

Mechanical Tube Specifications

Round (in) Nominal decimal for ordering gauge

| Outside Diameter | Equiv. Sizes (in) | 22 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |
|------------------|-------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | .028 | .035 | .042 | .049 | .058 | .065 | .072 | .083 | .095 | .109 | .120 | .134 | .148 | .165 | .180 |
| .500 | | .1413 | .1740 | .2056 | .2362 | .2740 | .3023 | | | | | | | | | |
| .625 | | .1787 | .2207 | .2618 | .3017 | .3516 | .3891 | | | | | | | | | |
| .706 | ½ EMT | .2029 | .2511 | .2981 | .3441 | .4018 | .4454 | | | | | | | | | |
| .750 | | .2161 | .2675 | .3179 | .3672 | .4291 | .4760 | .5218 | | | | | | | | |
| .815 | ½ IMC | .2356 | .2918 | .3471 | .4012 | .4694 | .5211 | .5719 | .6495 | | | | | | | |
| .870 | | .2520 | .3124 | .3718 | .4300 | .5035 | .5594 | .6142 | | | | | | | | |
| .875 | | .2535 | .3143 | .3740 | .4327 | .5066 | .5628 | .6181 | | | | | | | | |
| .922 | ¾ EMT | .2676 | .3319 | .3951 | .4573 | .5357 | .5955 | .6542 | .7444 | | | | | | | |
| .980 | | .2850 | .3535 | .4211 | .4877 | .5717 | .6358 | .6989 | .7959 | | | | | | | |
| .995 | | .2894 | .3592 | .4279 | .4955 | .5810 | .6462 | .7104 | .8092 | | | | | | | |
| 1.000 | | .2909 | .3611 | .4301 | .4981 | .5841 | .6497 | .7143 | .8136 | | | | | | | |
| 1.029 | | .2996 | .3719 | .4431 | .5133 | .6020 | .6698 | .7366 | .8394 | | | | | | | |
| 1.125 | | .3284 | .4078 | .4862 | .5636 | .6616 | .7365 | .8105 | .9245 | | | | | | | |
| 1.163 | 1 EMT | | .4220 | .5033 | .5835 | .6851 | .7629 | .8397 | .9583 | | | | | | | |
| 1.187 | | | | .5141 | .5961 | .7000 | .7796 | | | | | | | | | |
| 1.250 | | | .4546 | .5424 | .6291 | .7391 | .8234 | .9067 | 1.0354 | 1.1730 | 1.3295 | 1.4496 | 1.5986 | | | |
| 1.290 | 1 IMC | | | .5603 | .6500 | .7639 | .8512 | .9375 | 1.0709 | 1.2136 | 1.3761 | 1.5009 | 1.6559 | | | |
| 1.315 | 1 NPS | | .4789 | .5716 | .6631 | .7794 | .8686 | .9567 | 1.0931 | 1.2390 | 1.4052 | 1.5329 | 1.6917 | | | |
| 1.375 | | | .5014 | .5985 | .6946 | .8166 | .9103 | 1.0029 | 1.1464 | | | | | | | |
| 1.500 | | | .5481 | .6546 | .7600 | .8941 | .9971 | 1.0991 | 1.2573 | 1.4268 | 1.6208 | 1.7703 | 1.9567 | | | |
| 1.510 | 1½ EMT | | .5519 | .6591 | .7653 | .9003 | 1.0041 | 1.1068 | 1.2661 | 1.4370 | 1.6325 | 1.7831 | 1.9711 | | | |
| 1.625 | | | | | .8255 | .9716 | 1.0840 | 1.1953 | 1.3682 | 1.5538 | 1.7665 | 1.9306 | 2.1358 | | | |
| 1.638 | 1½ IMC | | | .7166 | .8323 | .9796 | 1.0930 | 1.2053 | 1.3797 | 1.5670 | 1.7816 | 1.9473 | 2.1544 | | | |
| 1.660 | 1½ NPS | .4885 | .6080 | .7264 | .8439 | .9933 | 1.1083 | 1.2223 | 1.3992 | 1.5893 | 1.8072 | 1.9755 | 2.1859 | | | |
