

# Steel 1.0038 / S235JR

## Alternative Designations

EN 10025 | S235JR | A283 (AISI/AA) | A 33 (AFNOR) | SN490B;C (JIS) | A310-0 (UNE)

## Key Features

Good plasticity • Tough • Good weldability

## Description

This is a hot-rolled pure structural steel. With good plasticity, toughness, and weldability, it has a lower yield strength of 185 - 235MPa. This material can be formed into many products such as I beams, channels, plates, angle bars etc. its excellent weldability makes it to be widely used in bridges, transmission towers etc. It is equivalent to Fe360B. Any steel with similar chemical and mechanical properties can be designated as S235JR material.

## Mechanical Properties

Yield strength	185 – 235 MPa
Tensile strength	340 – 510 MPa
Elongation at break	21 – 26%
Hardness	120
Module of elasticity	210 GPa

## Physical Properties

Density	7.85 g/cm <sup>3</sup>
Electrical conductivity	1.82 m/Ω · mm <sup>2</sup>
Coefficient of thermal expansion	10 K <sup>-1</sup> · 10 <sup>-6</sup>
Thermal conductivity	40 – 45 W/m · K
Specific heat capacity	460 – 480 J/kg · K

## Chemical Composition

Al	-	N	0.012%
Bi	-	Nb	-
C	0.17%	Ni	-
Cd	-	O	-
Co	-	P	0.035%
Cr	-	Pb	-
Cu	0.55%	S	0.035%
Fe	-	Si	-
H	-	Sn	-
Mg	-	Ti	-
Mn	1.4%	V	-
Mo	-	Zn	-

## 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.