



FORM NO : NTH/CHN/F5

भारत सरकार Government of India  
राष्ट्रीय परीक्षण शाला (द.क्षे.)  
NATIONAL TEST HOUSE (SR)

347528

तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.  
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

## TEST CERTIFICATE

Test Certificate No.	Date of Issue	Code No.	Page	No. of Pages
NTH(SR)/EL(C)/2014/253C	16.09.2014	1409640112794	01	05
Issued to & address	: M/s. METROSEAL. 28 - 30 Purdeys Way, Purdeys Way Ind. Estt., Rochford, Essex, SS4 1ND, United Kingdom.			
Customer's Ref. No.	: Nil, Date: 01.09.2014			
Description of Test Item	: Electrical Insulating matting made of Elastomer			
Identification of Test Item	: Electrical Insulating matting, Class '4'			
Date of Receipt of Sample	: 02.09.2014			
Method used for test/Specification	: As per IEC 61111 Edition 2.0 2009-04			

Tested by

V. Sivaguru  
Scientific Officer (Elect.)

Checked by

K. Jeyaraj  
Scientific Officer (Elect.)

Approved by

S. B. Nandakumar  
Scientist SC (Elect.)



FORM NO : NTH/CHN/FS

भारत सरकार Government of India  
राष्ट्रीय परीक्षण शाला (द.क्षे.)  
NATIONAL TEST HOUSE (SR)

347528


तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.  
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

## TEST CERTIFICATE

Test Certificate No.	Date of Issue	Code No.	Page	No. of Pages
NTH(SR)/EL(C)/2014/253C	16.09.2014	1409640112794	02	05

### 1. Description of the sample :

- a. Nomenclature : Electrical Insulating matting made of Elastomer, Class '4'  
b. Size : 2m x 1 m, Thickness: 5 mm,  
c. Quantity : 2 Number.  
d. Marking : The following markings were found on the mat.

"METRSEAL INSULATION MAT AS PER IEC 61111:2009  CLASS '4' 09/2014 PROOF  
TEST 40kV WITHSTAND TEST 50kV MAX USE VOLATGE 36kV

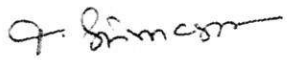
As requested the sample has been subjected to IEC 61111 Edition 2.0 2009-04 with the results noted below.

### 2. Visual Inspection (Cl. 5.2)

- a. Classification : Class '4'  
b. Composition : Elastomer, with slip resistance both sides  
c. Dimensions : Length: 2m, Breadth: 1 m, Thickness: 5 mm,  
d. Workmanship and finish : Generally Satisfactory, no harmful physical irregularities found on both surfaces

3. Tests	Observed	Specified
a. Mechanical Puncture resistance (as per cl. 5.5.2 of the specification) Test carried out on both sides of the sample on two samples. Puncture resistance in N i. Side 1 ii. Side 2	Satisfactory 88 88	70 (Min)

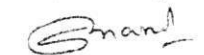
Tested by

  
V. Sivaguru  
Scientific Officer (Elect.)

Checked by

  
K. Jeyaraj  
Scientific Officer (Elect.)

Approved by

  
S. B. Nandakumar  
Scientist SC (Elect.)



FORM NO : NTH/CHN/F5

भारत सरकार Government of India  
राष्ट्रीय परीक्षण शाला (द.क्षे.)  
NATIONAL TEST HOUSE (SR)  
तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.  
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

347528

**TEST CERTIFICATE**

Test Certificate No.	Date of Issue	Code No.	Page	No. of Pages
NTH(SR)/EL(C)/2014/253C	16.09.2014	1409640112794	03	05

	Observed	Specified
<b>b. Voltage Proof test</b> (as per cl. 5.6.2.2.2 of the specification) Mask with picture frame made up of insulating material with a opening of 762x762mm in the middle and kept on a earthed metal plate. The opening was filled by a conductive material. The sample kept on this arrangement and top electrode of size 762mm X 762mm place above this. (such arrangement shown in Picture 1)  An ac voltage of 40kV (rms) at 50 Hz applied and kept constant for 3 minutes.	Withstood the test satisfactorily	Shall withstand without breakdown or flashover
<b>c. Voltage Withstand Test</b> (as per cl. 5.6.2.3 of the specification) Electrode: 25mm (Top) x 75mm (Bottom) An ac voltage at 50 Hz applied with a rate of rise of voltage 1000V/sec. until it reaches 50kV.	Withstood the test satisfactorily	Shall withstand without breakdown or flashover
<b>d. Ageing test</b> (as per cl. 5.7 of specification) Sample conditioned at 70°C±2°C for 168 hours. <b>Mechanical Puncture resistance</b> (as per cl. 5.5.2 of the specification) Test carried out on both sides of the sample on two samples. <b>Puncture resistance in N</b> i. Side 1 ii. Side 2	Satisfactory 78 78	(Minimum 80% of puncture resistance before ageing) 70.4 (Min) 70.4 (Min)
<b>e. Flame retardance test</b> (as per cl.5.8.1 of the specification) Application of flame 10s and after withdrawal, the propagation of flame was observed for 55s and it shall not reach any point of 50mm diameter.	Satisfactory 40mm	Propagation of flame shall not reached 50 mm diameter of circle

