 13.9 | 1637 | 2157 | 66520 | 3274 | 1.28 |
| | 14.2 | 137.35 | 175 | 33690 | 13.9 | 1658 | 2185 | 67370 | 3315 | 1.28 |
| | 16.0 | 154.05 | 196 | 37450 | 13.8 | 1843 | 2440 | 74900 | 3686 | 1.28 |
| | 20.0 | 190.58 | 243 | 45430 | 13.7 | 2236 | 2989 | 90860 | 4472 | 1.28 |
| | 25.0 | 235.15 | 300 | 54700 | 13.5 | 2692 | 3642 | 109400 | 5384 | 1.28 |
| | 32.0 | 295.46 | 376 | 66430 | 13.3 | 3269 | 4497 | 132900 | 6539 | 1.28 |
| **457** | 6.3 | 70.02 | 89.2 | 22650 | 15.9 | 991 | 1280 | 45310 | 1983 | 1.44 |
| | 8.0 | 88.58 | 113 | 28450 | 15.9 | 1245 | 1613 | 56890 | 2490 | 1.44 |
| | 10.0 | 110.24 | 140 | 35090 | 15.8 | 1536 | 1998 | 70180 | 3071 | 1.44 |
| | 12.0 | 131.69 | 168 | 41560 | 15.7 | 1819 | 2377 | 83110 | 3637 | 1.44 |
| | 12.5 | 137.03 | 175 | 43150 | 15.7 | 1888 | 2470 | 86290 | 3776 | 1.44 |
| | 14.2 | 155.07 | 198 | 48460 | 15.7 | 2121 | 2785 | 96930 | 4242 | 1.44 |
| | 16.0 | 174.01 | 222 | 53960 | 15.6 | 2361 | 3113 | 107900 | 4723 | 1.44 |
| | 20.0 | 215.54 | 275 | 65680 | 15.5 | 2874 | 3822 | 131400 | 5749 | 1.44 |
| | 25.0 | 266.34 | 339 | 79420 | 15.3 | 3475 | 4671 | 158800 | 6951 | 1.44 |
| | 32.0 | 335.40 | 427 | 97010 | 15.1 | 4246 | 5791 | 194000 | 8491 | 1.44 |
| | 40.0 | 411.35 | 524 | 114900 | 14.8 | 5031 | 6977 | 229900 | 10060 | 1.44 |
| **508** | 6.3 | 77.95 | 99.3 | 31250 | 17.7 | 1230 | 1586 | 62490 | 2460 | 1.60 |
| | 8.0 | 98.65 | 126 | 39280 | 17.7 | 1546 | 2000 | 78560 | 3093 | 1.60 |
| | 10.0 | 122.81 | 156 | 48520 | 17.6 | 1910 | 2480 | 97040 | 3820 | 1.60 |
| | 12.0 | 146.79 | 187 | 57540 | 17.5 | 2265 | 2953 | 115100 | 4530 | 1.60 |
| | 12.5 | 152.75 | 195 | 59760 | 17.5 | 2353 | 3070 | 119500 | 4705 | 1.60 |
| | 14.2 | 172.93 | 220 | 67200 | 17.5 | 2646 | 3463 | 134400 | 5291 | 1.60 |
| | 16.0 | 194.14 | 247 | 74910 | 17.4 | 2949 | 3874 | 149800 | 5898 | 1.60 |
| | 20.0 | 240.70 | 307 | 91430 | 17.3 | 3600 | 4766 | 182900 | 7199 | 1.60 |
| | 25.0 | 297.79 | 379 | 110900 | 17.1 | 4367 | 5837 | 221800 | 8734 | 1.60 |
| | 32.0 | 375.64 | 479 | 136100 | 16.9 | 5360 | 7261 | 272300 | 10720 | 1.60 |
| | 40.0 | 461.66 | 588 | 162200 | 16.6 | 6385 | 8782 | 324400 | 12770 | 1.60 |
| | 50.0 | 564.75 | 719 | 190900 | 16.3 | 7515 | 10530 | 381800 | 15030 | 1.60 |

# Square




| Designation Size DxD | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Area I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **20x20** | 2 | 1.12 | 1.40 | 0.739 | 0.727 | 0.739 | 0.930 | 1.22 | 1.07 | 0.0748 |
| | 2.5 | 1.35 | 1.68 | 0.835 | 0.705 | 0.835 | 1.08 | 1.41 | 1.20 | 0.0736 |
| **25x25** | 2 | 1.41 | 1.80 | 1.56 | 0.932 | 1.25 | 1.53 | 2.52 | 1.81 | 0.0948 |
| | 2.5 | 1.74 | 2.18 | 1.81 | 0.909 | 1.44 | 1.82 | 2.97 | 2.08 | 0.0936 |
| | 3 | 2.00 | 2.54 | 2.00 | 0.886 | 1.60 | 2.06 | 3.35 | 2.30 | 0.0923 |
| | 3.2 | 2.15 | 2.68 | 2.06 | 0.877 | 1.65 | 2.15 | 3.48 | 2.37 | 0.0918 |
| **30x30** | 2.5 | 2.14 | 2.68 | 3.33 | 1.11 | 2.22 | 2.74 | 5.40 | 3.22 | 0.114 |
| | 3 | 2.47 | 3.14 | 3.74 | 1.09 | 2.50 | 3.14 | 6.16 | 3.60 | 0.112 |
| | 3.2 | 2.65 | 3.32 | 3.89 | 1.08 | 2.59 | 3.29 | 6.44 | 3.74 | 0.112 |
| **35x35** | 4 | 3.76 | 4.79 | 7.48 | 1.25 | 4.28 | 5.47 | 12.5 | 6.16 | 0.130 |
| | 6 | 5.16 | 6.57 | 8.81 | 1.16 | 5.03 | 6.91 | 15.4 | 7.19 | 0.125 |
| **40x40** | 2.5 | 2.92 | 3.68 | 8.54 | 1.52 | 4.27 | 5.14 | 13.6 | 6.22 | 0.154 |
| | 3 | 3.45 | 4.34 | 9.78 | 1.50 | 4.89 | 5.97 | 15.7 | 7.10 | 0.152 |
| | 3.2 | 3.66 | 4.60 | 10.2 | 1.49 | 5.11 | 6.28 | 16.5 | 7.42 | 0.152 |
| | 4 | 4.46 | 5.59 | 11.8 | 1.45 | 5.91 | 7.44 | 19.5 | 8.54 | 0.150 |
| | 5 | 5.40 | 6.73 | 13.4 | 1.41 | 6.68 | 8.66 | 22.5 | 9.60 | 0.147 |
| **45x45** | 4 | 5.01 | 6.39 | 17.6 | 1.66 | 7.82 | 9.71 | 28.7 | 11.3 | 0.170 |
| | 5 | 6.07 | 7.73 | 20.1 | 1.61 | 8.95 | 11.41 | 33.5 | 12.9 | 0.167 |
| **50x50** | 2.5 | 3.71 | 4.68 | 17.5 | 1.93 | 6.99 | 8.29 | 27.5 | 10.2 | 0.194 |
| | 3 | 4.39 | 5.54 | 20.2 | 1.91 | 8.08 | 9.70 | 32.1 | 11.8 | 0.192 |
| | 3.2 | 4.66 | 5.88 | 21.2 | 1.90 | 8.49 | 10.2 | 33.8 | 12.4 | 0.192 |
| | 4 | 5.72 | 7.19 | 25.0 | 1.86 | 9.99 | 12.3 | 40.4 | 14.5 | 0.190 |
| | 5 | 6.97 | 8.73 | 28.9 | 1.82 | 11.6 | 14.5 | 47.6 | 16.7 | 0.187 |
| | 6 | 8.15 | 10.2 | 32.0 | 1.77 | 12.8 | 16.5 | 53.6 | 18.4 | 0.185 |
| | 6.3 | 8.49 | 10.6 | 32.8 | 1.76 | 13.1 | 17.0 | 55.2 | 18.8 | 0.184 |
| | 8 | 10.31 | 12.7 | 35.2 | 1.7 | 14.1 | 19.2 | 60.9 | 20.1 | 0.179 |
| | 10 | 11.70 | 14.9 | 37.6 | 1.59 | 15.0 | 21.4 | 66.7 | 21.4 | 0.174 |
| **60x60** | 3 | 5.39 | 6.74 | 36.2 | 2.32 | 12.1 | 14.3 | 56.9 | 17.7 | 0.232 |
| | 3.2 | 5.67 | 7.16 | 38.2 | 2.31 | 12.7 | 15.2 | 60.2 | 18.6 | 0.232 |
| | 4 | 6.97 | 8.79 | 45.4 | 2.27 | 15.1 | 18.3 | 72.5 | 22.0 | 0.230 |
| | 5 | 8.54 | 10.7 | 53.3 | 2.23 | 17.8 | 21.9 | 86.4 | 25.7 | 0.227 |
| | 6 | 10.00 | 12.6 | 59.9 | 2.18 | 20.0 | 25.1 | 98.6 | 28.8 | 0.225 |
| | 6.3 | 10.50 | 13.1 | 61.6 | 2.17 | 20.5 | 26.0 | 102 | 29.6 | 0.224 |
| | 8 | 12.80 | 16.0 | 69.7 | 2.09 | 23.2 | 30.4 | 118 | 33.4 | 0.219 |
| | 10 | 14.90 | 18.9 | 75.5 | 2.00 | 25.2 | 34.4 | 131 | 36.0 | 0.214 |
| **70x70** | 3 | 6.28 | 7.94 | 59.0 | 2.73 | 16.9 | 19.9 | 92 | 24.8 | 0.272 |
| | 3.6 | 7.46 | 9.42 | 68.6 | 2.70 | 19.6 | 23.3 | 108 | 28.7 | 0.271 |
| | 5 | 10.10 | 12.7 | 88.5 | 2.64 | 25.3 | 30.8 | 142 | 36.8 | 0.267 |
| | 6 | 11.90 | 15.0 | 101 | 2.59 | 28.7 | 35.5 | 163 | 41.6 | 0.265 |
| | 6.3 | 12.50 | 15.6 | 104 | 2.58 | 29.7 | 36.9 | 169 | 42.9 | 0.264 |
| | 8 | 15.30 | 19.2 | 120 | 2.50 | 34.2 | 43.8 | 200 | 49.2 | 0.259 |
| **75x75** | 3.2 | 7.25 | 9.08 | 77.5 | 2.92 | 20.7 | 24.3 | 121 | 30.3 | 0.292 |
| | 4 | 8.93 | 11.2 | 93.2 | 2.89 | 24.8 | 29.6 | 147 | 36.3 | 0.290 |
| | 5 | 11.00 | 13.7 | 111 | 2.84 | 29.6 | 35.8 | 177 | 43.0 | 0.287 |
| | 6 | 12.90 | 16.2 | 126 | 2.80 | 33.7 | 41.4 | 204 | 48.9 | 0.285 |
| | 6.3 | 13.50 | 16.9 | 131 | 2.78 | 34.9 | 43.0 | 212 | 50.5 | 0.284 |
| | 8 | 16.60 | 20.8 | 152 | 2.71 | 40.5 | 51.3 | 252 | 58.4 | 0.279 |
| | 10 | 19.60 | 24.9 | 170 | 2.61 | 45.4 | 59.4 | 289 | 65.1 | 0.274 |

