



BÖHLER FOX CN 23/12-A

Stick electrode, high-alloyed, austenitic stainless, special applications

SMAW

Classifications

EN ISO 3581-A
E 23 12 L R 3 2

AWS A5.4 / SFA-5.4
E309L-17

Characteristics and typical fields of application

Rutile coated, core wire alloyed electrode of E 23 12 L / E309L-17 type providing increased delta ferrite contents (FN ~17) in the weld deposit for safe and crack resistant dissimilar joint welds and surfacing. Designed for first class weld seems and easy handling on AC or DC+. High current carrying capacity with minimum spatter formation. Self-releasing slag, smooth and clean weld profile. Safety against formation of porosity due to 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

Primarily used for surfacing (buffer layer) unalloyed or low-alloyed steels and when joining non-molybdenum-alloyed stainless and carbon steels. Joints and mixed joints between austenitic steels such as

1.4301 X5CrNi18-10, 1.4306 X2CrNi19-11, 1.4308 GX5CrNi19-10, 1.4401 X5CrNiMo17-12-2, 1.4404 X2CrNiMo17-12-2, 1.4408 GX5CrNiMo19-11-2, 1.4435 X2CrNiMo18-14-3, 1.4436 X3CrNiMo17-12-3, 1.4541 X6CrNiTi18-10, 1.4550 X6CrNiNb18-10, 1.4552 GX5CrNiNb19-11, 1.4571 X6CrNiMoTi17-12-2, 1.4580 X6CrNiMoNb17-12-2, 1.4581 GX5CrNiMoNb19-11-2, 1.4583 X10CrNiMoNb18-12, 1.4948 X6CrNi18-10

UNS S30400, S30403, S30809, S31600, S31603, S31635, S32100, S34700, S31640

AISI 304, 304L, 316, 316L, 316Ti, 321, 347

or mixed joints between austenitic and heat resistant steels such as

1.4713 X10CrAlSi7, 1.4724 X10CrAlSi13, 1.4742 X10CrAlSi18, 1.4826 GX40CrNiSi22-10, 1.4828 X15CrNiSi20-12, 1.4832 GX25CrNiSi20-14, 1.4837 GX40CrNiSi25-12

with ferritic steels to pressure boiler steels P295GH and fine grained structural steels to P355N, ship building steel grades A – E, AH 32 – EH 36, A40 – F40, etc.

Typical analysis 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 - typical values (min. values)

Condition	Yield strength R _{p0.2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact values ISO-V KV J	
	MPa	MPa	%	20°C	-60°C
u	450 (≥ 320)	570 (≥ 520)	37 (≥ 25)	55	42 (≥ 32)
u untreated, as-welded					

Operating data



Polarity DC+ / AC
Electrode identification FOX CN 23/12-A / 309L-17 E 23
 12 L R

Dimension mm	Current A
2.5 × 300/350	60 – 80
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.

Redrying at 120 – 200°C for min. 2 h if necessary.

Approvals

TÜV (01771), DB (30.014.08), ABS, BV, LR, DNV GL, CWB, NAKS (Ø 3.2 mm, Ø 4.0 mm), CE