Reaction to fire classification report

Issuing laboratory: Warringtonfire Testing and Certification Limited

Classification standard:	EN 13501-1: 2018
Report sponsor(s):	Forbo Flooring UK Ltd.
Product(s):	"Flotex Sheet"
Report number:	539890
Version:	1

Warringtonfire Testing and Certification Limited , accredited for compliance with ISO/IEC 17025:2017 – Testing

Approved Body Number 0833

Quality management

Version	Date	Summary of amendments including reasons		
1	05 April 2024	Description	Initial issue	
			Prepared by	Authorised by
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		Signature		
			*Signed for and on behalf of Warringtonfire Testing and Certification Limited	

Contents

1. Introduction

This classification report defines the classification assigned to "Flotex Sheet", in line with the procedures given in EN 13501-1: 2018.

Warringtonfire Testing and Certification Limited (Warringtonfire) issued the classification report at the request of the report sponsor listed in Table 1.

Table 1 Report sponsor details

Entity	Address
Report sponsor	
Forbo Flooring UK Ltd.	High Holborn Road, Ripley, Derbyshire, DE5 3NT

2. Details of classified product

2.1 General

The product(s), "Flotex Sheet", are defined as being suitable for flooring applications.

The related harmonised product standard is EN 14041:2004/AC:2006.

2.2 Product description

The product(s), "Flotex Sheet", are described in Table 2 and in the test reports listed in Section 3.1.

Table 2 Product description

Item	Detail
General description	Flocked floorcovering
Product reference	“Flotex Sheet”
Name of manufacturer	Forbo Flooring UK Ltd
Weight per unit area	1815g/m^2 (stated by sponsor) 1816.59g/m^2 (determined by Warringtonfire)
Thickness	4.3mm (stated by sponsor) 4.51mm (determined by Warringtonfire)

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Item		Detail
Print (Pile surface)	Generic type	Acid / pre-metallised dyes
	Product reference	"KP"
	Name of manufacturer	Forbo Flooring UK Ltd
	Application rate	0.5 – 1.0% of the pile weight
	Colour	Various (stated by sponsor) Black patterned (as tested by Warringtonfire)
	Flame retardant details	See Note 1 below
Pile	Product reference	"RA110"
	Generic type	Nylon 6.6
	Name of manufacturer	Domo
	Weight per unit area	250g/m^2
	Pile height above the backing	2.0mm
	Flame retardant details	See Note 1 below
Pile adhesive	Product reference	"RWP02"
	Generic type	Polyvinyl chloride plastisol
	Name of manufacturer	Forbo Flooring UK Ltd
	Weight per unit area	340g/m^2
	Thickness	0.25mm
	Flame retardant details	See Note 2 below
Fibreglass reinforcement #1	Product reference	"RA147"
	Generic type	Fibreglass nonwoven
	Name of manufacturer	OC Veil
	Weight per unit area	58g/m^2
	Thickness	0.5mm
	Flame retardant details	See Note 1 below
Back coating #1	Product reference	"RWP15"
	Generic type	Closed cell polyvinyl chloride foam
	Name of manufacturer	Forbo Flooring UK Ltd
	Weight per unit area	800g/m^2
	Thickness	1.4mm
	Flame retardant details	See Note 1 below
Fibreglass reinforcement #2	Product reference	"RA152"
	Generic type	Laid Fibreglass Scrim
	Name of manufacturer	Fothergill Crenette
	Weight per unit area	27g/m^2
	Thickness	0.22mm
	Flame retardant details	See Note 1 below
Back coating #2	Product reference	"RWP15"
	Generic type	Closed cell polyvinyl chloride foam
	Name of manufacturer	Forbo Flooring UK Ltd
	Weight per unit area	350g/m^2
	Thickness	0.6mm
	Flame retardant details	See Note 1 below

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Item	Detail
Brief description of the manufacturing process	A coating of closed cell polyvinyl chloride foam is applied to a fibreglass nonwoven, after which a fibreglass scrim reinforcement is added, followed by a second coating of closed cell polyvinyl chloride foam. The material is then gelled and inverted, and the flock adhesive is applied. The pile is then electrostatically flocked into the adhesive. After curing, the product is rotary screen printed, steamed, washed and dried, and is then cut into rolls.
Mounting and fixing details (option 1)	Tested over non-FR treated particleboard substrate as per EN 13238:2020
Mounting and fixing details (option 2)	Tested over fibre cement board substrate as per EN 13238:2020

Note 1: The sponsor of the test has confirmed that no flame-retardant additives were utilised in the production of the product.

