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UKAS TESTING 0248

Customer:	R - Tek Manufacturing Limited Unit 1 Hamiltownsbawn Industrial Estate Armagh County Armagh BT60 1HW	SATRA Ref:	FLO0182952/1009/1
		Report Date:	20 April 2010
		Samples received:	1 March 2010
Contact:	Peadar Hurson		

TECHNICAL SERVICES REPORT

Subject: Testing of materials to BS EN 1815:2005

Your reference:

Conditions of Issue:

This report may be forwarded to other parties provided that it is not changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only.

Tests marked † fall outside the UKAS Accreditation Schedule for SATRA. All interpretations of results of such tests and the comments based upon them are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

Report signed by: Jacqueline Glasspool
Position: Business area manager
Department: Flooring

Technical Services Report

ASSESSMENT OF ELECTROSTATIC PROPENSITY ACCORDING TO BS EN 1815

As requested by R-Tek Manufacturing Limited, we have conducted an assessment of the propensity of development of static electrical charge on the samples, as detailed below:

SUMMARY

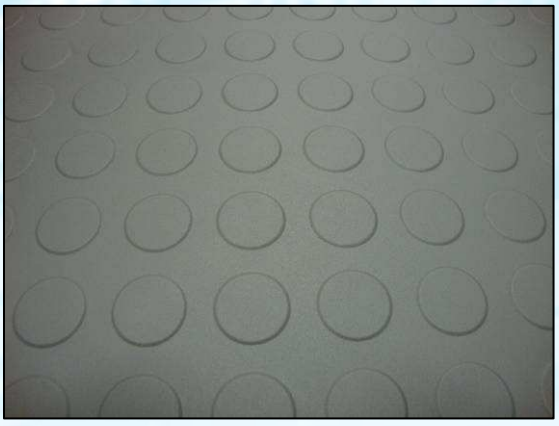
With regard to the property assessed (Static Electrical Propensity), the rubber floor coverings submitted referenced "5mm Studded" and "7mm Textured" have both demonstrated values above 2kV.

The average results for the floorings submitted demonstrated results above 2kV, when assessed with the metal plate alone (representing applications where the floor covering is to be adhered to concrete or on any surface having a resistance to earth $\leq 10^9\ \Omega$) and when assessed with the metal plate in conjunction with the rubber mat (representing applications where the floor covering is to be adhered to a surface having a resistance to earth $> 10^9\ \Omega$).

When voltages of this level are obtained it is suggested that individuals are more likely to notice static discharges (3)

SAMPLE SUBMITTED

Reference: 5mm Studded, 7mm Textured
Description: Profiled PVC Floor Covering
Colour: Grey, Black
Appearance:



5mm Studded

7mm Textured

Intended application: Contract use
Date received: 1st March 2010
Testing completed; 19th April 2010
Testing conducted by: Jonathan Lund, Mandy De Wet and Lloyd Whittington

TESTS CARRIED OUT

- BS EN 1815 Resilient and textile floor coverings – Assessment of static electrical propensity.

RESULTS

Sample Referenced "5mm Studded"

Table 1 - Floor covering tested on metal plate.

If the floor covering is to be adhered to concrete or any other surface having a resistance to earth $\leq 10^9\,\Omega$, the results in table 1 apply.

Sole type	Average trial 1 (3 dp)	Average trial 2 (3 dp)	Average trial 3 (3 dp)	Overall result (1 dp)
Bam	2.066	2.099	2.114	**2.1**
Neolite	4.144	4.152	4.267	**4.2**

Table 2 - Individual results for - Floor covering on metal plate.

		Voltage (kV) of the five highest valley peaks (to 3dp)				
Sole type	Trial	1	2	3	4	5
BAM	1	2.037	2.112	2.036	2.208	1.936
	2	1.986	2.078	2.178	2.153	2.099
	3	2.279	2.099	2.074	2.032	2.087
Neolite	1	3.825	4.001	3.770	4.453	4.713
	2	3.925	4.143	4.168	4.227	4.298
	3	4.190	4.089	4.336	4.184	4.536

Table 3 - Floor covering tested on insulating mat.

If the floor covering is to be adhered to a surface having a resistance to earth $> 10^9\,\Omega$, the results in table 1 apply.

