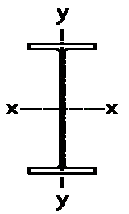


Universal Beams - Grade S275
AXIAL LOAD and BENDING - Resistance and Capacity Tables
Pc & Ag.py (kN) - Mc, Mb, Mbs & Z.y (kN.m)

Values are only valid up to the limiting value of 'Fc limit'. The lengths given represent:-
 Effective Length 'Le' for Pc & Mb and Actual Length 'L' for Mbs.



Read the guidance notes before using values from the shaded zones.

| Section | Fc limit | Mcx | Mcy | | 1m | 2m | 3m | 4m | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | 13m | 14m | 15m |
|---|----------|------|------|------|------|------|------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|------|
| 406x178UB 60 Zx.py = 292 Zy.py = 37.2 Ag.py = 2104 | 2104 | 225 | 28.6 | Pcx | 2008 | 2008 | 2007 | 1982 | 1955 | 1927 | 1895 | 1858 | 1815 | 1765 | 1715 | 1690 | 1599 | 1499 | 1393 |
| | | | | Pcy | 1952 | 1735 | 1457 | 1065 | 763 | 561 | 426 | 334 | 268 | 220 | 184 | 156 | 133 | ~ | ~ |
| | 1715 | 292 | 44.6 | Pcx | 2104 | 2104 | 2101 | 2074 | 2046 | 2015 | 1980 | 1939 | 1892 | 1836 | 1769 | 1690 | 1599 | 1499 | 1393 |
| | | | | Pcy | 2041 | 1805 | 1457 | 1065 | 763 | 561 | 426 | 334 | 268 | 220 | 184 | 156 | 133 | ~ | ~ |
| 622 | 330 | 44.6 | Mb | 292 | 277 | 229 | 185 | 149 | 123 | 104 | 90.3 | 79.5 | 71.1 | 64.3 | 58.7 | 54.1 | ~ | ~ | |
| | | | Mbs | 292 | 292 | 284 | 252 | 219 | 186 | 156 | 131 | 111 | 94.0 | 80.6 | 69.8 | 60.9 | ~ | ~ | |
| 1896 | 187 | 23.1 | Pcx | 1785 | 1785 | 1783 | 1761 | 1737 | 1711 | 1682 | 1648 | 1609 | 1563 | 1508 | 1483 | 1419 | 1325 | 1227 | |
| | | | Pcy | 1732 | 1532 | 1280 | 921 | 655 | 480 | 364 | 285 | 229 | 187 | 156 | 132 | 114 | ~ | ~ | |
| 406x178UB 54 Zx.py = 256 Zy.py = 31.6 Ag.py = 1896 | 1483 | 256 | 37.9 | Pcx | 1896 | 1896 | 1892 | 1867 | 1841 | 1812 | 1779 | 1741 | 1697 | 1643 | 1580 | 1505 | 1419 | 1325 | 1227 |
| | | | | Pcy | 1834 | 1611 | 1280 | 921 | 655 | 480 | 364 | 285 | 229 | 187 | 156 | 132 | 114 | ~ | ~ |
| | 578 | 290 | 37.9 | Mb | 256 | 240 | 196 | 156 | 125 | 102 | 85.3 | 73.2 | 64.0 | 56.9 | 51.3 | 46.7 | 42.8 | ~ | ~ |
| | | | | Mbs | 256 | 256 | 246 | 217 | 187 | 158 | 132 | 110 | 92.5 | 78.5 | 67.2 | 58.1 | 50.6 | ~ | ~ |
| 406x140UB 46 Zx.py = 214 Zy.py = 20.8 Ag.py = 1613 | 1613 | 122 | 11.9 | Pcx | 1447 | 1447 | 1447 | 1429 | 1410 | 1389 | 1366 | 1340 | 1310 | 1274 | 1231 | 1181 | 1123 | 1057 | 1019 |
