

# BÖHLER FOX CN 23/12-A

## High alloyed stick electrode type 309L for special applications

### Main benefit:

Core wire alloyed stick electrode with balanced chemistry to provide safe dissimilar joints and surfacing.





Product features	Product benefits	User benefits
» Core wire alloyed coating concept	» Homogeneous chemistry of every single stick from the beginning up to the end	» Homogeneous weld seams lead to reliable corrosion resistance
» Designed for easy welding	» Minimum spatter formation » Self-releasing slag	» Less post weld cleaning » Lower total welding time
» Rutile coated	» Easy to handle » Very good welding characteristics	» Smooth and clean weld seams » Shiny surface for visible seams
» Increased delta ferrite content (FN ~17) » Moisture resistant coating	» Crack resistant dissimilar joints » Safe against porosity » Many 3 <sup>rd</sup> party approvals	» Welding for high demanding industries with required approvals
» Available in Böhler Dry System and in hermetical sealed tins	» Ready to weld without re-drying up to 9 h after opening	» Reduced preparation work, safe packaging always dry, oven-fresh stick electrodes



### Typical applications

- » Variable applications when dissimilar joints are requested
- » Surfacing of unalloyed steel for corrosion resistance
- » Various industries

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Classifications		Operating data	
EN ISO 3581-A	AWS A5.4 / SFA-5.4	Welding positions	Polarity
E 23 12 L R 3 2	E309L-17		

Typical analysis of all weld metal, wt. %				
C	Si	Mn	Cr	Ni
0.02	0.7	0.8	23.2	12.5

Mechanical properties, all weld metal (single values typical)						
	Condition	Yield strength R <sub>p0.2%</sub> MPa	Tensile strength R <sub>m</sub> MPa	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	CVN Impact toughness ISO-V KV J	
					+20 °C	-60 °C
	As welded	450 (≥ 320)	570 (≥ 520)	37 (≥ 25)	55	42 (≥ 32)

Steels to be welded	
EN	ASTM
<p>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.</p>	

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

Tin Packaging	Dry System Vacuum Packaging
 <p>Weight: ~ 4.1 kg</p> <p>Diameter:            2.5 x 350 mm            3.2 x 350 mm            4.0 x 350 mm            4.0 x 450 mm            5.0 x 450 mm</p>	 <p>Weight: DrySys 20: ~1.2 kg DrySys 30: ~ 2.1 kg</p> <p>Diameter:            2.5 x 300 mm            2.5 x 350 mm            3.2 x 300 mm            3.2 x 350 mm            4.0 x 350 mm</p>