

AUSTENITIC STEELS

Product Description

For applications involving highly corrosive environments due to the presence of chemically aggressive media, e.g. for equipment and plants which are cooled by seawater and parts for offshore plants. In the chemical industry where resistance to the attack of pure acids as well as acids containing chloride ions (sulphuric acid in particular), of organic acids and mixed acids is required in the higher pressure and temperature ranges. The enhanced resistance to crevice corrosion permits use also for applications where incrustation must be expected, and / or where the formation of gaps cannot be avoided by design precautions.

Properties

Austenitic Cr-Ni-Mo-Cu-stainless steel with excellent resistance to stress corrosion cracking, pitting and crevice corrosion. Resistant to intergranular corrosion in the temperature range up to 400°C (752°F). For optimum resistance, surfaces should be pickled, scalefree heat treated or machined.

Applications

- > Comp. for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Other Oil and Gas + CPI comps.
- > Tubular Products, Flanges, Fittings
- > Wire Lines

Technical data

Material designation		Standards	
1.4529	SEL	10088-3	EN ISO
N08926	UNS	A182	ASTM
X1CrNiMoCuN20-18-7	EN	A276	
X1NiCrMoCu25-20-5		A479	
		B649	

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni	Cu	N
≤ 0,02	0.18	0.9	20.8	6.3	24.3	0.75	0.2

Heat treatment

Solution annealing

Temperature	1120 to 1180 °C 2048 to 2156 °F	Water, air cooling (rapid cooling)
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Physical Properties

Density	8.1 0.29	[kg/dm ³ lb/in ³]
Thermal conductivity	12 6.93	[W/(m.K) BTU (IT) ft/hr/ft ² /F]
Specific heat	450 107.48	[J/(kg.K) BTU (IT) lb/F]
Spec. electrical resistance	1 4.73	[Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft]
Modulus of elasticity	195 28.28	[10 ³ N/mm ² 10 ³ ksi]

Thermal Expansions between 20°C | 68°F and ...

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))	16.5 9.2	17 9.4	17.5 9.7	18 10	18.5 10.3

For more information see <https://www.voestalpine.com/bohler-edelstahl/de/>

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