| | | | | Pcy | 1370 | 1137 | 836 | 542 | 369 | 265 | 199 | 155 | 123 | 101 | ~ | ~ | ~ | ~ | |
| | 1019 | 214 | 25.0 | Pcx | 1613 | 1613 | 1609 | 1587 | 1565 | 1540 | 1511 | 1479 | 1440 | 1394 | 1339 | 1273 | 1199 | 1118 | 1034 |
| | | | | Pcy | 1515 | 1229 | 836 | 542 | 369 | 265 | 199 | 155 | 123 | 101 | ~ | ~ | ~ | ~ | |
| 398 | 244 | 25.0 | Mb | 214 | 181 | 137 | 103 | 79.7 | 64.5 | 54.1 | 46.6 | 40.9 | 36.5 | ~ | ~ | ~ | ~ | | |
| | | | Mbs | 214 | 214 | 186 | 154 | 124 | 98.5 | 78.8 | 63.9 | 52.7 | 44.1 | ~ | ~ | ~ | ~ | | |
| 406x140UB 39 Zx.py = 173 Zy.py = 15.9 Ag.py = 1365 | 1365 | 87.2 | 8.00 | Pcx | 1182 | 1182 | 1181 | 1166 | 1150 | 1133 | 1114 | 1092 | 1066 | 1036 | 1000 | 958 | 909 | 854 | 796 |
| | | | | Pcy | 1113 | 911 | 659 | 420 | 284 | 203 | 152 | 118 | 94.5 | 77.2 | ~ | ~ | ~ | ~ | |
| | 772 | 173 | 19.1 | Pcx | 1365 | 1365 | 1360 | 1342 | 1322 | 1300 | 1274 | 1245 | 1209 | 1167 | 1116 | 1056 | 989 | 917 | 844 |
| | | | | Pcy | 1273 | 1006 | 659 | 420 | 284 | 203 | 152 | 118 | 94.5 | 77.2 | ~ | ~ | ~ | ~ | |
| 328 | 199 | 19.1 | Mb | 173 | 143 | 105 | 76.6 | 58.3 | 46.4 | 38.4 | 32.7 | 28.5 | 25.2 | ~ | ~ | ~ | ~ | | |
| | | | Mbs | 173 | 172 | 146 | 119 | 94.0 | 73.9 | 58.7 | 47.4 | 38.9 | 32.5 | ~ | ~ | ~ | ~ | | |
| 356x171UB 67 Zx.py = 295 Zy.py = 43.3 Ag.py = 2351 | 2351 | 333 | 51.9 | Pcx | 2351 | 2351 | 2338 | 2303 | 2266 | 2225 | 2176 | 2119 | 2050 | 1965 | 1864 | 1747 | 1619 | 1487 | 1357 |
| | | | | Pcy | 2282 | 2021 | 1637 | 1200 | 861 | 634 | 482 | 378 | 303 | 249 | 208 | 176 | 151 | ~ | ~ |
| | 1995 | 278 | 42.5 | Mb | 333 | 310 | 257 | 210 | 174 | 147 | 127 | 112 | 100 | 90.2 | 82.4 | 75.8 | 70.3 | ~ | ~ |
| | | | | Mbs | 333 | 333 | 324 | 288 | 250 | 213 | 179 | 151 | 127 | 108 | 92.9 | 80.4 | 70.2 | ~ | ~ |
| 356x171UB 57 Zx.py = 246 Zy.py = 35.4 Ag.py = 1995 | 1995 | 278 | 42.5 | Pcx | 1995 | 1995 | 1983 | 1953 | 1921 | 1885 | 1843 | 1792 | 1731 | 1656 | 1567 | 1464 | 1352 | 1238 | 1128 |
| | | | | Pcy | 1933 | 1704 | 1365 | 990 | 706 | 518 | 394 | 308 | 248 | 203 | 169 | 143 | 123 | ~ | ~ |
| | 1785 | 198 | 28.0 | Mb | 278 | 256 | 208 | 167 | 135 | 112 | 95.6 | 83.3 | 73.8 | 66.3 | 60.2 | 55.2 | 51.0 | ~ | ~ |
| | | | | Mbs | 278 | 278 | 268 | 237 | 205 | 174 | 146 | 122 | 103 | 87.3 | 74.8 | 64.7 | 56.5 | ~ | ~ |
