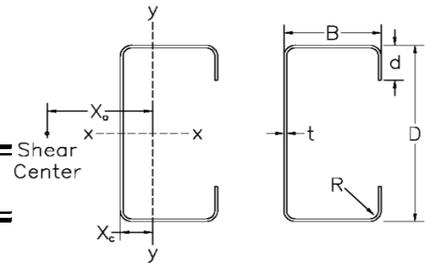
# Cee Sections: Gross Section Properties



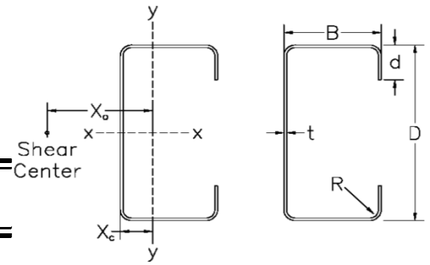

| Member | Ga. | Dimensions | | | | | Gross Section Properties | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Area | Weight | Axis X-X | | | Axis Y-Y | | | | Centroid | Shear Center | Torsional Propeties | | |
| | | D | B | d | t | R | A | | $I_x$ | $S_{x\ TOP\ \&\ BOT}$ | $r_x$ | $I_y$ | $S_{y\ LEFT}$ | $S_{y\ RIGHT}$ | $r_y$ | $X_c$ | $X_o$ | J | $C_w$ | j |
| | | (in) | (in) | (in) | (in) | (in) | ($in^2$) | (lb/ft) | ($in^4$) | ($in^3$) | (in) | ($in^4$) | ($in^3$) | ($in^3$) | (in) | (in) | (in) | ($in^4$) | ($in^6$) | (in) |
| 1 3/4" Cee | 16 | 2.5 | 1.375 | 0.375 | 0.059 | 0.1000 | 0.327 | 1.11 | 0.328 | 0.262 | 1.002 | 0.082 | 0.172 | 0.092 | 0.502 | 0.480 | 1.107 | 0.0004 | 0.11 | 1.566 |
| 4 x 2 | 12 | 4 | 2 | 0.88475 | 0.105 | 0.1875 | 0.938 | 3.19 | 2.278 | 1.139 | 1.558 | 0.550 | 0.720 | 0.445 | 0.766 | 0.764 | 1.776 | 0.0034 | 2.37 | 2.367 |
| 4 x 2 | 14 | 4 | 2 | 0.79975 | 0.07 | 0.1875 | 0.626 | 2.13 | 1.564 | 0.782 | 1.581 | 0.371 | 0.501 | 0.295 | 0.770 | 0.741 | 1.759 | 0.0010 | 1.53 | 2.400 |
| 4 x 2 | 16 | 4 | 2 | 0.773 | 0.059 | 0.1875 | 0.527 | 1.79 | 1.331 | 0.665 | 1.588 | 0.314 | 0.428 | 0.248 | 0.772 | 0.734 | 1.754 | 0.0006 | 1.27 | 2.410 |
| 4 x 2.5 | 12 | 4 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.043 | 3.55 | 2.676 | 1.338 | 1.601 | 0.938 | 0.956 | 0.617 | 0.948 | 0.981 | 2.254 | 0.0038 | 4.00 | 2.775 |
| 4 x 2.5 | 14 | 4 | 2.5 | 0.79975 | 0.07 | 0.1875 | 0.696 | 2.37 | 1.835 | 0.917 | 1.624 | 0.630 | 0.659 | 0.408 | 0.952 | 0.957 | 2.232 | 0.0011 | 2.56 | 2.797 |
| 4 x 2.5 | 16 | 4 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.586 | 1.99 | 1.560 | 0.780 | 1.631 | 0.533 | 0.561 | 0.343 | 0.953 | 0.949 | 2.225 | 0.0007 | 2.14 | 2.803 |
| 4 x 3.5 | 12 | 4 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.253 | 4.26 | 3.473 | 1.736 | 1.665 | 2.112 | 1.474 | 1.022 | 1.298 | 1.433 | 3.219 | 0.0046 | 8.86 | 3.654 |
| 4 x 3.5 | 14 | 4 | 3.5 | 0.79975 | 0.07 | 0.1875 | 0.836 | 2.84 | 2.375 | 1.188 | 1.686 | 1.414 | 1.006 | 0.675 | 1.301 | 1.405 | 3.191 | 0.0014 | 5.67 | 3.661 |
