



These conversion values are approximate and for guidance only

| ROCKWELL        |                |                |                |                | VICKERS                     | TUKON KNOOP                 | BRINELL               | TENSILE STRENGTH |      |
|-----------------|----------------|----------------|----------------|----------------|-----------------------------|-----------------------------|-----------------------|------------------|------|
| STANDARD        |                | SUPERFICIAL    |                |                | 10 kg<br>Diamond<br>Pyramid | 500 gr &<br>Over<br>Diamond | 3000 kg<br>10 mm Ball | Approx.<br>Kpsi  | Mpa  |
| C               | A              | 15-N           | 30-N           | 45-N           |                             |                             |                       |                  |      |
| Brale<br>150 kg | Brale<br>60 kg | Brale<br>15 kg | Brale<br>30 kg | Brale<br>45 kg |                             |                             |                       |                  |      |
| 80              | 92.0           | 96.5           | 92.0           | 87.0           | 1865                        | -                           | -                     | -                | -    |
| 79              | 91.5           | -              | 91.5           | 86.5           | 1787                        | -                           | -                     | -                | -    |
| 78              | 91.0           | 96.0           | 91.0           | 85.5           | 1710                        | -                           | -                     | -                | -    |
| 77              | 90.5           | -              | 90.5           | 84.5           | 1633                        | -                           | -                     | -                | -    |
| 76              | 90.0           | 95.5           | 90.0           | 83.5           | 1556                        | -                           | -                     | -                | -    |
| 75              | 89.5           | -              | 89.0           | 82.5           | 1478                        | -                           | -                     | -                | -    |
| 74              | 89.0           | 95.0           | 88.5           | 81.5           | 1400                        | -                           | -                     | -                | -    |
| 73              | 88.5           | -              | 88.0           | 80.5           | 1323                        | -                           | -                     | -                | -    |
| 72              | 88.0           | 94.5           | 87.0           | 79.5           | 1245                        | -                           | -                     | -                | -    |
| 71              | 87.0           | -              | 86.5           | 78.5           | 1160                        | -                           | -                     | -                | -    |
| 70              | 86.5           | 94.0           | 86.0           | 77.5           | 1076                        | -                           | -                     | -                | -    |
| 69              | 86.0           | 93.5           | 85.0           | 76.5           | 1004                        | -                           | -                     | -                | -    |
| 68              | 85.6           | 93.2           | 84.4           | 75.4           | 940                         | 920                         | -                     | -                | -    |
| 67              | 85.0           | 92.9           | 83.6           | 74.2           | 900                         | 895                         | -                     | -                | -    |
| 66              | 84.5           | 92.5           | 82.8           | 73.3           | 865                         | 870                         | -                     | -                | -    |
| 65              | 83.9           | 92.2           | 81.9           | 72.0           | 832                         | 846                         | 739                   | -                | -    |
| 64              | 83.4           | 91.8           | 81.1           | 71.0           | 800                         | 822                         | 722                   | -                | -    |
| 63              | 82.8           | 91.4           | 80.1           | 69.9           | 772                         | 799                         | 705                   | -                | -    |
| 62              | 82.3           | 91.1           | 79.3           | 68.8           | 746                         | 776                         | 688                   | -                | -    |
| 61              | 81.8           | 90.7           | 78.4           | 67.7           | 720                         | 754                         | 670                   | -                | -    |
| 60              | 81.2           | 90.2           | 77.5           | 66.6           | 697                         | 732                         | 654                   | -                | -    |
| 59              | 80.7           | 89.8           | 76.6           | 65.5           | 674                         | 710                         | 634                   | 351              | 2420 |
| 58              | 80.1           | 89.3           | 75.7           | 64.3           | 653                         | 690                         | 615                   | 338              | 2331 |
| 57              | 79.6           | 88.9           | 74.8           | 63.2           | 633                         | 670                         | 595                   | 325              | 2241 |
| 56              | 79.0           | 88.3           | 73.9           | 62.0           | 613                         | 650                         | 577                   | 313              | 2158 |
| 55              | 78.5           | 87.9           | 73.0           | 60.9           | 595                         | 630                         | 560                   | 301              | 2075 |
| 54              | 78.0           | 87.4           | 72.0           | 59.8           | 577                         | 612                         | 543                   | 292              | 2013 |
| 53              | 77.4           | 86.9           | 71.2           | 58.6           | 560                         | 594                         | 525                   | 283              | 1951 |
