

TD-106-3 Rev-5	Form No.		PRODUCT STANDARD HEAT EXCHANGERS HYDERABAD		No: HE 51516		
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		1.0 GENERAL: This specification governs the quality requirements Naval brass tube plates.					
		2.0 APPLICATION: Used as tube plates for condensers and heat exchangers.					
		3.0 CONDITION DELIVERY: Hot rolling and finished by such cold working and annealing as may be necessary to achieve the required dimension and properties.					
		4.0 MATERIAL: SB-171M C46400 (specification for Copper alloy plate and sheet for pressure vessels, condensers and heat exchangers) of ASME SEC-II Part-B latest code & addenda.					
		5.0 DIMENSION AND TOLERANCES:					
		5.1 Sizes: Plates shall be supplied to the dimensions specified in enquiry/drawing					
		5.2 Tolerances: Unless otherwise specified tolerances on thickness, diameter, length or width and flatness shall as per SB-171M of ASME SEC-II Part-B latest code & addenda.					
		6.0 FREEDOM FROM DEFECTS: The plates shall be clean, smooth, without any roller marks sound free from seams, laminations, porosity cracks and other injurious defects.					
		7.0 NON DESTRUCTIVE TEST: Plates (For all thickness) shall be ultrasonically tested as per SA-578 and acceptance standard level-B of SA-578M of ASME SEC-II Part-A latest code & addenda.					
8.0 CHEMICAL COMPOSITION: The material shall conform to the chemical compositional requirements of SB- 171M of ASME SEC-II Part-B latest code & addenda.							
Ref.Doc	Revision: Refer to record of revisions		Prepared: S.S.R	Approved: A.C.S	Date: 15.10.2013		

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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		9.0 TEST SAMPLES: 9.1 For chemical analysis: 9.1.1 When samples are taken at the time when the castings are poured, at least one sample shall be taken from each group of castings poured simultaneously from the same source of molten metal. 9.1.2 When samples are taken from the semi-finished product, one sample shall be taken to represent each 4550kg or fraction thereof except that not more than one sample be shall be required per piece. 9.2 For tensile test: One tensile test sample shall be taken from each rolled plate. 10.0 MECHANICAL PROPERTIES: The test pieces shall follow the Mechanical properties as per SB-171M of ASME SEC-II Part-B latest code & addenda. 11.0 DOCUMENTS TO BE FURNISHED: The following documents shall be furnished along with the offer/supply: 1. A process chart clearly indicating the sequence of manufacture. 2. Heat treatment details. 3. UT Certificate. 12.0 INSPECTION AT SUPPLIERS WORKS: BHEL Representative shall have free access at all times until work on contact of BHEL's representative all reasonable facilities without charge to satisfy the latter that the material is being furnished in accordance with this specification. 13.0 RETEST: Retesting, if needed shall be done as per ASME SB-171M. 14.0 TEST CERTIFICATES: Three copies of test certificates shall be supplied, unless otherwise specified on order. In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material. The test certificate shall bear the following information;			
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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		BHEL Order No. Naval brass tube plates Suppliers reference and Name Test certificate No. Quantity and weight Identification mark Details of Heat treatment and batch No. Process of manufacture Test results: Dimensional inspection. Test results of chemical and Mechanical. 15.0 PACKING AND MARKING: The material shall be separated by size and prepared shipment in such a manner as to ensure acceptance by common carrier transportation and to afford protection from the normal hazards of transportation. A metal label shall be securely attached to each package and shall bear the following information: BHEL Order No. Naval brass tube plates. Consignment/Identification No. Size, Number and Weight Supplier's Reference and Name. 16.0 Referred Standard (Latest publications including Addenda): 1. ASME SB-171M			
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		Rev. No.	Date	Revision details	Revised	Approved
		00	15.10.2013	First Issue	S.S.R	A.C.S
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