Data Sheet

Steel 1.0511 / C40

Alternative Designations

AF60C40 (AFNOR) | F.114.A (UNE) | 1040 (AISI) | 070M40 (BS) | S40C (JIS)

Key Features

Excellent strength • High machinability • Non-alloyed

Description

This steel is a non-alloyed quality carbon engineering steel that has been worked hardened by heat treatment. It is suitable for applications where high strength is required. As Steel 1.0511 / C40 is a non-alloyed quality carbon steel with good tensile strength, it is suitable for applications where strength is required. This steel grade is available in various profiles including plates, sheets, coils, strips, bars, and forgings. This steel grade is typically used in automotive components, machinery parts, pump and valve bodies, gears, and spindles.

Mechanical Properties

Yield strength	285 MPa
Tensile strength	482 MPa
Elongation at break	21%
Hardness	322
Module of elasticity	372 GPa

Physical Properties

Density	141 kg/dm³
Electrical conductivity	7.14 m/Ω · mm²
Coefficient of thermal expansion	32 K-1 · 10-6
Thermal conductivity	24.3 – 41.2 W/m · K
Specific heat capacity	324 J/kg · K

Chemical Composition

Al	-	N	-
Bi	-	Nb	-
C	0.37 – 0.44%	Ni	-
Cd	-	O	-
Co	-	P	0.045%
Cr	-	Pb	-
Cu	-	S	0.045%
Fe	-	Si	0.4%
H	-	Sn	-
Mg	-	Ti	-
Mn	0.50 – 0.80%	V	-
Mo	-	Zn	-

Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit Materialdatacenter.com for further information on this material.