



DAIKOWM 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

ISO 14343-A	G 18 15 3 L / 19 13 4 L	AWS A5.9	ER317L
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	M12, M13
Positions	PA, PB, PC, PD, PE, PF, PG	Current	DC+

ASME QUALIFICATIONS	FERRITE	PREN	HARDNESS
F-No (QW432)	6	30.55	80HRB
A-No (QW442)	8		

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN	VARIANT
C	0.015	Tensile strength R _m MPa	480	550
Mn	1.5	Yield strength R _{p0.2} MPa	300	430
Ni	14	Elongation A (L ₀ =5d ₀) %	25	35
Cr	19	Impact Charpy ISO-V	-	-
P	0.02	Impact Charpy ISO-V	-	-
S	0.01			
Mo	3.5			
Si	0.4			
Cu	0.15			
		WELDING PARAMETERS	1 mm	1.2 mm
		Ampere	160A - 220A	200A - 270A
		Voltage	25V - 29V	26V - 30V
		Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
		Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.



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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.

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