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

ISO 3581-A	E 19 13 4 N LR 32	**AWS A5.4**	E317L-16
DIN	-	**Werkstoff Number**	-
Certifications	-	**Shielding**	-
Positions	PA, PB, PC, PD, PE, PF	**Current**	DC+, AC

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	8

FERRITE

-

PREN

29.72

HARDNESS

80HRB

CHEM. COMP. %

	DEFAULT
C	0.025
Mn	1.3
Ni	12.5
Cr	18.5
P	0.02
S	0.01
Mo	3.4
Si	0.8
Cu	0.1

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R_m MPa	510	560
Yield strength $R_{p0.2}$ MPa	320	440
Elongation A (L_0=5d_0) %	25	35
Impact Charpy ISO-V	-	80J @ 20°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.5 mm	3.2 mm	4 mm	
Ampere	50A - 80A	80A - 110A	110A - 150A	160A -
Voltage	-	-	-	
Packaging	56 pcs/kg	28 pcs/kg	19 pcs/kg	12 p
Packaging Type	Carton box	Carton box	Carton box	Carto

DAIKO

317L

DESCRIPTION

APPLICATION

These consumables are employed for welding 317/317L austenitic stainless steels, showcasing notable effectiveness in challenging corrosion environments prevalent in industries such as chemicals, flue gas desulfurization, seawater desalination, and especially in pulp & paper and textile sectors. Their versatile applications extend to marine, papermaking, chemical processes, and food processing. Notably, they are suitable for surpassing 316/316L steels, leveraging a higher Mo content in the weld metal to enhance pitting and crevice resistance in highly corrosive environments. These steels exhibit excellent resistance to stress corrosion cracking and maintain high pitting resistance. With a service temperature ranging from -120°C to 300°C, careful welding is essential, as subsequent passes may induce precipitates of secondary phases in the weld metal. To address this, a recommended low heat input of max. 1.5 kJ/mm and an interpass temperature of max. 150°C are suggested. Generally, post-weld heat treatment is not required, though, in specific instances, solution annealing at 1080 - 1130°C followed by water quenching can be considered.

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.