| 52              | 76.8           | 86.4           | 70.2           | 57.4           | 544                         | 576                         | 512                   | 273              | 1882 |
| 51              | 76.3           | 85.9           | 69.4           | 56.1           | 528                         | 558                         | 496                   | 264              | 1820 |
| 50              | 75.9           | 85.5           | 68.5           | 55.0           | 513                         | 542                         | 481                   | 255              | 1758 |
| 49              | 75.2           | 85.0           | 67.6           | 53.8           | 498                         | 526                         | 469                   | 246              | 1696 |
| 48              | 74.7           | 84.5           | 66.7           | 52.5           | 484                         | 510                         | 455                   | 237              | 1634 |
| 47              | 74.1           | 83.9           | 65.8           | 51.4           | 471                         | 495                         | 443                   | 229              | 1579 |
| 46              | 73.6           | 83.5           | 64.8           | 50.3           | 458                         | 480                         | 432                   | 221              | 1524 |
| 45              | 73.1           | 83.0           | 64.0           | 49.0           | 446                         | 466                         | 421                   | 215              | 1482 |
| 44              | 72.5           | 82.5           | 63.1           | 47.8           | 434                         | 452                         | 409                   | 208              | 1434 |
| 43              | 72.0           | 82.0           | 62.2           | 46.7           | 423                         | 438                         | 400                   | 201              | 1386 |
| 42              | 71.5           | 81.5           | 61.3           | 45.5           | 412                         | 426                         | 390                   | 195              | 1345 |
| 41              | 70.9           | 80.9           | 60.4           | 44.3           | 402                         | 414                         | 381                   | 188              | 1296 |
| 40              | 70.4           | 80.4           | 59.5           | 43.1           | 392                         | 402                         | 371                   | 182              | 1255 |
| 39              | 69.9           | 79.9           | 58.6           | 41.9           | 382                         | 391                         | 362                   | 177              | 1220 |
| 38              | 69.4           | 79.4           | 57.7           | 40.8           | 372                         | 380                         | 353                   | 171              | 1179 |
| 37              | 68.9           | 78.8           | 56.8           | 39.6           | 363                         | 370                         | 344                   | 166              | 1145 |
| 36              | 68.4           | 78.3           | 55.9           | 38.4           | 354                         | 360                         | 336                   | 161              | 1110 |
| 35              | 67.9           | 77.7           | 55.0           | 37.2           | 345                         | 351                         | 327                   | 156              | 1076 |
| 34              | 67.4           | 77.2           | 54.2           | 36.1           | 336                         | 342                         | 319                   | 152              | 1048 |
| 33              | 66.8           | 76.6           | 53.3           | 34.9           | 327                         | 334                         | 311                   | 149              | 1027 |
| 32              | 66.3           | 76.1           | 52.1           | 33.7           | 318                         | 326                         | 301                   | 146              | 1007 |
| 31              | 65.8           | 75.6           | 51.3           | 32.5           | 310                         | 318                         | 294                   | 141              | 972  |
| 30              | 65.3           | 75.0           | 50.4           | 31.3           | 302                         | 311                         | 286                   | 138              | 952  |
| 29              | 64.8           | 74.5           | 49.5           | 30.1           | 294                         | 304                         | 279                   | 135              | 931  |
| 28              | 64.3           | 73.9           | 48.6           | 28.9           | 286                         | 297                         | 271                   | 131              | 903  |
| 27              | 63.8           | 73.3           | 47.7           | 27.8           | 279                         | 290                         | 264                   | 128              | 883  |
| 26              | 63.3           | 72.8           | 46.8           | 26.7           | 272                         | 284                         | 258                   | 125              | 862  |
| 25              | 62.8           | 72.2           | 45.9           | 25.5           | 266                         | 278                         | 253                   | 123              | 848  |
| 24              | 62.4           | 71.6           | 45.0           | 24.3           | 260                         | 272                         | 247                   | 119              | 821  |
| 23              | 62.0           | 71.0           | 44.0           | 23.1           | 254                         | 266                         | 243                   | 117              | 807  |
| 22              | 61.5           | 70.5           | 43.2           | 22.0           | 248                         | 261                         | 237                   | 115              | 793  |
| 21              | 61.0           | 69.9           | 42.3           | 20.7           | 243                         | 256                         | 231                   | 112              | 772  |
| 20              | 60.5           | 69.4           | 41.5           | 19.6           | 238                         | 251                         | 226                   | 110              | 758  |