UN-COATED COLD ROLLED SHEETS FOR POLE LAMINATIONS

1.0 GENERAL

This specification governs all the requirements of Un-Coated Cold Rolled (CR) sheets for pole lamination.

2.0 CONDITION OF DELIVERY

Un-Coated Cold Rolled with trimmed edges in straight length (sheet form) in the ordered thickness & size as specified on BHEL order.

Material shall be supplied with rust preventive measures on both sides, and shall not contain any welds. The sheets shall be stacked so that their edges are superimposed in a regular manner.

3.0 DIMENSIONS AND TOLARANCES:

3.1 Sizes:

Magnetic Steel sheet shall be supplied to the dimensions specified on BHEL order. Sheets shall be supplied in straight lengths & shall be flat and edges cleanly sheared & truly squared.

3.2 Tolerances:

3.2.1 Thickness: ± 8%

3.2.2 Width (Trimmed Edges): +1.0, -0.0 mm

3.2.3 Length: +15, -0mm

3.2.4 Flatness

The maximum distance between the lower face of the sheet and the flat horizontal surface shall not exceed 8 mm for length less than 1250 mm and 10 mm for lengths above 1250 mm.

3.2.5 Edge Camber

The gap which characterizes the edge camber shall not exceed 0.4% X length of the sheet for material supplied with trimmed edges and above 150 mm width.

Revision : 02	Distribution	Qty.	Approved : 13/4/16 (A Dani)		
Date: 13/04/16	PRM TAM TME MM-STL	1 1 1 1	Prepared 13/4/16 (P Telang)	Checked 13/04/16 (Vikas Rawtiya)	Date : 13/04/16

4.0 FREEDOM FROM DEFECTS:

The surface of the material shall be smooth and clean, free from grease, rust, loose scale and other surface defects such as burrs, cutting distortions, dents, waviness, scratches, blisters, cracks, pitting, cracked edges etc.

5.0 TECHNICAL REQUIREMENTS

The sheets , when tested as detailed in BS EN 10265 at a temperature of 27±2 deg. C shall show the following properties:

5.1 Mechanical

Yield Strength (N/mm^2)	Tensile Strength (N/mm^2)	El @ 80 GL (%)
220-300	340-410	Min. 23

5.2 Magnetic properties

Magnetic field strength (A/m)	2500	5000	10000
Magnetic flux density Tesla (Minimum)	1.58	1.68	1.78

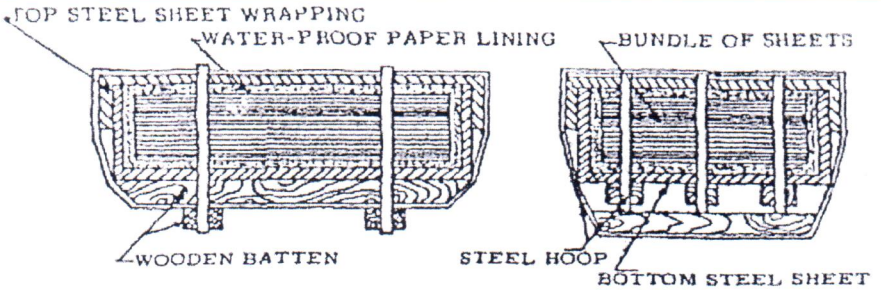
6.0 GENERAL INFORMATION (FOR REFERENCE ONLY):

This specification covers electrical sheet with high magnetic permeability and moderate core loss used for pole lamination. The material properties are specified above to have electrical and magnetic properties characteristic of the 0.25% Silicone Electrical sheet type.

7.0 PACKAGING:

Sheets shall be suitably packed in bundles to prevent corrosion and damage during transit.

Recommended packing for imported material shall be as shown below. However, other methods of packing are also acceptable if prior agreement of BHEL is obtained in writing by the manufacturer.



DETAILS OF PACKING FOR MAGNETIC STEEL SHEET

Note:
Water proof paper lining shall be preferably Volatile Corrosion Inhibitor (V.C.I.) Coated Paper with additional polythene (100 micron) enveloped.

Approximate weight of each bundle shall be 2 to 3 tonnes. Bundle weighing 2 metric tonnes is however preferred.

8.0 MARKING:

A metal label / tag shall be securely attached with each bundle outside its wrapping and shall bear the following information

- TM10402
- BHEL Purchase Order No
- Supplier's Name and Identification No
- Melt No
- Size and Weight

9.0 TEST CERTIFICATE:

Three copies of Test Certificate shall be supplied unless otherwise agreed to. 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:
Material specification, BHEL Order No., Supplier`s Name/Grade/Identification No., Size & Weight, Packet/Bundle No., Test results of a) Dimensions & Tolerances, b) Mechanical & c) Electromagnetic properties viz.: Magnetic Flux Density in Tesla- Guaranteed at 2,500 A/m, 5,000 A/m and 10,000 A/m.