

AISI 430 Stainless Steel Sheet Plate

General Characteristics:

The most popular ferritic stainless steel, with a minimum of 16% chromium content, is 430 alloy. It demonstrates good oxidation resistance at high temperatures and good corrosion resistance in slightly corrosive conditions. ASTM a240 Type 430 can be made using a variety of roll forming or mild stretch forming operations in addition to the more typical deep drawing and bending techniques. It is ductile in the annealed condition and does not work harden significantly during cold work. This alloy is always magnetic and is typically resistant to stress corrosion cracking. Because of its exceptional polishing properties, grade 430 is frequently utilised in applications like architectural appliances and other surface-critical ones.

SS 430 Sheet Plate Mechanical Properties:

Mechanical properties	UTS (MPa)	YS (MPa)	%EL	Hardness
ASTM A240 - UNS S43000	450 min	205 min	22 min	89 HRB max

430 Stainless Steel Sheet Plate Physical Properties:

Modulus of Elasticity (GPa)	Density (kg/m ³)	Specific Heat (J/Kg°K)	Electrical resistivity (μΩm)	Thermal conductivity (W/m°C)	Co-efficient of Thermal Expansion (μm/m /°C)
200	7700	460	600	25.9	10.3

SS 430 Sheet Plate Chemical Properties:

Designation		%C	%Mn	%S	%P	%Si	%Ni	%Cr
UNS S43000	Min	--	--	--	--	--	--	16.0
	Max	0.12	1.00	0.030	0.040	1.00	0.75	18.0

Products available:

Hot Rolled Plates & Coil, Cold Rolled Coil & Sheets

Corrosion Resistance:

Nitric acid, as well as many other organic and food acids, are just a few of the many corrosive media against which grade 430 has exceptional corrosion resistance. Because it is ferritic, this alloy has exceptionally good stress corrosion cracking resistance and can be used in situations where 304 stainless steel might malfunction. However, austenitic stainless steels with higher chromium contents offer more resistance to pitting in chloride and acid-containing environments than this grade does.

Oxidation Resistance:

The alloy has good oxidation resistance up to 8750C for intermittent service and up to 7400C for continuous service due to its more than 16 percent chromium concentration. The scale that forms is strongly adhering and difficult to remove during abrupt temperature changes because of its poor thermal expansion.

Formability:

The typical processes, such as bending, deep drawing, contour forming, etc., are easily capable of cold forming grade 430. 430 steel has a lower work hardening rate than austenitic grades, which is reflected in its lower elongation. As a result, this grade is less suitable for stretch forming applications than austenitic grades. However, the type 430's low work hardening is advantageous for compressive

shaping (extrusion, cold stamping, upsetting, coin and spinning). In pure deep drawing, 430 grade can even outperform 304 grade.

Applications:

- Decorative Panels
- Home appliances: Dish Washers, Washing Machine, Sinks, Refrigerator
- Automotive trims

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