

Classifications

EN ISO 3581-A	EN ISO 3581-B	AWS A5.4
E 22 9 3 N L R 3 2	ES2209-17	E2209-17

Characteristics and typical fields of application

Rutile electrode, designed for ferritic-austenitic duplex steels, e.g. 1.4462, UNS 31803. Field of applications are in off-shore engineering and in the chemical industry. Besides offering high mechanical strength and toughness, the weld metal is also noted for excellent resistance to stress corrosion cracking and pitting resistance. BÖHLER FOX CN 22/9 N offers excellent positional weldability, and thus is perfectly suited for pipe welding. Besides the good wetting characteristics, slag removability, resistance to porosity and reliable CVN toughness down to -20 °C it is designed with a fully alloyed core wire providing best corrosion resistance and a very homogeneous micro structure with specified ferrite contents of 30 – 60 FN (WRC) and a Pitting Resistance Equivalent (PREN) of > 35 . For wall thicknesses above 20 mm or impact requirements down to -60 °C we recommend our basic coated electrode BÖHLER FOX CN 22/9 N-B.

Base materials

Same-alloyed duplex steels, as well as similar-alloyed, ferritic-austenitic steels with higher tensile strength

1.4462 X2CrNiMoN22-5-3, 1.4362 X2CrNiN23-4,
1.4462 X2CrNiMoN22-5-3 together with 1.4583 X10CrNiMoNb18-12, 1.4462 X2CrNiMoN22-5-3 together with P235GH/ P265GH, S255N, P295GH, S355N, 16Mo3
UNS S31803, S32205

Typical analysis of all-weld metal (wt.-%)

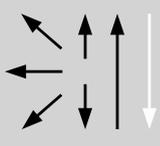
	C	Si	Mn	Cr	Ni	Mo	N		PRE _N
wt-%	≤ 0.03	0.8	0.9	22.6	9.0	3.1	0.17		≥ 35

Mechanical properties of all-weld metal

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	-10 °C	-20 °C
u	650 (≥ 450)	820 (≥ 690)	25 (≥ 20)	55	50	≥ 32

u untreated, as welded

Operating data

	Polarity:	Redrying:	Electrode identification:	∅ (mm)	L mm	Amps A
	DC (+)	if necessary: 250 – 300 °C, min. 2 h	FOX CN 22/9 N 2209- 17 E 22 9 3 N L R	2.5	300	40 – 75
	DC (-)			3.2	350	70 – 120
	AC			4.0	350	110 – 150
				5.0	450	150 – 200

Preheating and interpass temperature max. $+150\text{ °C}$. In case of solution annealing e.g. cast iron, an interpass temperature of 250 °C is acceptable. Heat input according to wall thickness.

Approvals

TÜV (3636.), ABS (E 22 09-17), DNV (Duplex), GL (4462), LR (X), RINA (2209), Statoil, SEPPOZ, CE