| 4 x 3.5 | 16 | 4 | 3.5 | 0.773 | 0.059 | 0.1875 | 0.704 | 2.39 | 2.018 | 1.009 | 1.693 | 1.193 | 0.855 | 0.567 | 1.302 | 1.396 | 3.182 | 0.0008 | 4.72 | 3.663 |
| 4 x 4 | 12 | 4 | 4 | 0.88475 | 0.105 | 0.1875 | 1.358 | 4.62 | 3.871 | 1.935 | 1.688 | 2.926 | 1.758 | 1.253 | 1.468 | 1.664 | 3.705 | 0.0050 | 12.19 | 4.111 |
| 4 x 4 | 14 | 4 | 4 | 0.79975 | 0.07 | 0.1875 | 0.906 | 3.08 | 2.646 | 1.323 | 1.709 | 1.957 | 1.197 | 0.828 | 1.470 | 1.635 | 3.674 | 0.0015 | 7.80 | 4.113 |
| 4 x 4 | 16 | 4 | 4 | 0.773 | 0.059 | 0.1875 | 0.763 | 2.60 | 2.247 | 1.124 | 1.716 | 1.651 | 1.015 | 0.695 | 1.471 | 1.626 | 3.665 | 0.0009 | 6.50 | 4.113 |
| 6 x 2.5 | 12 | 6 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.253 | 4.26 | 6.909 | 2.303 | 2.348 | 1.088 | 1.318 | 0.650 | 0.932 | 0.826 | 1.970 | 0.0046 | 8.56 | 3.282 |
| 6 x 2.5 | 14 | 6 | 2.5 | 0.79975 | 0.07 | 0.1875 | 0.836 | 2.84 | 4.687 | 1.562 | 2.368 | 0.729 | 0.909 | 0.430 | 0.934 | 0.802 | 1.952 | 0.0014 | 5.60 | 3.321 |
| 6 x 2.5 | 16 | 6 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.704 | 2.39 | 3.971 | 1.324 | 2.375 | 0.616 | 0.775 | 0.361 | 0.935 | 0.795 | 1.946 | 0.0008 | 4.70 | 3.334 |
| 6 x 3 | 12 | 6 | 3 | 0.88475 | 0.105 | 0.1875 | 1.358 | 4.62 | 7.821 | 2.607 | 2.400 | 1.690 | 1.646 | 0.856 | 1.115 | 1.027 | 2.422 | 0.0050 | 13.17 | 3.587 |
| 6 x 3 | 14 | 6 | 3 | 0.79975 | 0.07 | 0.1875 | 0.906 | 3.08 | 5.302 | 1.767 | 2.420 | 1.130 | 1.128 | 0.565 | 1.117 | 1.002 | 2.400 | 0.0015 | 8.60 | 3.615 |
| 6 x 3 | 16 | 6 | 3 | 0.773 | 0.059 | 0.1875 | 0.763 | 2.60 | 4.492 | 1.497 | 2.426 | 0.953 | 0.959 | 0.475 | 1.117 | 0.994 | 2.393 | 0.0009 | 7.20 | 3.624 |
| 6 x 3.5 | 12 | 6 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.463 | 4.98 | 8.733 | 2.911 | 2.443 | 2.455 | 1.988 | 1.084 | 1.295 | 1.235 | 2.880 | 0.0054 | 19.02 | 3.938 |
| 6 x 3.5 | 14 | 6 | 3.5 | 0.79975 | 0.07 | 0.1875 | 0.976 | 3.32 | 5.917 | 1.972 | 2.463 | 1.639 | 1.356 | 0.715 | 1.296 | 1.209 | 2.856 | 0.0016 | 12.41 | 3.958 |
| 6 x 3.5 | 16 | 6 | 3.5 | 0.773 | 0.059 | 0.1875 | 0.822 | 2.80 | 5.012 | 1.671 | 2.469 | 1.382 | 1.152 | 0.601 | 1.296 | 1.200 | 2.848 | 0.0010 | 10.39 | 3.965 |