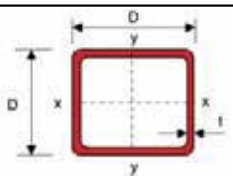
# Square




| Designation Size DxD | Thickness t | | Mass Per Metre | Area Of Section A | Second Moment Of Area I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **80x80** | 3 | | 7.18 | 9.14 | 89.8 | 3.13 | 22.5 | 26.3 | 140 | 33.0 | 0.312 |
| | 3.6 | | 8.59 | 10.9 | 105 | 3.11 | 26.2 | 31.0 | 164 | 38.5 | 0.311 |
| | 5 | | 11.70 | 14.7 | 137 | 3.05 | 34.2 | 41.1 | 217 | 49.8 | 0.307 |
| | 6 | | 13.80 | 17.4 | 156 | 3.00 | 39.1 | 47.8 | 252 | 56.8 | 0.305 |
| | 6.3 | | 14.40 | 18.1 | 162 | 2.99 | 40.5 | 49.7 | 262 | 58.7 | 0.304 |
| | 8 | | 17.80 | 22.4 | 189 | 2.91 | 47.3 | 59.5 | 312 | 68.3 | 0.299 |
| | 10 | | 21.10 | 26.9 | 214 | 2.82 | 53.5 | 69.3 | 360 | 76.8 | 0.294 |
| **90x90** | 3.6 | | 9.72 | 12.3 | 152 | 3.52 | 33.8 | 39.7 | 237 | 49.7 | 0.351 |
| | 5 | | 13.30 | 16.7 | 200 | 3.45 | 44.4 | 53.0 | 316 | 64.8 | 0.347 |
| | 6 | | 15.70 | 19.8 | 230 | 3.41 | 51.1 | 61.8 | 367 | 74.3 | 0.345 |
| | 6.3 | | 16.40 | 20.7 | 238 | 3.40 | 53.0 | 64.3 | 382 | 77.0 | 0.344 |
| | 8 | | 20.40 | 25.6 | 281 | 3.32 | 62.6 | 77.6 | 459 | 90.5 | 0.339 |
| | 10 | | 24.30 | 30.9 | 322 | 3.23 | 71.6 | 91.3 | 536 | 103.0 | 0.334 |
| **100x100** | 4 | | 12.00 | 15.2 | 232 | 3.91 | 46.4 | 54.4 | 361 | 68.2 | 0.390 |
| | 5 | | 14.80 | 18.7 | 279 | 3.86 | 55.9 | 66.4 | 439 | 81.8 | 0.387 |
| | 6 | | 17.60 | 22.2 | 323 | 3.82 | 64.6 | 77.6 | 513 | 94.3 | 0.385 |
| | 6.3 | | 18.40 | 23.2 | 336 | 3.80 | 67.1 | 80.9 | 534 | 97.8 | 0.384 |
| | 8 | | 22.90 | 28.8 | 400 | 3.73 | 79.9 | 98.2 | 646 | 116 | 0.379 |
| | 10 | | 27.90 | 34.9 | 462 | 3.64 | 92.4 | 116 | 761 | 133 | 0.374 |
| | 12 | | 31.90 | 40.7 | 512 | 3.55 | 102.0 | 132 | 858 | 147 | 0.369 |
| **120x120** | 5 | | 18.00 | 22.7 | 498 | 4.68 | 83.0 | 97.6 | 777 | 122 | 0.467 |
| | 6 | | 21.30 | 27.0 | 579 | 4.63 | 96.6 | 115 | 911 | 141 | 0.465 |
| | 6.3 | | 22.30 | 28.2 | 603 | 4.62 | 100 | 120 | 950 | 147 | 0.464 |
| | 8 | | 27.90 | 35.2 | 726 | 4.55 | 121 | 146 | 1160 | 176 | 0.459 |
| | 10 | | 34.20 | 42.9 | 852 | 4.46 | 142 | 175 | 1382 | 206 | 0.454 |
| | 12.5 | | 41.60 | 52.1 | 982 | 4.34 | 164 | 207 | 1623 | 236 | 0.448 |
| **140x140** | 5 | | 21.10 | 26.7 | 807 | 5.50 | 115 | 135 | 1253 | 170 | 0.547 |
| | 6 | | 25.10 | 31.8 | 944 | 5.45 | 135 | 159 | 1475 | 198 | 0.545 |
| | 8 | | 32.90 | 41.6 | 1195 | 5.36 | 171 | 204 | 1892 | 249 | 0.539 |
| | 10 | | 40.40 | 50.9 | 1416 | 5.27 | 202 | 246 | 2272 | 294 | 0.534 |
| | 12.5 | | 49.50 | 62.1 | 1653 | 5.16 | 236 | 293 | 2696 | 342 | 0.528 |
| **150x150** | 5 | | 22.70 | 28.7 | 1002 | 5.90 | 134 | 156 | 1550 | 197 | 0.587 |
| | 6 | | 27.00 | 34.2 | 1174 | 5.86 | 156 | 184 | 1828 | 230 | 0.585 |
| | 6.3 | | 28.30 | 35.8 | 1223 | 5.85 | 163 | 192 | 1909 | 240 | 0.584 |
| | 8 | | 35.40 | 44.8 | 1491 | 5.77 | 199 | 237 | 2351 | 291 | 0.579 |
| | 10 | | 43.60 | 54.9 | 1773 | 5.68 | 236 | 286 | 2832 | 344 | 0.574 |
| | 12.5 | | 52.40 | 67.1 | 2080 | 5.57 | 277 | 342 | 3375 | 402 | 0.568 |
| | 16 | + | 66.40 | 83.0 | 2430 | 5.41 | 324 | 411 | 4026 | 467 | 0.559 |
| **160x160** | 12.5 | | 57.30 | 72.1 | 2576 | 5.98 | 322 | 395 | 4158 | 467 | 0.608 |
| | 16 | | 70.20 | 89.4 | 3028 | 5.82 | 379 | 476 | 4988 | 546 | 0.599 |
| **180x180** | 6 | | 32.60 | 41.4 | 2077 | 7.09 | 231 | 269 | 3215 | 340 | 0.705 |
| | 6.3 | | 34.20 | 43.3 | 2168 | 7.07 | 241 | 281 | 3361 | 355 | 0.704 |
| | 8 | | 43.00 | 54.4 | 2661 | 7.00 | 296 | 349 | 4162 | 434 | 0.699 |
| | 10 | | 53.00 | 66.9 | 3193 | 6.91 | 355 | 424 | 5048 | 518 | 0.694 |
| | 12.5 | | 65.20 | 82.1 | 3790 | 6.80 | 421 | 511 | 6070 | 613 | 0.688 |
| | 16 | | 81.40 | 102 | 4504 | 6.64 | 500 | 621 | 7343 | 724 | 0.679 |

