

**Characteristics and Applications:**

HOBART HN-590 is an agglomerated aluminates basic flux, with little weld metal alloy pick-up of Mn and Si. Suitable for welding non-and low alloy steels with single and multiple wires application. Designed for two-run or multiple layers with both AC and DC technique. Has excellent slag detachability and good operation performance. Good mechanical properties at low temperatures can be achieved if combine with appropriate wire. It is suitable to be applied in following industries.

- Shipbuilding
- Boiler and Pressure Vessel
- Pipemill up to API-5L-X70
- Low alloy and High Tensile/Strength Steel Structural Fabrication
- Bridge Fabrication

**Notes on Usage:**

1. The flux must be re-dried at a temperature of 300~350°C for 1~2hr holding time when it is affected by moisture pick-up.
2. Adding a certain amount of new flux with used one to maintain good quality of weld metal.

**Typical Chemical Composition of Weld Metal (wt %)**

Wire	Weld metal classification		C	Si	Mn	P	S	Mo	Ni
	AWS A5.17	EN ISO 14171-A							
HOBART M12K	F7A2/A4-EM12K	S 42 3 AB S2Si	0.06	0.4	1.7	0.03	0.01	-	-
SubCor M13K	F7A6-EC1	N/A	0.05	0.27	1.6	0.027	0.01	-	-
Wire	Weld metal classification		C	Si	Mn	P	S	Mo	Ni
	AWS A5.23	EN ISO 14171-A							
HOBART 12E	F8A4-EA2-G	S 46 3 AB S2Mo	0.06	0.29	1.6	0.03	0.01	0.45	-
HOBART E31	F8A6-ENi1-Ni1	S 46 5 AB S2Ni1	0.06	0.3	1.6	0.025	0.01	-	0.96

**Typical Mechanical Properties of Weld Metal**

Wire	Yield strength MPa(ksi)	Tensile strength MPa(ksi)	Elongation %	Charpy V-Notch J (ft-lbf)	Temperature °C(°F)
HOBART M12K	460(67)	530(77)	30	40(30)	-40(-40)
				65(48)	-30(-20)
SubCor M13K	450(65)	515(75)	34	50(37)	-51(-60)
HOBART 12E	546(79)	614(89)	26	50(37)	-40(-40)
HOBART E31	520(75)	615(89)	28	55(41)	-50(-60)

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