

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF77197 Rev 02 पृष्ठ का Page 1 of 4																											
SUPERSEDES INVENTORY NO. सामग्री सूची संख्या को अधिकृतित करना	LOW HYDROGEN TYPE COVERED ARC WELDING ELECTRODES FOR CARBON / CARBON - MANGANESE STEEL																													
1.0 Scope This specification covers the quality of carbon / carbon manganese steel low hydrogen covered arc welding electrodes. The electrodes are to be used for rectification welding of C / C-Mn steel.																														
2.0 Compliance with National and International Standards Assistance has been taken from TLV 905901 and ASME Section II (c) in preparing the specification.																														
3.0 Condition of Delivery Electrodes shall be supplied in seaworthy and tight packing to avoid any damage / exposure to atmosphere during handling, transit and storage.																														
4.0 Manufacture The core wire and the coating used for the manufacture of the electrode shall be at 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																														
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:35%;">Element</th> <th style="width:30%;">Min. (%)</th> <th style="width:35%;">Max. (%)</th> </tr> </thead> <tbody> <tr> <td>Carbon</td> <td>0.050</td> <td>0.100</td> </tr> <tr> <td>Sulphur</td> <td>---</td> <td>0.025</td> </tr> <tr> <td>Phosphorus</td> <td>---</td> <td>0.025</td> </tr> <tr> <td>Manganese</td> <td>1.200</td> <td>1.600</td> </tr> <tr> <td>Silicon</td> <td>0.300</td> <td>0.600</td> </tr> <tr> <td>Chromium</td> <td>---</td> <td>0.200</td> </tr> <tr> <td>Molybdenum</td> <td>---</td> <td>0.300</td> </tr> <tr> <td>Nickel</td> <td>---</td> <td>0.300</td> </tr> </tbody> </table>				Element	Min. (%)	Max. (%)	Carbon	0.050	0.100	Sulphur	---	0.025	Phosphorus	---	0.025	Manganese	1.200	1.600	Silicon	0.300	0.600	Chromium	---	0.200	Molybdenum	---	0.300	Nickel	---	0.300
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Note : Total value of Mn, Cr, Mo and Ni shall not exceed 1.75.																														
स्वत्ताधिकार एवं गोपनीयता इस प्रलेख में, दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	RMI MPIC CHAIRMAN CPSC	KBS KB SOOD B RAHA	अनुवादक TRANSLATED BY निर्माणकर्ता WORKED BY VIVEK GUPTA जांचकर्ता CHECKED BY VK AGARWAL पर्यवेक्षणकर्ता SUPERVISED BY AK GARG																											
सामग्री सूची संख्या INVENTORY NO.	सहमत विभाग AGREED DEPTT.	नाम NAME दिनांक एवं हस्ताक्षर DATE & SIGNATURE	स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE निर्माण : PREPARED : WELDING TECH जारी : फाउण्ट्री टेक्नोलॉजी ISSUED : WELDING TECHNOLOGY दिनांक : DATE : 20.10.06																											

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सामग्री सूची संख्या को अधिकृत करता है	SUPERSEDES INVENTORY NO.	6.0 Mechanical Properties The following mechanical properties shall be obtained after stress relieving at $560 \pm 10^\circ \text{C}$ <table> <tr> <td>Yield Strength (0.2 % offset)</td> <td>-</td> <td>400 Mpa min.</td> </tr> <tr> <td>Tensile Strength</td> <td>-</td> <td>530 Mpa min.</td> </tr> <tr> <td>% Elongation</td> <td>-</td> <td>22.0 min.</td> </tr> <tr> <td>Charpy V notch (ISO-V)</td> <td>-</td> <td>27.0 J avg. of 3 specimens at - 46°C</td> </tr> </table>			Yield Strength (0.2 % offset)	-	400 Mpa min.	Tensile Strength	-	530 Mpa min.	% Elongation	-	22.0 min.	Charpy V notch (ISO-V)	-	27.0 J avg. of 3 specimens at - 46°C
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		7.0 Selection of Test Samples The selection of test samples for acceptance for chemical composition and mechanical properties shall be done as follows 7.1 Electrodes shall be drawn from one or more than one packet from each batch no. 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 Electrode shall be deposited on carbon steel plates for radiography and mechanical properties in accordance with ASME Sec. II (c).														
स्वत्वधिकार एवं गोपनीयता इस दस्तावेज में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।		8.0 Preparation of Test Samples Tensile and Impact specimen shall be prepared in accordance with ASME Sec. II (c).														
दिनांक एवं हस्ताक्षर SIGN & DATE		9.0 Freedom from Defects Weldment on the test plate made as per ASME Sec. II (c) shall be free from inclusions, cracks and lack of fusion etc, on radiography, as per recommendation of ASME Sec. II (c).														
दिनांक एवं हस्ताक्षर SIGN & DATE		10.0 Acceptance 10.1 Each batch of electrodes supplied by approved vendor shall be accepted on the basis of properties given in Cl. 5.0 and properties as per Cl. 6.0 shall be checked on surveillance basis. 10.2 For a new vendor the initial approval will be done on the basis of properties (given in Cl. 5.0, 6.0 and 9.0) obtained on the test samples prepared from the test plate made as per ASME Sec. II (c) at BHEL														
दिनांक एवं हस्ताक्षर SIGN & DATE		11.0 Test Certificates The supplier shall submit five copies of test certificates giving the following information along with delivery 11.1 BHEL REFERENCE 11.1.1 PO Number 11.1.2 Specification No.														
सामग्री सूची संख्या		निर्माणकर्ता WORKED BY	VIVEK GUPTA													
		जांचकर्ता CHECKED BY	VK AGARWAL													

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