| 6 x 4 | 12 | 6 | 4 | 0.88475 | 0.105 | 0.1875 | 1.568 | 5.33 | 9.646 | 3.215 | 2.480 | 3.399 | 2.347 | 1.332 | 1.472 | 1.448 | 3.344 | 0.0058 | 26.22 | 4.320 |
| 6 x 4 | 14 | 6 | 4 | 0.79975 | 0.07 | 0.1875 | 1.046 | 3.56 | 6.533 | 2.178 | 2.500 | 2.268 | 1.596 | 0.879 | 1.473 | 1.421 | 3.317 | 0.0017 | 17.10 | 4.333 |
| 6 x 4 | 16 | 6 | 4 | 0.773 | 0.059 | 0.1875 | 0.881 | 3.00 | 5.533 | 1.844 | 2.506 | 1.911 | 1.353 | 0.739 | 1.473 | 1.412 | 3.309 | 0.0010 | 14.31 | 4.337 |
| 7 x 2 | 12 | 7 | 2 | 0.88475 | 0.105 | 0.1875 | 1.253 | 4.26 | 8.691 | 2.483 | 2.633 | 0.669 | 1.145 | 0.473 | 0.731 | 0.585 | 1.430 | 0.0046 | 6.95 | 3.578 |
| 7 x 2 | 14 * | 7 | 2 | 0.79975 | 0.07 | 0.1875 | 0.836 | 2.84 | 5.881 | 1.680 | 2.653 | 0.450 | 0.798 | 0.313 | 0.734 | 0.563 | 1.418 | 0.0014 | 4.59 | 3.640 |
| 7 x 2 | 16 * | 7 | 2 | 0.773 | 0.059 | 0.1875 | 0.704 | 2.39 | 4.980 | 1.423 | 2.659 | 0.380 | 0.683 | 0.263 | 0.734 | 0.557 | 1.414 | 0.0008 | 3.86 | 3.659 |
| 7 x 2.5 | 12 * | 7 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.358 | 4.62 | 9.939 | 2.840 | 2.705 | 1.146 | 1.497 | 0.661 | 0.919 | 0.766 | 1.856 | 0.0050 | 11.74 | 3.682 |
| 7 x 2.5 | 14 * | 7 | 2.5 | 0.79975 | 0.07 | 0.1875 | 0.906 | 3.08 | 6.722 | 1.921 | 2.724 | 0.767 | 1.033 | 0.437 | 0.921 | 0.743 | 1.840 | 0.0015 | 7.72 | 3.729 |
| 7 x 2.5 | 16 * | 7 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.763 | 2.60 | 5.690 | 1.626 | 2.730 | 0.647 | 0.880 | 0.367 | 0.921 | 0.736 | 1.835 | 0.0009 | 6.48 | 3.744 |
| 7 x 3 | 12 | 7 | 3 | 0.88475 | 0.105 | 0.1875 | 1.463 | 4.98 | 11.187 | 3.196 | 2.765 | 1.782 | 1.863 | 0.872 | 1.104 | 0.957 | 2.294 | 0.0054 | 18.06 | 3.903 |
| 7 x 3 | 14 | 7 | 3 | 0.79975 | 0.07 | 0.1875 | 0.976 | 3.32 | 7.562 | 2.161 | 2.784 | 1.190 | 1.277 | 0.576 | 1.105 | 0.932 | 2.274 | 0.0016 | 11.85 | 3.938 |
| 7 x 3 | 16 | 7 | 3 | 0.773 | 0.059 | 0.1875 | 0.822 | 2.80 | 6.401 | 1.829 | 2.790 | 1.004 | 1.086 | 0.484 | 1.105 | 0.925 | 2.267 | 0.0010 | 9.94 | 3.949 |
| 7 x 3.5 | 12 | 7 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.568 | 5.33 | 12.435 | 3.553 | 2.816 | 2.592 | 2.243 | 1.106 | 1.286 | 1.156 | 2.739 | 0.0058 | 26.08 | 4.192 |