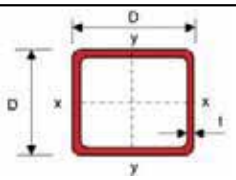
+ Seamless process

# Square




| Designation Size DxD | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Area I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **200x200** | 5 | 30.50 | 38.7 | 2445 | 7.95 | 245 | 283 | 3756 | 362 | 0.787 |
| | 6 | 36.40 | 46.2 | 2883 | 7.90 | 288 | 335 | 4449 | 426 | 0.785 |
| | 6.3 | 38.20 | 48.4 | 3011 | 7.89 | 301 | 350 | 4653 | 444 | 0.784 |
| | 8 | 48.00 | 60.8 | 3709 | 7.81 | 371 | 436 | 5778 | 545 | 0.779 |
| | 10 | 59.30 | 74.9 | 4471 | 7.72 | 447 | 531 | 7031 | 655 | 0.774 |
| | 12.5 | 73.00 | 92.1 | 5336 | 7.61 | 534 | 643 | 8491 | 778 | 0.768 |
| | 16 | 91.50 | 115 | 6394 | 7.46 | 639 | 785 | 10340 | 927 | 0.759 |
| **220x220** | 5 | 33.50 | 42.7 | 3281 | 8.76 | 298 | 344 | 5028 | 442 | 0.867 |
| | 6 | 40.00 | 51.0 | 3875 | 8.72 | 352 | 408 | 5963 | 521 | 0.865 |
| | 8 | 52.70 | 67.2 | 5002 | 8.63 | 455 | 532 | 7765 | 669 | 0.859 |
| | 10 | 65.10 | 82.9 | 6050 | 8.54 | 550 | 650 | 9473 | 807 | 0.854 |
| | 12 | 77.20 | 98.3 | 7023 | 8.45 | 638 | 762 | 11090 | 933 | 0.849 |
| | 14 | 88.90 | 113 | 7922 | 8.36 | 720 | 868 | 12620 | 1049 | 0.844 |
| **250x250** | 6 | 45.80 | 58.2 | 5752 | 9.94 | 460 | 531 | 8825 | 681 | 0.985 |
| | 6.3 | 48.10 | 61.0 | 6014 | 9.93 | 481 | 556 | 9238 | 712 | 0.984 |
| | 8 | 60.50 | 76.8 | 7455 | 9.86 | 596 | 694 | 11530 | 880 | 0.979 |
| | 10 | 75.00 | 94.9 | 9055 | 9.77 | 724 | 851 | 14110 | 1065 | 0.974 |
| | 12.5 | 92.60 | 117 | 10920 | 9.66 | 873 | 1037 | 17160 | 1279 | 0.968 |
| | 16 | 117.00 | 147 | 13270 | 9.50 | 1061 | 1280 | 21140 | 1546 | 0.959 |
| **260x260** | 6 | 47.60 | 60.6 | 6491 | 10.4 | 499 | 576 | 9951 | 740 | 1.02 |
| | 6.3 | 49.90 | 63.5 | 6788 | 10.3 | 522 | 603 | 10420 | 773 | 1.02 |
| | 8 | 62.80 | 80.0 | 8423 | 10.3 | 648 | 753 | 13010 | 956 | 1.02 |
| | 10 | 77.70 | 98.9 | 10240 | 10.2 | 788 | 924 | 15930 | 1159 | 1.01 |
| | 12 | 92.20 | 117 | 11950 | 10.1 | 920 | 1087 | 18730 | 1348 | 1.01 |
| | 12.5 | 95.80 | 122 | 12370 | 10.1 | 951 | 1127 | 19410 | 1394 | 1.01 |
| | 14 | 106.00 | 136 | 13560 | 10.0 | 1043 | 1244 | 21400 | 1525 | 1.00 |
| | 14.2 | 108.00 | 137 | 13710 | 9.99 | 1055 | 1259 | 21660 | 1542 | 1.00 |
| | 16 | 120.00 | 153 | 15060 | 9.91 | 1159 | 1394 | 23940 | 1689 | 1.00 |
| **300x300** | 6 | 55.10 | 70 | 10080 | 12.0 | 672 | 772 | 15407 | 997 | 1.18 |
| | 6.3 | 57.95 | 73.6 | 10550 | 12.0 | 703 | 809 | 16140 | 1043 | 1.18 |
| | 8 | 73.10 | 92.8 | 13130 | 11.9 | 875 | 1013 | 20190 | 1294 | 1.18 |
| | 9 | 81.93 | 104 | 14600 | 11.9 | 973 | 1130 | 22520 | 1437 | 1.18 |
| | 10 | 90.70 | 115 | 16030 | 11.8 | 1068 | 1246 | 24810 | 1575 | 1.17 |
| | 12 | 107.97 | 137 | 18780 | 11.7 | 1252 | 1470 | 29250 | 1840 | 1.17 |
| | 12.5 | 112.00 | 142 | 19440 | 11.7 | 1296 | 1525 | 30330 | 1904 | 1.17 |
| | 16 | 142.00 | 179 | 23850 | 11.5 | 1590 | 1895 | 37620 | 2325 | 1.16 |
| **350x350** | 6 | 64.50 | 82.2 | 16170 | 14.0 | 924 | 1058 | 24650 | 1373 | 1.38 |
| | 8 | 85.70 | 109 | 21130 | 13.9 | 1207 | 1392 | 32380 | 1789 | 1.38 |
| | 10 | 106.00 | 135 | 25880 | 13.9 | 1479 | 1715 | 39890 | 2185 | 1.37 |
| | 12 | 127.00 | 161 | 30440 | 13.8 | 1739 | 2030 | 47150 | 2563 | 1.37 |
| | 12.5 | 132.00 | 167 | 31540 | 13.7 | 1802 | 2107 | 48930 | 2654 | 1.37 |
| | 14 | 146.00 | 186 | 34790 | 13.7 | 1988 | 2334 | 54190 | 2922 | 1.36 |
| | 14.2 | 148.00 | 189 | 35210 | 13.7 | 2012 | 2364 | 54880 | 2957 | 1.36 |
| | 16 | 167.00 | 211 | 38940 | 13.6 | 2225 | 2630 | 60990 | 3264 | 1.36 |
| | 19 | 190.00 | 248 | 44820 | 13.5 | 2561 | 3055 | 70760 | 3744 | 1.35 |
| | 22 | 217.00 | 283 | 50270 | 13.3 | 2873 | 3460 | 80010 | 4187 | 1.34 |
| | 25 | 242.00 | 318 | 55320 | 13.2 | 3161 | 3845 | 88750 | 4595 | 1.34 |

