DAIKOFCW 317

FCAW

AUSTENITIC STAINLESS STEELS
317L

DESCRIPTION

Rutile flux cored wire for flat and horizontal position

Austenitic rutile flux cored wire for welding and cladding in flat and horizontal position. The easy handling and the high deposition rate result in high productivity, excellent welding performance and very low spatter formation. 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. These consumables are used to weld 317/317L austenitic stainless steels.

SPECIFICATIONS

EN ISO 17633-A	TZ 19 13 4 L R C1 / M21 3	**AWS A5.22**	E317LT0-1/4
Shielding	M21, C1	**Positions**	PA, PB, PC
Current	DC+	**Packaging Type**	BS300 spool

ASME QUALIFICATIONS

F-No (QW432)	6
A-No (QW442)	8

FERRITE

6-9 FN

PREN

30.65

HARDNESS

80HRB

CHEM. COMP. %

	DEFAULT
C	0.03
Mn	1.1
Ni	12.6
Cr	19.1
P	0.02
S	0.01
Mo	3.5
Si	0.6

MECHANICAL PROPERTIES

	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	550	610
Yield strength $R_{p0.2}$ MPa	350	480
Elongation A (L_0=5d_0) %	25	35
Impact Charpy ISO-V	-	50J
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	1.2 mm	1.6 mm
Ampere	120A - 280A	200A - 350A
Voltage	22V - 30V	26V - 30V
Packaging	Ø 1,2÷1,6mm	Ø 1,2÷1,6mm
Packaging Type	BS300 spool	BS300 spool

NOTES

D200 spool, Ø 1,0 mm and flat position version available upon request.

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DESCRIPTION

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