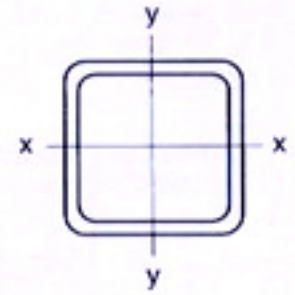


SQUARE HOLLOW SECTIONS



SQUARE HOLLOW SECTIONS

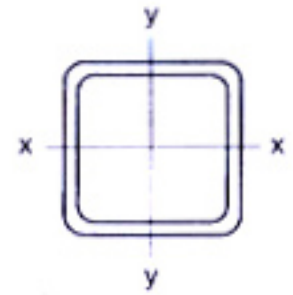
ASTM A-500 GRADES A & B/ MANUFACTURER'S STANDARD



| Dimensions | | | | | | | | Area | Moment of Inertia | | Section Modulus | | Radius of Gyration | | Plastic Modulus | |
|------------|---------------|----------------|-------|-------------------|--------|-------|-------|--------|-------------------|---------|-----------------|---------|--------------------|-------|-----------------|--------|
| Size | | Wall Thickness | | Calculated Weight | | | | | ix | ly | Zx | Zy | ix | iy | Sx | Sy |
| Nominal | Actual | mm | in | kg/m | kg/cm | kg/ft | lb/ft | | | | | | | | | |
| 12 x 12 | 1 1/2 X 1 1/2 | 1.0 | 0.039 | 0.357 | 2.142 | 0.109 | 0.240 | 0.0706 | 0.00249 | 0.00249 | 0.00996 | 0.00960 | 0.188 | 0.188 | 0.0121 | 0.0121 |
| | | 1.2 | 0.047 | 0.421 | 2.526 | 0.128 | 0.283 | 0.0833 | 0.00284 | 0.00284 | 0.01130 | 0.01130 | 0.185 | 0.185 | 0.0141 | 0.0141 |
| | | 1.6 | 0.063 | 0.540 | 3.240 | 0.165 | 0.363 | 0.1070 | 0.00339 | 0.00339 | 0.01360 | 0.01360 | 0.178 | 0.178 | 0.0174 | 0.0174 |
| 16 x 16 | 5/8 X 5/8 | 1.0 | 0.039 | 0.456 | 2.736 | 0.139 | 0.306 | 0.0901 | 0.00513 | 0.00513 | 0.0164 | 0.0164 | 0.239 | 0.239 | 0.0197 | 0.0197 |
| | | 1.2 | 0.047 | 0.540 | 3.249 | 0.165 | 0.363 | 0.1070 | 0.00592 | 0.00592 | 0.0189 | 0.0189 | 0.235 | 0.235 | 0.0230 | 0.0230 |
| | | 1.6 | 0.063 | 0.699 | 4.194 | 0.213 | 0.470 | 0.1380 | 0.00724 | 0.00724 | 0.0232 | 0.0232 | 0.229 | 0.229 | 0.0290 | 0.0290 |
| 19 x 19 | 3/4 X 3/4 | 1.0 | 0.039 | 0.555 | 3.330 | 0.169 | 0.373 | 0.110 | 0.00920 | 0.00920 | 0.0245 | 0.0245 | 0.290 | 0.290 | 0.0291 | 0.0291 |
| | | 1.2 | 0.047 | 0.659 | 3.954 | 0.201 | 0.443 | 0.130 | 0.0107 | 0.0107 | 0.0285 | 0.0285 | 0.286 | 0.286 | 0.0342 | 0.0342 |
| | | 1.6 | 0.063 | 0.859 | 5.154 | 0.262 | 0.577 | 0.170 | 0.0133 | 0.0133 | 0.0354 | 0.0354 | 0.280 | 0.280 | 0.0435 | 0.0435 |
| 25 x 25 | 1 x 1 | 1.0 | 0.039 | 0.752 | 4.512 | 0.229 | 0.505 | 0.149 | 0.0228 | 0.0228 | 0.0456 | 0.0456 | 0.392 | 0.392 | 0.0534 | 0.0534 |
| | | 1.2 | 0.047 | 0.897 | 5.382 | 0.273 | 0.603 | 0.177 | 0.0267 | 0.0267 | 0.0535 | 0.0535 | 0.388 | 0.388 | 0.0632 | 0.0632 |
| | | 1.6 | 0.063 | 1.180 | 7.080 | 0.359 | 0.791 | 0.233 | 0.0339 | 0.0339 | 0.0678 | 0.0678 | 0.382 | 0.382 | 0.0814 | 0.0814 |
| | | 2.3 | 0.091 | 1.540 | 9.240 | 0.470 | 1.050 | 0.331 | 0.0443 | 0.0443 | 0.0890 | 0.0890 | 0.371 | 0.371 | 0.1086 | 0.1086 |
| | | 3.0 | 0.120 | 2.070 | 12.420 | 0.632 | 1.390 | 0.410 | 0.0528 | 0.0528 | 0.1060 | 0.1060 | 0.359 | 0.359 | 0.1340 | 0.1340 |
| | | 3.2 | 0.125 | 2.150 | 12.900 | 0.654 | 1.440 | 0.424 | 0.0540 | 0.0540 | 0.1080 | 0.1080 | 0.357 | 0.357 | 0.1380 | 0.1380 |