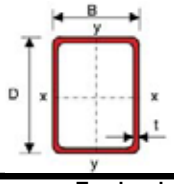
# Square




| Designation Size DxD | Thickness t | | Mass Per Metre | Area Of Section A | Second Moment Of Area I | Radius Of Gyration r | Elastic Modulus Z | Plastic Modulus S | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | kg/m | $cm^2$ | $cm^4$ | cm | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **400x400** | 8 | | 97.90 | 125 | 31860 | 16.0 | 1593 | 1830 | 48700 | 2363 | 1.58 |
| | 10 | | 122.00 | 155 | 39130 | 15.9 | 1956 | 2260 | 60090 | 2895 | 1.57 |
| | 12 | | 145.00 | 185 | 46130 | 15.8 | 2306 | 2679 | 71180 | 3405 | 1.57 |
| | 12.5 | | 152.00 | 192 | 47840 | 15.8 | 2392 | 2782 | 73910 | 3530 | 1.57 |
| | 14 | | 168.00 | 214 | 52870 | 15.7 | 2643 | 3087 | 81960 | 3894 | 1.56 |
| | 14.2 | | 170.00 | 217 | 53530 | 15.7 | 2676 | 3127 | 83030 | 3942 | 1.56 |
| | 16 | | 192.00 | 243 | 59340 | 15.6 | 2967 | 3484 | 92440 | 4362 | 1.56 |
| | 20 | # | 237.00 | 300 | 71540 | 15.4 | 3577 | 4247 | 112500 | 5237 | 1.55 |
| | 22 | | 251.00 | 327 | 77260 | 15.4 | 3863 | 4612 | 122100 | 5646 | 1.54 |
| | 25 | | 282.00 | 368 | 85380 | 15.2 | 4269 | 5141 | 135900 | 6223 | 1.54 |
| **450x450** | 12 | | 162.00 | 209 | 66460 | 17.8 | 2954 | 3419 | 102200 | 4368 | 1.77 |
| | 16 | | 213.00 | 275 | 85860 | 17.7 | 3816 | 4459 | 133200 | 5620 | 1.76 |
| | 19 | | 250.00 | 324 | 99540 | 17.5 | 4424 | 5208 | 155400 | 6497 | 1.75 |
| | 22 | | 286.00 | 371 | 112500 | 17.4 | 5000 | 5929 | 176700 | 7324 | 1.74 |
| | 25 | | 321.00 | 418 | 124700 | 17.3 | 5544 | 6624 | 197200 | 8101 | 1.74 |
| | 28 | △ | 355.00 | 464 | 136300 | 17.1 | 6058 | 7292 | 216800 | 8832 | 1.73 |
| | 32 | △ | 399.00 | 524 | 150700 | 17.0 | 6696 | 8143 | 241700 | 9735 | 1.72 |
| **500x500** | 12 | | 181.00 | 233 | 92030 | 19.89 | 3681 | 4248 | 141200 | 5451 | 1.97 |
| | 16 | | 238.00 | 307 | 119300 | 19.71 | 4771 | 5554 | 184400 | 7038 | 1.96 |
| | 19 | | 280.00 | 362 | 138600 | 19.58 | 5545 | 6498 | 215500 | 8159 | 1.95 |
| | 22 | | 320.00 | 415 | 157100 | 19.44 | 6283 | 7411 | 245600 | 9222 | 1.94 |
| | 25 | | 360.00 | 468 | 174600 | 19.31 | 6986 | 8295 | 274600 | 10230 | 1.94 |
| | 28 | △ | 399.00 | 520 | 191300 | 19.18 | 7653 | 9149 | 302600 | 11180 | 1.93 |
| | 32 | △ | 450.00 | 588 | 212300 | 19.00 | 8491 | 10242 | 338200 | 12370 | 1.92 |
| | 36 | △ | 498.00 | 654 | 231700 | 18.82 | 9269 | 11283 | 372000 | 13470 | 1.91 |
| **550x550** | 16 | | 263.00 | 339 | 160400 | 21.75 | 5833 | 6769 | 247300 | 8616 | 2.16 |
| | 19 | | 309.00 | 400 | 186800 | 21.62 | 6793 | 7930 | 289500 | 10010 | 2.15 |
| | 22 | | 355.00 | 459 | 212100 | 21.49 | 7714 | 9058 | 330400 | 11340 | 2.14 |
| | 25 | | 399.00 | 518 | 236300 | 21.35 | 8594 | 10150 | 370100 | 12610 | 2.14 |
| | 28 | △ | 443.00 | 576 | 259500 | 21.22 | 9436 | 11220 | 408400 | 13810 | 2.13 |
| | 32 | △ | 500.00 | 652 | 288700 | 21.04 | 10500 | 12580 | 457500 | 15330 | 2.12 |
| | 36 | △ | 555.00 | 726 | 316100 | 20.86 | 11500 | 13890 | 504400 | 16740 | 2.11 |
| | 40 | △ | 608.00 | 799 | 341800 | 20.68 | 12430 | 15140 | 549000 | 18060 | 2.10 |
| **600x600** | 25 | △ | 439.00 | 568 | 311100 | 23.40 | 10370 | 12200 | 485300 | 15230 | 2.34 |
| | 28 | △ | 487.00 | 632 | 342100 | 23.26 | 11410 | 13490 | 536300 | 16720 | 2.33 |
| | 32 | △ | 550.00 | 716 | 381600 | 23.08 | 12720 | 15160 | 601900 | 18600 | 2.32 |
| | 36 | △ | 611.00 | 798 | 418800 | 22.91 | 13960 | 16770 | 664900 | 20370 | 2.31 |
| | 40 | △ | 671.00 | 879 | 453900 | 22.73 | 15130 | 18310 | 725100 | 22030 | 2.30 |
| **700x700** | 25 | △ | 517.00 | 668 | 504700 | 27.48 | 14420 | 16850 | 782900 | 21240 | 2.74 |
| | 28 | △ | 575.00 | 744 | 556600 | 27.35 | 15900 | 18670 | 867000 | 23380 | 2.73 |
| | 32 | △ | 651.00 | 844 | 623100 | 27.17 | 17800 | 21040 | 975800 | 26110 | 2.72 |
| | 36 | △ | 724.00 | 942 | 686500 | 26.99 | 19610 | 23330 | 1081000 | 28700 | 2.71 |
| | 40 | △ | 797.00 | 1039 | 746900 | 26.81 | 21340 | 25540 | 1182000 | 31160 | 2.70 |

