
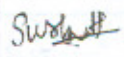
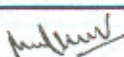
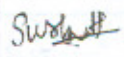
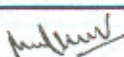
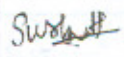
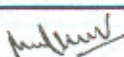

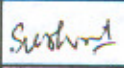




fnukad .00 g.k.k.k. SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF77190 Rev 03 पृष्ठ 1 का 4 Page 1 of 4																											
सामग्री सूची संख्या INVENTORY NO.	LOW HYDROGEN TYPE COVERED ARC WELDING ELECTRODES FOR 13%Cr4%Ni STEEL 1.0 Scope This specification covers the quality of Stainless steel low hydrogen covered arc welding electrodes. The electrodes are to be used for rectification welding of 13Cr4Ni steel. 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																													
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	<table border="1"> <thead> <tr> <th>Element</th> <th>Min. (%)</th> <th>Max. (%)</th> </tr> </thead> <tbody> <tr> <td>Carbon</td> <td>---</td> <td>0.050</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>0.600</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	---	0.050	Sulphur	---	0.030	Phosphorus	---	0.030	Manganese	0.600	0.900	Silicon	---	0.600	Chromium	11.500	14.000	Molybdenum	0.400	0.600	Nickel	3.800	5.500
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fmkad .oa gLrkj SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF77190 Rev 03 पृष्ठ का Page 2 of 4																
SUPERSEDES INVENTORY NO. lkekzh lwph la f k dks	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>15.0 min.</td> </tr> <tr> <td>Charpy V notch (ISO-V)</td> <td>-</td> <td>50.0 J avg. of 3 specimens at $+ 20^\circ \text{C}$ 45.0 J avg. of 3 specimens at 0°C</td> </tr> </table>				Yield Strength (0.2 % offset)	-	550 Mpa min.	Tensile Strength	-	760 Mpa min.	% Elongation	-	15.0 min.	Charpy V notch (ISO-V)	-	50.0 J avg. of 3 specimens at $+ 20^\circ \text{C}$ 45.0 J avg. of 3 specimens at 0°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). 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 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. 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.																		
LoRokf/kdkj .oa xksiuh:: jskk esa nh xbZ jwpuk Hkkj gsoh bysDVwbYI dh IEIRr gS bls. zR{k .oa vizR{k .lk ls fdHh Hkh rgi iz ksx jks fd daudh ds fgr esa gLrkj d gks u fd;k Ik, A	<table border="1"> <tr> <td data-bbox="73 1825 203 1982"> gLrkj .oa fmkad SIGN & DATE </td> <td colspan="4" data-bbox="203 1825 1544 1982"></td> </tr> <tr> <td data-bbox="73 1982 203 2116"> Lkekzh lwph la f k </td> <td data-bbox="203 1982 925 2116"></td> <td data-bbox="925 1982 1079 2116"> निर्माणकर्ता WORKED BY Sushant Panday </td> <td data-bbox="1079 1982 1242 2116"> Sushant Panday  </td> <td data-bbox="1242 1982 1544 2116"> 25/08/09 </td> </tr> <tr> <td data-bbox="73 2116 203 2116"></td> <td data-bbox="203 2116 925 2116"></td> <td data-bbox="925 2116 1079 2116"> जांचकर्ता CHECKED BY Anil Kumar </td> <td data-bbox="1079 2116 1242 2116"> Anil Kumar  </td> <td data-bbox="1242 2116 1544 2116"> 25/08/09 </td> </tr> </table>				gLrkj .oa fmkad SIGN & DATE					Lkekzh lwph la f k		निर्माणकर्ता WORKED BY Sushant Panday	Sushant Panday 	25/08/09			जांचकर्ता CHECKED BY Anil Kumar	Anil Kumar 	25/08/09
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Trukad, oa Inukad SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF77190 Rev 03 पृष्ठ का Page 3 of 4	
SUPERSEDES INVENTORY NO Lkxzh lwph la[k dks	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 FF77190 Rev 02.			
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.	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. <ul style="list-style-type: none"> Brand Name Size of electrode Batch no. and Date of Manufacture Quantity and net weight. 			
LoRokf/kdkj, oa xksiuh:: LwpuK Hkkyr gsoh bys(DV^yY) dh IE/rRr gS bldk lZR jk. oa vZrR jk lk ls fdm Hkh ng iz kxk] lks fd dauh ds fgr esa ghuLdhd gks u fd, k tx, A	(This section is blank in the original document)			
Lkxzh lwph la[k	(This section is blank in the original document)	निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY	Sushant Panday Anil Kumar	  25/08/09 25/08/09

सिग्नेचर एवं दिनांक SIGN & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हार्डवेयर)		FF77190 Rev 03		
		PLANT PURCHASE SPECIFICATION (CFEP - HARDWARE)		पृष्ठ का Page 4 of 4		
सुपेर्सिडिंग INVENTORY NO. संख्या और REVISION NO.	RECORD OF CHANGES					
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	REV CODE	NO. OF CHANGES	DOCU. NO.	SHEET NO.	SIGN	DATE
	02	Clause No. 5.0 Lower limit of Si deleted		1 of 4		20.10.06
		Clause No. 6.0 SR specified, 23 ± 5 changed to 20		2 of 4		20.10.06
		Clause No. 7.4 deleted		2 of 4		20.10.06
		Clause No. 9.0 Radiography added		2 of 4		20.10.06
		Clause no. 10.0 added		2 of 4		20.10.06
	03	Clause No. 12.0 AWS No. added		3 of 4		20.10.06
		Clause No. 6.0 YS, UTS & % El values changed in line with material specification		2 of 4		25.08.09
			DISTRIBUTION OF PRINTS			
	स्वतंत्र अधिकार एवं गोपनीयता इस दस्तावेज़ में दी गई सूचना भारत भारती इंजीनियरिंग लिमिटेड की संपत्ति है। इसका प्रयोग केवल आपका ही है। इसे किसी भी प्रकार प्रसारित, प्रतिलिपि बनाना, या किसी अन्य व्यक्ति को इसकी जानकारी देना अनुमति नहीं है।	RMI	✓			
STANDARD SECTION		✓				
MPIC		✓				
सुपेर्सिडिंग INVENTORY				निर्माणकर्ता WORKED BY	Sushant Panday	Subrat 25/08/09
				जांचकर्ता CHECKED BY	Anil Kumar	Anil Kumar 25/08/09