



दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान क्रय विनिर्देश (हीप - हरिद्वार) PLANT PURCHASE SPECIFICATION (HEEP - HARIDWAR)		HW 19572
				मुख पृष्ठ PREFACE SHEET
सामग्री सूची संख्या को SUPERSEDES INVENTORY NO.	STEEL CASTING WITH IDENTIFICATION NUMBER (GP240GH)			
<p>केवल आंतरिक प्रयोग हेतु प्रदायक को देने से पूर्व इस मुखपृष्ठ को निकाल दें । FOR INTERNAL USE ONLY REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS.</p>				
<p>समतुल्य मानक/सूची आदि COMPARABLE STANDARDS / CATALOGUES ETC. } :NIL</p>				
<p>सुझाए/सम्भावित प्रदायक एवं श्रेणी SUGGESTED / PROBABLE SUPPLIERS AND GRADES. } :AS PER PMD</p>				
<p>कोई अन्य जानकारी ANY OTHER INFORMATION } : BASED ON TLV 9059 01 05/2001</p>				
स्वतंत्रताधिकार एवं गोपनीय इस प्रलेख में कोई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग जो कि कंपनी के हित में हानिकारक हो न किया जाए ।	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			
दिनांक एवं हस्ताक्षर SIGN & DATE 13/12/06	स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE			
सामग्री सूची संख्या INVENTORY NO. P-2415	Rev 02 27.01.06	तैयारी : मानक विभाग ISSUED : STANDARDS DIVISION	तैयारी : मानक विभाग ISSUED : STANDARDS DIVISION	दिनांक : DATE : 11/02/2006

SUPERSEDES INVENTORY NO.	HW 19572 पृष्ठ का Page 1 of 2	संस्थान क्रय विनिर्देश (हीप - हरिद्वार) PLANT PURCHASE SPECIFICATION (HEEP - HARIDWAR)																															
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1.0 SCOPE OF APPLICATION The specification governs the quality of steel castings in material grade GP240GH (Material no. 1.0619) for turbine parts exposed to pressure.																																	
2.0 APPLICABLE REFERENCE DOCUMENT HW0980832 (TLV 0100)																																	
3.0 CHEMICAL COMPOSITION Heat analysis according to EN 10213 in weight % shall be as follows:																																	
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4.0 WELDING Welding as per approved WPS and PQR shall be performed only on quenched and tempered castings. Design welds are allowed only after permission from BHEL. The welding filler materials shall be covered electrodes E42 5 B 4 2 H5 according to EN499 or E7018-1 H4 R according to AWS A5.1-91. The use of other welding filler material is only allowed after prior agreement with the purchaser. On each casting, weld hardness shall be checked random wise and documented accordingly. Values of max. 320 HV ₁₀ are allowed.																																	
5.0 HEAT TREATMENT According to EN 10213.																																	
दस्तावेज एवं दिनांक DATE & DATE 13/12/06	संस्थान मानक समिति INVENTORY NO. P-2415	नाम NAME R.S. CHAUHAN Vikas Malhotra A.K. GOEL N.K. Mounwani 27.01.06	दिनांक एवं हस्ताक्षर SIGNATURE & DATE अनुवादक TRANSLATED BY निरीक्षणकर्ता WORKED BY जांचकर्ता CHECKED BY पर्यवेक्षणकर्ता SUPERVISED BY S.S. GROTTRA P. NATH V.B. ARORA 28.01.06																														
सहमत विभाग AGREED DEPT नाम NAME दिनांक एवं हस्ताक्षर DATE & SIGNATURE		स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE निर्माण : PREPARED : MTE जारी : मानक विभाग ISSUED : STANDARDS DIVISION दिनांक : DATE : 11/02/2006																															

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		PLANT PURCHASE SPECIFICATION (HEEP - HARIDWAR)		पृष्ठ का Page 2 of 2											
SUPERSEDES INVENTORY NO. सामग्री सूची संख्या को अतिरिक्त करता है	<p>Hardening: temperature 890 - 980°C, holding time corresponding to the wall thickness.</p> <p>Tempering: temperature 600-700°C, holding time corresponding to the wall thickness, cooling at calm air or cooling in furnace down to 300°C, then calm air.</p> <p>After rough machining in the foundry, stress-relieving treatment is necessary before delivery of the casting. The stress relieving temperature should not be more than the actually applied tempering temperature. The cooling rate for the stress relieving should be $\leq 30^\circ\text{C/hr}$ down to $\leq 300^\circ\text{C}$.</p> <p>The stress relieving after rough machining can be dropped, if production welding followed by stress relieving is carried out after rough machining.</p> <p>6.0 MECHANICAL PROPERTIES</p> <p>The mechanical properties of each casting shall be determined on attached samples in the delivery condition. The following properties shall be achieved at room temperature:</p> <table border="0"> <tr> <td>0.2% PS</td> <td>$\geq 240 \text{ N/mm}^2$</td> </tr> <tr> <td>UTS</td> <td>420 - 600 N/mm²</td> </tr> <tr> <td>%El (l=5d)</td> <td>$\geq 22\%$</td> </tr> <tr> <td>%Ra</td> <td>$\geq 40\%$</td> </tr> <tr> <td>Impact</td> <td>$\geq 40 \text{ J}^*$</td> </tr> </table> <p>* Average of 3 Charpy-V-notch specimens, where the smallest value shall be at least 32 J.</p> <p>NOTE: IRRESPECTIVE OF STANDARD SPECIFIED ON THE ORDERING DRAWING, CASTINGS AS PER SPECIFICATION NUMBERS HW19573 SHALL BE PROCURED AS PER HW19572.</p>					0.2% PS	$\geq 240 \text{ N/mm}^2$	UTS	420 - 600 N/mm ²	%El (l=5d)	$\geq 22\%$	%Ra	$\geq 40\%$	Impact	$\geq 40 \text{ J}^*$
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सामग्री सूची संख्या INVENTORY NO. P-2415	REV 02	निर्माणकर्ता WORKED BY S. G. ROTRA	21/1/06												
		जांचकर्ता CHECKED BY P. NATH	21.01												