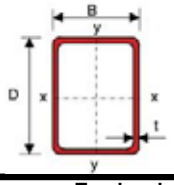
# Grade S355J2H only
△S.A.W process

# Rectangular




| Designation Size DxB | Thickness t | Mass Per Metre | Area Of Section A | Second Moment Of Area Axis x-x | Second Moment Of Area Axis y-y | Radius Of Gyration Axis x-x | Radius Of Gyration Axis y-y | Elastic Modulus Axis x-x | Elastic Modulus Axis y-y | Plastic Modulus Axis x-x | Plastic Modulus Axis y-y | Torsional Constants J | Torsional Constants C | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | kg/m | $cm^2$ | $cm^4$ | $cm^4$ | cm | cm | $cm^3$ | $cm^3$ | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **50x25** | 2.5 | 2.72 | 3.43 | 10.4 | 3.39 | 1.74 | 0.994 | 4.16 | 2.71 | 5.33 | 3.22 | 8.42 | 4.61 | 0.144 |
| | 3 | 3.22 | 4.04 | 11.9 | 3.83 | 1.72 | 0.973 | 4.76 | 3.06 | 6.18 | 3.71 | 9.64 | 5.20 | 0.142 |
| | 3.2 | 3.41 | 4.28 | 12.5 | 3.98 | 1.71 | 0.964 | 4.98 | 3.18 | 6.50 | 3.89 | 10.1 | 5.41 | 0.142 |
| | 4 | 4.07 | 5.19 | 14.4 | 4.48 | 1.66 | 0.929 | 5.75 | 3.59 | 7.67 | 4.54 | 11.6 | 6.11 | 0.140 |
| **50x30** | 2.5 | 2.92 | 3.68 | 11.8 | 5.22 | 1.79 | 1.19 | 4.73 | 3.48 | 5.92 | 4.11 | 11.7 | 5.73 | 0.154 |
| | 3 | 3.45 | 4.34 | 13.6 | 5.94 | 1.77 | 1.17 | 5.43 | 3.96 | 6.88 | 4.76 | 13.5 | 6.51 | 0.152 |
| | 3.2 | 3.66 | 4.60 | 14.2 | 6.20 | 1.76 | 1.16 | 5.68 | 4.13 | 7.25 | 5.00 | 14.2 | 6.80 | 0.152 |
| | 4 | 4.46 | 5.59 | 16.5 | 7.08 | 1.72 | 1.13 | 6.60 | 4.72 | 8.59 | 5.88 | 16.6 | 7.77 | 0.150 |
| | 5 | 5.40 | 6.73 | 18.7 | 7.89 | 1.67 | 1.08 | 7.49 | 5.26 | 10.0 | 6.80 | 19.0 | 8.67 | 0.147 |
| **60x40** | 2.5 | 3.71 | 4.68 | 22.8 | 12.1 | 2.21 | 1.60 | 7.61 | 6.03 | 9.32 | 7.02 | 25.1 | 9.73 | 0.194 |
| | 3 | 4.39 | 5.54 | 26.5 | 13.9 | 2.18 | 1.58 | 8.82 | 6.95 | 10.9 | 8.19 | 29.2 | 11.2 | 0.192 |
| | 3.2 | 4.66 | 5.88 | 27.8 | 14.6 | 2.18 | 1.57 | 9.27 | 7.29 | 11.5 | 8.64 | 30.8 | 11.7 | 0.192 |
| | 4 | 5.72 | 7.19 | 32.8 | 17.0 | 2.14 | 1.54 | 10.9 | 8.52 | 13.8 | 10.3 | 36.7 | 13.7 | 0.190 |
| | 5 | 6.97 | 8.73 | 38.1 | 19.5 | 2.09 | 1.50 | 12.7 | 9.77 | 16.4 | 12.2 | 43.0 | 15.7 | 0.187 |
| | 6 | 8.15 | 10.2 | 42.3 | 21.4 | 2.04 | 1.45 | 14.1 | 10.7 | 18.6 | 13.7 | 48.2 | 17.3 | 0.185 |
| | 6.3 | 8.49 | 10.6 | 43.4 | 21.9 | 2.02 | 1.44 | 14.5 | 11.0 | 19.2 | 14.2 | 49.5 | 17.6 | 0.184 |
| | 8 | 10.00 | 12.8 | 47.9 | 23.7 | 1.94 | 1.36 | 16.0 | 11.9 | 22.1 | 16.1 | 55.4 | 19.2 | 0.179 |
| **80x40** | 3 | 5.34 | 6.74 | 54.2 | 18.0 | 2.84 | 1.63 | 13.6 | 9.00 | 17.1 | 10.4 | 43.8 | 15.3 | 0.232 |
| | 3.2 | 5.67 | 7.16 | 57.2 | 18.9 | 2.83 | 1.63 | 14.3 | 9.46 | 18.0 | 11.0 | 46.2 | 16.1 | 0.232 |
| | 4 | 6.97 | 8.79 | 68.2 | 22.2 | 2.79 | 1.59 | 17.1 | 11.1 | 21.8 | 13.2 | 55.2 | 18.9 | 0.230 |
| | 5 | 8.54 | 10.7 | 80.3 | 25.7 | 2.74 | 1.55 | 20.1 | 12.9 | 26.1 | 15.7 | 65.1 | 21.9 | 0.227 |
| | 6 | 10.00 | 12.6 | 90.5 | 28.5 | 2.68 | 1.50 | 22.6 | 14.2 | 30.0 | 17.8 | 73.4 | 24.2 | 0.225 |
| | 6.3 | 10.50 | 13.1 | 93.3 | 29.2 | 2.67 | 1.49 | 23.3 | 14.6 | 31.1 | 18.4 | 75.6 | 24.8 | 0.224 |
| | 8 | 12.80 | 16.0 | 106 | 32.1 | 2.58 | 1.42 | 26.5 | 16.1 | 36.5 | 21.2 | 85.8 | 27.4 | 0.219 |
| | 10 | 14.90 | 18.9 | 115 | 33.7 | 2.47 | 1.33 | 28.8 | 16.9 | 41.3 | 23.5 | 92.5 | 28.9 | 0.214 |
| **80x50** | 3 | 5.81 | 7.34 | 63.1 | 30.2 | 2.93 | 2.03 | 15.8 | 12.1 | 19.4 | 13.9 | 64.8 | 19.7 | 0.252 |
| | 4 | 7.53 | 9.59 | 79.8 | 37.7 | 2.88 | 1.98 | 19.9 | 15.1 | 24.9 | 17.8 | 82.6 | 24.6 | 0.250 |
| | 5 | 9.33 | 11.7 | 94.4 | 44.1 | 2.84 | 1.94 | 23.6 | 17.7 | 29.9 | 21.3 | 98.4 | 28.8 | 0.247 |
| | 6 | 11.00 | 13.8 | 107 | 49.5 | 2.79 | 1.90 | 26.8 | 19.8 | 34.4 | 24.4 | 112 | 32.3 | 0.245 |
| | 8 | 14.11 | 17.6 | 127 | 57.4 | 2.69 | 1.81 | 31.7 | 23.0 | 42.2 | 29.6 | 135 | 37.5 | 0.239 |
| | 10 | 16.40 | 20.9 | 140 | 62.1 | 2.59 | 1.72 | 35.0 | 24.8 | 48.3 | 33.4 | 150 | 40.6 | 0.234 |
| **90x50** | 3 | 6.28 | 7.94 | 84.4 | 33.5 | 3.26 | 2.05 | 18.8 | 13.4 | 23.2 | 15.3 | 76.5 | 22.4 | 0.272 |
| | 3.2 | 6.63 | 8.44 | 89.1 | 35.3 | 3.25 | 2.04 | 19.8 | 14.1 | 24.6 | 16.2 | 80.9 | 23.6 | 0.272 |
| | 3.6 | 7.46 | 9.42 | 98.3 | 38.7 | 3.23 | 2.03 | 21.8 | 15.5 | 27.2 | 18.0 | 89.4 | 25.9 | 0.271 |
| | 4 | 8.15 | 10.4 | 107 | 41.9 | 3.21 | 2.01 | 23.8 | 16.8 | 29.8 | 19.6 | 97.5 | 28.0 | 0.270 |
| | 5 | 10.10 | 12.7 | 127 | 49.2 | 3.16 | 1.97 | 28.3 | 19.7 | 36.0 | 23.5 | 116 | 32.9 | 0.267 |
| | 6 | 11.90 | 15.0 | 145 | 55.4 | 3.11 | 1.92 | 32.2 | 22.1 | 41.6 | 27.0 | 133 | 37.0 | 0.265 |
| | 6.3 | 12.50 | 15.6 | 150 | 57.0 | 3.10 | 1.91 | 33.3 | 22.8 | 43.2 | 28.0 | 138 | 38.1 | 0.264 |
| | 8 | 15.30 | 19.2 | 174 | 64.6 | 3.01 | 1.84 | 38.6 | 25.8 | 51.4 | 32.9 | 160 | 43.2 | 0.259 |
| | 10 | 18.00 | 22.9 | 194 | 70.2 | 2.91 | 1.75 | 43.0 | 28.1 | 59.3 | 37.4 | 179 | 47.1 | 0.254 |
| **100x50** | 3 | 6.75 | 8.54 | 110 | 36.8 | 3.58 | 2.08 | 21.9 | 14.7 | 27.3 | 16.8 | 88.4 | 25.0 | 0.292 |
| | 3.2 | 7.18 | 9.08 | 116 | 38.8 | 3.57 | 2.07 | 23.2 | 15.5 | 28.9 | 17.7 | 93.4 | 26.4 | 0.292 |
| | 4 | 8.86 | 11.2 | 140 | 46.2 | 3.53 | 2.03 | 27.9 | 18.5 | 35.2 | 21.5 | 113 | 31.4 | 0.290 |
| | 5 | 10.90 | 13.7 | 167 | 54.3 | 3.48 | 1.99 | 33.3 | 21.7 | 42.6 | 25.8 | 135 | 36.9 | 0.287 |
| | 6 | 12.90 | 16.2 | 190 | 61.2 | 3.43 | 1.95 | 38.1 | 24.5 | 49.4 | 29.7 | 154 | 41.6 | 0.285 |
| | 6.3 | 13.40 | 16.9 | 197 | 63.0 | 3.42 | 1.93 | 39.4 | 25.2 | 51.3 | 30.8 | 160 | 42.9 | 0.284 |
| | 8 | 16.60 | 20.8 | 230 | 71.7 | 3.33 | 1.86 | 46.0 | 28.7 | 61.4 | 36.3 | 186 | 48.9 | 0.279 |
| | 10 | 19.60 | 24.9 | 259 | 78.4 | 3.22 | 1.77 | 51.8 | 31.4 | 71.2 | 41.4 | 209 | 53.6 | 0.274 |