1. Section properties are calculated in accordance with the 2007 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: A1011 HSLAS Grade 55 Class 1 Steel or A653 SS Grade 55 Steel
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 4 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

* Section meets geometric criteria listed in D6.1.1 of the 2007 Ed. AISI NAS for CFS Members

Revised: Mar-13

# Cee Sections: Gross Section Properties



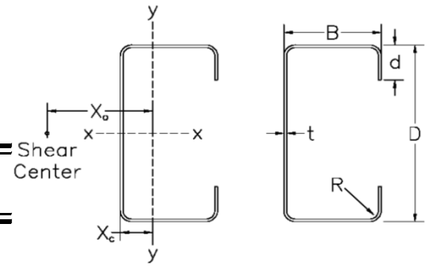

| Member | Ga. | Dimensions | | | | | Gross Section Properties | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Area | Weight | Axis X-X | | | Axis Y-Y | | | | Centroid | Shear Center | Torsional Propeties | | |
| | | D | B | d | t | R | A | | $I_x$ | $S_{x\ TOP\ \&\ BOT}$ | $r_x$ | $I_y$ | $S_{y\ LEFT}$ | $S_{y\ RIGHT}$ | $r_y$ | $X_c$ | $X_o$ | J | $C_w$ | j |
| | | (in) | (in) | (in) | (in) | (in) | ($in^2$) | (lb/ft) | ($in^4$) | ($in^3$) | (in) | ($in^4$) | ($in^3$) | ($in^3$) | (in) | (in) | (in) | ($in^4$) | ($in^6$) | (in) |
| 7 x 3.5 | 14 | 7 | 3.5 | 0.79975 | 0.07 | 0.1875 | 1.046 | 3.56 | 8.403 | 2.401 | 2.835 | 1.729 | 1.530 | 0.730 | 1.286 | 1.130 | 2.717 | 0.0017 | 17.09 | 4.218 |
| 7 x 3.5 | 16 | 7 | 3.5 | 0.773 | 0.059 | 0.1875 | 0.881 | 3.00 | 7.112 | 2.032 | 2.841 | 1.457 | 1.299 | 0.613 | 1.286 | 1.122 | 2.710 | 0.0010 | 14.33 | 4.226 |
| 7 x 4 | 12 | 7 | 4 | 0.88475 | 0.105 | 0.1875 | 1.673 | 5.69 | 13.683 | 3.910 | 2.860 | 3.591 | 2.639 | 1.361 | 1.465 | 1.361 | 3.192 | 0.0062 | 35.94 | 4.525 |
| 7 x 4 | 14 | 7 | 4 | 0.79975 | 0.07 | 0.1875 | 1.116 | 3.79 | 9.243 | 2.641 | 2.878 | 2.394 | 1.794 | 0.898 | 1.465 | 1.334 | 3.167 | 0.0018 | 23.55 | 4.544 |
| 7 x 4 | 16 | 7 | 4 | 0.773 | 0.059 | 0.1875 | 0.940 | 3.20 | 7.822 | 2.235 | 2.884 | 2.017 | 1.522 | 0.754 | 1.465 | 1.326 | 3.160 | 0.0011 | 19.74 | 4.550 |
| 8 x 2 | 12 | 8 | 2 | 0.88475 | 0.105 | 0.1875 | 1.358 | 4.62 | 12.012 | 3.003 | 2.974 | 0.697 | 1.282 | 0.479 | 0.716 | 0.544 | 1.345 | 0.0050 | 9.21 | 4.215 |
| 8 x 2 | 14 * | 8 | 2 | 0.79975 | 0.07 | 0.1875 | 0.906 | 3.08 | 8.109 | 2.027 | 2.992 | 0.468 | 0.895 | 0.317 | 0.719 | 0.523 | 1.334 | 0.0015 | 6.11 | 4.285 |
| 8 x 2 | 16 * | 8 | 2 | 0.773 | 0.059 | 0.1875 | 0.763 | 2.60 | 6.861 | 1.715 | 2.998 | 0.395 | 0.766 | 0.266 | 0.719 | 0.516 | 1.331 | 0.0009 | 5.14 | 4.306 |
