Jigsaw
RUBBER MATTING

PRODUCT TEST DOCUMENTATION

Test Certificate Class 2 edited

Supplied by Jigsaw Rubber Matting, a trading name of Jigsaw Industrial Ltd.

The original manufacturer or independent laboratory report follows in full. Its issuer, applicant, test results and original references have been retained. Jigsaw Rubber Matting is the retailer, not the testing body.

For product advice and sales enquiries, contact our team.

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परीक्षण प्रमाण पत्र
TEST CERTIFICATE

INTERIM/FINAL REPORT

Number of Copies issued Single	जारी होने की तिथि Date of Issue	कोड नं Code No	पृष्ठ Page	पृष्ठों की संख्या No of Pages
परीक्षण प्रमाण पत्र सं. Test Certificate No				
NTH(SR)/EL(C)/2020/009-M	28/07/2020	Manual	1	2

जिसे जारी करना है Issued To	:	COBA Europe Ltd,
पता Address	:	Marlborough Drive, Fleckney, Leicester, LE8 8UR, United Kingdom
ग्राहक का सन्दर्भ सं एवं दिनांक Customer's Ref. No.	:	By Mail Date: 11/03/2020
पंजिका सं एवं दिनांक Register No & Date	:	009-M/NTH(SR)/EL(C)/18/05/2020
परीक्षण सामग्री का विवरण Description of Test Item	:	Electrical Insulating matting made of Elastomer, Class – 2
परीक्षण सामग्री का पहचान Identification of Test Item	:	Marking :As in the attached sheet "Annexure".
नमूना का विशिष्टि (यदि हों) Product Specification (If any)	:	IEC 61111 Edition 2.0 2009-04
नमूना प्राप्ति की तिथि Date of Receipt of the Test Item	:	18/05/2020
कार्य सम्पादन की तिथि Date(s) of Performance of Tests	:	From: 18/05/2020 To: 28/07/2020
व्यावहृत प्रणाली का पहचान Method(s) used for Test	:	Tests as per IEC 61111 Edition 2.0 2009-04
नमूना प्रकिया जहाँ प्रासंगिक हों Sampling Procedure where relevant	:	Not Applicable

Tested By	Checked By	Approved By
N. Joseph Kalai Selvan	K.Jeyraj	
Natrajan Joseph kalaiselvan	K.Jeyraj	Srilayrajj Soundararajan
SO Electrical	Scientist- B (Electrical)	Scientist- C (Electrical)

Notes : 1. The results relate only to the items tested or calibrated
2. The test/calibration certificate shall not be reproduced except in full, without written approval of the authority

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Sl. No.	Test Name	Test Result	Limit
1	Test	As in the attached sheet "Annexure" and the Annexure contains 05 page	As in the attached sheet "Annexure"

टिप्पणी
Note :
I).The average ambient conditions of the laboratory during the above tests were as follows:Room temperature, deg C: 28+/-2, Relative humidity, percent: 70 to 75%.
ii).The Oil Resistance test was carried out by transformer oil as requested by the firm.

कैफियत
Remarks : Comments offered against each test.

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ANNEXURE

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1. Description of the sample :

a. Nomenclature : **Electrical Insulating matting made of Elastomer, Class – 2**

b. Colour Code : Yellow (Double triangle)

c. Size : 1m x 10m

d. Quantity : 1 roll

e. Marking : i) The following markings were found printed on the insulating mat

"IEC 61111 – CLASS 2 WORKING VOLTAGE: 17 000V,

PROOF VOLTAGE: 20 000V, WITHSTAND VOLTAGE: 30 000V"

As requested the sample has been subjected to **Tests as per IEC 61111 Edition 2.0 2009-04** and the results noted below:-

