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TECHNICAL REPORT

DURAMAT LTD Unit 6, Causeway End Manningtree CO11 2LH United Kingdom	SATRA reference:	FLO4215P2B0	
		2340	3
	Report ID/Issue number:	33899/2	
	Your reference:		
	Date samples received:	04/09/2023	
	Date(s) work carried out:	04/09/2023 to 16/10/2023	
	Date of report:	07/11/2023	

Testing Requirements

Classification of one product described by the customer as "PVC Floor Tile" to EN 13501-1:2018 (L/NCS).

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Report Signed by:

Reece Johnson

Report Signatory

TESTING OF ONE PRODUCT, DESCRIBED BY THE CUSTOMER AS 'PVC FLOOR TILE' TO EN 13501-1:2018. (L/NCS)

As requested by Duramat Ltd, SATRA have assessed the floor covering submitted to determine its fire classification in accordance with the procedures given in EN 13501-1:2018, as detailed below.

CONCLUSION

With regard to the properties assessed, the product 'PVC Floor Tile' demonstrates compliance with the requirements for reaction to fire classification: **B_{fl} - s1** in accordance with EN 13501-1:2018 based on testing conducted in accordance with EN ISO 9239-1:2010 and EN ISO 11925-2:2020. See below report for details of relevant fields of application.

DETAILS OF CLASSIFIED PRODUCT:

The product, 'PVC Floor Tile', is defined as resilient flooring, and is described in full overleaf.
Appearance:

Date received:	04 September 2023
Date conditioning commenced:	05 October 2023
Testing conducted:	11, 12 and 16 October 2023
Testing conducted by:	Dusan Pekarovic

TESTS CARRIED OUT

- EN ISO 9239-1:2010. Reaction to fire tests for floorings. Part 1: Determination of the burning behaviour using a radiant heat source. (L/NCS) (2)
- EN ISO 11925-2:2020. Reaction to fire tests – Ignitability of products subject to direct impingement of flame. Part 2 – Single-flame source test. (L/NCS) (2)

Notes:

(1) Information supplied by the customer. Not verified by SATRA.
(2) Results have been assessed against EN 13501-1:2018 Clause 12.

FULL DESCRIPTION OF TEST SPECIMENS (1)

The description of the specimen given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

General description of flooring system			PVC interlocking floor tile
Product reference of flooring system			PVC Floor Tile
Colour reference			Black / Grey
Name of Manufacturer			Big mats ltd
Overall weight per unit area			2.2kg per tile
Overall Thickness			7mm
Product Configuration			
Floor covering	Layer 1	Product Reference	PVC FLOOR TILE
		Generic Type	FLOOR TILE
		Name of Manufacturer	BIG MATS LTD
		% Composition	100% RECYCLED PVC
		Weight per unit area	2.2KG
		Thickness	7MM
		Trade name of flame retardant	N/A
		Generic form of flame retardant	N/A
		Amount of flame retardant	N/A
Brief Description of the manufacturing process			Note 1

LABORATORY SUPPLIED SUBSTRATE;

Adhesive	Product Reference	N/A
	Generic Type	N/A
	Name of Manufacturer	N/A
	Density (20ºC)	N/A
	Colour	N/A
Substrate	Product reference	'Cembrit HD'
	Generic type	Fibre cement board
	Name of supplier	Clarkes of Walsham Ltd
	Thickness	8 ± 2mm
	Density	1800 ± 200 kg/m³

Note 1: The sponsor of the test has failed to provide the information
Note 2: The sponsor has provided the required information but at the request of the sponsor it has been omitted from the final report.
Note 3: The sponsor was unwilling to provide the required information.

EVIDENCE IN SUPPORT OF CLASSIFICATION

Test reports and extended application reports relating to this classification.

Testing Laboratory	Name of Sponsor	Test report / extended application report reference	Test method / extended application rules.
SATRA Technology Centre Ltd	Duramat Ltd	FLO4215P2B0 2340 1	EN ISO 9239-1:2010
SATRA Technology Centre Ltd	Duramat Ltd	FLO4215P2B0 2340 2	EN ISO 11925-2:2020

Test results relating to the test reports above.

