

For welding steel such as:

Outokumpu	EN	ASTM	BS*	NF*	SS*
4438	1.4439	317L	317S12	Z3 CND 19-15-04	2367
4439	1.4439	317LMN	–	Z3 CND 18-14-05 Az	–

* Obsolete national standards, replaced by EN 10088.

Characteristics

AVESTA FCW-3D 317L/SNR is a new type of flux cored wire with very good weldability in all welding positions. The flux composition ensures excellent arc stability, very little spatter, a smooth weld surface and self-releasing slag.

AVESTA FCW-3D 317L/SNR is designed for welding austenitic stainless steel type 18 Cr 14 Ni 3 Mo and similar. The enhanced content of chromium, nickel and molybdenum compared to 316L gives improved corrosion properties in acid chloride containing environments.

The chemical composition and mechanical properties of the weld metal meet the requirements of AWS A5.22-95.

Welding directions

AVESTA FCW-3D 317L/SNR should be welded using direct current, positive polarity (DC+) with a recommended wire stick-out of 15–20 mm. Compared to the MIG-method, the range of welding current and voltage is considerably wider.

Welding data

Ø inch	Horizontal		Vertical up		Overhead	
	A	V	A	V	A	V
0.045	200-280	29-31	140-180	23-26	150-200	24-29

For further recommendations, please contact Avesta Welding.

Shielding gas recommendations

Welding is preferably done using an Ar-based shielding gas with addition of 15–25%CO₂, which will give the best result with respect to arc stability, melt pool control and spatter. However, 100%CO₂ can also be used, but then the welding voltage should be increased by 2–3 V to ensure the right arc length.

Gas flow rate is typically 20–25 l/min.

Standard designations

AWS A5.22 E317LT1-1/-4

Chemical composition - Typical values, %

C	0.03	Cr	18.6
Si	0.6	Ni	12.7
Mn	1.3	Mo	3.3
		N	0.04
Ferrite	11 FN DeLong		
	6 FN WRC-92		

Mechanical properties – Typical values, IIW

	Typ. values		
Yield strength, Rp _{0.2}	400 N/mm ²	58	ksi
Tensile strength, R _m	560 N/mm ²	44	ksi
Elongation, A ₅	29 %	29	%
Impact strength, KV	+20°C	49 J	36 ft·lb
	+/-0°C	49 J	36 ft·lb

Interpass temperature: Max. 300°F (150°C)

Heat input: Max. 50.8kJ/in (2.0 kJ/mm)

Heat treatment: Generally none. In special cases quench annealing at 1922°F (1050°C).

Structure: Austenite with 5–10% ferrite.

Scaling temperature: Approx. 1562°F (850°C) (air).

Corrosion resistance: Better resistance to general, pitting and intercrystalline corrosion in chloride containing environments than 316L. Intended for severe service conditions, e.g. in dilute hot acids.

Approvals: –