



# 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       |

## 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 | -      |

## Physical Properties

|                                  |                            |
|----------------------------------|----------------------------|
| Density                          | 7.85 g/cm <sup>3</sup>     |
| Electrical conductivity          | 6.67 m/Ω · mm <sup>2</sup> |
| Coefficient of thermal expansion | 11.1 K-1 · 10-6            |
| Thermal conductivity             | 54 W/m · K                 |
| Specific heat capacity           | 461 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.