



TABLE 3.1-3(A)

**UNIVERSAL BEAMS
DIMENSIONS AND PROPERTIES**

| Designation | DIMENSIONS | | | | | | RATIOS | | PROPERTIES | | | | | | | | | | |
|-------------|--------------------|-----------------------------|---------------------------------|------------------------------|----------------------------|--------------------------------------|-------------------|----------------------------|-----------------------------------|---------------------------------|---------------------------------|--------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|------|------|------|
| | Depth of Section d | Flange Width b _f | Flange Thickness t _f | Web Thickness t _w | Root Radius r ₁ | Depth Between Flanges d ₁ | $\frac{d_1}{t_w}$ | $\frac{(b_f - t_w)}{2t_f}$ | Gross Section Area A _g | About x-axis | | About y-axis | | Torsion Constant J | Warping Constant I _w | | | | |
| kg/m | mm | mm | mm | mm | mm | mm | | | mm ² | 10 ⁶ mm ⁴ | 10 ³ mm ³ | mm | 10 ⁶ mm ⁴ | 10 ³ mm ³ | mm | 10 ⁹ mm ⁶ | | | |
| 610UB 125 | 612 | 229 | 19.6 | 11.9 | 14.0 | 572 | 48.1 | 5.54 | 16000 | 986 | 3230 | 3680 | 249 | 39.3 | 343 | 536 | 49.6 | 1560 | 3450 |
| 113 | 607 | 228 | 17.3 | 11.2 | 14.0 | 572 | 51.1 | 6.27 | 14500 | 875 | 2880 | 3290 | 246 | 34.3 | 300 | 469 | 48.7 | 1140 | 2980 |
| 101 | 602 | 228 | 14.8 | 10.6 | 14.0 | 572 | 54.0 | 7.34 | 13000 | 761 | 2530 | 2900 | 242 | 29.3 | 257 | 402 | 47.5 | 790 | 2530 |
| 530UB 92.4 | 533 | 209 | 15.6 | 10.2 | 14.0 | 502 | 49.2 | 6.37 | 11800 | 554 | 2080 | 2370 | 217 | 23.8 | 228 | 355 | 44.9 | 775 | 1590 |
| 82.0 | 528 | 209 | 13.2 | 9.6 | 14.0 | 502 | 52.3 | 7.55 | 10500 | 477 | 1810 | 2070 | 213 | 20.1 | 193 | 301 | 43.8 | 526 | 1330 |
| 460UB 82.1 | 460 | 191 | 16.0 | 9.9 | 11.4 | 428 | 43.3 | 5.66 | 10500 | 372 | 1610 | 1840 | 188 | 18.6 | 195 | 303 | 42.2 | 701 | 919 |
| 74.6 | 457 | 190 | 14.5 | 9.1 | 11.4 | 428 | 47.1 | 6.24 | 9520 | 335 | 1460 | 1660 | 188 | 16.6 | 175 | 271 | 41.8 | 530 | 815 |
| 67.1 | 454 | 190 | 12.7 | 8.5 | 11.4 | 428 | 50.4 | 7.15 | 8580 | 296 | 1300 | 1480 | 186 | 14.5 | 153 | 238 | 41.2 | 378 | 708 |
| 410UB 59.7 | 406 | 178 | 12.8 | 7.8 | 11.4 | 381 | 48.8 | 6.65 | 7640 | 216 | 1060 | 1200 | 168 | 12.1 | 135 | 209 | 39.7 | 337 | 467 |
| 53.7 | 403 | 178 | 10.9 | 7.6 | 11.4 | 381 | 50.1 | 7.82 | 6890 | 188 | 933 | 1060 | 165 | 10.3 | 115 | 179 | 38.6 | 234 | 394 |