| 356x171UB 51 Zx.py = 219 Zy.py = 31.1 Ag.py = 1785 | 1785 | 198 | 28.0 | Pcx | 1753 | 1753 | 1742 | 1716 | 1688 | 1656 | 1646 | 1600 | 1544 | 1476 | 1395 | 1301 | 1200 | 1097 | 998 |
| | | | | Pcy | 1698 | 1518 | 1209 | 871 | 620 | 454 | 345 | 270 | 217 | 178 | 148 | 125 | 108 | ~ | ~ |
| | 1651 | 219 | 37.3 | Pcx | 1785 | 1785 | 1773 | 1746 | 1717 | 1684 | 1646 | 1600 | 1544 | 1476 | 1395 | 1301 | 1200 | 1097 | 998 |
| | | | | Pcy | 1727 | 1518 | 1209 | 871 | 620 | 454 | 345 | 270 | 217 | 178 | 148 | 125 | 108 | ~ | ~ |
| 581 | 246 | 37.3 | Mb | 219 | 205 | 169 | 136 | 110 | 91.3 | 77.5 | 67.3 | 59.4 | 53.2 | 48.3 | 44.2 | 40.7 | ~ | ~ | |
| | | | Mbs | 219 | 219 | 211 | 186 | 160 | 136 | 113 | 94.7 | 79.7 | 67.6 | 57.9 | 50.0 | 43.6 | ~ | ~ | |
| 356x171UB 45 Zx.py = 189 Zy.py = 26.1 Ag.py = 1576 | 1576 | 152 | 21.1 | Pcx | 1516 | 1516 | 1506 | 1483 | 1459 | 1431 | 1398 | 1360 | 1337 | 1292 | 1217 | 1131 | 1039 | 948 | 860 |
| | | | | Pcy | 1465 | 1329 | 1043 | 741 | 524 | 383 | 290 | 227 | 182 | 149 | 124 | 105 | 90 | ~ | ~ |
| | 1337 | 189 | 31.3 | Pcx | 1576 | 1576 | 1565 | 1541 | 1514 | 1484 | 1449 | 1407 | 1355 | 1292 | 1217 | 1131 | 1039 | 948 | 860 |
| | | | | Pcy | 1521 | 1329 | 1043 | 741 | 524 | 383 | 290 | 227 | 182 | 149 | 124 | 105 | 90.3 | ~ | ~ |
| 498 | 213 | 31.3 | Mb | 189 | 175 | 143 | 113 | 90.1 | 73.7 | 61.9 | 53.2 | 46.7 | 41.6 | 37.5 | 34.2 | 31.5 | ~ | ~ | |
| | | | Mbs | 189 | 189 | 180 | 158 | 135 | 114 | 94.5 | 78.6 | 66.0 | 55.8 | 47.8 | 41.2 | 35.9 | ~ | ~ | |
| 356x127UB 39 Zx.py = 158 Zy.py = 15.6 Ag.py = 1369 | 1369 | 114 | 11.2 | Pcx | 1282 | 1282 | 1274 | 1255 | 1234 | 1210 | 1183 | 1150 | 1110 | 1061 | 1045 | 968 | 887 | 807 | 731 |
| | | | | Pcy | 1188 | 959 | 598 | 374 | 251 | 179 | 134 | 104 | 83.0 | ~ | ~ | ~ | ~ | ~ | |
| | 1055 | 158 | 18.7 | Pcx | 1369 | 1369 | 1358 | 1336 | 1313 | 1286 | 1255 | 1217 | 1170 | 1113 | 1045 | 968 | 887 | 807 | 731 |
| | | | | Pcy | 1261 | 959 | 598 | 374 | 251 | 179 | 134 | 104 | 83.0 | ~ | ~ | ~ | ~ | ~ | |
| 422 | 181 | 18.7 | Mb | 158 | 126 | 92.0 | 68.5 | 53.7 | 43.9 | 37.2 | 32.3 | 28.6 | ~ | ~ | ~ | ~ | ~ | | |
| | | | Mbs | 158 | 154 | 129 | 102 | 79.0 | 61.2 | 48.2 | 38.7 | 31.7 | ~ | ~ | ~ | ~ | ~ | | |
| | | | | Mb | 181 | 138 | 97.2 | 71.1 | 55.2 | 45.0 | 37.9 | 32.9 | 29.0 | ~ | ~ | ~ | ~ | | |
| | | | | Mbs | 181 | 177 | 147 | 117 | 90.3 | 70.0 | 55.1 | 44.3 | 36.2 | ~ | ~ | ~ | ~ | ~ | |