Note 2: The sponsor of the test has provided this information but at the specific request of the sponsor these details have been omitted from the test report and are instead held on the confidential file relating to this investigation.

3. Test reports and test results in support of classification

3.1 Test reports

Table 3 details the test reports that have been used in support of classification.

Table 3 Test reports

Name of laboratory	Name of sponsor(s)	Test report no.	Test date	Test and extended application standard
Warringtonfire	Forbo Flooring UK Ltd.,	536360 (Issue 2)	12 September 2023	EN ISO 9239-1: 2010
Warringtonfire	Forbo Flooring UK Ltd.,	536359 (Issue 2)	14 September 2023	EN ISO 11925-2: 2020
Warringtonfire	Forbo Flooring UK Ltd.,	539229 (Issue 2)	08 December 2023	EN ISO 9239-1: 2010
Warringtonfire	Forbo Flooring UK Ltd.,	539230 (Issue 2)	07 December 2023	EN ISO 11925-2: 2020
Warringtonfire	Forbo Flooring UK Ltd.,	539891	-	CEN/TS 15117: 2005 / EN 15725: 2023

3.2 Test results

3.2.1 Official test results used for the classification

Table 4 details the test results that have been used in support of classification. The fire performance parameters for class B_{FL} - s1 can be found in Table 8.

Table 4 Test data

Test method Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN ISO 9239-1: 2010 536360 (Issue 2)	Critical heat flux, (kW/m²)	4	10.4	-
	Average smoke development, (%.min)		89	-
EN ISO 11925-2: 2020 (15s exposure - Surface) 536359 (Issue 2)	Fs ≤ 150 mm within 20 s	6	-	Compliant
EN ISO 11925-2: 2020 (15s exposure - Edge) 536359 (Issue 2)	Fs ≤ 150 mm within 20 s	6	-	Compliant

Note: '-' symbol confirms this parameter is not applicable.

3.2.2 Comparative test results used for the worst case determinations

The tables below detail the test data that has been used to determine the worst case for each product parameter.

Table 5 EN ISO 11925

Product name Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
EN ISO 11925-2: 2020 (15s exposure - Surface) 539230 (Issue 2) Particleboard substrate	Fs ≤ 150 mm within 20 s	2	-	Compliant
EN ISO 11925-2: 2020 (15s exposure - Edge) 539230 (Issue 2) Particleboard substrate	Fs ≤ 150 mm within 20 s	2	-	Compliant
EN ISO 11925-2: 2020 (15s exposure - Surface) 536359 (Issue 2) Fibre cement board substrate	Fs ≤ 150 mm within 20 s	2	-	Compliant
EN ISO 11925-2: 2020 (15s exposure - Edge) 536359 (Issue 2) Fibre cement board substrate	Fs ≤ 150 mm within 20 s	2	-	Compliant

Note: '-' symbol confirms this parameter is not applicable.

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Table 6 EN ISO 9239

Product name Report number	Parameter	Number of tests	Results	
			Continuous parameters	Compliance with parameters
Flotex Sheet - Production Direction 539229 (Issue 2) Particleboard substrate	Critical heat flux, (kW/m²)	1	≥ 11	-
	Average smoke development, (%.min)		83	-
Flotex Sheet - Perpendicular Direction 539229 (Issue 2) Particleboard substrate	Critical heat flux, (kW/m²)	1	≥ 11	-
	Average smoke development, (%.min)		169	-
Flotex Sheet - Production Direction 536360 (Issue 2) Fibre cement board substrate	Critical heat flux, (kW/m²)	1	10.4	-
	Average smoke development, (%.min)		80	-
Flotex Sheet - Production Direction 536360 (Issue 2) Fibre cement board substrate	Critical heat flux, (kW/m²)	1	10.4	-
	Average smoke development, (%.min)		89	-

Note: '-' symbol confirms this parameter is not applicable.

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with EN 13501-1:2018.

4.2 Classification

The product "Flotex Sheet" in relation to its reaction to fire behavior is classified as:

B_{FL}

The additional classification in relation to smoke production is:

s1

The format of the reaction to fire classification for flooring applications products is:

Fire behaviour		Smoke production	
B_{FL}	-	s	1

Alternatively shown:

Reaction to fire classification: B_{FL} - s1

4.3 Field of application

The classification for the product described in Section 2.2 of this report is valid for end-use applications described in Table 7.