| 1.690 | | | | | | | 1.1291 | 1.2453 | 1.4258 | 1.6198 | 1.8422 | 2.0140 | 2.2289 | | | |
| 1.740 | 1½ EMT | | .6379 | .7624 | .8858 | 1.0429 | 1.1639 | 1.2838 | 1.4702 | | | | | | | |
| 1.750 | | | .6417 | .7669 | .8910 | 1.0491 | 1.1708 | 1.2915 | 1.4791 | | | | | | | |
| 1.764 | | | .6469 | .7731 | .8983 | 1.0578 | 1.1806 | 1.3023 | 1.4915 | | | | | | | |
| 1.875 | | | | .8230 | .9565 | 1.1266 | 1.2577 | 1.3877 | 1.5900 | | | | | | | |
| 1.883 | 1½ IMC | | | .8266 | .9607 | 1.1315 | 1.2632 | 1.3939 | 1.5971 | 1.8158 | 2.0671 | 2.2616 | 2.5054 | | | |
| 1.900 | 1½ NPS | | .6978 | .8342 | .9696 | 1.1421 | 1.2750 | 1.4070 | 1.6122 | 1.8331 | 2.0869 | 2.2834 | 2.5297 | 2.7719 | | |
| 1.948 | | | .7157 | .8558 | .9947 | 1.1718 | 1.3084 | 1.4439 | 1.6548 | | | | | | | |
| 1.968 | 50 MM | | .7232 | .8647 | 1.0052 | 1.1842 | 1.3223 | 1.4593 | 1.6725 | | | | | | | |
| 2.000 | | | .7352 | .8791 | 1.0220 | 1.2041 | 1.3445 | 1.4839 | 1.7009 | 1.9346 | 2.2034 | 2.4117 | 2.6730 | 2.9301 | | |
| 2.197 | 2 EMT | | | | | | 1.4814 | 1.6356 | 1.8757 | 2.1347 | 2.4330 | 2.6644 | 2.9552 | 3.2418 | | |
| 2.360 | 2 IMC | | | | 1.2105 | 1.4273 | 1.5947 | 1.7610 | 2.0203 | 2.3002 | 2.6229 | 2.8735 | 3.1887 | 3.4996 | | |
| 2.375 | 2 NPS | | | 1.0475 | 1.2184 | 1.4366 | 1.6051 | 1.7726 | 2.0336 | 2.3155 | 2.6404 | 2.8927 | 3.2101 | 3.5234 | 3.8981 | 4.2236 |
| 2.500 | | | | | | | 1.6920 | 1.8688 | 2.1445 | 2.4424 | 2.7860 | 3.0531 | 3.3892 | 3.7211 | 4.1186 | 4.4610 |
| 2.857 | 2½ IMC | | | | | | | 2.1436 | 2.4613 | 2.8049 | 3.2020 | 3.5110 | 3.9006 | 4.2860 | 4.7483 | 5.1511 |
| 2.875 | 2½ NPS | | | | | | | 2.1574 | 2.4773 | 2.8232 | 3.2230 | 3.5341 | 3.9264 | 4.3144 | 4.7800 | 5.1857 |
| 3.000 | | | | | | | | 2.2536 | 2.5882 | 2.9502 | 3.3686 | 3.6945 | 4.1054 | 4.5122 | 5.0005 | 5.4262 |
| 3.476 | 3 IMC | | | | | | | 2.6200 | 3.0105 | 3.4336 | 3.9233 | 4.3051 | 4.7873 | 5.2653 | 5.8401 | 6.3422 |
| 3.500 | 3 NPS | | | | | | | 2.6385 | 3.0318 | 3.4579 | 3.9512 | 4.3359 | 4.8217 | 5.3033 | 5.8824 | 6.3883 |
| 3.971 | 3½ IMC | | | | | | | | 3.4497 | 3.9363 | 4.5000 | 4.9401 | 5.4963 | 6.0484 | 6.7132 | 7.2946 |
| 4.000 | 3½ NPS | | | | | | | | 3.4754 | 3.9657 | 4.5338 | 4.9773 | 5.5379 | 6.0943 | 6.7644 | 7.3504 |
| 4.466 | 4 IMC | | | | | | | | 3.3820 | 3.8889 | 4.4390 | 5.0768 | 5.5750 | 6.2054 | 6.8316 | 7.5863 |
| 4.500 | 4 NPS | | | | | | | | 3.4081 | 3.9191 | 4.4735 | 5.1164 | 5.6187 | 6.2541 | 6.8854 | 7.6463 |
| 5.000 | 4½ NPS | | | | | | | | | | 4.9813 | 5.6990 | 6.2601 | 6.9704 | 7.6764 | 8.5282 |

Typical Mechanical Properties Achieved For Galvanized Tube Products:

 40,000 psi yield/45,000 psi tensile
 45,000 psi yield/48,000 psi tensile
 50,000 psi yield/55,000 psi tensile
 Higher mechanical properties available on request

Shapes

| | Size | RTS | WIC | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |
|-----------------|-------------|-----|-----|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | | .035 | .042 | .049 | .058 | .065 | .072 | .083 | .095 | .109 | .120 | .134 | .148 | .165 | .180 |
| SQUARE | .625 | X | | .2810 | .3333 | .3841 | .4476 | .4954 | | | | | | | | | |
| | .709 | X | | .3211 | .3813 | .4401 | | | | | | | | | | | |
| | .750 | X | | .3406 | .4047 | .4675 | .5463 | .6060 | .6644 | .7535 | | | | | | | |
| | .813 | X | | .3706 | .4407 | .5095 | .5960 | .6617 | .7261 | .8246 | | | | | | | |
| | .875 | X | | .4001 | .4762 | .5509 | .6449 | .7166 | .7869 | .8947 | | | | | | | |
| | .975 | X | | | | .6175 | .7239 | .8050 | .8849 | 1.0076 | | | | | | | |
| | 1.000 | X | | .4597 | .5476 | .6342 | .7436 | .8271 | .9094 | 1.0359 | 1.1701 | 1.3218 | | | | | |
| | 1.250* | X | X | .5788 | .6905 | .8009 | .9409 | 1.0483 | 1.1543 | 1.3183 | 1.4934 | 1.6927 | 1.8455 | | | | |
| | 1.500* | X | X | .6979 | .8334 | .9677 | 1.1383 | 1.2695 | 1.3993 | 1.6007 | 1.8166 | 2.0635 | 2.2538 | | | | |
| | 1.625 | | X | | | | | 1.3801 | 1.5218 | 1.7419 | 1.9782 | 2.2490 | 2.4580 | | | | |
| | 1.750* | | X | | | | | 1.4906 | 1.6443 | 1.8831 | 2.1398 | 2.4344 | 2.6621 | | | | |
| | 1.875 | | X | | | | | | | | | 2.6198 | | | | | |
| | 2.000* | X | X | | | | | 1.7118 | 1.8893 | 2.1655 | 2.4631 | 2.8053 | 3.0704 | 3.4031 | 3.7304 | 4.1208 | 4.4586 |
| | 2.188 | | X | | | | | | | | | | | 3.7460 | | | |
| 2.250* | X | X | | | | | | 2.1343 | 2.4479 | 2.7863 | 3.1762 | 3.4787 | 3.8590 | | | | |
| 2.500* | X | X | | | | | | 2.3792 | 2.7303 | 3.1095 | 3.5470 | 3.8870 | 4.3150 | 4.7376 | 5.2436 | | |
| 3.000 | X | | | | | | 2.5964 | 2.8692 | 3.2951 | 3.7560 | 4.2888 | 4.7036 | 5.2268 | 5.7447 | 6.3664 | 6.9084 | |
| 4.000 | X | | | | | | | | 4.4248 | 5.0490 | 5.7723 | 6.3368 | 7.0506 | 7.7590 | 8.6121 | 9.3582 | |
| FLAT SIDED OVAL | .750x1.000 | | | .3319 | .3951 | .4573 | .5357 | .5955 | | | | | | | | | |
| | 1.500x1.000 | | | .4789 | .5716 | .6631 | .7794 | .8686 | | | | | | | | | |
| | 1.75x1.125 | | | .5519 | .6591 | .7653 | .9003 | 1.0041 | 1.1068 | 1.2661 | | | | | | | |
| | 2.000x1.094 | | | .6080 | .7264 | .8439 | .9933 | 1.1083 | | | | | | | | | |
| | 2.250x1.313 | | | .6978 | .8342 | .9696 | 1.1421 | 1.2750 | | | | | | | | | |
| | 2.375x1.625 | | | | | 1.1251 | 1.3262 | 1.4814 | | | | | | | | | |
| RECTANGLE | .625x1.125 | | | .4001 | .4762 | .5509 | .6449 | .7166 | | | | | | | | | |
| | .750x1.500 | | | .5192 | .6191 | .7176 | .8423 | .9377 | 1.0319 | 1.1771 | | | | | | | |
| | .750x2.250 | | | .6979 | | | | | | | | | | | | | |
| | .875x1.917 | | | .6483 | .7740 | .8983 | 1.0562 | 1.1775 | | | | | | | | | |
| | 1.000x1.750 | | | .6383 | .7620 | .8843 | 1.0396 | 1.1589 | | | | | | | | | |
| | 1.000x2.000 | | | .6979 | .8334 | .9677 | 1.1383 | 1.2695 | 1.3993 | 1.6007 | | | | | | | |
| | 1.500x2.000 | | | .8169 | .9763 | 1.1344 | 1.3356 | 1.4906 | 1.6443 | 1.8831 | 2.1398 | 2.4344 | 2.6621 | | | | |
| | 1.500x2.500 | | | | 1.1192 | 1.3011 | 1.5330 | 1.7118 | 1.8893 | 2.1655 | 2.4631 | 2.8053 | 3.0704 | 3.4031 | | | |
| | 1.500x3.000 | | | | | | | | | | 2.7863 | 3.1762 | 3.4787 | | | | |
| | 1.500x3.500 | | | | | 1.6345 | 1.9277 | 2.1541 | 2.3792 | 2.7303 | 3.1095 | 3.5470 | 3.8870 | 4.3150 | | | |
| | 1.540x3.110 | | | | | | | | | | | 3.2874 | | | | | |
| | 1.625x3.000 | | | | | | | | | 2.5185 | 2.8671 | 3.2689 | 3.5808 | | | | |
| | 2.000x3.000 | | | | | | | 2.1541 | 2.3792 | 2.7303 | 3.1095 | 3.5470 | 3.8870 | 4.3150 | 4.7376 | 5.2436 | 5.6835 |
| | 2.000x4.000 | | | | | | | | | 3.2951 | 3.7560 | 4.2888 | 4.7036 | 5.2268 | 5.7447 | 6.3664 | |
| 2.000x5.000 | | | | | | | | | 3.8599 | 4.4025 | 5.0305 | 5.5202 | 6.1387 | 6.7519 | 7.4892 | | |
| 2.360x4.720 | | | | | | | | | | 4.4542 | 5.0899 | 5.5855 | 6.2117 | 6.8324 | | | |
| 3.000x4.000 | | | | | | | | | | 4.4025 | 5.0305 | 5.5202 | 6.1387 | 6.7519 | 7.4892 | 8.1333 | |
| OCTAGON | 4.783 | | | | | | | | | | 5.7505 | 6.3159 | 7.0316 | 7.7429 | 8.6006 | | |

