

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

BÖHLER FOX CN 23/12-A

**SMAW rutile electrode
high-alloyed, special applications**

Description

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.

Typical Composition of All-weld Metal

	C	Si	Mn	Cr	Ni
wt-%	0.02	0.7	0.8	23.2	12.5

Mechanical Properties of All-weld Metal

yield strength R_e N/mm ² (MPa):	440	(≥400)
tensile strength R_m N/mm ² (MPa):	570	(≥550)
elongation A ($L_0=5d_0$) %:	40	(≥30)
impact work ISO-V KV J	60	(≥47)
	+20°C:	(≥32)
	-60°C:	(≥32)

u untreated, as-welded

Operating Data



re-drying if necessary:

250-300°C, min. 2 h

electrode identification:

FOX CN 23/12-A 309L-17 E 23 12 L R

ø mm	L mm	amps A
2.5	350	60-80
3.2	350	80-110
4.0	350	110-140
5.0	450	140-180



Preheating and interpass temperature as required by the base metal.

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- perlite 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

Approvals and Certificates

TÜV-D (1771.), DB (30.014.08), ÖBB, TÜV-A (130), ABS (E309L-17), BV (UP), DNV (NV 309 L), GL (4332), LR (DXV u. O, CMnSS), VUZ, SEPROZ, CE, CWB, NAKS (Ø3,2 mm; Ø4,0 mm)

Same-alloy / Similar-alloy Filler Metals

SMAW electrode:	FOX CN 23/12 Mo-A	GMAW flux cored wire:	CN 23/12-FD
GTAW rod:	CN 23/12-IG		CN 23/12 PW-FD
GMAW solid wire:	CN 23/12-IG		CN 23/12 Mo-FD
Metal cored wire:	CN 23/12-MC		CN 23/12 Mo PW-FD
		SAW combination:	CN 23/12-UP/BB 202