

SUPERCORE F91

ALL-POSITIONAL FLUX CORED WIRE

PRODUCT DESCRIPTION

All-positional flux cored wire designed to weld equivalent modified 9CrMo steels [P91]. Rutile flux system with an high purity strip producing weld metal recovery of about 90%.

SPECIFICATIONS

AWS A5.29M	E91T1-B9C/M-H4	
AWS A5.36M	E91T1-C1PZ-B91-H4 or E91T1-M21PZ-B91-H4	(dependent on shielding gas)
BS EN 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	Ni+Mn
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

PWHT 760°C / 2h (6h)	Min.	typical 760°C/2h	typical 760°C/6h	High Temperature		
				+566°C	+600°C	+650°C
Tensile strength (MPa)	690	790	750	450	420	396
0.2% proof strength (MPa)	565	660	630	360	288	245
Elongation (%) 4d	17	20	23	21	27	29
	5d	14	18	20	25	26
Reduction of area	--	55	58	73	81	85
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 rane *	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

Spools vacuum-sealed in barrier foil with cardboard carton: 15kg (33 lbs)

The as-packed shelf life is virtually indefinite.

Resistance to moisture absorption is high, but to maintain the high integrity of the wire surface and prevent any possibility of porosity, it is advised that part-used spools are returned to polythene wrappers.

Where possible, preferred storage conditions are 60% RH max, 18°C min.

FUME DATA

Fume composition (wt %), 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