| 32 x 32 | 1 1/4 X 1 1/4 | 1.2 | 0.047 | 1.13 | 6.780 | 0.346 | 0.762 | 0.224 | 0.0539 | 0.0539 | 0.0863 | 0.0863 | 0.490 | 0.490 | 0.101 | 0.101 |
| | | 1.6 | 0.063 | 1.50 | 9.000 | 0.456 | 1.010 | 0.296 | 0.0692 | 0.0692 | 0.1110 | 0.1110 | 0.484 | 0.484 | 0.131 | 0.131 |
| | | 2.3 | 0.091 | 2.02 | 12.120 | 0.616 | 1.360 | 0.414 | 0.0922 | 0.0922 | 0.1480 | 0.1480 | 0.472 | 0.472 | 0.179 | 0.147 |
| | | 3.0 | 0.120 | 2.68 | 16.080 | 0.817 | 1.800 | 0.530 | 0.1120 | 0.1120 | 0.1800 | 0.1800 | 0.460 | 0.460 | 0.223 | 0.223 |
| | | 3.2 | 0.125 | 2.78 | 16.680 | 0.847 | 1.870 | 0.549 | 0.1150 | 0.1150 | 0.1850 | 0.1850 | 0.458 | 0.458 | 0.230 | 0.230 |
| 38 x 38 | 1 1/2 X 1 1/2 | 1.2 | 0.047 | 1.37 | 8.220 | 0.418 | 0.922 | 0.271 | 0.0952 | 0.0952 | 0.1270 | 0.1270 | 0.592 | 0.592 | 0.147 | 0.147 |
| | | 1.6 | 0.063 | 1.81 | 10.860 | 0.553 | 1.220 | 0.359 | 0.1230 | 0.1230 | 0.1640 | 0.1640 | 0.586 | 0.586 | 0.193 | 0.193 |
| | | 2.3 | 0.091 | 2.48 | 14.880 | 0.756 | 1.670 | 0.505 | 0.1660 | 0.1660 | 0.2210 | 0.2210 | 0.573 | 0.573 | 0.256 | 0.256 |
| | | 3.0 | 0.120 | 3.29 | 19.740 | 1.000 | 2.210 | 0.650 | 0.2050 | 0.2050 | 0.2740 | 0.2740 | 0.562 | 0.562 | 0.335 | 0.335 |
| | | 3.2 | 0.125 | 3.41 | 20.460 | 1.040 | 2.290 | 0.674 | 0.2110 | 0.2110 | 0.2820 | 0.2820 | 0.560 | 0.560 | 0.346 | 0.346 |
| 50 X 50 | 2 X 2 | 1.6 | 0.063 | 2.45 | 14.700 | 0.747 | 1.65 | 0.485 | 0.302 | 0.302 | 0.302 | 0.302 | 0.790 | 0.790 | 0.351 | 0.351 |
| | | 2.3 | 0.091 | 3.40 | 20.400 | 1.04 | 2.28 | 0.689 | 0.416 | 0.416 | 0.416 | 0.416 | 0.777 | 0.777 | 0.494 | 0.494 |
| | | 3.0 | 0.120 | 4.38 | 26.280 | 1.33 | 2.94 | 0.865 | 0.498 | 0.498 | 0.498 | 0.498 | 0.759 | 0.759 | 0.601 | 0.601 |
| | | 3.2 | 0.125 | 4.54 | 27.240 | 1.38 | 3.05 | 0.897 | 0.513 | 0.513 | 0.513 | 0.513 | 0.756 | 0.756 | 0.621 | 0.621 |
| | | 4.0 | 0.156 | 5.50 | 33.000 | 1.68 | 3.70 | 1.090 | 0.598 | 0.598 | 0.598 | 0.598 | 0.741 | 0.741 | 0.737 | 0.737 |
| | | 4.5 | 0.177 | 6.11 | 36.654 | 1.86 | 4.10 | 1.210 | 0.644 | 0.644 | 0.644 | 0.644 | 0.730 | 0.730 | 0.807 | 0.807 |
| 65 X 65 | 2 1/2 X 2 1/2 | 2.3 | 0.091 | 4.31 | 25.878 | 1.32 | 2.90 | 0.86 | 0.82 | 0.82 | 0.656 | 0.656 | 0.976 | 0.976 | 0.861 | 0.861 |
| | | 3.0 | 0.120 | 5.59 | 33.540 | 1.70 | 3.76 | 1.11 | 1.03 | 1.03 | 0.820 | 0.820 | 0.963 | 0.963 | 0.975 | 0.975 |
| | | 3.2 | 0.125 | 5.80 | 34.800 | 1.77 | 3.90 | 1.15 | 1.06 | 1.06 | 0.847 | 0.847 | 0.961 | 0.961 | 1.010 | 1.010 |
| | | 4.0 | 0.156 | 7.08 | 42.480 | 2.16 | 4.76 | 1.40 | 1.25 | 1.25 | 1.000 | 1.000 | 0.946 | 0.946 | 1.210 | 1.210 |
| | | 4.5 | 0.177 | 7.88 | 47.271 | 2.40 | 5.30 | 1.56 | 1.36 | 1.36 | 1.090 | 1.090 | 0.935 | 0.935 | 1.310 | 1.310 |
| | | 6.0 | 0.236 | 10.10 | 60.59 | 3.08 | 6.77 | 1.99 | 1.72 | 1.72 | 1.370 | 1.370 | 0.928 | 0.928 | 1.720 | 1.720 |