| 8 x 2.5 | 12 * | 8 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.463 | 4.98 | 13.649 | 3.412 | 3.054 | 1.196 | 1.674 | 0.670 | 0.904 | 0.715 | 1.756 | 0.0054 | 15.56 | 4.177 |
| 8 x 2.5 | 14 * | 8 | 2.5 | 0.79975 | 0.07 | 0.1875 | 0.976 | 3.32 | 9.210 | 2.302 | 3.072 | 0.800 | 1.156 | 0.442 | 0.906 | 0.692 | 1.741 | 0.0016 | 10.27 | 4.232 |
| 8 x 2.5 | 16 * | 8 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.822 | 2.80 | 7.791 | 1.948 | 3.078 | 0.675 | 0.985 | 0.372 | 0.906 | 0.685 | 1.736 | 0.0010 | 8.63 | 4.249 |
| 8 x 3 | 12 | 8 | 3 | 0.88475 | 0.105 | 0.1875 | 1.568 | 5.33 | 15.285 | 3.821 | 3.122 | 1.862 | 2.078 | 0.885 | 1.090 | 0.896 | 2.180 | 0.0058 | 23.94 | 4.300 |
| 8 x 3 | 14 | 8 | 3 | 0.79975 | 0.07 | 0.1875 | 1.046 | 3.56 | 10.310 | 2.578 | 3.140 | 1.243 | 1.425 | 0.584 | 1.090 | 0.872 | 2.162 | 0.0017 | 15.76 | 4.342 |
| 8 x 3 | 16 | 8 | 3 | 0.773 | 0.059 | 0.1875 | 0.881 | 3.00 | 8.721 | 2.180 | 3.146 | 1.048 | 1.212 | 0.491 | 1.090 | 0.865 | 2.156 | 0.0010 | 13.23 | 4.355 |
| 8 x 3.5 | 12 | 8 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.673 | 5.69 | 16.921 | 4.230 | 3.180 | 2.712 | 2.496 | 1.124 | 1.273 | 1.086 | 2.614 | 0.0062 | 34.56 | 4.517 |
| 8 x 3.5 | 14 | 8 | 3.5 | 0.79975 | 0.07 | 0.1875 | 1.116 | 3.79 | 11.411 | 2.853 | 3.198 | 1.808 | 1.704 | 0.741 | 1.273 | 1.061 | 2.593 | 0.0018 | 22.73 | 4.550 |
| 8 x 3.5 | 16 | 8 | 3.5 | 0.773 | 0.059 | 0.1875 | 0.940 | 3.20 | 9.651 | 2.413 | 3.204 | 1.523 | 1.446 | 0.623 | 1.273 | 1.053 | 2.586 | 0.0011 | 19.08 | 4.559 |
| 8 x 4 | 12 | 8 | 4 | 0.88475 | 0.105 | 0.1875 | 1.778 | 6.05 | 18.558 | 4.639 | 3.230 | 3.760 | 2.929 | 1.384 | 1.454 | 1.284 | 3.056 | 0.0065 | 47.63 | 4.794 |
| 8 x 4 | 14 | 8 | 4 | 0.79975 | 0.07 | 0.1875 | 1.186 | 4.03 | 12.511 | 3.128 | 3.248 | 2.505 | 1.992 | 0.913 | 1.454 | 1.257 | 3.032 | 0.0019 | 31.31 | 4.819 |
| 9 x 2 | 12 | 9 | 2 | 0.88475 | 0.105 | 0.1875 | 1.463 | 4.98 | 16.013 | 3.558 | 3.308 | 0.721 | 1.417 | 0.483 | 0.702 | 0.509 | 1.271 | 0.0054 | 11.87 | 4.966 |
| 9 x 2 | 14 * | 9 | 2 | 0.79975 | 0.07 | 0.1875 | 0.976 | 3.32 | 10.790 | 2.398 | 3.326 | 0.483 | 0.991 | 0.320 | 0.704 | 0.488 | 1.261 | 0.0016 | 7.89 | 5.042 |