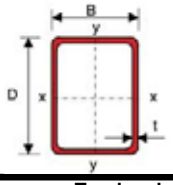
# Rectangular




| Designation Size DxB | Thickness t | | Mass Per Metre | Area Of Section | Second Moment Of Area | | Radius Of Gyration | | Elastic Modulus | | Plastic Modulus | | Torsional Constants | | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Axis x-x | Axis y-y | Axis x-x | Axis y-y | Axis x-x | Axis y-y | Axis x-x | Axis y-y | J | C | |
| mm | mm | | kg/m | $cm^2$ | $cm^4$ | $cm^4$ | cm | cm | $cm^3$ | $cm^3$ | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **100x60** | 3 | | 7.22 | 9.14 | 124 | 55.7 | 3.68 | 2.47 | 24.7 | 18.6 | 30.2 | 21.2 | 121 | 30.7 | 0.312 |
| | 3.6 | | 8.59 | 10.9 | 145 | 64.8 | 3.65 | 2.44 | 28.9 | 21.6 | 35.6 | 24.9 | 142 | 35.6 | 0.311 |
| | 5 | | 11.70 | 14.7 | 189 | 83.6 | 3.58 | 2.38 | 37.8 | 27.9 | 47.4 | 32.9 | 188 | 45.9 | 0.307 |
| | 6 | | 13.80 | 17.4 | 217 | 95.0 | 3.53 | 2.34 | 43.4 | 31.7 | 55.1 | 38.1 | 216 | 52.1 | 0.305 |
| | 6.3 | | 14.40 | 18.1 | 225 | 98.1 | 3.52 | 2.33 | 45.0 | 32.7 | 57.3 | 39.5 | 224 | 53.8 | 0.304 |
| | 8 | | 17.80 | 22.4 | 264 | 113 | 3.44 | 2.25 | 52.8 | 37.8 | 68.7 | 47.1 | 265 | 62.2 | 0.299 |
| **120x60** | 3.6 | | 9.72 | 12.3 | 227 | 76.3 | 4.30 | 2.49 | 37.9 | 25.4 | 47.2 | 28.9 | 183 | 43.3 | 0.351 |
| | 4 | | 10.70 | 13.6 | 249 | 83.1 | 4.28 | 2.47 | 41.5 | 27.7 | 51.9 | 31.7 | 201 | 47.1 | 0.350 |
| | 5 | | 13.30 | 16.7 | 299 | 98.8 | 4.23 | 2.43 | 49.9 | 32.9 | 63.1 | 38.4 | 242 | 56.0 | 0.347 |
| | 6 | | 15.70 | 19.8 | 345 | 113 | 4.18 | 2.39 | 57.5 | 37.5 | 73.6 | 44.5 | 279 | 63.8 | 0.345 |
| | 6.3 | | 16.40 | 20.7 | 358 | 116 | 4.16 | 2.37 | 59.7 | 38.8 | 76.7 | 46.3 | 290 | 65.9 | 0.344 |
| | 8 | | 20.40 | 25.6 | 425 | 135 | 4.08 | 2.30 | 70.8 | 45.0 | 92.7 | 55.4 | 344 | 76.6 | 0.339 |
| | 10 | | 24.30 | 30.9 | 488 | 152 | 3.97 | 2.21 | 81.4 | 50.5 | 109.2 | 64.4 | 396 | 86.1 | 0.334 |
| **120x80** | 5 | | 14.80 | 18.7 | 365 | 193 | 4.42 | 3.21 | 60.9 | 48.2 | 74.6 | 56.1 | 401 | 77.9 | 0.387 |
| | 6 | | 17.60 | 22.2 | 423 | 222 | 4.37 | 3.17 | 70.6 | 55.6 | 87.3 | 65.5 | 468 | 89.6 | 0.385 |
| | 6.3 | | 18.40 | 23.2 | 440 | 230 | 4.36 | 3.15 | 73.3 | 57.6 | 91.0 | 68.2 | 487 | 92.9 | 0.384 |
| | 8 | | 22.90 | 28.8 | 525 | 273 | 4.27 | 3.08 | 87.5 | 68.1 | 111 | 82.6 | 587 | 110 | 0.379 |
| | 10 | | 27.90 | 34.9 | 609 | 313 | 4.18 | 2.99 | 102 | 78.1 | 131 | 97.3 | 688 | 126 | 0.374 |
| **150x100** | 5 | | 18.70 | 23.7 | 739 | 392 | 5.58 | 4.07 | 98.5 | 78.5 | 119 | 90.1 | 807 | 127 | 0.487 |
| | 6 | | 22.30 | 28.2 | 862 | 456 | 5.53 | 4.02 | 115 | 91.2 | 141 | 106 | 946 | 147 | 0.485 |
| | 6.3 | | 23.30 | 29.5 | 898 | 474 | 5.52 | 4.01 | 120 | 94.8 | 147 | 110 | 986 | 153 | 0.484 |
| | 8 | | 29.10 | 36.8 | 1087 | 569 | 5.44 | 3.94 | 145 | 114 | 180 | 135 | 1203 | 183 | 0.479 |
| | 10 | | 35.70 | 44.9 | 1282 | 665 | 5.34 | 3.85 | 171 | 133 | 216 | 161 | 1432 | 214 | 0.474 |
| | 12 | | 41.40 | 52.7 | 1450 | 745 | 5.25 | 3.76 | 193 | 149 | 249 | 185 | 1633 | 240 | 0.469 |
| | 12.5 | | 42.80 | 54.6 | 1488 | 763 | 5.22 | 3.74 | 198 | 153 | 256 | 190 | 1679 | 246 | 0.468 |
| **160x80** | 4.5 | | 16.24 | 20.6 | 679 | 229 | 5.75 | 3.33 | 84.9 | 57.1 | 106 | 64.8 | 547 | 97.2 | 0.468 |
| | 5 | | 18.00 | 22.7 | 744 | 249 | 5.72 | 3.31 | 93.0 | 62.3 | 116 | 71.1 | 600 | 106 | 0.467 |
| | 6 | | 21.30 | 27.0 | 868 | 288 | 5.67 | 3.27 | 108 | 72.0 | 136 | 83.3 | 701 | 122 | 0.465 |
| | 6.3 | | 22.30 | 28.2 | 903 | 299 | 5.66 | 3.26 | 113 | 74.8 | 142 | 86.8 | 730 | 127 | 0.464 |
| | 8 | | 27.90 | 35.2 | 1091 | 356 | 5.57 | 3.18 | 136 | 89.0 | 175 | 106 | 883 | 151 | 0.459 |
| | 10 | | 34.20 | 42.9 | 1284 | 411 | 5.47 | 3.10 | 161 | 103 | 209 | 125 | 1041 | 175 | 0.454 |
| | 12 | | 39.50 | 50.3 | 1449 | 455 | 5.37 | 3.01 | 181 | 114 | 240 | 142 | 1175 | 194 | 0.449 |
| | 12.5 | | 41.60 | 52.1 | 1485 | 465 | 5.34 | 2.99 | 186 | 116 | 247 | 146 | 1204 | 198 | 0.448 |
| **200x100** | 5 | | 22.70 | 28.7 | 1495 | 505 | 7.21 | 4.19 | 149 | 101 | 185 | 114 | 1204 | 172 | 0.587 |
| | 6 | | 27.00 | 34.2 | 1754 | 589 | 7.16 | 4.15 | 175 | 118 | 218 | 134 | 1414 | 200 | 0.585 |
| | 6.3 | | 28.30 | 35.8 | 1829 | 613 | 7.15 | 4.14 | 183 | 123 | 228 | 140 | 1475 | 208 | 0.584 |
| | 8 | | 35.40 | 44.8 | 2234 | 739 | 7.06 | 4.06 | 223 | 148 | 282 | 172 | 1804 | 251 | 0.579 |
| | 10 | | 43.60 | 54.9 | 2664 | 869 | 6.96 | 3.98 | 266 | 174 | 341 | 206 | 2156 | 295 | 0.574 |
| | 12 | | 50.80 | 64.7 | 3047 | 979 | 6.86 | 3.89 | 305 | 196 | 395 | 237 | 2469 | 333 | 0.569 |
| | 12.5 | | 53.40 | 67.1 | 3136 | 1004 | 6.84 | 3.87 | 314 | 201 | 408 | 245 | 2541 | 341 | 0.568 |
| | 16 | + | 66.40 | 83.0 | 3678 | 1147 | 6.66 | 3.72 | 368 | 229 | 491 | 290 | 2982 | 391 | 0.559 |
| **200x120** | 5 | | 24.1 | 30.7 | 1690 | 762 | 7.40 | 4.98 | 168 | 127 | 205 | 144 | 1650 | 210 | 0.627 |
| | 6.3 | | 30.1 | 38.3 | 2070 | 929 | 7.34 | 4.92 | 207 | 155 | 253 | 177 | 2030 | 255 | 0.624 |
| | 8 | | 37.6 | 48.0 | 2530 | 1130 | 7.26 | 4.85 | 253 | 188 | 313 | 218 | 2490 | 310 | 0.619 |
| | 10 | | 46.3 | 58.9 | 3030 | 1340 | 7.17 | 4.76 | 303 | 223 | 379 | 263 | 3000 | 367 | 0.614 |
| | 12.5 | | 55.7 | 71.7 | 3468 | 1524 | 6.99 | 4.63 | 347 | 254 | 444 | 308 | 3568 | 426 | 0.608 |
| | 16 | | 71.38 | 89.4 | 4221 | 1813 | 6.87 | 4.50 | 422 | 302 | 550 | 377 | 4247 | 497 | 0.599 |

