Alleima

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)

Datasheet updated 6/19/2023 5:45:00 AM (supersedes all previous editions)

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]	
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/mm^2
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, 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).

Datasheet updated 6/19/2023 5:45:00 AM (supersedes all previous editions)

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)

Datasheet updated 6/19/2023 5:45:00 AM (supersedes all previous editions)