

# TF-210

Basicity index: 3.1

EN ISO 14174 S A FB 1 55 AC H5

## Characteristics and Applications:

TF-210 is a fluoride-basic flux with high basicity and low impurity levels such as P and S. It is suitable for welding on DC and AC using single and tandem wire process.

It also specially suited to narrow gap welding on AC. It provides excellent weldability and due to neutral behavior, high mechanical properties of weld metal can be controlled by using the appropriate wire grade.

- Fine grain structural steels for low temperature requirements.
- Offshore applications.
- High tensile fine grain steels.

## Notes on usage:

1. Flux exposed to atmosphere for an excess period must be re-baked at 300~350°C for 2~4hrs holding time.
2. Re-circulation of flux should be limited to three cycles. After this, the flux should be mixed with twice its volume of new flux prior to further use.
3. We recommend using heated hoppers for storage of flux in production.

## Typical chemical composition of weld metal (wt %) :

Wire	EN ISO 14171-A	C	Mn	Si	P	S	Mo	Ni	Cr
TSW-E12	S 46 5 FB S2Mo	0.06	0.99	0.19	0.013	0.004	0.47	-	-
TSW-E13	S 50 4 FB SZ	0.057	1.26	0.41	0.017	0.004	0.41	-	-
TSW-E32	S 42 7 FB S2Ni2	0.06	0.90	0.24	0.007	0.002	-	2.23	-
TSW-E33	S 46 10 FB S2Ni3	0.064	0.85	0.24	0.003	0.003	-	3.29	-
TSW-E40	S 46 6 FB SZ	0.07	1.35	0.30	0.012	0.005	0.23	0.80	-
TSW-E5G	-	0.06	1.33	0.30	0.011	0.003	0.48	2.43	0.57
TSW-E41	S 50 5 FB S3Ni1Mo	0.07	1.55	0.22	0.011	0.002	0.48	0.8	--
SubCor H12KN	-	0.06	1.5	0.20	0.010	0.004	--	1.70	--

## Typical mechanical properties of weld metal:

Wire	AWS A5.23	Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	Charpy V-Notch J (ft-lbf)	Temperature °C(°F)	PWHT
TSW-E12	F8A6-EA2-A2	498(72)	573(83)	28	130(96)	-51(-60)	--
	F8P6-EA2-A2	520(75)	580(84)	32	88(65)	-51(-60)	620°C*1hr
TSW-E13	F9A4-EG-G	656(95)	670(97)	25	90(66)	-40(-40)	AW
TSW-E32	F8A10-ENi2-Ni2	484(70)	563(82)	32	63(46)	-73(-100)	--
TSW-E33	F8A15-ENi3-Ni3	527(76)	611(89)	30	64(47)	-101(-150)	AW
	F8P15-ENi3-Ni3	476(69)	565(82)	32	84(62)	-101(-150)	620°C*1hr
TSW-E40	F8A8-EG-G	549(80)	628(91)	28	90(66)	-62(-80)	--
TSW-E5G	F11A6-EG-G	694(101)	806(117)	20	66(49)	-51(-60)	AW
	F11P6-EG-G	688(100)	773(112)	22	57(42)	-51(-60)	605°C*1hr
TSW-E41	F9A6-EF3-F3	600(87)	680(99)	26	78(58)	-51(-60)	AW
	F9P6-EF3-F3	571(83)	644(93)	29	65(48)	-51(-60)	620°C*1hr
SubCor H12KN	F8A8-ECG-G	562(82)	643(93)	30	136(100)	-62(-80)	AW
	F8P6-ECG-G	517(75)	604(88)	30	165(122)	-51(-60)	620°C*1hr

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