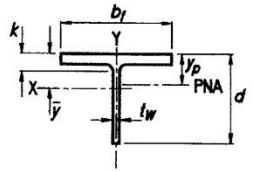
Related to Example 3-6 page 36




## Table 1–8 (continued)
# WT Shapes
### Dimensions

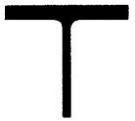
| Shape | Area, A | Depth, d | | Stem | | | | Flange | | | | Distance | | Work-able Gage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Thickness, $t_w$ | | $\frac{t_w}{2}$ | Area | Width, $b_f$ | | Thickness, $t_f$ | | k | | |
| | in.$^2$ | in. | | in. | | in. | in.$^2$ | in. | | in. | | in. | | in. |
| WT6×11[c] | 3.24 | 6.16 | 6 1/8 | 0.260 | 1/4 | 1/8 | 1.60 | 4.03 | 4 | 0.425 | 7/16 | 0.725 | 15/16 | 2 1/4[g] |
| ×9.5[c] | 2.79 | 6.08 | 6 1/8 | 0.235 | 1/4 | 1/8 | 1.43 | 4.01 | 4 | 0.350 | 3/8 | 0.650 | 7/8 | |
| ×8[c] | 2.36 | 6.00 | 6 | 0.220 | 1/4 | 1/8 | 1.32 | 3.99 | 4 | 0.265 | 1/4 | 0.565 | 13/16 | |
| ×7[c,v] | 2.08 | 5.96 | 6 | 0.200 | 3/16 | 1/8 | 1.19 | 3.97 | 4 | 0.225 | 1/4 | 0.525 | 3/4 | |
| WT5×56 | 16.5 | 5.68 | 5 5/8 | 0.755 | 3/4 | 3/8 | 4.29 | 10.4 | 10 3/8 | 1.25 | 1 1/4 | 1.75 | 1 15/16 | 5 1/2 |
| ×50 | 14.7 | 5.55 | 5 1/2 | 0.680 | 11/16 | 3/8 | 3.77 | 10.3 | 10 3/8 | 1.12 | 1 1/8 | 1.62 | 1 13/16 | |
| ×44 | 12.9 | 5.42 | 5 3/8 | 0.605 | 5/8 | 5/16 | 3.28 | 10.3 | 10 1/4 | 0.990 | 1 | 1.49 | 1 11/16 | |
| ×38.5 | 11.3 | 5.30 | 5 1/4 | 0.530 | 1/2 | 1/4 | 2.81 | 10.2 | 10 1/4 | 0.870 | 7/8 | 1.37 | 1 9/16 | |
| ×34 | 9.99 | 5.20 | 5 1/4 | 0.470 | 1/2 | 1/4 | 2.44 | 10.1 | 10 1/8 | 0.770 | 3/4 | 1.27 | 1 7/16 | |
| ×30 | 8.82 | 5.11 | 5 1/8 | 0.420 | 7/16 | 1/4 | 2.15 | 10.1 | 10 1/8 | 0.680 | 11/16 | 1.18 | 1 3/8 | |
| ×27 | 7.91 | 5.05 | 5 | 0.370 | 3/8 | 3/16 | 1.87 | 10.0 | 10 | 0.615 | 5/8 | 1.12 | 1 5/16 | |
| ×24.5 | 7.21 | 4.99 | 5 | 0.340 | 5/16 | 3/16 | 1.70 | 10.0 | 10 | 0.560 | 9/16 | 1.06 | 1 1/4 | |
| WT5×22.5 | 6.63 | 5.05 | 5 | 0.350 | 3/8 | 3/16 | 1.77 | 8.02 | 8 | 0.620 | 5/8 | 1.12 | 1 5/16 | |
| ×19.5 | 5.73 | 4.96 | 5 | 0.315 | 5/16 | 3/16 | 1.56 | 7.99 | 8 | 0.530 | 1/2 | 1.03 | 1 3/16 | |
| ×16.5 | 4.85 | 4.87 | 4 7/8 | 0.290 | 5/16 | 3/16 | 1.41 | 7.96 | 8 | 0.435 | 7/16 | 0.935 | 1 1/8 | |