| 9 x 2 | 16 * | 9 | 2 | 0.773 | 0.059 | 0.1875 | 0.822 | 2.80 | 9.124 | 2.028 | 3.331 | 0.408 | 0.848 | 0.269 | 0.704 | 0.481 | 1.258 | 0.0010 | 6.64 | 5.066 |
| 9 x 2.5 | 12 * | 9 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.568 | 5.33 | 18.090 | 4.020 | 3.396 | 1.239 | 1.849 | 0.677 | 0.889 | 0.670 | 1.668 | 0.0058 | 20.05 | 4.766 |
| 9 x 2.5 | 14 * | 9 | 2.5 | 0.79975 | 0.07 | 0.1875 | 1.046 | 3.56 | 12.185 | 2.708 | 3.414 | 0.828 | 1.278 | 0.447 | 0.890 | 0.648 | 1.654 | 0.0017 | 13.27 | 4.827 |
| 9 x 2.5 | 16 * | 9 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.881 | 3.00 | 10.303 | 2.290 | 3.419 | 0.698 | 1.090 | 0.376 | 0.890 | 0.641 | 1.649 | 0.0010 | 11.15 | 4.846 |
| 9 x 3 | 12 * | 9 | 3 | 0.88475 | 0.105 | 0.1875 | 1.673 | 5.69 | 20.167 | 4.482 | 3.472 | 1.933 | 2.292 | 0.896 | 1.075 | 0.843 | 2.078 | 0.0062 | 30.86 | 4.777 |
| 9 x 3 | 14 * | 9 | 3 | 0.79975 | 0.07 | 0.1875 | 1.116 | 3.79 | 13.581 | 3.018 | 3.489 | 1.289 | 1.573 | 0.591 | 1.075 | 0.820 | 2.061 | 0.0018 | 20.37 | 4.826 |
| 9 x 3 | 16 * | 9 | 3 | 0.773 | 0.059 | 0.1875 | 0.940 | 3.20 | 11.482 | 2.552 | 3.494 | 1.086 | 1.338 | 0.497 | 1.075 | 0.812 | 2.056 | 0.0011 | 17.11 | 4.841 |
| 9 x 3.5 | 12 | 9 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.778 | 6.05 | 22.244 | 4.943 | 3.537 | 2.818 | 2.748 | 1.139 | 1.259 | 1.025 | 2.501 | 0.0065 | 44.55 | 4.912 |
| 9 x 3.5 | 14 | 9 | 3.5 | 0.79975 | 0.07 | 0.1875 | 1.186 | 4.03 | 14.977 | 3.328 | 3.554 | 1.877 | 1.876 | 0.751 | 1.258 | 1.001 | 2.481 | 0.0019 | 29.37 | 4.951 |
| 9 x 4 | 12 | 9 | 4 | 0.88475 | 0.105 | 0.1875 | 1.883 | 6.40 | 24.321 | 5.405 | 3.594 | 3.910 | 3.219 | 1.404 | 1.441 | 1.215 | 2.932 | 0.0069 | 61.39 | 5.126 |
| 9 x 4 | 14 | 9 | 4 | 0.79975 | 0.07 | 0.1875 | 1.256 | 4.27 | 16.372 | 3.638 | 3.611 | 2.604 | 2.189 | 0.926 | 1.440 | 1.189 | 2.910 | 0.0021 | 40.45 | 5.156 |
| 10 x 2 | 12 | 10 | 2 | 0.88475 | 0.105 | 0.1875 | 1.568 | 5.33 | 20.745 | 4.149 | 3.637 | 0.741 | 1.551 | 0.487 | 0.687 | 0.478 | 1.205 | 0.0058 | 14.94 | 5.830 |
| 10 x 2 | 14 | 10 | 2 | 0.79975 | 0.07 | 0.1875 | 1.046 | 3.56 | 13.598 | 2.792 | 3.654 | 0.497 | 1.086 | 0.322 | 0.689 | 0.457 | 1.196 | 0.0017 | 9.94 | 5.912 |
| 10 x 2 | 16 | 10 | 2 | 0.773 | 0.059 | 0.1875 | 0.881 | 3.00 | 11.798 | 2.360 | 3.659 | 0.419 | 0.930 | 0.271 | 0.690 | 0.451 | 1.193 | 0.0010 | 8.37 | 5.937 |

