

	:	PLANT STANDARD	:	FF 77198
BHEL	:	CFFP HARDWAR	:	PAGE NO. 1 OF 3

LOW HYDROGEN TYPE COVERED ARC WELDING ELECTRODES FOR
LOW CARBON STEEL

- 1.0 SCOPE : This specification covers the quality of carbon steel low hydrogen covered arc welding electrodes. The electrodes are to be used for rectification welding of low carbon steel.
- 2.0 COMPLIANCE WITH NATIONAL & INTERNATIONAL STANDARD : Assistance has been taken from DIN:17245 (87) and DIN 8575 in preparing the specification.
- 3.0 CONDITION OF DELIVERY : Electrodes shall be supplied in baked condition in packets.
- 4.0 MANUFACTURE : The core wire used for manufacture of electrodes / coating shall be left to the discretion of the supplier.
- 5.0 CHEMICAL COMPOSITION : Chemical composition of deposited weld metal, when tested in accordance with ASME Sec.II(c), shall conform to the following requirements.

Element	Min	Max
Carbon	0.050	0.100
Sulphur	-	0.025
Phosphorus	-	0.025
Manganese	1.000	1.500
Silicon	0.300	0.500

ISSUED	:	WELDING TECHNOLOGY	:	WORKED	:	VIVEK GUPTA	<i>Vivek</i>
REVISION	:	00	:	CHECKED	:	V.K.AGARWAL	<i>Agarwal</i>
DATE	:	08.12.97	:	APPROVED	:	A.K.JAIN	<i>A.K.Jain</i>

2

BHEL	PLANT STANDARD CFFP HARDWAR	FF 77198 PAGE NO. 2 OF 3
------	--------------------------------	-----------------------------

- 6.0 MECHANICAL PROPERTIES : The following mechanical properties shall be obtained after stress-relieving :
Yield Strength : 400 N /sq mm min. (.2% offset)
Tensile strength : 490 N /sq mm min.
% Elongation : 22.0 min.
Charpy V Notch : 27.0 J (Average of 3 specimens)
Impact (ISO-V) : at +20oC.
- 7.0 SELECTION OF TEST SAMPLE : The selection of test samples for chemical composition and mechanical properties shall be done as follows.
- 7.1 Electrodes shall be drawn from one or more than one packets from each batch number for carrying out chemical and mechanical properties.
- 7.2 Test sample for chemical analysis shall be made according to ASME Sec. II (c).
- 7.3 Electrodes shall be deposited on carbon steel plates for radiography and mechanical properties in accordance with ASME Sec. II (c).
- 7.4 Plate shall be subjected to stress relieving at not less than 600oC.
- 8.0 PREPARATION OF TEST SAMPLE : Tensile and Impact specimens shall be prepared in accordance with ASME Sec. II (c).
- 9.0 FREEDOM FROM DEFECTS : Weldment shall be free from inclusions, cracks, lack of fusion etc.

ISSUED	WELDING TECHNOLOGY	WORKED : VIVEK GUPTA
REVISION : 00	DATE : 08.12.97	CHECKED : V.K.AGARWAL

1

BHEL	:	PLANT STANDARD	:	FF 77198
	:	CFFP HARDWAR	:	PAGE NO. 3 OF 3

10.0 TEST CERTIFICATE : The supplier shall submit 5 copies of test certificates, giving the following informations, along with delivery.

10.1 BHEL Reference

10.1.1 PO Number

10.1.2 Specification number

10.2 Supplier's reference

10.2.1 Supplier's Name or Emblem

10.2.2 Chemical analysis

10.2.3 Results of Mechanical Properties.

10.2.4 Dia. of core wire and length of electrodes

10.2.5 Batch number

10.2.6 Date of manufacture

10.3 Party shall certify that the electrodes have been manufactured in accordance with ASME Sec. II (c).

11.0 MARKING : Each electrode shall be marked by imprint of AWS classification no. and brand name of supplier near to the gripping end. Ink used for imprinting shall provide sufficient contrast with the electrode covering, so that it is legible before and after normal welding operation.

Party shall print following information on each carton.

- Brand Name
- Size of electrode
- Batch number & date of manufacture
- Quantity and net weight

ISSUED : WELDING TECHNOLOGY | WORKED : VIVEK GUPTA

REVISION : 00 DATE : 08.12.97 | CHECKED : V.K.AGARWAL