SQUARE HOLLOW SECTIONS

ASTM A-500 GRADES A & B/ MANUFACTURER'S STANDARD



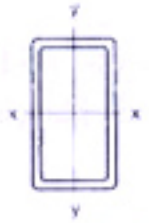
| Dimensions | | | | | | | | Area | Moment of Inertia | | Section Modulus | | Radius of Gyration | | Plastic Modulus | |
|------------|---------------|----------------|--------|-------------------|--------|-------|-------|-------|-------------------|-------|-----------------|-------|--------------------|------|-----------------|-------|
| Size | | Wall Thickness | | Calculated Weight | | | | | Ix | Iy | Zx | Zy | ix | iy | Sx | Sy |
| Nominal | Actual | mm | in | kg/m | kg/cm | kg/ft | lb/ft | | | | | | | | | |
| 75 X 75 | 3 X 3 | 2.3 | 0.091 | 5.231 | 31.387 | 1.594 | 3.52 | 1.03 | 1.44 | 1.44 | 0.96 | 0.96 | 1.19 | 1.19 | 1.25 | 1.25 |
| | | 3.0 | 0.120 | 6.810 | 40.860 | 2.07 | 4.57 | 1.35 | 1.83 | 1.83 | 1.22 | 1.22 | 1.17 | 1.17 | 1.44 | 1.44 |
| | | 3.2 | 0.125 | 7.070 | 42.420 | 2.15 | 4.75 | 1.40 | 1.90 | 1.90 | 1.26 | 1.26 | 1.16 | 1.16 | 1.49 | 1.49 |
| | | 4.0 | 0.156 | 8.660 | 51.960 | 2.64 | 5.82 | 1.71 | 2.26 | 2.26 | 1.57 | 1.57 | 1.15 | 1.15 | 1.80 | 1.80 |
| | | 4.5 | 0.177 | 9.700 | 58.191 | 2.95 | 6.52 | 1.92 | 2.48 | 2.48 | 1.65 | 1.65 | 1.14 | 1.14 | 2.00 | 2.00 |
| | | 5.0 | 0.197 | 10.76 | 64.555 | 3.26 | 7.21 | 2.13 | 2.72 | 2.72 | 1.81 | 1.81 | 1.13 | 1.13 | 2.18 | 2.18 |
| 6.0 | 0.236 | 12.78 | 76.678 | 3.87 | 8.56 | 2.53 | 3.12 | 3.12 | 2.08 | 2.08 | 1.11 | 1.11 | 2.56 | 2.56 | | |
| 90 X 90 | 3 1/2 X 3 1/2 | 3.0 | 0.120 | 8.020 | 48.120 | 2.44 | 5.39 | 1.59 | 2.98 | 2.98 | 1.70 | 1.70 | 1.37 | 1.37 | 1.99 | 1.99 |
| | | 3.2 | 0.125 | 8.330 | 49.980 | 2.54 | 5.60 | 1.65 | 3.09 | 3.09 | 1.76 | 1.76 | 1.37 | 1.37 | 2.07 | 2.07 |
| | | 4.0 | 0.156 | 10.20 | 61.200 | 3.12 | 6.88 | 2.02 | 3.71 | 3.71 | 2.12 | 2.12 | 1.35 | 1.35 | 2.51 | 2.51 |
| | | 4.5 | 0.177 | 11.50 | 68.984 | 3.50 | 7.70 | 2.27 | 4.10 | 4.10 | 2.34 | 2.34 | 1.34 | 1.34 | 2.79 | 2.79 |
| | | 5.0 | 0.197 | 12.76 | 76.582 | 3.88 | 8.55 | 2.52 | 4.51 | 4.51 | 2.58 | 2.58 | 1.34 | 1.34 | 3.06 | 3.06 |
| | | 6.0 | 0.236 | 14.88 | 89.273 | 4.54 | 9.98 | 2.94 | 5.12 | 5.12 | 2.92 | 2.92 | 1.32 | 1.32 | 3.78 | 3.78 |
| 100 X 100 | 4 X 4 | 3.0 | 0.120 | 9.23 | 55.380 | 2.81 | 6.21 | 1.83 | 4.59 | 4.59 | 2.29 | 2.29 | 1.59 | 1.59 | 2.66 | 2.66 |
| | | 3.2 | 0.125 | 9.60 | 57.600 | 2.93 | 6.45 | 1.90 | 4.70 | 4.70 | 2.35 | 2.35 | 1.57 | 1.57 | 2.74 | 2.74 |
| | | 4.0 | 0.156 | 11.8 | 70.800 | 3.60 | 7.94 | 2.34 | 5.67 | 5.67 | 2.84 | 2.84 | 1.56 | 1.56 | 3.34 | 3.34 |
| | | 4.5 | 0.177 | 13.3 | 79.874 | 4.06 | 8.95 | 2.63 | 6.28 | 6.28 | 3.14 | 3.14 | 1.55 | 1.55 | 3.72 | 3.72 |