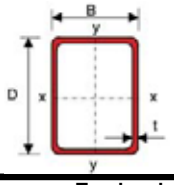
+ Seamless process

# Rectangular




| Designation Size | Thickness | Mass Per Metre | Area Of Section | Second Moment Of Area | | Radius Of Gyration | | Elastic Modulus | | Plastic Modulus | | Torsional Constants | | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Axis | Axis | Axis | Axis | Axis | Axis | Axis | Axis | | | |
| DxB | t | | A | x-x | y-y | x-x | y-y | x-x | y-y | x-x | y-y | J | C | |
| mm | mm | kg/m | $cm^2$ | $cm^4$ | $cm^4$ | cm | cm | $cm^3$ | $cm^3$ | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **200x150** | 6 | 31.70 | 40.2 | 2318 | 1485 | 7.60 | 6.08 | 232 | 198 | 277 | 227 | 2820 | 313 | 0.685 |
| | 6.3 | 33.22 | 42.1 | 2420 | 1549 | 7.58 | 6.07 | 242 | 207 | 289 | 237 | 2947 | 326 | 0.684 |
| | 8 | 41.70 | 52.8 | 2971 | 1894 | 7.50 | 5.99 | 297 | 253 | 359 | 294 | 3643 | 398 | 0.679 |
| | 9 | 46.60 | 58.9 | 3276 | 2084 | 7.46 | 5.95 | 328 | 278 | 398 | 325 | 4033 | 437 | 0.677 |
| | 10 | 51.40 | 64.9 | 3568 | 2264 | 7.41 | 5.91 | 357 | 302 | 436 | 356 | 4409 | 475 | 0.674 |
| | 12 | 60.90 | 76.7 | 4109 | 2596 | 7.32 | 5.82 | 411 | 346 | 508 | 414 | 5119 | 543 | 0.669 |
| | 12.5 | 63.20 | 79.6 | 4236 | 2673 | 7.30 | 5.80 | 424 | 356 | 525 | 428 | 5287 | 559 | 0.668 |
| **250x150** | 6 | 36.40 | 46.2 | 3965 | 1796 | 9.27 | 6.24 | 317 | 239 | 385 | 270 | 3877 | 396 | 0.785 |
| | 6.3 | 38.00 | 48.4 | 4143 | 1874 | 9.25 | 6.22 | 331 | 250 | 402 | 283 | 4054 | 413 | 0.784 |
| | 8 | 48.00 | 60.8 | 5111 | 2298 | 9.17 | 6.15 | 409 | 306 | 501 | 350 | 5021 | 506 | 0.779 |
| | 10 | 59.30 | 74.9 | 6174 | 2755 | 9.08 | 6.06 | 494 | 367 | 611 | 426 | 6090 | 605 | 0.774 |
| | 12.5 | 73.00 | 92.1 | 7387 | 3265 | 8.96 | 5.96 | 591 | 435 | 740 | 514 | 7326 | 717 | 0.768 |
| | 16 | 91.50 | 115 | 8879 | 3873 | 8.79 | 5.80 | 710 | 516 | 906 | 625 | 8868 | 849 | 0.759 |
| **300x100** | 5 | 30.52 | 38.7 | 4146 | 731 | 10.3 | 4.34 | 276 | 146 | 354 | 161 | 2040 | 262 | 0.787 |
| | 6 | 36.20 | 46.2 | 4893 | 854 | 10.3 | 4.30 | 326 | 171 | 419 | 190 | 2399 | 306 | 0.785 |
| | 6.3 | 38.00 | 48.4 | 5111 | 890 | 10.3 | 4.29 | 341 | 178 | 439 | 199 | 2504 | 319 | 0.784 |
| | 8 | 48.00 | 61.1 | 6386 | 1087 | 10.2 | 4.22 | 426 | 217 | 551 | 247 | 3066 | 387 | 0.780 |
| | 10 | 58.80 | 74.9 | 7613 | 1275 | 10.1 | 4.13 | 508 | 255 | 666 | 296 | 3676 | 458 | 0.774 |
| | 12 | 70.30 | 88.7 | 8818 | 1447 | 9.97 | 4.04 | 588 | 289 | 779 | 343 | 4223 | 520 | 0.769 |
| | 16 | 91.50 | 117 | 11240 | 1747 | 9.82 | 3.87 | 749 | 349 | 1008 | 431 | 5142 | 620 | 0.769 |
| **300x200** | 6 | 45.80 | 58.2 | 7486 | 4013 | 11.3 | 8.31 | 499 | 401 | 596 | 451 | 8100 | 651 | 0.985 |
| | 6.3 | 48.10 | 61.0 | 7829 | 4193 | 11.3 | 8.29 | 522 | 419 | 624 | 472 | 8476 | 681 | 0.984 |
| | 8 | 60.50 | 76.8 | 9717 | 5184 | 11.3 | 8.22 | 648 | 518 | 779 | 589 | 10560 | 840 | 0.979 |
| | 10 | 75.00 | 94.9 | 11820 | 6278 | 11.2 | 8.13 | 788 | 628 | 956 | 721 | 12910 | 1015 | 0.974 |
| | 12 | 89.15 | 113 | 13800 | 7294 | 11.1 | 8.05 | 920 | 729 | 1124 | 847 | 15140 | 1178 | 0.969 |
| | 12.5 | 92.60 | 117 | 14270 | 7537 | 11.0 | 8.02 | 952 | 754 | 1165 | 877 | 15680 | 1217 | 0.968 |
| | 16 | 117.00 | 147 | 17390 | 9109 | 10.9 | 7.87 | 1159 | 911 | 1441 | 1080 | 19250 | 1468 | 0.959 |
| **300x250** | 6.3 | 53.00 | 67.5 | 9239 | 6984 | 11.7 | 10.20 | 616 | 559 | 720 | 636 | 12140 | 862 | 1.082 |
| | 8 | 66.80 | 85.1 | 11500 | 8682 | 11.6 | 10.10 | 767 | 695 | 902 | 796 | 15170 | 1067 | 1.077 |
| | 10 | 82.80 | 106 | 14050 | 10580 | 11.5 | 10.00 | 937 | 847 | 1109 | 978 | 18600 | 1295 | 1.071 |
| | 12.5 | 102.00 | 130 | 17050 | 12810 | 11.4 | 9.91 | 1137 | 1025 | 1358 | 1196 | 22680 | 1561 | 1.065 |
| | 16 | 129.00 | 165 | 20930 | 15670 | 11.3 | 9.76 | 1395 | 1254 | 1689 | 1485 | 28020 | 1898 | 1.055 |
| **350x150** | 6.3 | 48.10 | 61 | 9551 | 2537 | 12.5 | 6.44 | 546 | 338 | 680 | 375 | 6383 | 587 | 0.974 |
| | 8 | 60.50 | 77 | 11880 | 3125 | 12.4 | 6.36 | 679 | 417 | 851 | 467 | 7917 | 721 | 0.974 |
| | 10 | 75.00 | 94.9 | 14320 | 3737 | 12.3 | 6.27 | 818 | 498 | 1035 | 566 | 9633 | 867 | 0.974 |
| | 12.5 | 92.60 | 117 | 17300 | 4450 | 12.2 | 6.17 | 988 | 593 | 1263 | 686 | 11620 | 1032 | 0.968 |
| | 16 | 117.00 | 149 | 21500 | 5386 | 12.0 | 6.02 | 1229 | 718 | 1586 | 850 | 14110 | 1235 | 0.968 |
| **350x250** | 8 | 73.10 | 93 | 16560 | 9854 | 13.3 | 10.30 | 946 | 788 | 1124 | 892 | 19010 | 1255 | 1.18 |
| | 10 | 90.70 | 116 | 20270 | 12020 | 13.2 | 10.20 | 1158 | 963 | 1385 | 1098 | 23330 | 1526 | 1.18 |
| | 12.5 | 112.00 | 143 | 24680 | 14580 | 13.1 | 10.10 | 1410 | 1166 | 1700 | 1345 | 28490 | 1843 | 1.18 |
| | 16 | 142.00 | 181 | 30440 | 17860 | 13.0 | 9.95 | 1739 | 1429 | 2121 | 1672 | 35280 | 2248 | 1.18 |
| **400x120** | 6.3 | 50.00 | 63.7 | 11880 | 1752 | 13.7 | 5.24 | 594 | 292 | 766 | 322 | 5035 | 527 | 1.03 |
| | 8 | 63.10 | 80.3 | 14790 | 2146 | 13.6 | 5.17 | 740 | 358 | 960 | 399 | 6212 | 645 | 1.02 |
| | 10 | 78.10 | 99.5 | 18050 | 2569 | 13.5 | 5.08 | 903 | 428 | 1180 | 486 | 7501 | 771 | 1.02 |
| | 12.5 | 96.60 | 123 | 21900 | 3040 | 13.3 | 4.97 | 1095 | 507 | 1444 | 588 | 8973 | 912 | 1.01 |
| **400x150** | 6.3 | 53.00 | 67.5 | 13350 | 2863 | 14.1 | 6.51 | 667 | 382 | 841 | 420 | 7588 | 673 | 1.09 |
| | 8 | 66.80 | 85.1 | 16630 | 3528 | 14.0 | 6.44 | 832 | 470 | 1054 | 524 | 9415 | 828 | 1.08 |
| | 10 | 82.80 | 106 | 20340 | 4257 | 13.9 | 6.35 | 1017 | 568 | 1297 | 640 | 11450 | 998 | 1.08 |
| | 12.5 | 102.00 | 130 | 24720 | 5087 | 13.8 | 6.24 | 1236 | 678 | 1589 | 778 | 13820 | 1191 | 1.07 |
| | 16 | 129.00 | 165 | 30400 | 6108 | 13.6 | 6.09 | 1520 | 814 | 1978 | 957 | 16810 | 1427 | 1.06 |