1. Section properties are calculated in accordance with the 2007 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: A1011 HSLAS Grade 55 Class 1 Steel or A653 SS Grade 55 Steel
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 4 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

* Section meets geometric criteria listed in D6.1.1 of the 2007 Ed. AISI NAS for CFS Members

Revised: Mar-13

# Cee Sections: Gross Section Properties




| Member | Ga. | Dimensions | | | | | Gross Section Properties | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Area | Weight | Axis X-X | | | Axis Y-Y | | | | Centroid | Shear Center | Torsional Propeties | | |
| | | D | B | d | t | R | A | | $I_x$ | $S_{x\ TOP\ \&\ BOT}$ | $r_x$ | $I_y$ | $S_{y\ LEFT}$ | $S_{y\ RIGHT}$ | $r_y$ | $X_c$ | $X_o$ | J | $C_w$ | j |
| | | (in) | (in) | (in) | (in) | (in) | ($in^2$) | (lb/ft) | ($in^4$) | ($in^3$) | (in) | ($in^4$) | ($in^3$) | ($in^3$) | (in) | (in) | (in) | ($in^4$) | ($in^6$) | (in) |
| 10 x 2.5 | 12 * | 10 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.673 | 5.69 | 23.316 | 4.663 | 3.733 | 1.277 | 2.022 | 0.683 | 0.874 | 0.632 | 1.588 | 0.0062 | 25.25 | 5.447 |
| 10 x 2.5 | 14 * | 10 | 2.5 | 0.79975 | 0.07 | 0.1875 | 1.116 | 3.79 | 15.684 | 3.137 | 3.750 | 0.853 | 1.399 | 0.451 | 0.874 | 0.610 | 1.576 | 0.0018 | 16.73 | 5.515 |
| 10 x 2.5 | 16 * | 10 | 2.5 | 0.773 | 0.059 | 0.1875 | 0.940 | 3.20 | 13.256 | 2.651 | 3.755 | 0.719 | 1.193 | 0.379 | 0.875 | 0.603 | 1.571 | 0.0011 | 14.07 | 5.535 |
| 10 x 3 | 12 * | 10 | 3 | 0.88475 | 0.105 | 0.1875 | 1.778 | 6.05 | 25.886 | 5.177 | 3.815 | 1.995 | 2.504 | 0.905 | 1.059 | 0.797 | 1.987 | 0.0065 | 38.87 | 5.334 |
| 10 x 3 | 14 * | 10 | 3 | 0.79975 | 0.07 | 0.1875 | 1.186 | 4.03 | 17.410 | 3.482 | 3.832 | 1.330 | 1.719 | 0.597 | 1.059 | 0.773 | 1.971 | 0.0019 | 25.70 | 5.388 |
| 10 x 3.5 | 12 * | 10 | 3.5 | 0.88475 | 0.105 | 0.1875 | 1.883 | 6.40 | 28.456 | 5.691 | 3.887 | 2.912 | 2.998 | 1.151 | 1.243 | 0.971 | 2.398 | 0.0069 | 56.11 | 5.377 |