* Also available as Square-Fit*

Square tubing is available as round-to-square (RTS), weld-in-corner (WIC) or both. Please inquire for details.

| Tolerances: | | | |
|--------------------|-----------|---|-----------|
| Round | Tolerance | Length | Tolerance |
| .500 thru 1.510 | ±.005 | Under 5' | ± 1/16" |
| 1.625 thru 2.000 | ±.010 | 5' - 15' | ± 1/8" |
| 2.197 thru 4.500 | ±.015 | 16' - 19' | ± 1/4" |
| 5.000 | ±.020 | 20' - 40** | ± 1/2" |
| Square & Rectangle | ±.010 | *Must be cut off-line. | |
| <i>Except:</i> | | | |
| 1x1 & Smaller | ±.005 | Closer length tolerances available upon request | |
| 1.500 x 3.000 | ±.020 | | |
| 2.000 x 3.000 | ±.015 | | |
| 2.000 x 4.000 | ±.015 | **sizes 2.875 - 5.000 can be run up to 40' long | |
| 2.000 x 5.000 | ±.030 | | |
| 2.360 x 4.720 | ±.030 | | |
| 3.000 x 3.000 | ±.015 | | |
| 3.000 x 4.000 | ±.030 | | |
| 4.000 x 4.000 | ±.020 | | |
| Oval Sizes | ±.015 | | |

| Carbon Steel Typical Chemistry: | | | | |
|---------------------------------|---|---|---|---|
| | 1008 Steel (16 gauge and lighter) | 1010 Steel (15 gauge and heavier) | 1015 Steel (15 gauge and heavier) | 1022 Steel (15 gauge and heavier) |
| Carbon max. % | .10 | .13 | .18 | .23 |
| Manganese max. % | .50 | .60 | .60 | 1.00 |
| Phosphorus max. % | .030 | .030 | .030 | .030 |
| Sulphur max. % | .035 | .035 | .035 | .035 |

All steel tube products...

are manufactured per ASTM-A500 dimensions. Inquire as to compliance to specific grades. Please inquire about our ability to meet ASTM-A513 and other tube specifications.