

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. – हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		FF09110 Rev 00																												
				पृष्ठ क Page 1 of 3																												
*नमूने के चयन/प्रकार का नाम सामग्री सूची संख्या को अधिकृत करता है	LOW HYDROGEN TYPE COVERED ARC WELDING ELECTRODES FOR 13%Cr4%Ni STEEL																															
1.0 Scope This specification covers the quality of Stainless steel low hydrogen covered arc welding electrodes for fabrication welding of Hydro Runners. 2.0 Compliance with National and International Standards Assistance has been taken from 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"> <thead> <tr> <th>Element</th> <th>Min. (%)</th> <th>Max. (%)</th> </tr> </thead> <tbody> <tr> <td>Carbon</td> <td>---</td> <td>0.040</td> </tr> <tr> <td>Sulphur</td> <td>---</td> <td>0.030</td> </tr> <tr> <td>Phosphorus</td> <td>---</td> <td>0.030</td> </tr> <tr> <td>Manganese</td> <td>0.600</td> <td>0.900</td> </tr> <tr> <td>Silicon</td> <td>---</td> <td>0.500</td> </tr> <tr> <td>Chromium</td> <td>11.500</td> <td>14.000</td> </tr> <tr> <td>Molybdenum</td> <td>0.400</td> <td>0.600</td> </tr> <tr> <td>Nickel</td> <td>3.800</td> <td>5.500</td> </tr> </tbody> </table>					Element	Min. (%)	Max. (%)	Carbon	---	0.040	Sulphur	---	0.030	Phosphorus	---	0.030	Manganese	0.600	0.900	Silicon	---	0.500	Chromium	11.500	14.000	Molybdenum	0.400	0.600	Nickel	3.800	5.500
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अनुवादक TRANSLATED BY निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY पर्यवेक्षणकर्ता SUPERVISED BY																																
RMI SN GHOSH MPIC NK VERMA CHAIRMAN CPSC VK AGARWAL																																
सहमत विभाग नाम AGREED DEPT. NAME दिनांक एवं हस्ताक्षर DATE & SIGNATURE																																
स्वतंत्रता एवं गोपनीयता इस प्रलेख में दी गई सुचना भारत हेतु हस्तक्षेप/विकास की समर्पिता है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE निर्माण % PREPARED : WELDING TECH जारी : फाउण्ड्री टेक्नालॉजी ISSUED : WELDING TECHNOLOGY दिनांक % DATE : 09.11.12																															

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				पृष्ठ Page	का 2 of 3												
सामग्री सूची संख्या को अधिकतम करता है	SUPERSEDES INVENTORY NO.	6.0 Mechanical Properties The following mechanical properties shall be obtained after stress relieving at $600 \pm 10^\circ \text{C}$ <table border="0"> <tr> <td>Yield Strength (0.2 % offset)</td> <td>-</td> <td>550 Mpa min.</td> </tr> <tr> <td>Tensile Strength</td> <td>-</td> <td>760 Mpa min.</td> </tr> <tr> <td>% Elongation</td> <td>-</td> <td>16.0 min.</td> </tr> <tr> <td>Charpy V notch (ISO-V)</td> <td>-</td> <td>60.0 J avg. of 3 specimens at $+ 20^\circ \text{C}$ 50.0 J avg. of 3 specimens at $- 20^\circ \text{C}$</td> </tr> </table>				Yield Strength (0.2 % offset)	-	550 Mpa min.	Tensile Strength	-	760 Mpa min.	% Elongation	-	16.0 min.	Charpy V notch (ISO-V)	-	60.0 J avg. of 3 specimens at $+ 20^\circ \text{C}$ 50.0 J avg. of 3 specimens at $- 20^\circ \text{C}$
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COPYRIGHT AND CONFIDENTIAL The information on this documents 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 - Electrodes shall be drawn from one or more than one packet from each batch no. for carrying out chemical and mechanical properties. - Test Sample for chemical analysis shall be made according to ASME Sec. II (c) - Electrode shall be deposited on carbon steel plates for radiography and mechanical properties in accordance with ASME Sec. II (c).															
स्वत्वाधिकार 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।		8.0 Preparation of Test Samples Tensile and Impact specimen shall be prepared in accordance with ASME Sec. II (c).															
		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).															
		10.0 Acceptance - 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. - 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															
		11.0 Test Certificates The supplier shall submit five copies of test certificates giving the following information along with delivery - BHEL REFERENCE - PO Number															
हस्ताक्षर एवं दिनांक "09/12/12"																	
सामग्री सूची संख्या		निर्माणकर्ता WORKED BY	SUSHANT PANDEY	<i>Sushant</i>	10/12/12												
		जांचकर्ता CHECKED BY	ARUN AGARWAL	<i>Arun</i>	10/12/12												

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सामग्री सूची संख्या को अधिकृतित करता है SUPERSEDES INVENTORY NO.	11.2 SUPPLIER REFERENCE 11.2.1 Supplier Name and Emblem. 11.2.2 Chemical Analysis 11.2.3 Result of Mechanical Properties 11.2.4 Diameter of core wire and length of electrodes 11.2.5 Batch No. 11.2.6 Date of manufacture 11.3 Party shall certify that the electrodes have been manufactured in accordance with FF09110 Rev 00. 12.0 Marking Each electrode shall be marked by imprint of Plant Standard No./ AWS 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 imprint following information on each carton. - Brand Name - Size of electrode - Batch no. and Date of Manufacture - Quantity and net weight.												
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