



# 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

## 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	-

## Physical Properties

Density	141 kg/dm <sup>3</sup>
Electrical conductivity	7.14 m/Ω · mm <sup>2</sup>
Coefficient of thermal expansion	32 K <sup>-1</sup> · 10 <sup>-6</sup>
Thermal conductivity	24.3 – 41.2 W/m · K
Specific heat capacity	324 J/kg · K

## Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit [Materialdatacenter.com](https://Materialdatacenter.com) for further information on this material.