



OUTER SHEET

SHEET NO. 1 OF 5

# SPECIFICATION FOR SEMICURED CERAMIC SHEET (SCQ-H)

 Checked By
 Drawn by

SPECIFICATION FOR  
SEMICURED CERAMIC  
SHEET (SCQ-H)

Reference : Hitachi Works Div No. 18W 702-146

CHH FANSAJAN  
LOCOMOTIVE WORKS,  
WEST BENGAL, INDIA

  
 DY.CEE/TMD

NO. A6235, Rev. - 1  
DATE: 04.09.2009

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Signature Not Verified

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Nihar Ranjan Mondal  
Date: 2022.04.11  
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Location: New Delhi

SHEET NO. 2 OF 5  
DATE

CHITTARANJAN  
LOCOMOTIVE WORKS,  
WEST BENGAL, INDIA.

NO.A0235, Rev. - 1  
DATE: 04/09/2009

DY.CEE/TMD

1. Scope:

This specification describes Semicured Ceramic Sheet (SCQ-II) (hereafter abbreviated as sheet) treated with Epoxy Resin to be used for layer insulation of electrical machine.

2. Classification Dimension and Tolerance:

Classification, dimension and tolerance of this tape are given in table – 1.

Table – 1

Description	Nominal thickness (mm)	Nominal width (mm) (a)	Nominal length (m) (b)	Tolerance		
				Thickness (mm)	Width (mm)	Length (m)
SCQ-II: 0.15 x a x b	0.15	(i)450 (ii)410	(i) 36 (ii) 27	+ 0.03 - 0.00	+ 15 0	More than nominal length

NOTE:

Non-standard length may be supplied maximum 10% of total ordered qty. but the length should not be less than 15 m.

3. Quality:

Quality of this sheet is given in table -2.

4. Shelf-life:

Shelf-life of this sheet is 12 months after mfg. date when kept below 25°C.

5. Test methods:5.1. Resin Content:

One sample of base paper of size: 150 mm x 150 mm is cut and weighed on a balance. Similarly, sample of finished product of same size: 150 mm x 150 mm is taken and weighed. If W1 is the weight of base paper & W2 is the weight of finished product. Resin content (%) =  $\frac{W^2 - W^1}{W^2} \times 100$

The same procedure is repeated for three times and average value is considered for resin content but no individual value should be less than the specified.

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SEMICURED CERAMIC  
SHEET (SCQ-II)

CHITTARANJAN  
LOCOMOTIVE WORKS,  
WEST BENGAL, INDIA

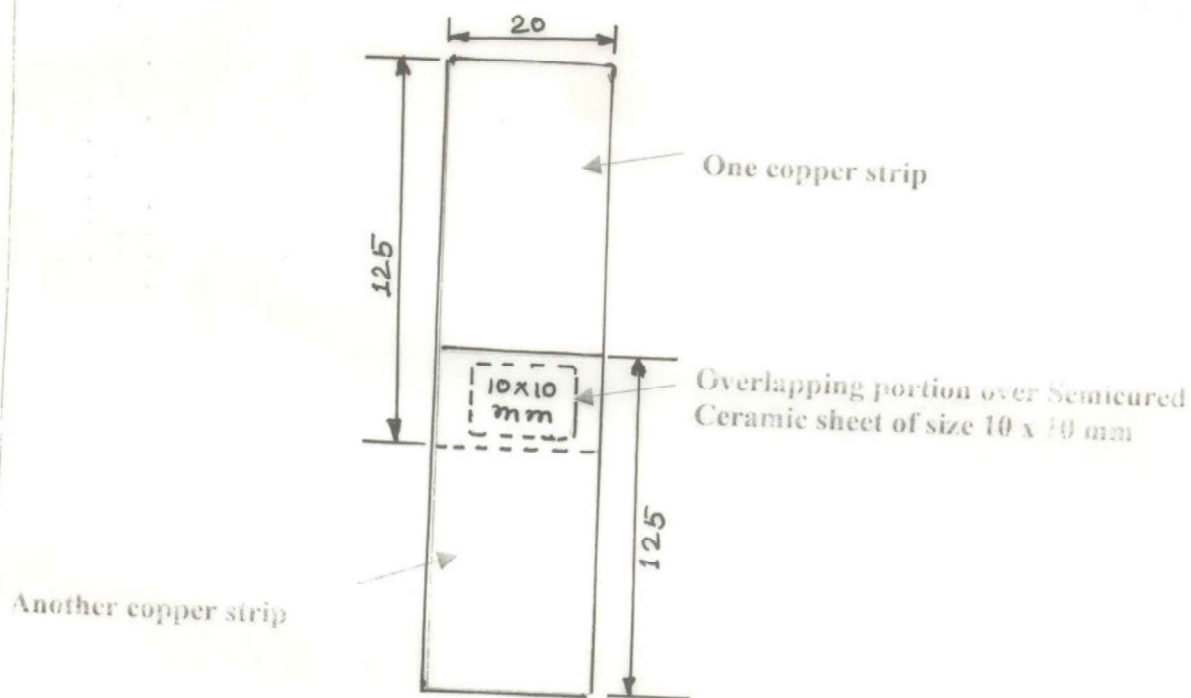
BY: CEE/TMD

NO. A0235, Rev. -  
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SHEET NO.4 OF 5

**5.2. Adhesive:**

Two copper strip of size: 125 x 20 x 1.6 mm are taken and one sample of finished Semicured Ceramic Sheet of size 10 x 10 mm are pasted without any external adhesive. 25 mm strip with sheet are under overlap and kept for 5 minutes at 220°C and pressure of 30 kg/cm<sup>2</sup> over overlapping portion. Now, the sample with copper strip is taken out and tensile strength is measured. This process is measured two times and average value is considered as observed value but no individual value should be less than specified.



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Table -2

No.	Item			Unit	Quality	Test procedure	Remarks
01	Weight			g/m <sup>2</sup>	190 ± 25	IS:1060 Pt.1	
02	Resin content			%	29 (+5, -3)	Clause 5.1	
03	Breakdown voltage	Before curing (at one sheet)	Average	kV	≥ 1.0	Clause 13 of JISC2116 & Note No.3	Curing condition 220°C, 30 kg/cm <sup>2</sup> 5 minutes
			Minimum	kV	≥ 0.8		
		After curing (at two sheets)	Average	kV	≥ 8.0		
			Minimum	kV	≥ 6.0		
04	Tensile strength	Before curing		Kg/15 mm	≥ 2.0	Clause 12 of JISC 2116.	Curing condition same as item 3
		After curing		Kg/15 mm	> 4.0		
05	Adhesive strength with copper plate			Kg/cm <sup>2</sup>	> 35, at 220°C	As per clause 5.2	Adhering condition 220°C, 30 kg/cm <sup>2</sup> 5 minutes

## NOTE:

1. The cover of different sizes should be of different colour coding as "RED" for item No.1 & "BLACK" for item No.2.
2. The length of the spool is made 460 ± 5 mm for item No.(i) and 420 ± 5 mm for item No.(ii)
3. The BDV measurement should be taken on at least 10 different points during routine as well as prototype test in lengthwise and widthwise directions as per clause No.13 of JISC 2116.

Checked By

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SHEET (SCQ-II)

DY. CHIEF/MD

CHITTARANJAN  
LOCOMOTIVE WORKS  
WEST BENGAL, INDIANO. AB235, Rev. - 1  
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