Table 7 End-use applications

End use	Description	Origin
Substrate	Any substrate of wood and of classes A1 and A2-s1,d0 with a density equal to or greater than 510 kg/m³.	As per EN 13238: 2010, clause 5.2.
Fixing to substrate	Valid for use with and without adhesive in end use conditions	As per EN 14041: 2004/AC: 2006 clause 4.1.2

This classification is valid for the following product parameters:

- Overall thickness: 4.3mm (No variation allowed)
- Overall weight per unit area: 1815g/m^2 (No variation allowed)
- Colour: Any colour
- Use of flame retardants: No variation allowed
- Pile height above backing: 2.0mm (No variation allowed)
- Pile weight per unit area: 250g/m^2 (No variation allowed)
- Pile adhesive thickness: 0.25mm (No variation allowed)
- Pile adhesive weight per unit area: 340g/m^2 (No variation allowed)
- Fibreglass reinforcement "RA147" thickness: 0.5mm (No variation allowed)
- Fibreglass reinforcement "RA147" weight per unit area: 58g/m^2 (No variation allowed)
- Back coating "RWP15" #1 thickness: 1.4mm (No variation allowed)
- Back coating "RWP15" #1 weight per unit area: 800g/m^2 (No variation allowed
- Fibreglass reinforcement "RA152" thickness: 0.22mm (No variation allowed)
- Fibreglass reinforcement "RA152" weight per unit area: 27g/m^2 (No variation allowed)
- Back coating "RWP15" #2 thickness: 0.6mm (No variation allowed)
- Back coating "RWP15" #2 weight per unit area: 350g/m^2 (No variation allowed)
- Construction: No variation allowed
- Composition: No variation allowed

4.4 Fire performance parameters for B_{FL} - s1

All the products described in Section 2.2 and within the field of application defined in Section 4.3 comply with the fire performance parameters shown in Table 8. The test results can be found in Section 3.2.

Table 8 Fire performance parameters for B_{FL} - s1

Test method	Parameter	Continuous parameters	Compliance with parameters
EN ISO 9239-1: 2010	Critical heat flux, (kW/m²)	CHF ≥ 8,0 kW/m²	-
	Average smoke development, (%.min)	Smoke ≤ 750 %.min	-
EN ISO 11925-2: 2020 (15s exposure)	Extent of flame spread	-	Fs ≤ 150 mm within 20 s
	Flaming droplets / particles that ignite filter paper	-	N/A

Note: '-' symbol confirms this parameter is not applicable.

5. Restrictions

At the time the standard EN 13501-1: 2018 was published, no decision was made about the duration of validity of a classification report.

When this report is used to support UKCA marking under the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and/or 'CE+UK(NI)' marking for Northern Ireland under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011, the provisions of those regulations prevail over any conflicting provisions in the designated/harmonised standards and technical specifications.

6. Limitations

The classification assigned to the product in this report is appropriate to a Declaration of Performance (DoP) by the manufacturer within the context of System 1 of AVCP and UKCA marking under the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and/or 'CE+UK(NI)' marking for Northern Ireland under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011, laying down harmonised conditions for the marketing of construction products.

The test laboratory played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide evidence for the traceability of the samples tested.

7. Validity

This document is the original version of this classification report and is written in English. In case of doubt the original version prevails over a translation.

This document is issued subject to Warringtonfire's standard terms and conditions, which are available at: Terms and Conditions | Element.

The classification results relate to the behaviour of a product under the particular conditions of the test(s); they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use, nor can the classification results be extrapolated and applied to other products, or imply suitability for use in configurations not specifically detailed in the classification report. The classification is based on the information available to Warringtonfire at the time of the report. Should conflicting or contradictory evidence become available, Warringtonfire reserves the right to unconditionally withdraw the classification report forthwith upon giving written notice of the same.

Reports are statements of fact prepared in accordance with the referenced version of the standards stated in Section 3 of this report. Test, classification and extended application are based upon the information provided to Warringtonfire. Warringtonfire takes no responsibility for the accuracy or completeness of such information.

The results stated in this classification report apply to the test specimens as received and/or specified in the referenced/supporting test reports. Any differences in composition, production process, thickness, density or colour of the product may significantly affect the performance and will therefore invalidate the application of the test and classification results to the variant product. It is recommended that any proposed variation to the tested configuration or product should be referred to the report sponsor. The report sponsor should then obtain appropriate documentary evidence of compliance from Warringtonfire or another accredited testing authority. The supplier of the product is responsible for ensuring that the product which is supplied for use is identical to the test specimens that were tested.

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This document does not represent type approval or certification of the product. Warringtonfire does not give an opinion nor is it Warringtonfire's responsibility to determine or state whether the product meets any particular fire or life safety standards as set out in the Building Regulations or any other appropriate document.

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