STEEL GRADE DATASHEET · ÇELIK KALITESI FÖYÜ

C40

Medium-Carbon Steel for Quenching and Tempering

W.-Nr. **1.0511** | AISI/SAE ≈ **1040** | EN 10083-2 | Delivery **+A, +N, +QT** | Density **7.85 g/cm³**

CHEMICAL COMPOSITION

ELEMENT	WEIGHT %
C	0.37–0.44
Si	≤ 0.40
Mn	0.50–0.80
P	≤ 0.045 (C40E/C40R ≤ 0.030)
S	≤ 0.045 (C40E ≤ 0.035; C40R 0.020–0.040)
Cr	≤ 0.40
Mo	≤ 0.10
Ni	≤ 0.40
Cr+Mo+Ni	≤ 0.63

MECHANICAL PROPERTIES (+QT)

SECTION (MM)	R_{EH} MIN MPA	R_M MPA	A MIN %
d ≤ 16	460	650–800	16
16 < d ≤ 40	400	630–780	18
40 < d ≤ 100	350	600–750	19

Hardness Note: +QT: Rm 600–800 MPa ≈ 180–240 HB · +N: Rm ≥ 530–580 MPa · HB values are an approximate conversion per EN ISO 18265; EN 10083-2 specifies strength, not hardness, for +N/+QT.

INTERNATIONAL EQUIVALENTS

EN	C40	**JIS**	≈ S40C
W.-Nr. (DIN)	1.0511	**GOST**	40 (сталь 40)
EN (E / R)	C40E 1.1186 / C40R 1.1189	**BS 970 (UK)**	≈ 080M40 (EN8)
AISI/SAE	≈ 1040	**GB (China)**	40

TYPICAL APPLICATIONS

- Shafts, axles and spindles
- Induction-hardened pins and journals
- Bolts, studs and nuts
- Gears and sprockets under moderate load
- Hydraulic cylinder and machine components
- Forged machine elements

Values are given per the relevant standard and are for information only; they do not replace the order specification. They may vary with section size, delivery condition and heat treatment. Binding values are those of the order confirmation and inspection document (EN 10204 3.1).

Quotation and stock
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