| | | 5.0 | 0.197 | 14.7 | 88.295 | 4.48 | 9.89 | 2.91 | 6.89 | 6.89 | 3.44 | 3.44 | 1.54 | 1.54 | 4.02 | 4.02 |
| | | 6.0 | 0.236 | 17.2 | 103.11 | 5.22 | 11.50 | 3.39 | 7.82 | 7.82 | 3.91 | 3.91 | 1.52 | 1.52 | 4.69 | 4.69 |
| 9.0 | 0.354 | 24.1 | 144.50 | 7.34 | 16.10 | 4.75 | 9.80 | 9.80 | 5.19 | 5.19 | 1.44 | 1.44 | 6.44 | 6.44 | | |
| 125 X 125 | 5 X 5 | 4.5 | 0.177 | 16.9 | 101.40 | 5.151 | 11.4 | 3.33 | 12.7 | 12.7 | 5.08 | 5.08 | 1.97 | 1.97 | 5.96 | 5.96 |
| | | 5.0 | 0.197 | 18.7 | 112.26 | 5.710 | 12.6 | 3.70 | 14.0 | 14.0 | 5.61 | 5.61 | 1.95 | 1.95 | 6.51 | 6.51 |
| | | 6.0 | 0.236 | 22.1 | 132.42 | 6.730 | 14.8 | 4.34 | 16.0 | 16.0 | 6.42 | 6.42 | 1.92 | 1.92 | 7.63 | 7.63 |
| | | 9.0 | 0.354 | 31.1 | 186.87 | 9.490 | 20.9 | 6.15 | 20.8 | 20.8 | 8.42 | 8.42 | 1.85 | 1.85 | 10.45 | 10.45 |
| 150 X 150 | 6 X 6 | 4.5 | 0.177 | 20.5 | 122.94 | 6.25 | 13.80 | 4.04 | 22.5 | 22.5 | 7.50 | 7.50 | 2.36 | 2.36 | 8.73 | 8.73 |
| | | 5.0 | 0.197 | 22.7 | 135.97 | 6.90 | 15.21 | 4.48 | 24.9 | 24.9 | 8.30 | 8.30 | 2.36 | 2.36 | 9.58 | 9.58 |
| | | 6.0 | 0.236 | 26.9 | 161.00 | 8.19 | 18.00 | 5.28 | 28.7 | 28.7 | 9.58 | 9.58 | 2.33 | 2.33 | 11.3 | 11.3 |
| | | 9.0 | 0.354 | 38.2 | 229.26 | 11.64 | 25.60 | 7.54 | 38.0 | 38.0 | 12.80 | 12.80 | 2.24 | 2.24 | 15.4 | 15.4 |
| 175 x 175 | 7 X 7 | 4.5 | 0.177 | 23.7 | 142.1 | 7.22 | 15.9 | 4.68 | 33.3 | 33.3 | 9.66 | 9.66 | 2.67 | 2.67 | 11.7 | 11.7 |
| | | 6.0 | 0.236 | 31.1 | 186.9 | 9.49 | 20.9 | 6.14 | 43.2 | 43.2 | 12.5 | 12.5 | 2.65 | 2.65 | 14.8 | 14.8 |
| | | 9.0 | 0.354 | 45.3 | 271.6 | 13.8 | 30.4 | 8.94 | 61.5 | 61.5 | 17.9 | 17.9 | 2.62 | 2.62 | 21.4 | 21.4 |
| | | 12.0 | 0.472 | 58.5 | 351.1 | 17.8 | 39.2 | 11.60 | 77.9 | 77.9 | 22.6 | 22.6 | 2.60 | 2.60 | 27.5 | 27.5 |
| 200 x 200 | 8 X 8 | 4.5 | 0.177 | 27.2 | 163.3 | 8.30 | 18.2 | 5.37 | 52.60 | 52.60 | 13.4 | 13.4 | 3.13 | 3.13 | 14.8 | 14.8 |
| | | 6.0 | 0.236 | 35.8 | 214.9 | 10.9 | 24.0 | 7.07 | 68.00 | 68.00 | 17.3 | 17.3 | 3.10 | 3.10 | 20.1 | 20.1 |
| | | 9.0 | 0.354 | 52.3 | 313.8 | 16.0 | 35.1 | 10.30 | 95.90 | 95.90 | 24.3 | 24.3 | 3.04 | 3.04 | 28.8 | 28.8 |
| | | 12.0 | 0.472 | 67.9 | 407.6 | 20.7 | 45.6 | 13.40 | 119.6 | 119.6 | 30.4 | 30.4 | 2.99 | 2.99 | 36.7 | 36.7 |
| 250 x 250 | 10 X 10 | 6.0 | 0.236 | 45.2 | 271.5 | 13.8 | 30.3 | 8.93 | 136.2 | 136.2 | 27.7 | 27.7 | 3.91 | 3.91 | 37.0 | 37.0 |
| | | 9.0 | 0.354 | 66.5 | 398.8 | 20.3 | 44.6 | 13.10 | 194.4 | 194.4 | 39.5 | 39.5 | 3.85 | 3.85 | 46.3 | 46.3 |
| | | 12.0 | 0.472 | 86.8 | 520.6 | 26.4 | 58.2 | 17.10 | 247.5 | 247.5 | 50.0 | 50.0 | 3.79 | 3.79 | 59.5 | 59.5 |

