FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITAION HARDENING STEELS

Available Product Shapes

Long Products

Product Description

Parts for the aerospace industry.

Properties

Martensitic chromium steel with nickel addition. Heat treatable grade, capable of taking a mirror finish. Resistant to the effects of seawater, weak acids and alkaline solutions, as well as to acids having a strong, oxidizing effect such as nitric acid. Surface finish for optimum corrosion resistance: fine ground or polished.

Applications

- Structural parts (Aerosp)

Material designation	
1.4044	SEL
S43100	UNS
Z15Cn17-03	EN
431	AISI
	Market grade
SUS431	JIS

Standards	
431S29	BS
AFNOR Z15CN16-02	Others

Chemical composition

C	Si	Mn	Cr	Ni
0.17	0.20	0.40	15.50	2.20

Delivery condition

Annealed	
Hardness	max. 248 HB

Hardened and Tempered	
Hardness	46 - 49 HRC

Heat treatment

Annealing

Temperature (°C / °F)	680 / 1256 - 710 / 1310	Furnace, air

Hardening and Tempering

Temperature (°C / °F)	1000 / 1832 - 1030 / 1886	Oil

Physical Properties at 20°C / 68°F

Density	7.7 / 0.28	[kg/dm^3 / lb/in^3]
Thermal conductivity	25 / 14.44	[W/(m.K) / BTU (IT) ft/hr/ft^2/F]
Specific heat	460 / 109.87	[J/(kg.K) / BTU (IT) lb/F]
Spec. electrical resistance	0.7 / <0.001	[Ohm.mm^2/m / Ohm.inch^2/ft]
Modulus of elasticity	216 / 31.33	[10^{3}N/mm^2 / 10^{3}ksi]

Thermal Expansions

Temperature (°C / °F)	**100 / 212**	**200 / 392**	**300 / 572**	**400 / 752**	**500 / 932**
Thermal expansion (10^{-6} m/(m.K) / 10^{-6} inch/(inch.F))	10 / 5.556	10.5 / 5.833	11 / 6.111	11 / 6.111	11 / 6.111

For more information see www.voestalpine.com/bohler-edelstahl

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ONE STEP AHEAD.