| WT5×15 | 4.42 | 5.24 | 5 1/4 | 0.300 | 5/16 | 3/16 | 1.57 | 5.81 | 5 3/4 | 0.510 | 1/2 | 0.810 | 1 1/8 | 2 3/4[g] |
| ×13[c] | 3.81 | 5.17 | 5 1/8 | 0.260 | 1/4 | 1/8 | 1.34 | 5.77 | 5 3/4 | 0.440 | 7/16 | 0.740 | 1 1/16 | |
| ×11[c] | 3.24 | 5.09 | 5 1/8 | 0.240 | 1/4 | 1/8 | 1.22 | 5.75 | 5 3/4 | 0.360 | 3/8 | 0.660 | 15/16 | |
| WT5×9.5[c] | 2.81 | 5.12 | 5 1/8 | 0.250 | 1/4 | 1/8 | 1.28 | 4.02 | 4 | 0.395 | 3/8 | 0.695 | 15/16 | 2 1/4[g] |
| ×8.5[c] | 2.50 | 5.06 | 5 | 0.240 | 1/4 | 1/8 | 1.21 | 4.01 | 4 | 0.330 | 5/16 | 0.630 | 7/8 | |
| ×7.5[c] | 2.21 | 5.00 | 5 | 0.230 | 1/4 | 1/8 | 1.15 | 4.00 | 4 | 0.270 | 1/4 | 0.570 | 13/16 | |
| ×6[c,f] | 1.77 | 4.94 | 4 7/8 | 0.190 | 3/16 | 1/8 | 0.938 | 3.96 | 4 | 0.210 | 3/16 | 0.510 | 3/4 | |
| WT4×33.5 | 9.84 | 4.50 | 4 1/2 | 0.570 | 9/16 | 5/16 | 2.57 | 8.28 | 8 1/4 | 0.935 | 15/16 | 1.33 | 1 5/8 | 5 1/2 |
| ×29 | 8.54 | 4.38 | 4 3/8 | 0.510 | 1/2 | 1/4 | 2.23 | 8.22 | 8 1/4 | 0.810 | 13/16 | 1.20 | 1 1/2 | |
| ×24 | 7.05 | 4.25 | 4 1/4 | 0.400 | 3/8 | 3/16 | 1.70 | 8.11 | 8 1/8 | 0.685 | 11/16 | 1.08 | 1 3/8 | |
| ×20 | 5.87 | 4.13 | 4 1/8 | 0.360 | 3/8 | 3/16 | 1.49 | 8.07 | 8 1/8 | 0.560 | 9/16 | 0.954 | 1 1/4 | |
| ×17.5 | 5.14 | 4.06 | 4 | 0.310 | 5/16 | 3/16 | 1.26 | 8.02 | 8 | 0.495 | 1/2 | 0.889 | 1 3/16 | |
| ×15.5[f] | 4.56 | 4.00 | 4 | 0.285 | 5/16 | 3/16 | 1.14 | 8.00 | 8 | 0.435 | 7/16 | 0.829 | 1 1/8 | |
| WT4×14 | 4.12 | 4.03 | 4 | 0.285 | 5/16 | 3/16 | 1.15 | 6.54 | 6 1/2 | 0.465 | 7/16 | 0.859 | 15/16 | 3 1/2 |
| ×12 | 3.54 | 3.97 | 4 | 0.245 | 1/4 | 1/8 | 0.971 | 6.50 | 6 1/2 | 0.400 | 3/8 | 0.794 | 7/8 | 3 1/2 |

[c] Shape is slender for compression with $F_y = 50$ ksi.
[f] Shape exceeds compact limit for flexure with $F_y = 50$ ksi.
[g] The actual size, combination, and orientation of fastener components should be compared with the geometry of the cross-section to ensure compatibility.
[v] Shear strength controlled by buckling effects ($C_v < 1.0$) with $F_y = 50$ ksi.





