ULTIMATE-80B2

1.25 Cr-0.5 Mo Steels

SFA 5.5 / AWS E 8018-B2
BS 2493 1 CrMoBH
DIN 8575 E CrMo1B26
IS 1395 E 55B-B2-2-6Fe
EN 1599 E CrMo1B42 H5
Identification : Name Printed.

Hydrogen controlled iron powder type electrode designed for depositing weld metal of 1.25 Cr-0.5 Mo steel with good creep resistance at service temperatures upto 550°C. In addition, it displays good resistance to corrosion in heated steam and to corrosion in processing high sulphur crude oil up to 450°C.

Applications:

- Boilers
- Pressure Vessels
- Headers
- High Pressure Piping
- Heat Exchangers and Condensers in power generation, oil refineries, chemical and petrochemical industries.

Chemical Analysis of All Weld Deposit (%).

C	Mn	Si	Cr	Mo	S	P
0.05–0.10	0.50–0.90	0.50 max	1.0 – 1.50	0.40–0.65	0.025 max	0.025 max

All Weld Mechanical Properties:

PWHT	UTS (Mpa)	0.2% Proof Stress (Mpa)	% Elongation (L = 4d)	CVN impact Energy (J) (+ 20°C)
690°/1hr	580 – 720	500 – 600	22 - 27	100 - 140
690 ° C/9 hr	560 min	460 min	24 - 29	

Hardness : 250 BHN (as welded)
215 BHN max after PWHT at 690 ° ± 10 ° C for 3 hrs.

Hydrogen in weld metal : 5 ml/100g. max.
(Mercury method)
Moisture content < 0.20%

WELDING CURRENT RANGES FOR SIZES MANUFACTURED
Use DC+ or AC (70 V Min)

Dia (mm)	2.50	3.15	4.00	5.00	6.30
Length (mm)	350	450	450	450	450
Current (Amp)	70-100	100-140	140-180	180-240	250-320

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Notes on Usage:

1. Redrying cycle:
   (a) 250°C/1-2 hr to control hydrogen below 10ml/100gm;
   (b) 325°C/1-2 hr to control hydrogen below 5ml/100 gm.
2. Avoid overdrying so as to prevent damage to coating. Restrict redrying to two cycles by using holding oven & quivers with temperature of 80-100°C.
3. For detailed information on storage & redrying, please refer to our Notes on L.H. Electrodes (copy available on request).
4. Use short arc & minimize weaving to the extent possible.
5. Due attention has to be given to preheat & interpass temperature to ensure crack free welds & control on hardness of weld deposit & HAZ.
6. Preheat - Interpass temperature range 150° - 300°C depending on thickness. for section of < 12.5 mm - 100 - 150°C.
7. In welding thick sections (over 25 mm), it is safe practice to maintain temperature of 200°C - 250°C for 1 - 2 hours after completion of welding. This facilitates reduction in hydrogen level.

Additional information:

- PWHT – There are differences in national codes : AWS 690°C/1hr; BS 650°C/1 hr., DIN 690°C/ ½ hr. min.

- **MATERIALS TO BE WELDED.**

ASTM GRADES.			EN & DIN GRADES.	
❖ Plates	:	SA 387 Gr.11	EN	13 Cr Mo 4 - 5
				G 17 Cr Mo 5 - 5
❖ Pipes	:	SA 335 Gr. P11, P12	DIN	13 Cr Mo 4 4
		SA 369 Gr. FP 11		16 Cr Mo 4 4
		SA 426 Cr.CP 11		15 Cr Mo 5
❖ Tubes	:	SA 199 SA 200 & SA 213		22 Cr Mo 4 4
		Gr. T 11 & Gr. T 12		24 Cr Mo 5
❖ Forgings	:	SA 182 Gr.F 11		15 Cr 3
		SA 336 Gr. F 11		16 Mn Cr 5
		SA 541 Gr.11		20 Mn Cr 5
❖ Castings	:	SA 217 Gr. WC 6 Gr. WC 11		GS-17 Cr Mo 5 5
				GS-22 Cr Mo 5 4