| 360UB 56.7 | 359 | 172 | 13.0 | 8.0 | 11.4 | 333 | 41.6 | 6.31 | 7240 | 161 | 899 | 1010 | 149 | 11.0 | 128 | 198 | 39.0 | 338 | 330 |
| 50.7 | 356 | 171 | 11.5 | 7.3 | 11.4 | 333 | 45.6 | 7.12 | 6470 | 142 | 798 | 897 | 148 | 9.60 | 112 | 173 | 38.5 | 241 | 284 |
| 44.7 | 352 | 171 | 9.7 | 6.9 | 11.4 | 333 | 48.2 | 8.46 | 5720 | 121 | 689 | 777 | 146 | 8.10 | 94.7 | 146 | 37.6 | 161 | 237 |
| 310UB 46.2 | 307 | 166 | 11.8 | 6.7 | 11.4 | 284 | 42.3 | 6.75 | 5930 | 100 | 654 | 729 | 130 | 9.01 | 109 | 166 | 39.0 | 233 | 197 |
| 40.4 | 304 | 165 | 10.2 | 6.1 | 11.4 | 284 | 46.5 | 7.79 | 5210 | 86.4 | 569 | 633 | 129 | 7.65 | 92.7 | 142 | 38.3 | 157 | 165 |
| 32.0 | 298 | 149 | 8.0 | 5.5 | 13.0 | 282 | 51.3 | 8.97 | 4080 | 63.2 | 424 | 475 | 124 | 4.42 | 59.3 | 91.8 | 32.9 | 86.5 | 92.9 |
| 250UB 37.3 | 256 | 146 | 10.9 | 6.4 | 8.9 | 234 | 36.6 | 6.40 | 4750 | 55.7 | 435 | 486 | 108 | 5.66 | 77.5 | 119 | 34.5 | 158 | 85.2 |
| 31.4 | 252 | 146 | 8.6 | 6.1 | 8.9 | 234 | 38.4 | 8.13 | 4010 | 44.5 | 354 | 397 | 105 | 4.47 | 61.2 | 94.2 | 33.4 | 89.3 | 65.9 |
| 25.7 | 248 | 124 | 8.0 | 5.0 | 12.0 | 232 | 46.4 | 7.44 | 3270 | 35.4 | 285 | 319 | 104 | 2.55 | 41.1 | 63.6 | 27.9 | 67.4 | 36.7 |
| 200UB 29.8 | 207 | 134 | 9.6 | 6.3 | 8.9 | 188 | 29.8 | 6.65 | 3820 | 29.1 | 281 | 316 | 87.3 | 3.86 | 57.5 | 88.4 | 31.8 | 105 | 37.6 |
| 25.4 | 203 | 133 | 7.8 | 5.8 | 8.9 | 188 | 32.3 | 8.15 | 3230 | 23.6 | 232 | 260 | 85.4 | 3.06 | 46.1 | 70.9 | 30.8 | 62.7 | 29.2 |
| 22.3 | 202 | 133 | 7.0 | 5.0 | 8.9 | 188 | 37.5 | 9.14 | 2870 | 21.0 | 208 | 231 | 85.5 | 2.75 | 41.3 | 63.4 | 31.0 | 45.0 | 26.0 |
| 18.2 | 198 | 99.0 | 7.0 | 4.5 | 11.0 | 184 | 40.9 | 6.75 | 2320 | 15.8 | 160 | 180 | 82.6 | 1.14 | 23.0 | 35.7 | 22.1 | 38.6 | 10.4 |
| 180UB 22.2 | 179 | 90.0 | 10.0 | 6.0 | 8.9 | 159 | 26.5 | 4.20 | 2820 | 15.3 | 171 | 195 | 73.6 | 1.22 | 27.1 | 42.3 | 20.8 | 81.6 | 8.71 |
| 18.1 | 175 | 90.0 | 8.0 | 5.0 | 8.9 | 159 | 31.8 | 5.31 | 2300 | 11.7 | 139 | 157 | 72.6 | 0.975 | 21.7 | 33.7 | 20.6 | 44.8 | 6.80 |
| 16.1 | 173 | 90.0 | 7.0 | 4.5 | 8.9 | 159 | 35.3 | 6.11 | 2040 | 10.6 | 123 | 138 | 72.0 | 0.853 | 19.0 | 29.4 | 20.4 | 31.5 | 5.88 |
| 150UB 18.0 | 155 | 75.0 | 9.5 | 6.0 | 8.0 | 136 | 22.7 | 3.63 | 2300 | 9.05 | 117 | 135 | 62.8 | 0.672 | 17.9 | 28.2 | 17.1 | 60.5 | 3.56 |
| 14.0 | 150 | 75.0 | 7.0 | 5.0 | 8.0 | 136 | 27.2 | 5.00 | 1780 | 6.66 | 88.8 | 102 | 61.1 | 0.495 | 13.2 | 20.8 | 16.6 | 28.1 | 2.53 |