

### Engineering Steel

#### Applications

- Automotive parts
- Connecting rods
- Studs, bolts
- Axles, spindles
- General engineering components

#### Product Description

EN8 is an unalloyed medium carbon steel which is used in applications where better properties than mild steel are required but where the costs do not justify the purchase of a steel alloy. EN8 can be heat treated to provide a good surface hardness and moderate wear resistance by flame or induction hardening processes. From the automotive trade to wider general engineering applications, EN8 is a popular steel in industry.

#### Weldability

Heat treatment required if over 18mm to prevent cracking.

#### Key features:

- Unalloyed medium carbon steel
- Reasonable tensile strength
- Can be flame or induction hardened
- Readily machinable
- Moderate wear resistance if heat treated

#### Machinability

Good

#### Related material specifications

|                           |                                  |
|---------------------------|----------------------------------|
| BS970: 1955               | EN8                              |
| BS970/PD970: 1970 onwards | 080M40                           |
| European                  | C40, C45, Ck40, Ck45, Cm40, Cm45 |
| Werkstoff No.             | 1.0511, 1.1186, 1.1189           |
| US SAE (AISI)             | 1039, 1040, 1042, 1043, 1045     |

#### Availability

Round bar, square bar, hexagon and plate

#### Chemical Composition (weight %)

|      | C    | Si   | Mn   | P    | S    |
|------|------|------|------|------|------|
| min. | 0.36 | 0.10 | 0.60 |      |      |
| max. | 0.44 | 0.40 | 1.00 | 0.05 | 0.05 |

#### Mechanical Properties (in "R" condition)

|                   |  |
|-------------------|--|
| Max Stress        | 700-850 n/mm <sup>2</sup>                  |
| Yield Stress      | 465 n/mm <sup>2</sup> Min (up to 19mm LRS) |
| 0.2% Proof Stress | 450 n/mm <sup>2</sup> Min (up to 19mm LRS) |
| Elongation        | 16% Min (12% if cold drawn)                |
| Impact KCV        | 28 Joules Min (up to 19mm LRS)             |
| Hardness          | 201-255 Brinell                            |

### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

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