RECTANGULAR HOLLOW SECTIONS



RECTANGULAR HOLLOW SECTIONS

ASTM A-500 GRADES A & B/ MANUFACTURER'S STANDARD



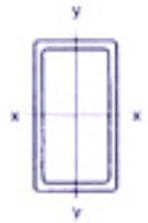
| Dimensions | | | | | | | | Area | Moment of Inertia | | Section Modulus | | Radius of Gyration | | Plastic Modulus | |
|------------|---------------|----------------|-------|-------------------|--------|-------|-------|--------|-------------------|---------|-----------------|--------|--------------------|--------|-----------------|--------|
| Size | | Wall Thickness | | Calculated Weight | | | | | Ix | Iy | Zx | Zy | ix | iy | Sx | Sy |
| Nominal | Actual | mm | in | kg/m | kg/cm | kg/ft | lb/ft | | | | | | | | | |
| 19 x 9 | 3/4 x 3/8 | 1.0 | 0.039 | 0.394 | 2.363 | 0.120 | 0.264 | 0.0778 | 0.00528 | 0.00170 | 0.0141 | 0.0091 | 0.2606 | 0.1480 | 0.0181 | 0.0109 |
| | | 1.2 | 0.047 | 0.462 | 2.772 | 0.141 | 0.310 | 0.0912 | 0.00612 | 0.00194 | 0.0163 | 0.0103 | 0.2589 | 0.1458 | 0.0211 | 0.0126 |
| | | 1.6 | 0.063 | 0.586 | 3.514 | 0.179 | 0.392 | 0.1156 | 0.00758 | 0.00232 | 0.0202 | 0.0124 | 0.2560 | 0.1420 | 0.0268 | 0.0157 |
| 25 x 12 | 1 x 1/2 | 1.0 | 0.039 | 0.555 | 3.330 | 0.169 | 0.373 | 0.110 | 0.0138 | 0.00457 | 0.0276 | 0.0183 | 0.355 | 0.204 | 0.0347 | 0.0211 |
| | | 1.2 | 0.047 | 0.659 | 3.954 | 0.201 | 0.443 | 0.130 | 0.0161 | 0.00526 | 0.0321 | 0.0210 | 0.351 | 0.201 | 0.0408 | 0.0247 |
| | | 1.6 | 0.063 | 0.859 | 5.154 | 0.262 | 0.577 | 0.170 | 0.0201 | 0.00642 | 0.0401 | 0.0257 | 0.344 | 0.194 | 0.0519 | 0.0311 |
| 32 x 16 | 1 1/4 x 3/4 | 1.0 | 0.039 | 0.707 | 4.240 | 0.215 | 0.475 | 0.140 | 0.0283 | 0.0094 | 0.0453 | 0.0301 | 0.4496 | 0.2591 | 0.0401 | 0.0282 |
| | | 1.2 | 0.047 | 0.838 | 5.028 | 0.255 | 0.563 | 0.166 | 0.0334 | 0.0110 | 0.0534 | 0.1709 | 0.4485 | 0.2574 | 0.0479 | 0.0332 |
| | | 1.6 | 0.063 | 1.100 | 6.600 | 0.335 | 0.738 | 0.217 | 0.0428 | 0.0138 | 0.0685 | 0.2192 | 0.4441 | 0.2522 | 0.0618 | 0.0426 |
| 38 x 19 | 1 1/2 x 1 3/4 | 1.0 | 0.039 | 0.858 | 5.146 | 0.261 | 0.577 | 0.170 | 0.4990 | 0.0168 | 0.0665 | 0.0448 | 0.5418 | 0.3143 | 0.0464 | 0.0325 |
| | | 1.2 | 0.047 | 1.014 | 6.084 | 0.309 | 0.682 | 0.201 | 0.0560 | 0.0197 | 0.0747 | 0.0525 | 0.5278 | 0.3131 | 0.0550 | 0.0417 |
| | | 1.6 | 0.063 | 1.340 | 8.040 | 0.408 | 0.900 | 0.265 | 0.0761 | 0.0249 | 0.1015 | 0.0664 | 0.5201 | 0.3065 | 0.0716 | 0.0542 |
| 38 x 25 | 1 1/2 x 1 | 1.0 | 0.039 | 0.949 | 5.694 | 0.289 | 0.638 | 0.188 | 0.0596 | 0.0318 | 0.0795 | 0.0636 | 0.564 | 0.412 | 0.0954 | 0.0722 |
| | | 1.2 | 0.047 | 1.13 | 6.780 | 0.346 | 0.762 | 0.224 | 0.0704 | 0.0374 | 0.0938 | 0.0748 | 0.560 | 0.408 | 0.113 | 0.0855 |
| | | 1.6 | 0.063 | 1.50 | 9.000 | 0.456 | 1.01 | 0.296 | 0.0905 | 0.0478 | 0.121 | 0.0955 | 0.553 | 0.402 | 0.147 | 0.111 |
| 50 x 25 | 2 x 1 | 1.0 | 0.039 | 1.15 | 6.900 | 0.349 | 0.770 | 0.227 | 0.120 | 0.0408 | 0.120 | 0.0816 | 0.727 | 0.424 | 0.147 | 0.0909 |
| | | 1.2 | 0.047 | 1.37 | 8.220 | 0.418 | 0.922 | 0.271 | 0.142 | 0.0481 | 0.142 | 0.0962 | 0.724 | 0.421 | 0.175 | 0.108 |
| | | 1.6 | 0.063 | 1.81 | 10.860 | 0.553 | 1.22 | 0.359 | 0.184 | 0.0616 | 0.184 | 0.123 | 0.716 | 0.414 | 0.229 | 0.140 |
| | | 2.3 | 0.091 | 2.48 | 14.880 | 0.756 | 1.67 | 0.505 | 0.257 | 0.0837 | 0.257 | 0.167 | 0.713 | 0.407 | 0.315 | 0.191 |
| | | 3.0 | 0.120 | 3.29 | 19.740 | 1.00 | 2.21 | 0.650 | 0.310 | 0.0995 | 0.310 | 0.199 | 0.690 | 0.391 | 0.399 | 0.240 |
| | | 3.2 | 0.125 | 3.41 | 20.460 | 1.04 | 2.29 | 0.674 | 0.319 | 0.102 | 0.319 | 0.204 | 0.688 | 0.389 | 0.413 | 0.248 |
