BÖHLER FOX CN 23/12-A

Stick electrode, high-alloyed, stainless, special applications

Classifications

EN ISO 3581-A	AWS A5.4 / SFA-5.4
E 23 12 L R 3 2	E309L-17

Characteristics and typical fields of application

Rutile electrode of type E 23 12 L / 309L providing increased delta ferrite contents (FN ~17) in the weld deposit for safe and crack resistant dissimilar joint welds and surfacing. BÖHLER FOX CN 23/12-A is noted for its superior welding characteristics and metallurgy. It can be used on AC and DC. Other advantages include high current carrying capacity, minimum spatter formation, self releasing slag, smooth and clean weld profile, safety against formation of porosity due to the moisture resistant coating and its packaging into hermetically sealed tins. Operating temperature from –60 °C to 300 °C and for weld claddings up to 400 °C.

Base materials

Dissimilar joint welds of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni- steels, manganese steels

Surfacing: for the first layer of corrosion resistant weld surfacing on ferritic- perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N, as well as of high temperature steels like 22NiMoCr4-7 acc. SEW- Werkstoffblatt 365, 366, 20MnMoNi5-5 and G18NiMoCr3-7

Typical analysis of all-weld metal

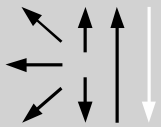
	C	Si	Mn	Cr	Ni
wt.-%	0.02	0.70	0.80	23.20	12.50

Mechanical properties of all-weld metal – typical values (min. values)

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	–60 °C
u	**450** (≥ 320)	**570** (≥ 520)	**37** (≥ 25)	**55**	≥ 32

u untreated, as welded

Operating data



Polarity:	Re-drying if necessary:	Electrode identification:	ø mm	L mm	Amps A
DC (+)	120 – 200 °C, min. 2 h	FOX CN 23/12-A	2.5	300/350	60 – 80
AC		309L-17 E 23 12 L R	3.2	300/350	80 – 110
			4.0	350/450	110 – 140
			5.0	450	140 – 180

Preheating and interpass temperature as required by the base metal.

Approvals

TÜV (01771.), DB (30.014.08), ABS, BV, LR, DNV GL, CWB, NAKS (ø 3,2 mm; ø 4,0 mm), CE