



G-TECH 317L

SMAW

AUSTENITIC STAINLESS STEELS
317L

DESCRIPTION

Rutile-basic coated electrode for 317L Mo bearing austenitic stainless steels

Its basic-rutile coating ensures an excellent combination of welding performance in all positions, except for vertical down, and a high resistance to cracking providing smooth arc transfer. Excellent weldability with a spatter free arc and self-releasing slag result in a very smooth bead appearance. These electrodes are used to weld 317/317L stainless steels. These steels are used for their good resistance to pitting in marine, chemical process, papermaking and food processing applications. Also suitable for 316/316L steels.

SPECIFICATIONS

EN ISO 3581-A	E 19 13 4 N LR 32	AWS A5.4	E317L-16
Shielding	-	Positions	PA, PB, PC, PD, PE, PF
Current	DC+, AC	Packaging Type	Carton box

ASME QUALIFICATIONS

PREN

HARDNESS

F-No (QW432)	5	29.72	80HRB
A-No (QW442)	8		

CHEM. COMP. %

DEFAULT

MECHANICAL PROPERTIES

MIN. PER STANDARD

PRODUCT

C	0.025	Tensile strength R _m MPa	510	560		
Mn	1.3	Yield strength R _{p0.2} MPa	320	440		
Ni	12.5	Elongation A (L ₀ =5d ₀) %	25	35		
Cr	18.5	Impact Charpy ISO-V	-	80J @ 20°C		
P	0.02	Impact Charpy ISO-V	-	-		
S	0.01					
Mo	3.4					
Si	0.8					
Cu	0.1					
		WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm	5.0 mm
		Ampere	50A - 80A	80A - 110A	110A - 150A	160A - 210A
		Voltage	-	-	-	-
		Packaging	56 pcs/kg	28 pcs/kg	19 pcs/kg	12 pcs/kg
		Packaging Type	Carton box	Carton box	Carton box	Carton box

NOTES

Pcs/kg is indicative, actual number may vary ± 5%.



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APPLICATION

This consumable is specifically designed for welding 317/317L austenitic stainless steels. It proves ideal for situations of extreme corrosion, typical of the chemical sectors, flue gas desulfurization, seawater desalination, and in particular, the paper, pulp, and textile industries. It is also widely used in marine applications, paper production, chemical processes, and food processing. Additionally, it is suitable for joining 316/316L steels, with a significant advantage: the high molybdenum content in the weld metal enhances resistance to pitting and crevice corrosion in highly corrosive environments. The material offers outstanding resistance to stress corrosion cracking and high tolerance to pitting. The service temperature ranges from -120 °C to 300 °C. Welding these molybdenum-alloyed steels requires attention. Successive passes can cause the formation of secondary phase precipitates in the weld metal. Therefore, it is recommended to limit heat input to a maximum of 1.5 kJ/mm and to keep the interpass temperature below 150 °C. Generally, post-weld heat treatment is not required, but in particular circumstances, a solution anneal between 1080 °C and 1130 °C followed by water quenching may be performed.

ALLOY TYPE

The nominal composition (wt. %) of alloy is 19.5 Cr, 14 Ni, 3.5 Mo, similar but more alloyed than ER316.

MICROSTRUCTURE

The fillers are fully-austenitic and slightly over-alloyed.

MATERIALS

EN W.Nr.: 1.4436 (X3CrNiMo17-13-3), 1.4439 (X2CrNiMoN17-13-5), 1.4429 (X2CrNiMoN17-13-3), 1.4438 (X2CrNiMo18-15-4), 1.4583 (X10CrNiMoNb18-12)

ASTM: 316Cb, 316LN, 317LN, 317L, A351 CG8M, CG3M

UNS: S31726, J92999