## Table 1–8 (continued)
# WT Shapes
### Properties


WT6-WT4

| Nominal Wt. | Compact Section Criteria | | Axis X-X | | | | | | Axis Y-Y | | | | $Q_s$ | Torsional Properties | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\frac{b_f}{2t_f}$ | $\frac{h}{t_w}$ | I | S | r | $\bar{y}$ | Z | $y_p$ | I | S | r | Z | $F_y$ = 50 ksi | J | $C_w$ |
| lb/ft | | | in.$^4$ | in.$^3$ | in. | in. | in.$^3$ | in. | in.$^4$ | in.$^3$ | in. | in.$^3$ | | in.$^4$ | in.$^6$ |
| 11 | 4.74 | 23.7 | 11.7 | 2.59 | 1.90 | 1.63 | 4.63 | 0.402 | 2.33 | 1.15 | 0.847 | 1.83 | 0.711 | 0.146 | 0.137 |
| 9.5 | 5.72 | 25.9 | 10.1 | 2.28 | 1.90 | 1.65 | 4.11 | 0.348 | 1.88 | 0.939 | 0.821 | 1.49 | 0.598 | 0.0899 | 0.0934 |
| 8 | 7.53 | 27.3 | 8.70 | 2.04 | 1.92 | 1.74 | 3.72 | 0.639 | 1.41 | 0.706 | 0.773 | 1.13 | 0.539 | 0.0511 | 0.0678 |
| 7 | 8.82 | 29.8 | 7.67 | 1.83 | 1.92 | 1.76 | 3.32 | 0.760 | 1.18 | 0.593 | 0.753 | 0.947 | 0.451 | 0.0350 | 0.0493 |
| 56 | 4.17 | 7.52 | 28.6 | 6.40 | 1.32 | 1.21 | 13.4 | 0.791 | 118 | 22.6 | 2.67 | 34.6 | 1.00 | 7.50 | 16.9 |
| 50 | 4.62 | 8.16 | 24.5 | 5.56 | 1.29 | 1.13 | 11.4 | 0.711 | 103 | 20.0 | 2.65 | 30.5 | 1.00 | 5.41 | 11.9 |
| 44 | 5.18 | 8.96 | 20.8 | 4.77 | 1.27 | 1.06 | 9.65 | 0.631 | 89.3 | 17.4 | 2.63 | 26.5 | 1.00 | 3.75 | 8.02 |
| 38.5 | 5.86 | 10.0 | 17.4 | 4.05 | 1.24 | 0.990 | 8.06 | 0.555 | 76.8 | 15.1 | 2.60 | 22.9 | 1.00 | 2.55 | 5.31 |
| 34 | 6.58 | 11.1 | 14.9 | 3.49 | 1.22 | 0.932 | 6.85 | 0.493 | 66.7 | 13.2 | 2.58 | 20.0 | 1.00 | 1.78 | 3.62 |
| 30 | 7.41 | 12.2 | 12.9 | 3.04 | 1.21 | 0.884 | 5.87 | 0.438 | 58.1 | 11.5 | 2.57 | 17.5 | 1.00 | 1.23 | 2.46 |
| 27 | 8.15 | 13.6 | 11.1 | 2.64 | 1.19 | 0.836 | 5.05 | 0.395 | 51.7 | 10.3 | 2.56 | 15.6 | 1.00 | 0.909 | 1.78 |
| 24.5 | 8.93 | 14.7 | 10.0 | 2.39 | 1.18 | 0.807 | 4.52 | 0.361 | 46.7 | 9.34 | 2.54 | 14.1 | 1.00 | 0.693 | 1.33 |
| 22.5 | 6.47 | 14.4 | 10.2 | 2.47 | 1.24 | 0.907 | 4.65 | 0.413 | 26.7 | 6.65 | 2.01 | 10.1 | 1.00 | 0.753 | 0.981 |