Tested by

V. Sivaguru  
Scientific Officer (Elect.)

Checked by

K. Jeyaraj  
Scientific Officer (Elect.)

Approved by

S. B. Nandakumar  
Scientist SC (Elect.)



FORM NO : NTH/CHN/F5

भारत सरकार Government of India  
राष्ट्रीय परीक्षण शाला (द.क्षे.)  
NATIONAL TEST HOUSE (SR)

347528

तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.  
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

## TEST CERTIFICATE

Test Certificate No. NTH(SR)/EL(C)/2014/253C  
Date of Issue 16.09.2014  
Code No. 1409640112794  
Page 04  
No. of Pages 05

	Observed	Specified
<p>f. <b>Low Temperature folding test</b> (as per cl. 5.8.2 of the specification) Sample conditioned at <math>(-25 \pm 3)^\circ\text{C}</math> for 4 hours. After this the test piece folded at the midpoint and placed between two polyethylene plates and subjected to a force of 100N for 30s.</p> <p>i. Visual inspection</p> <p>ii. Voltage Withstand Test (An ac voltage at 50 Hz applied with a rate of rise of voltage 1000V/sec. until it reaches 50kV).</p>	<p>Satisfactory as no crack or tear break observed</p> <p>Withstood the test satisfactorily</p>	<p>Shall not show crack or tear break observed</p> <p>Shall withstand without breakdown or flashover</p>
<p>g. <b>Acid resistance</b> (as per cl. 5.9 of the specification) Sample shall be immersed in Sulfuric acid solution at <math>23^\circ\text{C} \pm 2^\circ\text{C}</math> for 8h. after this rinsed with water and dried for 2h at <math>70^\circ\text{C}</math>.</p> <p><b>Mechanical Puncture resistance</b> (as per cl. 5.5.2 of the specification) Test carried out on both sides of the sample on two samples.</p> <p><b>Puncture resistance in N</b></p> <p>i. Side 1</p> <p>ii. Side 2</p> <p>iii. <b>Voltage Withstand Test</b> (An ac voltage at 50 Hz applied with a rate of rise of voltage 1000V/sec. until it reaches 50kV).</p>	<p>Satisfactory</p> <p>74</p> <p>74</p> <p>Withstood the test satisfactorily</p>	<p>(Minimum 75% of puncture resistance before ageing)</p> <p>66 (Min)</p> <p>66 (Min)</p> <p>Shall withstand without breakdown or flashover</p>

Tested by

V. Sivaguru  
Scientific Officer (Elect.)

Checked by

K. Jeyaraj  
Scientific Officer (Elect.)

Approved by

S. B. Nandakumar  
Scientist SC (Elect.)



FORM NO : NTH/CHN/F5

भारत सरकार Government of India  
राष्ट्रीय परीक्षण शाला (द.क्षे.)  
NATIONAL TEST HOUSE (SR)

तरमणी, चेन्नई - 600 113. Taramani, Chennai - 600 113.  
Phone : 22432374, 22431157 Fax : 22433158 email : nthsr@tn.nic.in

347528

**TEST CERTIFICATE**

Test Certificate No.	Date of Issue	Code No.	Page	No. of Pages
NTH(SR)/EL(C)/2014/253C	16.09.2014	1409640112794	05	05

	Observed	Specified
<b>h. Oil resistance</b> (as per cl. 5.10 of the specification) Sample shall be immersed in Oil 23°C±2°C at 50% RH for 3h. after this rinsed with water and dried for 24h at 70°C.		
<b>Mechanical Puncture resistance</b> (as per cl. 5.5.2 of the specification) Test carried out on both sides of the sample on two samples.		
<b>Puncture resistance in N</b>		(Minimum 75% of puncture resistance before ageing)
i. Side 1	Satisfactory	66 (Min)
ii. Side 2	70	66 (Min)
iii. <b>Voltage Withstand Test</b> (An ac voltage at 50 Hz applied with a rate of rise of voltage 1000V/sec. until it reaches 50kV).	70	Shall withstand without breakdown or flashover
	Withstood the test satisfactorily	

Note: The average ambient condition during the above test was as follows:-

Temperature : 25±2°C  
Relative Humidity : 60 to 70 %

###END OF TEST CERTIFICATE###

Tested by  
  
V. Sivaguru  
Scientific Officer (Elect.)

Checked by  
  
K. Jeyaraj  
Scientific Officer (Elect.)

Approved by  
  
S. B. Nandakumar  
Scientist SC (Elect.)