| 65 x 38 | 2 1/2 x 1 1/2 | 1.6 | 0.063 | 2.45 | 14.700 | 0.747 | 1.650 | 0.485 | 0.416 | 0.189 | 0.333 | 0.252 | 0.920 | 0.620 | 0.582 | 0.411 |
| | | 2.3 | 0.091 | 3.40 | 20.377 | 1.035 | 2.282 | 0.692 | 0.550 | 0.248 | 0.439 | 0.331 | 0.912 | 0.611 | 0.598 | 0.426 |
| | | 3.0 | 0.120 | 4.38 | 26.280 | 1.330 | 2.940 | 0.865 | 0.682 | 0.307 | 0.548 | 0.409 | 0.890 | 0.595 | 0.689 | 0.482 |
| | | 3.2 | 0.125 | 4.54 | 27.240 | 1.380 | 3.050 | 0.897 | 0.706 | 0.316 | 0.565 | 0.421 | 0.887 | 0.593 | 0.712 | 0.498 |
| 75 x 38 | 3 x 1 1/2 | 1.6 | 0.063 | 2.70 | 16.221 | 0.820 | 1.860 | 0.527 | 0.60 | 0.209 | 0.400 | 0.279 | 1.07 | 0.630 | 0.612 | 0.467 |
| | | 1.9 | 0.075 | 3.22 | 19.341 | 0.980 | 2.170 | 0.629 | 0.72 | 0.246 | 0.480 | 0.328 | 1.06 | 0.623 | 0.638 | 0.487 |
| | | 2.3 | 0.091 | 3.86 | 23.127 | 1.180 | 2.600 | 0.792 | 0.86 | 0.293 | 0.573 | 0.391 | 1.06 | 0.620 | 0.683 | 0.522 |
| | | 3.0 | 0.120 | 4.99 | 29.940 | 1.520 | 3.350 | 0.985 | 1.09 | 0.364 | 0.724 | 0.485 | 1.05 | 0.608 | 0.921 | 0.565 |
| | | 3.2 | 0.125 | 5.17 | 31.020 | 1.580 | 3.480 | 1.020 | 1.12 | 0.375 | 0.747 | 0.500 | 1.05 | 0.606 | 0.952 | 0.584 |
| 75 x 50 | 3 x 2 | 1.9 | 0.075 | 3.60 | 21.618 | 1.100 | 2.420 | 0.714 | 0.88 | 0.486 | 0.587 | 0.486 | 1.12 | 0.825 | 0.85 | 0.650 |
| | | 2.3 | 0.091 | 4.31 | 25.878 | 1.320 | 2.900 | 0.863 | 1.06 | 0.578 | 0.707 | 0.578 | 1.11 | 0.818 | 0.91 | 0.696 |
| | | 3.0 | 0.120 | 5.59 | 33.540 | 1.700 | 3.760 | 1.110 | 1.34 | 0.711 | 0.890 | 0.711 | 1.10 | 0.802 | 1.09 | 0.826 |
| | | 3.2 | 0.125 | 5.8 | 34.800 | 1.770 | 3.900 | 1.150 | 1.38 | 0.733 | 0.920 | 0.733 | 1.10 | 0.800 | 1.13 | 0.855 |
| | | 4.0 | 0.156 | 7.08 | 42.480 | 2.160 | 4.760 | 1.400 | 1.63 | 0.864 | 1.090 | 0.864 | 1.08 | 0.785 | 1.36 | 1.020 |
| | | 4.5 | 0.177 | 7.88 | 47.271 | 2.400 | 5.300 | 1.580 | 1.82 | 0.958 | 1.210 | 0.958 | 1.07 | 0.778 | 1.50 | 1.120 |
| 100 x 50 | 4 x 2 | 1.9 | 0.075 | 4.36 | 26.163 | 1.330 | 2.930 | 0.85 | 1.77 | 0.612 | 0.885 | 0.612 | 1.44 | 0.848 | 1.26 | 0.78 |
| | | 2.3 | 0.091 | 5.23 | 31.387 | 1.600 | 3.520 | 1.03 | 2.14 | 0.732 | 1.070 | 0.732 | 1.44 | 0.843 | 1.47 | 0.90 |
| | | 3.0 | 0.120 | 6.81 | 40.860 | 2.070 | 4.570 | 1.35 | 2.73 | 0.923 | 1.36 | 0.923 | 1.42 | 0.828 | 1.71 | 1.05 |
| | | 3.2 | 0.125 | 7.07 | 42.420 | 2.150 | 4.750 | 1.40 | 2.82 | 0.954 | 1.41 | 0.954 | 1.42 | 0.826 | 1.77 | 1.09 |
| | | 4.0 | 0.156 | 8.66 | 51.96 | 2.640 | 5.820 | 1.71 | 3.37 | 1.13 | 1.68 | 1.130 | 1.40 | 0.812 | 2.14 | 1.31 |
| | | 4.5 | 0.177 | 9.70 | 58.191 | 2.950 | 6.520 | 1.92 | 3.64 | 1.23 | 1.84 | 1.230 | 1.39 | 0.803 | 2.36 | 1.44 |
| | | 5.0 | 0.197 | 10.76 | 64.555 | 3.260 | 7.210 | 2.13 | 4.06 | 1.34 | 2.03 | 1.340 | 1.38 | 0.793 | 2.63 | 1.61 |
| 100 x 75 | 4 x 3 | 3.0 | 0.120 | 8.020 | 48.120 | 2.440 | 5.390 | 1.59 | 3.63 | 2.33 | 1.81 | 1.55 | 1.510 | 1.21 | 2.17 | 1.78 |
| | | 3.2 | 0.125 | 8.330 | 49.980 | 2.540 | 5.600 | 1.65 | 3.76 | 2.41 | 1.88 | 1.61 | 1.510 | 1.21 | 2.25 | 1.85 |
| | | 4.0 | 0.156 | 10.20 | 61.200 | 3.120 | 6.880 | 2.02 | 4.52 | 2.90 | 2.26 | 1.93 | 1.490 | 1.20 | 2.74 | 2.25 |
| | | 4.5 | 0.177 | 11.50 | 69.105 | 3.510 | 7.740 | 2.27 | 4.99 | 3.19 | 2.50 | 2.13 | 1.480 | 1.19 | 3.03 | 2.50 |
| | | 5.0 | 0.197 | 12.80 | 76.582 | 3.880 | 8.550 | 2.52 | 5.50 | 3.50 | 2.75 | 2.33 | 1.477 | 1.18 | 3.38 | 2.78 |
| | | 6.0 | 0.236 | 14.88 | 89.273 | 4.540 | 9.980 | 2.94 | 6.28 | 3.96 | 3.14 | 2.64 | 1.463 | 1.16 | 3.89 | 3.16 |

