

Steel 1.0044 / S275JR

Alternative Designations

RSt42-2 (DIN) | SS400 (JIS) | E28-2 (AFNOR) | 43A (BS) | Fe430B (UNI) | AE255B (UNE) | A283D (AISI)

Key Features

High malleability and ductility • Medium strength

Description

This material is a popular manufacturing material for many industries. It is frequently used in the production of car bodies, pipes, and wires. The material is also popular in the construction industry for its strength and durability. Fe430B is an alloy of iron and carbon, and it is this combination that gives the material its unique properties. The high carbon content makes the steel extremely hard, while the iron gives it ductility and malleability. This makes it an ideal material for a wide range of applications.

Mechanical Properties

Yield strength	235 MPa
Tensile strength	410 – 560 MPa
Elongation at break	22%
Hardness	110 – 162
Module of elasticity	431 GPa

Physical Properties

Density	342 kg/dm ³
Electrical conductivity	7.69 m/Ω · mm ²
Coefficient of thermal expansion	21 K ⁻¹ · 10 ⁻⁶
Thermal conductivity	24.3 – 43.2 W/m · K
Specific heat capacity	241 J/kg · K

Chemical Composition

Al	-	N	0.014%
Bi	-	Nb	-
C	0.24%	Ni	-
Cd	-	O	-
Co	-	P	0.045%
Cr	-	Pb	-
Cu	0.6%	S	0.045%
Fe	-	Si	-
H	-	Sn	-
Mg	-	Ti	-
Mn	1.6%	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.