



# PROPERTIES OF GRADE 8.8 BOLT & NUT (ISO)

| BOLT SIZE   | PITCH | STRESS AREA MM2 | BOLT/STUD/SCREW<br>ISO 898-1 Gr. 8.8 |               |                      |             |              |               | NUT<br>ISO 898-2 Gr. 8 |               |              |
|-------------|-------|-----------------|--------------------------------------|---------------|----------------------|-------------|--------------|---------------|------------------------|---------------|--------------|
|             |       |                 | PROOF STRESS N/MM2                   | PROOF LOAD KN | TENSILE STRESS N/MM2 | TORQUE* N-m | HARDNESS HRC | ELONGATION# % | PROOF STRESS N/MM2     | PROOF LOAD KN | HARDNESS HRC |
| M6          | 1     | 20.1            | 580                                  | 11.7          | 800.0                | 9.4         | 22-32        | 12.0          | 855                    | 17.2          | 30 Max       |
| M8          | 1.25  | 36.6            | 580                                  | 21.2          | 800.0                | 22.8        | 22-32        | 12.0          | 870                    | 31.8          | 30 Max       |
| M10         | 1.5   | 58.8            | 580                                  | 34.1          | 800.0                | 45.8        | 22-32        | 12.0          | 880                    | 51.7          | 30 Max       |
| M12         | 1.75  | 84.3            | 580                                  | 48.9          | 800.0                | 78.8        | 22-32        | 12.0          | 880                    | 74.2          | 38 Max       |
| M14         | 2.0   | 115.0           | 580                                  | 66.7          | 800.0                | 125.4       | 22-32        | 12.0          | 880                    | 101.2         | 38 Max       |
| M16         | 2.0   | 157.0           | 580                                  | 91.1          | 800.0                | 195.6       | 22-32        | 12.0          | 920                    | 144.4         | 38 Max       |
| M18         | 2.5   | 192.0           | 600                                  | 115.2         | 830.0                | 278.4       | 23-34        | 12.0          | 920                    | 176.6         | 38 Max       |
| M20         | 2.5   | 245.0           | 600                                  | 147.0         | 830.0                | 394.7       | 23-34        | 12.0          | 920                    | 225.4         | 38 Max       |
| M22         | 2.5   | 303.0           | 600                                  | 181.8         | 830.0                | 536.9       | 23-34        | 12.0          | 920                    | 278.8         | 38 Max       |
| M24         | 3.0   | 353.0           | 600                                  | 211.8         | 830.0                | 682.4       | 23-34        | 12.0          | 920                    | 324.8         | 38 Max       |
| M27         | 3.0   | 459.0           | 600                                  | 275.4         | 830.0                | 998.3       | 23-34        | 12.0          | 920                    | 422.3         | 38 Max       |
| M30         | 3.5   | 561.0           | 600                                  | 336.6         | 830.0                | 1,356       | 23-34        | 12.0          | 920                    | 516.1         | 38 Max       |
| M33         | 3.5   | 694.0           | 600                                  | 416.4         | 830.0                | 1,845       | 23-34        | 12.0          | 920                    | 638.5         | 38 Max       |
| M36         | 4.0   | 817.0           | 600                                  | 490.2         | 830.0                | 2,369       | 23-34        | 12.0          | 920                    | 751.6         | 38 Max       |
| M39         | 4.0   | 976.0           | 600                                  | 585.6         | 830.0                | 3,066       | 23-34        | 12.0          | 920                    | 897.9         | 38 Max       |
| M42         | 4.5   | 1,120.0         | 600                                  | 672.0         | 830.0                | 3,789       | 23-34        | 12.0          | 920                    | 1,030.4       | 38 Max       |
| M45         | 4.5   | 1,310.0         | 600                                  | 786.0         | 830.0                | 4,748       | 23-34        | 12.0          | 920                    | 1,205.2       | 38 Max       |
| M48         | 5.0   | 1,470.0         | 600                                  | 882.0         | 830.0                | 5,684       | 23-34        | 12.0          | 920                    | 1,352.4       | 38 Max       |
| M52         | 5.0   | 1,760.0         | 600                                  | 1,056.0       | 830.0                | 7,732       | 23-34        | 12.0          | 920                    | 1,619.2       | 38 Max       |
| M56         | 5.5   | 2,030.0         | 600                                  | 1,218.0       | 830.0                | 9,157       | 23-34        | 12.0          | 920                    | 1,867.6       | 38 Max       |
| M60         | 5.5   | 2,360.0         | 600                                  | 1,416.0       | 830.0                | 11,406      | 23-34        | 12.0          | 920                    | 2,171.2       | 38 Max       |
| M64         | 6.0   | 2,680.0         | 600                                  | 1,608.0       | 830.0                | 13,816      | 23-34        | 12.0          | 920                    | 2,465.6       | 38 Max       |
| M68         | 6.0   | 3,060.0         | 600                                  | 1,836.0       | 830.0                | 16,761      | 23-34        | 12.0          | 920                    | 2,815.2       | 38 Max       |
| M72         | 6.0   | 3,460.0         | 600                                  | 2,076.0       | 830.0                | 20,067      | 23-34        | 12.0          | 920                    | 3,183.2       | 38 Max       |
| DIMENSIONS  |       |                 | NORMAL HEX                           |               |                      |             |              |               | NORMAL HEX             |               |              |
| MARKINGS    |       |                 | 'RS' 'M' '8.8'                       |               |                      |             |              |               | 'RS' '8.8'             |               |              |
| CARBON      |       |                 | 0.25-0.55                            |               |                      |             |              |               | -0.58                  |               |              |
| MANGANESE   |       |                 | -0.25                                |               |                      |             |              |               |                        |               |              |
| SULPHUR     |       |                 | -0.035                               |               |                      |             |              |               | -0.15                  |               |              |
| SILICON     |       |                 |                                      |               |                      |             |              |               |                        |               |              |
| CHROMIUM    |       |                 |                                      |               |                      |             |              |               |                        |               |              |
| MOLYBDENUM  |       |                 |                                      |               |                      |             |              |               |                        |               |              |
| NICKLE      |       |                 |                                      |               |                      |             |              |               |                        |               |              |
| VANADIUM    |       |                 |                                      |               |                      |             |              |               |                        |               |              |
| BORON       |       |                 | -0.003                               |               |                      |             |              |               |                        |               |              |
| PHOSPHOROUS |       |                 | -0.035                               |               |                      |             |              |               | -0.06                  |               |              |
| MATERIAL    |       |                 | Carbon steel quenched & tempered     |               |                      |             |              |               | Medium Carbon Steel    |               |              |

**NOTES:**

Left hand side of '-' is minimum value  
 Right hand side of '-' is maximum value  
 Eg. 0.5 - 0.7 min. is 0.5 and max is 0.7  
 Eg. -0.8 max is 0.8 no minimum value  
 Eg. 2.0- min. is 2.0 no maximum value

\* Torque value based on 75% of proof load and finish as received steel