Sole type	Average trial 1 (3 dp)	Average trial 2 (3 dp)	Average trial 3 (3 dp)	Overall result (1 dp)
Bam	3.738	4.037	3.841	**3.9**
Neolite	6.102	6.412	6.451	**6.3**

Table 4 - Individual results for - Floor covering on metal plate and the insulating mat.

		Voltage (kV) of the five highest valley peaks (to 3dp)				
Sole type	Trial	1	2	3	4	5
BAM	1	3.398	3.678	3.671	3.947	3.996
	2	3.741	4.253	4.332	3.989	3.871
	3	3.891	3.824	3.799	3.854	3.837
Neolite	1	6.112	5.647	5.752	6.271	6.728
	2	6.585	6.417	6.338	6.262	6.459
	3	7.113	6.145	6.221	6.334	6.443

Sample Referenced "7mm Textured"

Table 1 - Floor covering tested on metal plate.

If the floor covering is to be adhered to concrete or any other surface having a resistance to earth $\leq 10^9\,\Omega$, the results in table 1 apply.

Sole type	Average trial 1 (3 dp)	Average trial 2 (3 dp)	Average trial 3 (3 dp)	Overall result (1 dp)
Bam	3.113	3.284	3.207	**3.2**
Neolite	5.796	5.222	5.570	**5.5**

Table 2 - Individual results for - Floor covering on metal plate.

		Voltage (kV) of the five highest valley peaks (to 3dp)				
Sole type	Trial	1	2	3	4	5
BAM	1	3.111	3.153	3.186	3.165	2.952
	2	3.312	3.450	3.182	3.144	3.333
	3	3.339	3.201	3.008	3.373	3.113
Neolite	1	5.825	5.808	5.582	5.942	5.825
	2	5.130	5.255	5.165	5.367	5.161
	3	5.551	5.576	5.698	5.480	5.547

Table 3 - Floor covering tested on insulating mat.

If the floor covering is to be adhered to a surface having a resistance to earth $> 10^9\,\Omega$, the results in table 1 apply.

Sole type	Average trial 1 (3 dp)	Average trial 2 (3 dp)	Average trial 3 (3 dp)	Overall result (1 dp)
Bam	5.016	5.044	5.377	**5.1**
Neolite	8.384	8.524	8.386	**8.4**

Table 4 - Individual results for - Floor covering on metal plate and the insulating mat.

		Voltage (kV) of the five highest valley peaks (to 3dp)				
Sole type	Trial	1	2	3	4	5
BAM	1	5.064	5.117	4.904	4.941	5.054
	2	4.579	4.971	5.265	5.122	5.281
	3	5.017	5.176	5.457	5.558	5.679
Neolite	1	8.879	8.853	8.091	8.015	8.087
	2	8.803	8.661	8.095	8.669	8.393
	3	8.242	8.493	8.298	8.558	8.380

COMMENTS

The test is intended to evaluate the static electrical charge generated by a person walking on a floor covering under standard laboratory conditions.

The tests were conducted using both Neolite and BAM soles. The resilient floor coverings are evaluated using pairs of standard sandals, incorporating the relevant soling material, walking over the floor coverings submitted when situated over a ground base plate or a rubber mat.

The average results for the floorings submitted demonstrated results above 2kV, when assessed with the metal plate alone (representing applications where the floor covering is to be adhered to concrete or on any surface having a resistance to earth $\leq 10^9\ \Omega$).

When assessed with the metal plate in conjunction with the rubber mat (representing applications where the floor covering is to be adhered to a surface having a resistance to earth $> 10^9\ \Omega$) the flooring also demonstrated results above 2kV.

When voltages of this level are obtained it is suggested that individuals are more likely to notice static discharges (3)

Note(s)

(1) Information supplied by the manufacturer. Not tested for verification.

(2) The test method has been modified. EN 1815: 1998 stipulates that the determination of the body voltage generated when a person wearing standardised footwear walks over the test surface (floorcovering) is to be conducted with two types of standardised footwear, one with conductive rubber soling (BAM) and the second with polyvinyl chloride soles (PVC). It has been reported to and acknowledged by CEN (European Committee for Standardisation) that the PVC sole is no longer available and no replacement has yet been finalised. To ensure testing is completed on more than one test sole it is the policy of SATRA to incorporate a second standardised footwear sole, standard sole material Neolite (standard XS-664P), as specified in BS ISO 6356: 2000 Textile floorcoverings – assessment of static electrical propensity – Walking Test.

