

Material Grade: **230M07**  
 Material Condition(s): **Untreated / Normalised / Drawn**  
 Surface Finish: **As rolled / Bright drawn / Bright turned**

Associated Standard: **BS970**

Description:

A non-alloyed free cutting steel suitable for applications where good machinability is the prime consideration. Typically used for the rapid production of parts which shall not be subject to high stresses in service. Case hardening can be carried out but this steel is not recommended for general case hardening work and it is not intended for use where the hardened case is subject to severe impact in service. This material should not be used for hollow parts which may be subject to internal pressure as the material does not possess good transverse properties.

Typical applications: **Light duty studs, cycle components, intricate non-critical 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>  |
|------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|
| <b>Min</b> |             | <b>0.15</b> | <b>0.90</b> | <b>0.25</b> |              |             |             |             |
| <b>Max</b> | <b>0.15</b> | <b>0.40</b> | <b>1.30</b> | <b>0.35</b> | <b>0.070</b> | <b>0.30</b> | <b>0.40</b> | <b>0.15</b> |

(\* 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 Temperature |
| Unit                    | N/mm2   | N/mm2       | N/mm2      | %         | %          | HB         | J                |
| As rolled Or Normalized | <b>Min</b>                                      | <b>215</b>  | <b>360</b> | <b>22</b> |            | <b>103</b> |                  |
|                         | <b>Max</b>                                      |             |            |           |            |            |                  |
| Drawn                   | <b>Min</b>                                      | <b>380</b>  | <b>400</b> | <b>7</b>  |            |            |                  |
|                         | <b>Max</b>                                      |             |            |           |            |            |                  |