# Rectangular




| Designation Size | Thickness | | Mass Per Metre | Area Of Section | Second Moment Of Area | | Radius Of Gyration | | Elastic Modulus | | Plastic Modulus | | Torsional Constants | | Surface Area Per Metre |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Axis | Axis | Axis | Axis | Axis | Axis | Axis | Axis | | | |
| DxB | t | | | A | x-x | y-y | x-x | y-y | x-x | y-y | x-x | y-y | J | C | |
| mm | mm | | kg/m | $cm^2$ | $cm^4$ | $cm^4$ | cm | cm | $cm^3$ | $cm^3$ | $cm^3$ | $cm^3$ | $cm^4$ | $cm^3$ | $m^2/m$ |
| **400x200** | 6.3 | | 57.90 | 73.6 | 15700 | 5376 | 14.6 | 8.55 | 785 | 538 | 960 | 594 | 12610 | 917 | 1.18 |
| | 8 | | 73.10 | 92.8 | 19560 | 6660 | 14.5 | 8.47 | 978 | 666 | 1203 | 743 | 15740 | 1135 | 1.18 |
| | 10 | | 90.70 | 115 | 23910 | 8084 | 14.4 | 8.39 | 1196 | 808 | 1480 | 911 | 19260 | 1376 | 1.17 |
| | 12.5 | | 112.00 | 142 | 29060 | 9738 | 14.3 | 8.28 | 1453 | 974 | 1813 | 1111 | 23440 | 1656 | 1.17 |
| | 16 | | 142.00 | 179 | 35740 | 11820 | 14.1 | 8.13 | 1787 | 1182 | 2256 | 1374 | 28870 | 2010 | 1.16 |
| **400x300** | 8 | | 85.70 | 109 | 25860 | 16620 | 15.4 | 12.30 | 1293 | 1108 | 1524 | 1252 | 30980 | 1749 | 1.37 |
| | 10 | | 106.00 | 136 | 31750 | 20360 | 15.3 | 12.30 | 1587 | 1357 | 1882 | 1544 | 38140 | 2136 | 1.37 |
| | 12.5 | | 132.00 | 168 | 38800 | 24800 | 15.2 | 12.20 | 1940 | 1654 | 2316 | 1898 | 46750 | 2593 | 1.37 |
| | 16 | | 167.00 | 213 | 48100 | 30620 | 15.0 | 12.00 | 2405 | 2041 | 2899 | 2371 | 58200 | 3186 | 1.37 |
| **450x250** | 8 | | 85.40 | 109 | 30080 | 12140 | 16.6 | 10.6 | 1337 | 971 | 1622 | 1081 | 27080 | 1629 | 1.38 |
| | 10 | | 106.00 | 135 | 36900 | 14820 | 16.5 | 10.5 | 1640 | 1185 | 2000 | 1331 | 33280 | 1986 | 1.37 |
| | 12.5 | | 132.00 | 167 | 45030 | 17970 | 16.4 | 10.4 | 2001 | 1438 | 2458 | 1631 | 40720 | 2406 | 1.37 |
| | 16 | | 167.00 | 211 | 55710 | 22040 | 16.2 | 10.2 | 2476 | 1763 | 3070 | 2029 | 50550 | 2947 | 1.36 |
| **500x200** | 8 | | 85.70 | 109 | 34270 | 8170 | 17.7 | 8.7 | 1371 | 817 | 1716 | 900 | 21100 | 1430 | 1.37 |
| | 10 | | 106.00 | 135 | 41760 | 9891 | 17.6 | 8.6 | 1670 | 989 | 2105 | 1101 | 25870 | 1737 | 1.37 |
| | 12.5 | | 132.00 | 168 | 51510 | 12020 | 17.5 | 8.5 | 2060 | 1202 | 2609 | 1354 | 31480 | 2097 | 1.37 |
| | 16 | | 167.00 | 213 | 63930 | 14670 | 17.3 | 8.31 | 2557 | 1467 | 3267 | 1683 | 38830 | 2554 | 1.37 |
| **500x300** | 10 | | 122.00 | 155 | 53760 | 24440 | 18.6 | 12.6 | 2150 | 1629 | 2595 | 1826 | 52450 | 2696 | 1.57 |
| | 12.5 | | 152.00 | 192 | 65810 | 29780 | 18.5 | 12.5 | 2633 | 1985 | 3196 | 2244 | 64390 | 3281 | 1.57 |
| | 16 | | 192.00 | 243 | 81780 | 36770 | 18.3 | 12.3 | 3271 | 2451 | 4005 | 2804 | 80330 | 4044 | 1.56 |
| | 20 | △ | 237.00 | 302 | 100100 | 44550 | 18.2 | 12.1 | 4006 | 2970 | 4942 | 3442 | 97310 | 4845 | |

△S.A.W process