(3) The determination of body voltage generated when walking on a floor represents many problems and may be affected by many factors. Relative humidity, clothing, sole material, the flooring material, mode of walking, and not least, the capacitance of a person, may affect the body voltage. Despite this, it has been found that most persons feel a discharge effect when charged to 2 kV or higher

Technical Services Report

TERMS AND CONDITIONS OF BUSINESS

1. GENERAL
Work done or services undertaken are subject to the terms and conditions detailed below and all other conditions, warranties and representations, expressed or implied are hereby excluded.

2. PRICES
Prices are based on current material and production costs, exchange rates, duty and freight and are subject to change without notice.

3. DELIVERY ESTIMATES
Delivery estimates are made in good faith and date from receipt of a written order and full information to enable us to proceed. While SATRA or its subsidiaries (hereafter referred to as "SATRA") make every effort to fulfil them, such estimates are subject to unforeseen events and if not maintained, cannot give rise to any claim. Offers "ex stock" are subject to prior sale.

4. CANCELLATION AND RETURNS
Cancellation of orders for goods, services, training or consultancy is only acceptable by prior agreement of SATRA and a charge will normally be made.

5. CLAIMS
Claims for errors, shortages etc should be notified within 10 days of date of receipt. In the event of goods damaged in transit, packing materials should be retained for examination; otherwise no liability can be accepted.

6. PAYMENT TERMS
Payment terms are net 21 days from date of invoice. Failure to comply with the terms of payment may result in delayed delivery of goods and services and a review of the Customer's credit account. Should the customer become subject to an administration order, or becomes bankrupt or goes into liquidation, SATRA has a right to cancel any contract and discontinue any work. SATRA reserves the right to adjust US Dollar and Euro sales price where customer exceeds credit terms and where the exchange rate has moved more than 10% since invoicing.

7. RETENTION OF TITLE
All goods remain the property of SATRA until paid in full. Under no circumstances will a customer's purchase order override our Retention of Title clause. In the case of software, the ownership of the software remains with SATRA. Payment of invoices in full will entitle the customer to use the software under licence until (a) they cease to be a member of SATRA or (b) they cease trading. In both instances, the licence shall then revert to SATRA.

8. GUARANTEE
All goods manufactured by SATRA are guaranteed both as regards material and workmanship. Any part returned carriage paid, within twelve months from date of supply and found defective, will be repaired or replaced at SATRA's option free of charge. SATRA admits no liability for loss, damage or delay consequent on any defect in any goods supplied by SATRA.

9. TEST REPORTS
Results given in test reports refer only to samples submitted for analysis and tested by SATRA. A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in a test report.

10. TEST SAMPLES
Unless otherwise agreed in advance, test samples will be disposed of 6 weeks after the date of the final report. If required, samples can be returned at the Customer's expense.

11. RESPONSIBILITY
Every effort is made to ensure accuracy in description, drawings and other information in correspondence, catalogues, etc but no warranty is given in this respect and SATRA shall not be liable for any error therein. SATRA carries out all tests and/or advises only on the basis that the same are carried out, made or given without any responsibility whether for negligence or otherwise. SATRA and its servants or agents will not be liable for any damage or loss direct or indirect of whatsoever kind, whether or not the same results directly or indirectly from negligence on the part of SATRA or its servants or agents.

12. CONFIDENTIALITY
Unless specifically excluded in the terms of an individual contract between SATRA and its Customer, the following shall apply to all reports, advice, drawings, photographs, specifications or data:
   i. The above shall not be disclosed to third parties or used in litigation without the consent of SATRA.
   ii. Where SATRA has given consent to disclosure, the Customer shall draw the attention of the third party to these terms of business and the basis on which SATRA undertakes test, reporting and advising. The Customer shall indemnify SATRA for any failure to do so.
   iii. The above items are submitted to the Customer as confidential documents. Confidentiality shall continue to apply after completion of the business, but shall cease to apply to information or knowledge which may come into the public domain.

13. CONSTRUCTION AND ARBITRATION
The laws of England shall govern all contracts and the parties submit to exclusive jurisdiction of the courts of England, unless otherwise agreed.

Issue Date: 1st October 2009

Signed: