

Steel 1.0570 / S355J2G3

Alternative Designations

St52-3; S355J2G3 (ISO) | 1024 (AISI/SAE) | G10240 (UNS) | E36-3 (AFNOR) | 50D (BS) | AE355D (UNE) | 2135-01 (SIS) | Fe510 (UNI) | SM490 (JIS)

Key Features

High tensile strength • Low thermal conductivity • Good weldability • Low ductility

Description

This steel is composed of different chemical elements that give it specific properties. For instance, steel st52 is known for its high strength and durability. It is also resistant to corrosion and can be easily welded. These properties make it an ideal choice for many applications. This unalloyed structural steel has a tensile strength of 630Mpa. Compared to other carbon steels, it has high electrical conductivity but low thermal conductivity and low ductility.

Mechanical Properties

Yield strength	315 – 355 MPa
Tensile strength	490 – 630 MPa
Elongation at break	22%
Hardness	217
Module of elasticity	210 GPa

Physical Properties

Density	7.85 g/cm ³
Electrical conductivity	6.67 m/Ω · mm ²
Coefficient of thermal expansion	11.1 K ⁻¹ · 10 ⁻⁶
Thermal conductivity	54 W/m · K
Specific heat capacity	461 J/kg · K

Chemical Composition

Al	0.02%	N	-
Bi	-	Nb	-
C	0.22%	Ni	0.3%
Cd	-	O	-
Co	-	P	0.035%
Cr	0.3%	Pb	-
Cu	-	S	0.035%
Fe	-	Si	0.55%
H	-	Sn	-
Mg	-	Ti	-
Mn	1.6%	V	-
Mo	0.08%	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.