RECTANGULAR HOLLOW SECTIONS



RECTANGULAR HOLLOW SECTIONS

ASTM A-500 GRADES A & B/ MANUFACTURER'S STANDARD



| Dimensions | | | | | | | | Area | Moment of Inertia | | Section Modulus | | Radius of Gyration | | Plastic Modulus | |
|------------|--------|----------------|-------|-------------------|---------|-------|-------|------|-------------------|-------|-----------------|------|--------------------|-------|-----------------|-------|
| Size | | Wall Thickness | | Calculated Weight | | | | | Ix | Iy | Zx | Zy | ix | iy | Sx | Sy |
| Nominal | Actual | mm | in | kg/m | kg/cm | kg/ft | lb/ft | | | | | | | | | |
| 125 x 50 | 5 x 2 | 3.0 | 0.120 | 8.020 | 48.120 | 2.440 | 5.390 | 1.59 | 4.79 | 1.14 | 1.92 | 1.14 | 1.74 | 0.846 | 2.44 | 1.28 |
| | | 3.2 | 0.125 | 8.330 | 49.980 | 2.540 | 5.600 | 1.65 | 4.96 | 1.17 | 1.98 | 1.17 | 1.73 | 0.844 | 2.53 | 1.32 |
| | | 4.0 | 0.156 | 10.20 | 61.200 | 3.120 | 6.880 | 2.02 | 5.96 | 1.40 | 2.38 | 1.40 | 1.72 | 0.830 | 3.07 | 1.60 |
| | | 4.5 | 0.177 | 11.50 | 69.105 | 3.510 | 7.740 | 2.27 | 6.57 | 1.52 | 2.63 | 1.52 | 1.70 | 0.820 | 3.41 | 1.77 |
| | | 5.0 | 0.197 | 12.80 | 76.582 | 3.880 | 8.550 | 2.52 | 7.24 | 1.67 | 2.90 | 1.67 | 1.69 | 0.814 | 3.79 | 1.97 |
| | | 6.0 | 0.236 | 14.88 | 89.273 | 4.540 | 9.980 | 2.94 | 8.39 | 1.85 | 3.35 | 1.85 | 1.69 | 0.793 | 4.39 | 2.21 |
| 125 x 75 | 5 x 3 | 3.0 | 0.120 | 9.23 | 55.380 | 2.81 | 6.21 | 1.83 | 6.220 | 2.83 | 2.49 | 1.89 | 1.85 | 1.25 | 3.02 | 2.13 |
| | | 3.2 | 0.125 | 9.60 | 57.600 | 2.93 | 6.45 | 1.90 | 6.440 | 2.93 | 2.58 | 1.95 | 1.84 | 1.24 | 3.14 | 2.21 |
| | | 4.0 | 0.156 | 11.8 | 70.800 | 3.60 | 7.94 | 2.34 | 7.790 | 3.53 | 3.12 | 2.35 | 1.83 | 1.23 | 3.83 | 2.69 |
| | | 4.5 | 0.177 | 13.3 | 79.874 | 4.06 | 8.95 | 2.63 | 8.630 | 3.90 | 3.45 | 2.6 | 1.81 | 1.22 | 4.26 | 2.99 |
| | | 5.0 | 0.197 | 14.7 | 88.245 | 4.48 | 9.89 | 2.92 | 9.530 | 4.28 | 3.81 | 2.85 | 1.80 | 1.21 | 4.73 | 3.33 |
| | | 6.0 | 0.236 | 17.2 | 103.116 | 5.22 | 11.5 | 3.47 | 11.20 | 4.98 | 4.48 | 3.32 | 1.79 | 1.19 | 5.37 | 3.98 |
| 150 x 50 | 6 x 2 | 3.0 | 0.120 | 9.23 | 55.380 | 2.81 | 6.21 | 1.83 | 7.64 | 1.35 | 2.55 | 1.35 | 2.05 | 0.859 | 3.29 | 1.50 |
| | | 3.2 | 0.125 | 9.60 | 57.600 | 2.93 | 6.45 | 1.90 | 7.92 | 1.39 | 2.64 | 1.39 | 2.04 | 0.857 | 3.42 | 1.56 |
| | | 4.0 | 0.156 | 11.8 | 70.800 | 3.60 | 7.94 | 2.34 | 9.56 | 1.66 | 3.19 | 1.66 | 2.02 | 0.843 | 4.16 | 1.89 |
| | | 4.5 | 0.177 | 13.3 | 79.874 | 4.06 | 8.95 | 2.63 | 10.5 | 1.82 | 3.50 | 1.82 | 2.01 | 0.838 | 4.63 | 2.09 |
| | | 5.0 | 0.197 | 14.7 | 88.245 | 4.48 | 9.89 | 2.92 | 11.6 | 1.99 | 3.88 | 1.99 | 1.99 | 0.826 | 5.15 | 2.33 |
| | | 6.0 | 0.236 | 17.3 | 103.71 | 5.23 | 11.6 | 3.47 | 13.1 | 2.21 | 4.36 | 2.21 | 1.96 | 0.818 | 5.83 | 2.60 |
| 150 x 75 | 6 x 3 | 3.2 | 0.125 | 10.9 | 65.537 | 3.32 | 7.32 | 2.13 | 10.1 | 3.44 | 3.35 | 2.30 | 2.17 | 1.27 | 3.99 | 2.47 |
| | | 4.0 | 0.156 | 13.4 | 80.544 | 4.09 | 9.02 | 2.65 | 12.2 | 4.15 | 4.07 | 2.76 | 2.15 | 1.25 | 4.98 | 3.08 |
| | | 4.5 | 0.177 | 15.1 | 90.634 | 4.60 | 10.2 | 2.98 | 13.6 | 4.60 | 4.53 | 3.07 | 2.13 | 1.24 | 5.66 | 3.49 |
| | | 5.0 | 0.197 | 16.7 | 100.28 | 5.10 | 11.3 | 3.31 | 15.0 | 5.05 | 5.00 | 3.37 | 2.13 | 1.24 | 6.30 | 3.89 |
| | | 6.0 | 0.236 | 19.7 | 118.07 | 6.00 | 13.2 | 3.87 | 17.0 | 5.72 | 5.67 | 3.81 | 2.10 | 1.22 | 7.19 | 4.40 |
