

SANICRO® 28

BAR

DATASHEET

Sanicro® 28 is a high-alloy multi-purpose austenitic stainless steel for service in highly corrosive conditions. The grade is characterized by:

- Very high corrosion resistance in strong acids
- Very good resistance to stress corrosion cracking (SCC) and intergranular corrosion in various environments
- High resistance to pitting and crevice corrosion
- Good weldability

STANDARDS

- UNS: N08028
- EN Number: 1.4563
- EN Name: X 1 NiCrMoCu 31-27-4
- W.Nr.: 1.4563

STANDARDS

Product standard
EN 10088-3, EN 10272

Certificates
Status according to EN 10 204 3.1

CHEMICAL COMPOSITION (NOMINAL)

Chemical composition (nominal) %

C	Si	Mn	P	S	Cr	Ni	Mo	Cu
≤0.020	≤0.6	≤2.0	≤0.025	≤0.010	27	31	3.5	1.0

MECHANICAL PROPERTIES

Bar steel is tested in delivery condition.

The following figures apply to material in the solution annealed and quenched condition.

At 20°C (68°F)

Metric units, Bar

Proof strength	Tensile strength	Elong.	HB
R _{p0.2} ^{a)}	R _m	A _b ^{b)}	
MPa	MPa	%	

Metric units, Bar

Proof strength	Tensile strength	Elong.	HB
R _{p0.2} ^{a)}	R _m	A ^{b)}	
MPa	MPa	%	
≥220	500-750 ^{c)}	≥35	≤220

Imperial units, Bar

Proof strength	Tensile strength	Elong.	Hardness
R _{p0.2} ^{a)}	R _m	A ^{b)}	Rockwell C
ksi	ksi	%	
			approx.
≥32	72-108	≥35	14

1 MPa = 1 N/mm²

a) R_{p0.2} corresponds to 0.2% offset yield strength.

b) Based on $L_0 = 5.65\sqrt{S_0}$, where L_0 is the original gauge length and S_0 the original cross-section area.

c) For sizes below 50 mm/2" R_m min. 800 MPa.

Impact strength

Due to its austenitic microstructure, Sandvik Sanicro® 28 has very good impact strength both at room temperature and at cryogenic temperatures.

Tests have demonstrated that the steel fulfils the requirements according to the European standards prEN 13445-2 (UFPV-2) (min.60J (44ft-lb) at -270°C (-455 °F)) and EN10272 (min. 60J (44ft-lb) at -196°C (-320°F)).

WELDING

The weldability of Sanicro® 28 is good. Suitable methods of fusion welding are manual metal-arc welding (MMA/SMAW) and gas-shielded arc welding, with the TIG/GTAW method as first choice.

For Sanicro® 28, heat-input of <1.0 kJ/mm and interpass temperature of <150°C (300°F) are recommended. A string bead welding technique should be used.

Recommended filler metals

TIG/GTAW or MIG/GMAW welding

ISO 14343 S 27 31 4 Cu L/AWS A5.9 ER383 (e.g. Exaton 27.31.4.LCu)

MMA/SMAW welding

ISO 3581 E 27 31 4 Cu L R/AWS A5.4 E383-16 (e.g. Exaton 27.31.4.LCuR)

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Sandvik materials.