

Material Grade: **080M40**
 Material Condition(s): **Untreated / Normalised / Drawn**
 Surface Finish: **As rolled / As forged / Bright drawn / Bright turned**

Associated Standard: **BS970**

Description:

A medium carbon steel offering moderate tensile strengths. The material is capable of through hardening by quenching and tempering on limited sections but is more commonly supplied in the untreated or normalized condition. Machinability similar to that of mild steel can be expected, however weldability is reduced.

Typical applications: **Axles, spindles, studs and many automotive and general engineering components**

1. STEELMAKING

| | <u>C</u> | <u>Si</u> | <u>Mn</u> | <u>S</u> | <u>P</u> | <u>Cr*</u> | <u>Ni*</u> | <u>Mo*</u> |
|-----|----------|-----------|-----------|----------|----------|------------|------------|------------|
| Min | 0.36 | 0.10 | 0.60 | | | | | |
| Max | 0.44 | 0.40 | 1.00 | 0.05 | 0.05 | 0.30 | 0.40 | 0.15 |

(* denotes residual element)

2. TYPICAL MECHANICAL PROPERTIES

| Test type | Tensile and hardness test (at room temperature) | | | | | | Impact test (KV) |
|------------------------|---|-------------|----------|-----------|------------|----------|------------------|
| | Yield (Re) | 0.2 % proof | UTS (Rm) | Elong (A) | R of A (Z) | Hardness | Room Temp |
| Unit | N/mm2 | N/mm2 | N/mm2 | % | % | HB | J |
| Normalized | Min | 280 | 550 | 16 | | 152 | 16 |
| | Max | | | | | 207 | |
| Drawn | Min | 510 | 650 | 8 | | | |
| | Max | | | | | | |
| Q + T to condition 'Q' | Min | 385 | 625 | 16 | | 179 | 28 |
| | Max | | 775 | | | 229 | |