| 19.5 | 7.53 | 15.7 | 8.84 | 2.16 | 1.24 | 0.876 | 3.99 | 0.359 | 22.5 | 5.64 | 1.98 | 8.57 | 1.00 | 0.487 | 0.616 |
| 16.5 | 9.15 | 16.8 | 7.71 | 1.93 | 1.26 | 0.869 | 3.48 | 0.305 | 18.3 | 4.60 | 1.94 | 7.00 | 1.00 | 0.291 | 0.356 |
| 15 | 5.70 | 17.5 | 9.28 | 2.24 | 1.45 | 1.10 | 4.01 | 0.380 | 8.35 | 2.87 | 1.37 | 4.41 | 1.00 | 0.310 | 0.273 |
| 13 | 6.56 | 19.9 | 7.86 | 1.91 | 1.44 | 1.06 | 3.39 | 0.330 | 7.05 | 2.44 | 1.36 | 3.75 | 0.904 | 0.201 | 0.173 |
| 11 | 7.99 | 21.2 | 6.88 | 1.72 | 1.46 | 1.07 | 3.02 | 0.282 | 5.71 | 1.99 | 1.33 | 3.05 | 0.837 | 0.119 | 0.107 |
| 9.5 | 5.09 | 20.5 | 6.68 | 1.74 | 1.54 | 1.28 | 3.10 | 0.349 | 2.15 | 1.07 | 0.874 | 1.67 | 0.873 | 0.116 | 0.0796 |
| 8.5 | 6.08 | 21.1 | 6.06 | 1.62 | 1.56 | 1.32 | 2.90 | 0.311 | 1.78 | 0.887 | 0.844 | 1.40 | 0.843 | 0.0776 | 0.0610 |
| 7.5 | 7.41 | 21.7 | 5.45 | 1.50 | 1.57 | 1.37 | 2.71 | 0.305 | 1.45 | 0.723 | 0.810 | 1.15 | 0.810 | 0.0518 | 0.0475 |
| 6 | 9.43 | 26.0 | 4.35 | 1.22 | 1.57 | 1.36 | 2.20 | 0.322 | 1.09 | 0.551 | 0.785 | 0.869 | 0.593 | 0.0272 | 0.0255 |
| 33.5 | 4.43 | 7.89 | 10.9 | 3.05 | 1.05 | 0.936 | 6.29 | 0.594 | 44.3 | 10.7 | 2.12 | 16.3 | 1.00 | 2.51 | 3.56 |
| 29 | 5.07 | 8.58 | 9.12 | 2.61 | 1.03 | 0.874 | 5.25 | 0.520 | 37.5 | 9.13 | 2.10 | 13.9 | 1.00 | 1.66 | 2.28 |
| 24 | 5.92 | 10.6 | 6.85 | 1.97 | 0.986 | 0.777 | 3.94 | 0.435 | 30.5 | 7.51 | 2.08 | 11.4 | 1.00 | 0.977 | 1.30 |
| 20 | 7.21 | 11.5 | 5.73 | 1.69 | 0.988 | 0.735 | 3.25 | 0.364 | 24.5 | 6.08 | 2.04 | 9.24 | 1.00 | 0.558 | 0.715 |
| 17.5 | 8.10 | 13.1 | 4.82 | 1.43 | 0.968 | 0.688 | 2.71 | 0.321 | 21.3 | 5.31 | 2.03 | 8.05 | 1.00 | 0.384 | 0.480 |
| 15.5 | 9.19 | 14.0 | 4.28 | 1.28 | 0.969 | 0.668 | 2.39 | 0.285 | 18.5 | 4.64 | 2.02 | 7.03 | 1.00 | 0.267 | 0.327 |
| 14 | 7.03 | 14.1 | 4.23 | 1.28 | 1.01 | 0.734 | 2.38 | 0.315 | 10.8 | 3.31 | 1.62 | 5.04 | 1.00 | 0.268 | 0.230 |
| 12 | 8.12 | 16.2 | 3.53 | 1.08 | 0.999 | 0.695 | 1.98 | 0.272 | 9.14 | 2.81 | 1.61 | 4.28 | 1.00 | 0.173 | 0.144 |