2. Visual Inspection (Cl. 5.2)

a. Classification : Class 2

b. Dimensions : 3.61mm X 1m X 10m

c. Workmanship and finish : Satisfactory

d. Sample Color : Dark Grey

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3. Tests

Sl.No	Tests	Observed Values	Specified limits
1.	**Mechanical Puncture resistance** (as per cl. 5.5.2 of the specification) Number of specimens: 2 Size of specimen: 50mm (diameter) Test carried out on both the sides of the matting for two specimens. 5mm diameter needle produce a taper with an include angle of 12° and tip rounded to 0.8mm **Puncture resistance in N** i. Side 1 ii. Side 2 iii. Average	 136 136 136	 Min. 70
2.	**Voltage Proof test** (as per cl. 5.6.2.2.2 of the specification) Number of specimen: 1 A 1270mm x 1270mm sheet of 5mm thick Plexiglass material with picture frame of 762 mm x 762 mm opening the center placed on a grounded metal plate. Mask filled with a conductive material same as thickness to bring the ground electrode at the same level to maintain direct contact with the mat to be tested. (fig:1 of IEC 61111 Edition 2.0 2009-04) An ac voltage of 20kV (rms) at 50 Hz applied and kept constant for 3 minutes.	Withstood the test satisfactorily	Shall withstand test voltage without break down or flashover

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Sl.No	Tests	Observed Values	Specified limits
3.	**Voltage Withstand Test** (as per cl. 5.6.2.3 of the specification) Number of specimen: 3 Specimen size : 150 x 150 Electrode : 25mm (Top) x 75mm (Bottom) 30kV ac voltage at 50 Hz applied with a rate of rise of 1000V/sec.	Withstood the test satisfactorily	Shall withstand test voltage without break down or flashover
4.	**Ageing test** (as per cl. 5.7 of specification) Number of specimen: 2 Sample conditioned at 70°C for 168 hours. **Mechanical Puncture resistance** (as per cl. 5.5.2) Test carried out on both the sides of the matting for two specimens. **Puncture resistance in N** i. Side 1 ii. Side 2	 116 115	 Min. 108.8 (Minimum 80% of puncture resistance before ageing)
5.	**Flame retardance test** (as per cl.5.8.1 of the specification) Number of specimen: 1 Specimen size: 150 x 150mm 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 No appreciable flame observed	Propagation of flame shall not reached 50 mm diameter of circle

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Sl.No	Tests	Observed Values	Specified limits
6.	**Acid resistance** (as per cl. 5.9 of the specification) Number of specimen: 4 Size of specimen: 150 x 150mm Sample immersed in Sulfuric acid solution at 23°C±2°C for 8h. Following acid condition, the sample rinsed with water and dried for 2h at 70°C. **Mechanical Puncture resistance** (as per cl. 5.5.2) Test carried out on both the sides of the matting for two specimens. **Puncture resistance in N** i. Side 1 ii. Side 2 **Voltage Withstand Test** 30kV ac voltage at 50 Hz applied with a rate of rise of 1000V/sec.	 110 109 Withstood the test satisfactorily	 Min. 102 (Minimum 75% of puncture before acid resistance) Shall withstand test voltage without breakdown or flashover
7.	***Oil resistance** (as per cl. 5.10 of the specification) Number of specimen: 4 Size of specimen: 150 x 150mm Sample conditioned in air at a temperature of 23°C±2°C at 50% RH for 3h. Then the sample is conditioned by immersing in oil at a temperature of 70°C for 24h. Following oil condition, the sample dried using lint free clean cloth. **Mechanical Puncture resistance** (as per cl. 5.5.2) Test carried out on both the sides of the matting for two specimens. **Puncture resistance in N** i. Side 1 ii. Side 2 **Voltage Withstand Test:** 30kV ac voltage at 50 Hz applied with a rate of rise of 1000V/sec.	 112 114 Withstood the test satisfactorily	 Min. 102 (Minimum 75% of puncture without oil conditioning) Shall withstand test voltage without breakdown or flashover

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Sl.No	Tests	Observed Values	Specified limits
8.	**Low Temperature folding test** (as per cl. 5.8.2 of the specification) **Number of specimen: 3** Size of specimen: 200 x 500mm Sample conditioned at (-)25±3°C 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.		
	Visual inspection	Satisfactory	Shall not show crack or tear break observed
	Voltage Withstand Test (An ac voltage at 50 Hz applied with a rate of rise of voltage 1000V/sec. until it reaches 30kV).	No crack or tear break observed Withstood the test satisfactorily	Shall with stand without breakdown or flashover

Note:

i. The average ambient conditions of the laboratory during the above tests were as follows
Room Temperature, in degree C : 28 ± 2°C
Relative Humidity , in percent : 70 to 75%.

ii. *The Oil Resistance test was carried out by transformer oil as requested by the firm.

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