

Classifications

EN ISO 3581-A	AWS A5.4	Mat. No.
E 20 16 3 Mn N L B 2 2	E316LMn-15	1.4455

Characteristics and typical fields of application

Stainless; resistant to intercrystalline corrosion and wet corrosion up to 350 °C (662 °F). Corrosion resistant similar to low carbon CrNiMo(Mn,N) steels/cast steel grades. Seawater resistant, good resistance to nitric acid. Huey test in acc. ASTM A 262-64: 3.3 μ / 48 h max. (0.54 g/m²h), selective attack 200 μm max. Non magnetic (permeability in field of 8000 A/m 1.01 max.).

Particularly suited to corrosion conditions in urea synthesis plants for welding work on steel X 2 CrNiMo 1812 and the overlay side of Thermanit 21/17 E weld claddings. Well suited for joining and surfacing applications with matching austenitic CrNi(N) and CrNiMo(Mn,N) steels/cast steel grades.

Base materials

TÜV certified parent metals

1.4429 – X2CrNiMoN17-13-3; 1.4315 – X5CrNiN19-9;
 1.4561 – X1CrNiMoTi18-13-2; 1.6903 – 10CrNiTi18-10;
 cryogenic 3,5 – 5 % Ni-steels

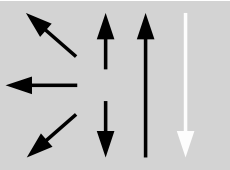
Typical analysis of all-weld metal (wt.-%)

	C	Si	Mn	Cr	Mo	Ni	N
wt-%	< 0.04	< 0.50	6.0	20.0	3.0	16.5	0.18

Structure: Austenite, part ferrite 0.6 % max.

Mechanical properties of all-weld metal

Heat-treatment	Yield strength R _{p0.2}	Yield strength R _{p1.0}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact work ISO-V KV J
	MPa	MPa	MPa	%	+20 °C
aw	430	450	650	30	80

Operating data														
	Polarity: DC (+)	<table border="1"> <thead> <tr> <th>\varnothing (mm)</th> <th>L mm</th> <th>Amps A</th> </tr> </thead> <tbody> <tr> <td>2.5</td> <td>300</td> <td>55 – 75</td> </tr> <tr> <td>3.2</td> <td>350</td> <td>70 – 110</td> </tr> <tr> <td>4.0</td> <td>350</td> <td>90 – 140</td> </tr> </tbody> </table>	\varnothing (mm)	L mm	Amps A	2.5	300	55 – 75	3.2	350	70 – 110	4.0	350	90 – 140
\varnothing (mm)	L mm	Amps A												
2.5	300	55 – 75												
3.2	350	70 – 110												
4.0	350	90 – 140												
Welding instruction														
Materials	Preheating	Postweld heat treatment												
Matching / similar steels CrNi(N) steels/cast steel grades and cryogenic CrNi(N) steels/cast steel grades	None	None												
21-17E claddings / high temperature steels / cast steel grades	According to parent metal 150 °C (302 °F) max.	In case of excessive hardening of the parent metal, stress relieving at 510 °C (950 °F) 20 h max., annealing above 530 °C (986 °F) only prior to welding the last pass												
Approvals														
TÜV (01813), DB (30.132.12), Stamicarbon, Snamprogetti, CE														