

Superflux800T X M-12K (HD)

SUBMERGED ARC WELDING CONSUMABLES
FOR WELDING OF Mild & 490MPa CLASS
HIGH TENSILE STEEL



❖ Specification

Flux	JIS Z3352	EN ISO 14174	KS B ISO 14174
Superflux800T	S A FB 1	S A FB 1	S A FB 1

❖ Applications

The flux is widely used for the welding of thick section components in the offshore, pressure vessel industries.

❖ Characteristics on Usage

Superflux800T is the agglomerated fluoride-basic and neutral type flux for wind-tower. It can be obtained good weldability and high notch toughness of weld metal at low temperature down to -60°C in combination with the electrode M-12K. As the low hydrogen content of weld metal is extremely low, it provides excellent resistance to crack

❖ Note on Usage

1. Dry the flux at $300\sim 350^{\circ}\text{C}$ ($572\sim 662^{\circ}\text{F}$) for 60minutes before use.
2. Remove rust, scales, oil, paint, water, dirt and slag of tack welds from the groove to obtain sound weld metal.
3. Use welding current and speed as low as possible at the first layer of groove to avoid cracking.
4. Preheat at $50\sim 100^{\circ}\text{C}$ ($122\sim 212^{\circ}\text{F}$) according to base metal and plate thickness. Keep interpass temperature at $100\sim 250^{\circ}\text{C}$ ($212\sim 482^{\circ}\text{F}$).



Welding consumable for test

❖ Flux

Consumable	Chemical Composition, wt%			
	SiO ₂ +TiO ₂	Al ₂ O ₃ +MnO	CaO+MgO	CaF ₂
Superflux800T	10	30	40	15

Consumable	Particle Size (Mesh)	Type of Flux	B.I	H ₂ O _{1000℃} /CO ₂ (%)
Superflux800T	10 X 48	Agglomerated/ Fluoride basic	2.4	0.05/0.8

❖ Electrode

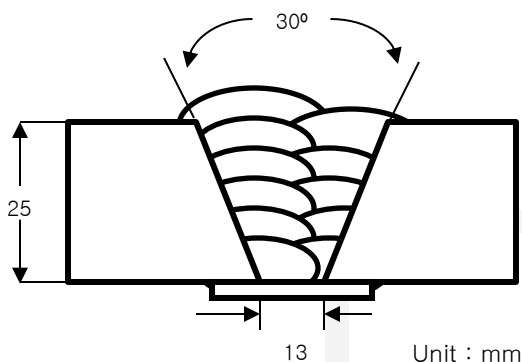
Consumable	Dia. (mm)	Chemical Composition, wt%				
		C	Si	Mn	P	S
M-12K (HD)	4.0	0.099	0.16	1.09	0.016	0.008
AWS A5.17 EM12K		0.05-0.15	0.10-0.35	0.80-1.25	≤0.030	≤0.030



Mechanical Properties & Chemical Composition of All Weld Metal

❖ Welding Conditions

Method by AWS Spec.



[Joint Preparation & Layer Details]

Base metal	: AH36
Particle size	: 10 X 48
Flux type	: Agglomerated
Amp./ Volt./cpm	: 550 / 30 / 40
Stick-Out(mm)	: 30
Pre-Heat(℃)	: R.T .
Interpass Temp.(℃)	: <150
Polarity	: AC

❖ Mechanical Properties of All weld metal

Consumables	PWHT Condition	Tensile Test			CVN Impact Test (Joule)	
		YS(MPa)	TS(MPa)	El(%)		
Superflux800T X M-12K (HD)	As welded	476	560	29.4	-62℃	34
AWS A5.17 F7A8-EM12K	-	≥ 400	490~660	≥ 22	≥ 27J at -62℃	

❖ Chemical Analysis of All weld metal(wt%)

Consumables	C	Si	Mn	P	S
Superflux800T X M-12K (HD)	0.073	0.24	1.28	0.028	0.008