

SUPERCORE F91

FCAW

ALL-POSITIONAL FLUX CORED WIRE FOR T91/P91 CREEP RESISTING STEELS

PRODUCT DESCRIPTION

All-positional flux cored wire designed to weld equivalent modified 9Cr-1Mo steels (P91). Rutile flux system with an high purity strip producing weld metal recovery of about 90% with respect to the wire.

CLASSIFICATIONS

AWS A5.29M	E91T1-B9C/M-H4	
AWS A5.36M	E91T1-C1PZ-B91-H4 or E91T1-M21PZ-B91-H4	(dependent on shielding gas)
ISO 17634-B	T69T1-1C/M-9C1MV	

ASME IX QUALIFICATION

QW432	F-No 6
QW442	A-No 5

CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Nb	V	N	Cu	Al	Mn +Ni
Min.	0.08	0.60	--	--	--	8.0	--	0.85	0.02	0.15	0.02	--	--	--
Max.	0.13	1.20	0.50	0.015	0.020	10.0	0.80	1.2	0.07	0.25	0.07	0.15	0.04	1.50
Typical	0.1	0.8	0.3	0.010	0.016	9.0	0.5	1.0	0.04	0.2	0.05	0.05	0.01	1.30

ALL-WELD MECHANICAL PROPERTIES

Properties after PWHT	Min.	Typical (760°C/2h)				Typical (760°C/6h)
		20°	+566°C	+600°C	+650°C	
Tensile strength [MPa]	690	790	450	420	396	750
0.2% proof strength [MPa]	565	660	360	288	245	630
Elongation [%] 4d	17	20	21	27	29	23
5d	14	18	20	25	26	20
Reduction of area	--	55	73	81	85	58
Impact ISO-V(J) +20°C	--	28	--	--	--	36
Hardness [HV]	--	260	--	--	--	250

OPERATING PARAMETERS

Shielding gas: 80%Ar-20%CO₂ (or 15 – 25%CO₂) or 100% CO₂ at 20-25l/min.

Current: DC+ve ranges as below:

Diameter (mm)	welding position	amp-volt range *	typical	stickout
1.2 (0.045in)	Positional	140-170A, 24-26V	160A, 25V	15-25mm

* Using 100%CO₂ the voltage should be increased by 1-2V

PACKAGING DATA

Diameter (mm)	Weight (kg)	Packaging	Item number
1.2	15	S300	SCF91-12

FUME DATA (WT % TYPICAL)

Shielding gas 80%Ar-20%CO₂:

Fe	Mn	Ni	Cr ³	Cr ⁶	Cu	F	OES (mg/m ³)
18	8	< 0.5	3	3	< 1	8	1.7