



संस्थान क्रय विनिर्देश (हीप - हार्डवार)

HW 10998

पृष्ठ 3 का 1

Page 1 of 3

**PLANT PURCHASE SPECIFICATION**  
(HEEP - HARDWAR)

**MAGNETIC STEEL SHEET GRADE 700**

(Cold Rolled finally Annealed)

1. GENERAL : This specification governs the quality of 1.0 mm & 0.65 mm cold rolled non-oriented magnetic steel sheet supplied in the finally annealed condition.
2. APPLICATION: As Stator Vent plates with spot welding of spacers in Large Turbo Generators.
3. COMPLIANCE WITH NATIONAL STANDARDS: There is no Indian Standard covering this material. However, assistance has been drawn from DIN EN 10106.
4. DIMENSIONS & TOLERANCES :
  - 4.1 Sizes: Magnetic steel sheet shall be supplied to the dimensions specified on the order.  
Thickness (mm) : 1.0 mm & 0.65 mm
  - 4.2 Tolerances : The tolerances on sheets shall comply with the following.
    - 4.2.1 Thickness :  $\pm 8\%$
    - 4.2.2 Range of Thickness Variation: The maximum range of thickness variation for any sheet shall be less than 8% over length of strip to a max. of 2 meters.
    - 4.2.3 Width:
 
$$\begin{matrix} +1.5 \\ -0 \end{matrix} \text{ mm for sheet width } > 500\text{mm} \leq 1250 \text{ mm}$$
    - 4.2.4 Length:
 
$$\begin{matrix} +1.0\% \\ -0 \end{matrix} \text{ (max. 10 mm)}$$
5. CONDITION OF DELIVERY : Cold rolled finally annealed sheet protected on both sides by rust protective coating. (  $2 \pm 1$  microns each side)
6. FINISH: : The material shall be free from loose scales , rust buckle or dents. The sheet shall be free from waviness , internal stresses as is commercially possible .

हस्ताक्षर एवं दिनांक

SIGN & DATE

सामग्री सूची संख्या

INVENTORY NO.

हस्ताक्षर एवं दिनांक	SIGN & DATE	नाम	दिनांक एवं हस्ताक्षर
		NAME	SIGNATURE & DATE
T&X	L.B. MALHOTRA	अनुवादक TRANSLATED BY	
TGF	P.BALA	निर्माणकर्ता WORKED BY	AMIT MITTAL
ISX	R.RANJAN	जांचकर्ता CHECKED BY	D.N.GOEL
सहमत विभाग	नाम	पर्यवेक्षणकर्ता SUPERVISED BY	P.C.CHATURVEDI
AGREED DEPTT	NAME	DATE & SIGNATURE	
		स्वीकृति	संस्थान मानक समिति
		APPROVED :	PLANT STANDARDS COMMITTEE
REV.NO.	02	निर्माण :	जारी : मानक विभाग
DATE	19.02.2019	PREPARED : TGE	ISSUED : STANDARDS DIVISION
			दिनांक : DATE 13.11.80

स्वायत्तकार एवं गोपनीय

\* प्रलेख में दी गई सूचना भारत की 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।


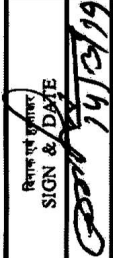


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SUPERSEDES INVENTORY

सामग्री सूची संख्या को अधिकारिता करता है

दिनांक एवं हस्ताक्षर & DATE

विभाग एवं इकाई SIGN & DATE		संस्थान क्रय विनिर्देश (हीप : हरिद्वार)		HW 10998	
		PLANT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		पृष्ठ 3 का 2 Page 2 of 3	
SUPERSEDES INVENTORY NO.  बावरी सूची संख्या को अतिरिक्त करता है	7. SELECTION OF TEST SAMPLE : Two test samples of sufficient size to provide the necessary test piece shall be taken from any one sheet in each Consignment of 30 tons or part thereof.				
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	8. BRITTTLENES : 8.1 Clause 8.1 Bend Test Bend test to conducted as per EN 10106/IS649 for their respective sheet thickness.				
	9. STACKING FACTOR : The surface quality of the sheets when measured in terms of stacking factor as specified in IS: 649 shall comply with minimum value of 97%				
	10. MAXIMUM LOSSES : Maximum loss at 1.5 T (Guaranteed) :  7.0 W/Kg at a flux density of 1.5 Tesla and at a frequency of 50 Hz for 1.0mm & 0.65mm thick steel sheet when tested to IS: 649				
	11. PERMEABILITY TEST: When tested to IS: 649 the magnetic field strength (H) in Amperes per meter, shall show corresponding minimum values of Magnetic induction (B) in Tesla as shown below:				
स्वसाधिकाए एवं गोपनीय इस प्रवेश में की गई सूचना भारत भारती लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रसारण के बिना की जाये नहीं, जो कि कंपनी के हित में सुरक्षितकरी न किया जाये।	Magnetic field Strength 'H' A/m 2500 5000 10,000		Magnetic Induction MIN 'B' Tesla 1.51 1.61 1.72 Guaranteed		
	12. AGEING FACTOR: The deterioration in specific core loss, when tested to IS: 649 shall not exceed a maximum of 2%				
विभाग एवं इकाई SIGN & DATE 	13. TEST PIECES FOR : The size and quantity of test pieces are as under:				
	TESTING AT BHEL				
बावरी सूची संख्या INVENTORY P-2276	REV. NO.	SUPERSEDES	निर्माणकर्ता WORKED BY	DEVESH TEWARI	 26/02/19
	02		जांचकर्ता CHECKED BY	AMIT MITTAL	 28/2/19



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SIZE	QUANTITY	TYPE OF TEST
3. 30 x 150 (mmxmm)	30	Stacking Factor

14. TEST CERTIFICATE: Three copies of the test certificates shall be supplied with each lot. The test certificate will bear the following information:

BHEL Reference.

Our Order No.

HW10998 Magnetic steel sheet grade 700 (cold rolled finally annealed)

Suppliers reference.

Consignment or Identification No.

Size and thickness of sheets.

Results of Tests :

For bend test, stacking factor, permeability test and Max. Specific Losses at 1.5 Tesla as received for each sample tested

15. PACKING.

Steel sheets shall be supplied in bundles, which shall be sea worthy and shall be protected to prevent damage in transit.

16. MARKING:

A metal label shall be securely attached to each bundle and shall be marked with the following:

HW-10998

Our Order No.

Consignment or Identification No.

Size and thickness of sheets.

Supplier's Name & Grade.

17. CROSS REFERRED : 1. IS :649 2. DIN EN 10106  
STANDARDS

## GENERAL INFORMATION FOR CALCULATION

(Not to form Acceptance Criterion)

Density I. 1.00 mm Thick : 7.65 KG/dm<sup>3</sup>

II. 0.65 mm Thick : 7.75 KG/dm<sup>3</sup>

Maximum specific loss at 1.0 Tesla : 3.0 Watts/KG

Magnetic Induction (B) : 1.90 Tesla , Min

At 30,000 A/M AC Magnetic  
field strength (H) Peak

REV.NO.  
02

निर्माणकर्ता  
WORKED BY

AMIT MITTAL

13-6-02

INVENTORY NO.

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इस प्रलेख में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं आवाक्य रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।

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