Test method	Parameter	No. of tests	Results	Compliance with **B_{fl}-s1** parameters
EN ISO 9239-1 [a]	Critical flux [b] (kW/m²)	3	(*m'*) [d]: ≥ 10.6	**Compliant**
	Smoke production [c] (%.min)		mean: 245.03	**Compliant**
EN ISO 11925-2 [e]	F_S (mm)	6	Max : 49	**Compliant**

[a] Test duration = 30 minutes.
[b] Critical flux is defined as the radiant flux at which the flame extinguishes or the radiant flux after a test period of 30 min, whichever is the lower (i.e. the flux corresponding with the furthest extent of spread of flame
[c] **s1** = Smoke production ≤ 750 %.min; **s2** = not s1.
[d] The reported mean for a continuous parameter lies within the limits of the envisaged class, and is therefore reported as *m'*.
[e] Under conditions of surface flame attack with 15s exposure time.

CLASSIFICATION

The product, 'PVC Floor Tile' in relation to its reaction to fire behaviour is classified: **B_{fl}**
The additional classification in relation to smoke production is: **s1**.

The format of the reaction to fire classification for floorings is:

Fire behaviour		**Smoke production**	
A1fl to **Ffl** (as applicable)	**-**	**s**	**1** or **2** (as applicable)

Reaction to fire classification: **B_{fl} - s1**

SATRA Report Reference: FLO4215P2B0 2340
Report ID/Issue number: 33899/2

FIELD OF APPLICATION

As the product was tested loose laid (L) over the standard non-combustible substrate (NCS) as specified in EN 13238:2010, this classification is valid for the following end use applications, providing the end use substrate density is at least 75% of the nominal value of the density of the standard substrate :

- Flooring applications utilizing end use substrates of classes A1 and A2-s1,d0 are represented by testing over a fibre cement board (non – combustible substrate).
- Installed with or without adhesive

The reaction to fire classification may be valid for products within the same family, where family is defined as a range of products within defined limits of variability of its parameters, e.g. thickness, density, end use application, for which the reaction to fire classification is proven to be unchanged, or for which the field of application is extended in an extended application report.

LIMITATIONS

This document does not represent type approval or certification of the product.

RELATIONSHIP BETWEEN CLASSES AND REFERENCE FIRE SITUATIONS

For information only, as discussed in Annex A of EN 13501-1:2018 the relationship between classes and reference fire situations for floorings is as follows:

Class F_{fl}: Products which cannot be classified in one of the classes $A1_{fl}$, $A2_{fl}$, B_{fl}, C_{fl}, D_{fl}, E_{fl}.

Class E_{fl}: Products capable of resisting a small flame.

Class D_{fl}: Products satisfying E_{fl} and in addition capable of resisting, for a certain period, a heat flux attack.

Class C_{fl}: As class D_{fl} but satisfying more stringent requirements.

Class B_{fl}: As class C_{fl} but satisfying more stringent requirements.

Class $A2_{fl}$: Satisfying the same requirements as class B_{fl} relating to heat flux. In addition under the conditions of a fully developed fire these products will not significantly contribute to the fire load and fire growth.

Class $A1_{fl}$: Class $A1_{fl}$ products will not contribute in any stage of the fire, including the fully developed fire. For that reason they are assumed to be capable of satisfying automatically all requirements of all lower classes.

Conditions of Use

Confidentiality and Dissemination

SATRA test reports may be forwarded to other parties provided that they are not changed in any way and are not marked as confidential. Test reports must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

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Where the UKAS logo is included on the test report then tests marked ≠ fall outside the UKAS Accreditation Schedule for SATRA. Where no UKAS logo is included on the test report then none of the tests reported are covered by SATRA's UKAS Accreditation.

Tests marked ¥ are performed under SATRA's Flexible UKAS Schedule.

Uncertainty of Measurement and Decision Rules

Where values for uncertainty of measurement are included within the report then the uncertainty of the corresponding results are based on a standard uncertainty multiplied by a coverage factor k=2, which provides a coverage probability of approximately 95%.

When reporting results against a conformance statement (Pass/Fail or the allocation of a class or level) then uncertainty of measurement is taken into account based on a non-binary acceptance which itself is based on the guard band being equal to the expanded uncertainty.

Where the result corrected for uncertainty falls within the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 2.5% and SATRA will in this instance quote a Pass/Fail, class, or level.

Where the result corrected for uncertainty falls outside of the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 50%. In this instance SATRA will not provide a Pass/Fail statement or a class or level but will include information in the notes in relation to the result obtained.

Where a report contains SATRA guidelines values then uncertainty of measurement values have been taken into account when determining the guideline values and as such are not considered when determining pass/ fail criteria.