



DAIKOWS 317L



AUSTENITIC STAINLESS STEELS
317L

DESCRIPTION

Solid wire for 317L austenitic stainless steels

These wires are used to weld 317/317L austenitic stainless steels. Applications include marine, papermaking, chemical process and food processing applications. Also suitable to overmatch 316/316L steels. The enhanced content of chromium, nickel and molybdenum compared to 316L ensures better resistance to general, pitting and intercrystalline corrosion in chloride containing environments. The microstructure is austenite with 5 - 10% ferrite. Intended for severe service conditions, i.e. in dilute hot acids. Not suitable for structural service above 400°C nor for cryogenic applications.

SPECIFICATIONS

EN ISO 14343-A	S 18 15 3 L /19 13 4 L	AWS A5.9	ER317L
Shielding	DAIKOFLUX 900-W	Positions	PA, PB, PC
Current	DC/AC	Packaging Type	K415 spool and drums.

ASME QUALIFICATIONS

PREN

HARDNESS

F-No (QW432)	6	30.55	80HRB
A-No (QW442)	8		

CHEM. COMP. %

DEFAULT

MECHANICAL PROPERTIES

MIN. PER STANDARD

PRODUCT

C	0.015	Tensile strength R_m MPa	480	600
Mn	1.5	Yield strength $R_{p0.2}$ MPa	300	400
Ni	14	Elongation A ($L_0=5d_0$) %	25	25
Cr	19	Impact Charpy ISO-V	-	50J @ -60°C
P	0.02	Impact Charpy ISO-V	-	-
S	0.01	WELDING PARAMETERS		
Mo	3.5	Ampere	2.4 mm 300A - 400A	
Si	0.4	Voltage	27V - 33V	
Cu	0.15	Packaging	Ø 2,0÷4,0mm	
		Packaging Type	K415 spool and drums.	

NOTES

SAW mechanical properties depend on wire/flux combination, refer to flux TDS.





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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