| 10 x 3.5 | 14 * | 10 | 3.5 | 0.79975 | 0.07 | 0.1875 | 1.256 | 4.27 | 19.135 | 3.827 | 3.904 | 1.939 | 2.048 | 0.759 | 1.243 | 0.947 | 2.380 | 0.0021 | 37.05 | 5.421 |
| 10 x 4 | 12 | 10 | 4 | 0.88475 | 0.105 | 0.1875 | 1.988 | 6.76 | 31.026 | 6.205 | 3.950 | 4.045 | 3.506 | 1.421 | 1.426 | 1.154 | 2.819 | 0.0073 | 77.31 | 5.520 |
| 10 x 4 | 14 | 10 | 4 | 0.79975 | 0.07 | 0.1875 | 1.326 | 4.51 | 20.861 | 4.172 | 3.967 | 2.692 | 2.386 | 0.937 | 1.425 | 1.128 | 2.799 | 0.0022 | 51.02 | 5.555 |
| 12 x 2.5 | 12 | 12 | 2.5 | 0.88475 | 0.105 | 0.1875 | 1.883 | 6.40 | 36.329 | 6.055 | 4.392 | 1.340 | 2.363 | 0.693 | 0.843 | 0.567 | 1.452 | 0.0069 | 37.83 | 7.084 |
| 12 x 2.5 | 14 | 12 | 2.5 | 0.79975 | 0.07 | 0.1875 | 1.256 | 4.27 | 24.390 | 4.065 | 4.407 | 0.894 | 1.640 | 0.457 | 0.844 | 0.546 | 1.441 | 0.0021 | 25.12 | 7.163 |
| 12 x 3 | 12 | 12 | 3 | 0.88475 | 0.105 | 0.1875 | 1.988 | 6.76 | 40.043 | 6.674 | 4.488 | 2.099 | 2.923 | 0.920 | 1.027 | 0.718 | 1.829 | 0.0073 | 58.28 | 6.680 |
| 12 x 3 | 14 | 12 | 3 | 0.79975 | 0.07 | 0.1875 | 1.326 | 4.51 | 26.880 | 4.480 | 4.503 | 1.398 | 2.010 | 0.607 | 1.027 | 0.695 | 1.814 | 0.0022 | 38.61 | 6.746 |
| 12 x 3.5 | 12 | 12 | 3.5 | 0.88475 | 0.105 | 0.1875 | 2.093 | 7.12 | 43.758 | 7.293 | 4.572 | 3.071 | 3.494 | 1.172 | 1.211 | 0.879 | 2.219 | 0.0077 | 84.16 | 6.510 |
| 12 x 4 | 12 | 12 | 4 | 0.88475 | 0.105 | 0.1875 | 2.198 | 7.47 | 47.472 | 7.912 | 4.647 | 4.275 | 4.078 | 1.449 | 1.395 | 1.048 | 2.621 | 0.0081 | 115.97 | 6.490 |

1. Section properties are calculated in accordance with the 2007 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: A1011 HSLAS Grade 55 Class 1 Steel or A653 SS Grade 55 Steel
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 4 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

* Section meets geometric criteria listed in D6.1.1 of the 2007 Ed. AISI NAS for CFS Members

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