

Classifications

EN ISO 17633-A	EN ISO 17633-B	AWS A5.22:
T 22 9 3 NL R M21 3 / T 22 9 3 NL R C1 3	TS2209-F M21 0/ F C1 0	E2209T0-4 / E2209T0-1

Characteristics and typical fields of application

BÖHLER CN 22/9 N-FD is a rutile DUPLEX-steel flux-cored wire for GMAW of 1.4462 / S31803 steel grades. Besides its high productivity and all the other general benefits of flux cored wire welding it offers good wetting characteristics, easy slag release, very little temper discoloration & bead oxidation, smooth and clean weld finish. These specific advantages help to save additional costs especially when GMAW the Duplex steels. The structure of the all-weld metal is austenitic-ferritic (FN 35-50). The pitting corrosion resistance factor PRE_N is higher than 35. The weld deposit is corrosion resistant acc. to ASTM A262-93a, practice E, C, B and ASTM G48/method A (24h) up to 22 °C (as welded, pickled), 30 °C (solution treated, pickled). The broad field of welding parameters for BÖHLER CN 22/9 N-FD permits universal application in a very wide range of wall thicknesses using the spray-arc transfer together with fast travel speeds which help to control the maximum heat inputs easily. BÖHLER CN 22/9 N-FD provides outstanding welding results in the flat and horizontal position, horizontal/vertical position as well as the slightly vertical-down position (1 o'clock). Service temperatures between -40 °C and +250 °C are usable.

Base materials

Same and similar alloyed duplex steels, as well as dissimilar joints or weld claddings
 1.4462 X2CrNiMoN22-5-3, 1.4362 X2CrNiN23-4,
 1.4462 X2CrNiMoN22-5-3 with 1.4583 X10CrNiMoNb18-12,
 1.4462 X2CrNiMoN22-5-3 with P235GH/ P265GH, S255N, P295GH, S460N, 16Mo3
 UNS S31803, S32205

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

	C	Si	Mn	Cr	Ni	Mo	N		PRE_N	FN
wt-%	≤ 0.03	0.8	0.9	22.7	9.0	3.2	0.13		35	30-50

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p2.0}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	-40 °C
u	600 (≥ 450)	800 (≥ 690)	27 (≥ 20)	60	45 (≥ 32)

u untreated, as welded – shielding gas Ar + 18 % CO₂

Operating data

	Polarity: DC (+)	Shielding gases: M1-M3; C1	Redrying: possible, 150°C / 24 h	∅ (mm) 1.2	Amps A 125 – 280	Voltage V 22 – 36
---	----------------------------	--------------------------------------	---	----------------------	----------------------------	-----------------------------

Welding with standard GMAW-facilities possible, slightly trailing torch position (angel appr. 80°), when using 100% CO₂ as shielding gas it is necessary to increase the voltage by 2 V; the gas flow should be 15 – 18 l/min

Approvals

ABS (E 2209 T0-4), CWB (E2209T0-4), DNV (- (M21, C1) \varnothing 1.2 mm), GL (4462S (M21,C1)), LR (X (M21)), RINA (2209S), SEPROZ, CE, DB (43.014.31)