| | | 9.0 | 0.354 | 28.1 | 168.59 | 8.56 | 18.8 | 5.55 | 23.9 | 7.62 | 7.97 | 5.08 | 2.07 | 1.17 | 10.30 | 6.16 |
| 150 x 100 | 6 x 4 | 4.0 | 0.156 | 15.0 | 90.00 | 4.57 | 10.1 | 2.96 | 14.9 | 7.96 | 4.96 | 3.98 | 2.24 | 1.64 | 5.91 | 4.45 |
| | | 4.5 | 0.177 | 16.9 | 101.40 | 5.15 | 11.4 | 3.33 | 16.5 | 8.87 | 5.50 | 4.44 | 2.23 | 1.63 | 6.70 | 5.06 |
| | | 5.0 | 0.197 | 18.7 | 112.26 | 5.71 | 12.6 | 3.70 | 18.3 | 9.77 | 6.10 | 4.89 | 2.22 | 1.62 | 7.45 | 5.64 |
| | | 6.0 | 0.236 | 22.1 | 132.42 | 6.73 | 14.8 | 4.34 | 21.0 | 11.1 | 7.00 | 5.55 | 2.20 | 1.60 | 8.55 | 6.45 |
| | | 9.0 | 0.354 | 31.7 | 190.37 | 9.67 | 21.3 | 6.26 | 29.2 | 15.1 | 9.72 | 7.57 | 2.16 | 1.55 | 12.2 | 9.09 |
| | | 12.0 | 0.472 | 40.8 | 242.3 | 12.3 | 27.1 | 7.98 | 36.4 | 18.6 | 12.1 | 9.30 | 2.14 | 1.53 | 15.5 | 11.5 |
| 175 x 100 | 7 x 4 | 4.5 | 0.177 | 18.5 | 110.7 | 5.63 | 12.4 | 3.64 | 24.4 | 10.19 | 6.98 | 5.10 | 2.59 | 1.67 | 8.23 | 5.57 |
| | | 6.0 | 0.236 | 24.2 | 145.4 | 7.39 | 16.3 | 4.79 | 31.2 | 12.9 | 8.91 | 6.44 | 2.54 | 1.64 | 10.82 | 7.28 |
| | | 9.0 | 0.354 | 35.1 | 210.9 | 10.7 | 23.6 | 6.94 | 43.0 | 17.4 | 12.3 | 8.71 | 2.48 | 1.58 | 15.2 | 10.1 |
| | | 12.0 | 0.472 | 45.4 | 272.1 | 13.8 | 30.4 | 8.95 | 52.0 | 20.6 | 14.9 | 10.3 | 2.41 | 1.53 | 19.47 | 12.8 |
| 175 x 125 | 7 x 5 | 4.5 | 0.177 | 20.5 | 122.94 | 6.25 | 13.8 | 4.04 | 28.7 | 17.0 | 8.20 | 6.82 | 2.65 | 2.05 | 9.76 | 7.74 |
| | | 6.0 | 0.236 | 26.9 | 161.13 | 8.19 | 18.0 | 5.28 | 36.1 | 21.6 | 10.4 | 8.62 | 2.63 | 2.02 | 12.0 | 9.49 |
| | | 9.0 | 0.354 | 38.9 | 233.1 | 11.84 | 26.1 | 7.67 | 50.1 | 29.3 | 14.3 | 11.7 | 2.56 | 1.95 | 17.7 | 13.9 |
| | | 12.0 | 0.472 | 50.0 | 299.7 | 15.23 | 33.5 | 9.86 | 63.1 | 36.5 | 18.0 | 14.6 | 2.53 | 1.92 | 22.6 | 17.7 |
| 200 x 100 | 8 x 4 | 4.5 | 0.177 | 20.5 | 122.94 | 6.25 | 13.8 | 4.04 | 32.0 | 10.9 | 8.12 | 5.55 | 2.89 | 1.69 | 10.4 | 6.42 |
| | | 5.0 | 0.197 | 22.7 | 135.97 | 6.90 | 15.2 | 4.48 | 37.0 | 12.6 | 9.25 | 6.28 | 2.87 | 1.67 | 11.6 | 6.90 |
| | | 6.0 | 0.236 | 26.9 | 161.40 | 8.19 | 18.0 | 5.21 | 40.8 | 13.9 | 10.4 | 7.02 | 2.82 | 1.66 | 13.8 | 8.23 |
| | | 9.0 | 0.354 | 38.9 | 233.1 | 11.84 | 26.1 | 7.67 | 59.84 | 19.5 | 15.0 | 9.8 | 2.79 | 1.60 | 19.0 | 11.5 |
| | | 12.0 | 0.472 | 50.0 | 299.7 | 15.23 | 33.5 | 9.86 | 75.6 | 24.1 | 18.9 | 12.0 | 2.77 | 1.56 | 24.4 | 14.6 |
| 200 x 150 | 8 x 6 | 4.5 | 0.177 | 24.1 | 144.3 | 7.33 | 16.1 | 4.75 | 42.5 | 27.3 | 10.6 | 9.10 | 2.99 | 2.40 | 12.7 | 10.4 |
| | | 6.0 | 0.236 | 31.6 | 189.7 | 9.64 | 21.2 | 6.24 | 55.3 | 35.4 | 13.8 | 11.8 | 2.98 | 2.38 | 16.6 | 13.6 |
| | | 9.0 | 0.354 | 46.0 | 276.2 | 14.0 | 30.9 | 9.09 | 79.1 | 50.2 | 19.8 | 16.7 | 2.95 | 2.35 | 24.1 | 19.7 |
| | | 12.0 | 0.472 | 59.5 | 357.1 | 18.1 | 39.9 | 11.8 | 100.5 | 63.3 | 25.1 | 21.1 | 2.92 | 2.32 | 31.1 | 25.3 |
| 250 x 150 | 10 x 6 | 6.0 | 0.236 | 36.4 | 218.4 | 11.1 | 24.4 | 7.19 | 94.5 | 42.7 | 18.9 | 14.2 | 3.63 | 2.44 | 23.1 | 16.19 |
| | | 9.0 | 0.354 | 53.2 | 319.2 | 16.2 | 35.7 | 10.5 | 136.1 | 60.7 | 27.2 | 20.2 | 3.60 | 2.40 | 33.64 | 23.5 |
| 300 x 200 | 12 x 8 | 6.0 | 0.236 | 46.0 | 275.7 | 14.0 | 30.8 | 9.07 | 177.7 | 95.1 | 29.6 | 23.8 | 4.43 | 3.24 | 35.6 | 27.0 |
| | | 9.0 | 0.354 | 67.5 | 405.2 | 20.6 | 45.3 | 13.3 | 257.8 | 136.9 | 43.0 | 34.2 | 4.40 | 3.20 | 52.3 | 39.4 |