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Testing. Advising. Assuring.

**Title:**

Extended application report in  
accordance with EN/TS 15117

**Notified Body No:**

0833

**Product Names:**

"Flotex Tile"

**Report No:**

312665

**Issue No:**

2

**Prepared for:**

Forbo Flooring UK Limited  
High Holborn Road  
Ripley  
Derbyshire  
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**Date:**

9<sup>th</sup> November 2011

## 1. Introduction

This report extends the field of application of test results obtained for "Flotex Tile", a family of Flocked floorcovering tiles. Extended application enables the prediction of fire performance, on the basis of one or more test results to the same test standard.

## 2. Details of Product Range

A product family is a group of products, which differ only in aspects that do not influence the properties required in the relevant product standard and, if relevant, end-use parameters, for which the reaction to fire performance remains unchanged (i.e. does not get worse).

The product family for which extended application is to be used is "Flotex Tile", a family of Flocked floorcovering tiles. The purpose of this extended application report is to compare the performance of a formulation change within the product to the original product formulation classified in February 2004. This property was assessed to determine its influence on the fire performance of the product when tested in accordance with EN ISO 9239-1 and EN ISO 11925-2, and classified in accordance with EN 13501-1.

### 2.1 Product description

The products contained within the range, are fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		A flocked floorcovering	
Carpet tile	Product reference	"Flotex Tile"	
	Name of manufacturer	Forbo Flooring UK Limited	
	Thickness	5.3mm	
	Weight per unit area	4500g/m <sup>2</sup>	
	Pattern / style reference	Any pattern	
	Colour reference	Any colour	
	Pile	Product reference	"RA 110"
		Generic type	Nylon 6.6
		Name of manufacturer	See 'Note 1' below
		Pile height above the backing	2mm
		Weight per unit area	250g/m <sup>2</sup>
		Flame retardant details	The manufacturer stated that no flame retardant additives were utilised in the production of the material
	Primary Backing	Product reference	"RA147 / RA 152"
		Generic type	Scrim reinforced fibreglass nonwoven
		Name of manufacturer	See 'Note 1' below
		Thickness	0.55mm
Weight per unit area		90g/m <sup>2</sup>	
Flame retardant details		The manufacturers stated that no flame retardant additives were utilised in the production of the material	

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Carpet tile continued...	Backing	Product reference	"RWP04 Adhesive"
		Generic type	PVC plastisol compound
		Name of manufacturer	Forbo Flooring UK Ltd.
		Thickness	0.25mm
		Weight per unit area	370 g/m <sup>2</sup> nominal
		Flame retardant details	See 'Note 1' below
	Back coating	Product reference	"RWP14 / Recycled Vinyl Backing"
		Generic type	Recycled vinyl backing laminated to the pile surface with a PVC plastisol
		Name of manufacturer	Forbo Flooring Ltd
		Thickness	2.5mm
		Weight per unit area	3790g/m <sup>2</sup>
		Flame retardant details	The manufacturers stated that no flame retardant additives were utilised in the production of the material
Substrate	Trade name	"NT D4 604"	
	Generic Description	Fibre cement board	
	Supplier	Scheerder van de Kerkhove (SVK)	
	Overall thickness	6mm	
	Overall density	1800 ± 200kg/m <sup>2</sup>	
Brief description of manufacturing process utilised in the production of the carpet tile		The back coating is applied to the fibreglass nonwoven. After gelling, the material is inverted and the flock adhesive is applied. The pile is then electrostatically flocked into the adhesive. After curing, the product is printed. A recycled vinyl backing is then laminated to the back using a PVC plastisol before being cut into tiles.	

**Note 1 – The sponsor provided this information but at the specific request of the sponsor, this information has been omitted from the test report and is instead held on our confidential file relating to this investigation.**

### 3. Test reports/classification reports & test results in support of classification

#### 3.1 Test reports/classification reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
Exova Warringtonfire	Forbo Flooring UK Limited	WARRES 125058, 125059, 125060, 125061, 125062 WF No. 312675	EN ISO 9239-1
Exova Warringtonfire	Forbo Flooring UK Limited	WARRES 125071	EN ISO 11925-2
Exova Warringtonfire	Forbo Flooring UK Limited	WF 312666	EN 13501

### 3.2 Test results

Test method & test number		Parameter	No. tests	Results	
				Continuous parameter - mean (m)	Compliance with parameters
EN ISO 9239-1		Critical flux	3, 3, 1, 1, 1, 1, 1	8.5, 9.2, 9.8, 10.0, 9.7, 10, 10.8	Compliant
		Smoke		293.27, 398.24, 324.31, 258.17, 270.78, 226.54, 251.66	Compliant
EN ISO 11925-2	(15s exposure – surface of decorative face)	F <sub>s</sub>	6	50	Compliant
		Flaming droplets/ particles		None	Compliant
	(15s exposure – edge of decorative face)	F <sub>s</sub>	6	57	Compliant
		Flaming droplets/ particles		None	Compliant

## 4. Classification and field of application

### 4.1 Definition of Limits of Extended Application

Seven tests have been conducted in accordance with EN ISO 9239-1, and one in accordance with EN ISO 11925-2. The tests were conducted on products having different formulation properties to investigate what influence these product properties had on the fire performance of the product.

### 4.2 EN ISO 9239-1

The radiant panel test measures the following fire parameters, Critical Flux and Smoke Production, and these parameters are evaluated to assess the fire performance of the vinyl floorcovering product range.

As demonstrated in Figure 1, all products would provide a Class B<sub>n</sub>, in accordance with EN 13501-1 as the critical flux at extinguishment (CFE) value for each flooring is at least 6% above the class limit. For the products with the new formulation, the critical flux at extinguishment (CFE) values are at least 25% above the class limit.

Similarly as demonstrated in Figure 2, all products comfortably fall within the s1 criteria for Smoke Production in accordance with EN 13501-1. The values recorded for each product tested are at least 46% below the classification criteria. For the products with the new formulation, the values are at least 66% below the classification criteria.

#### 4.3 EN ISO 11925-2

From the data generated during the EN ISO 9239-1 testing it was apparent which product specification gave the worst fire performance. This product was tested formally in accordance with EN ISO 11925-2 using surface and edge flame application. The highest average flame front was 62% below the maximum value allowed for Class B<sub>FL</sub> (EN 13501-1).

#### 4.4 Reference of classification

This classification has been carried out in accordance with clause 9 of EN 13501-1:2007+A1:2009.

#### 4.5 Classification

The products, "Flotex Tile", a family of Flocked floorcovering tiles, in relation to their reaction to fire behaviour are classified:

**B<sub>FL</sub>**

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	
<b>B<sub>FL</sub></b>	-	<b>s</b>	<b>1</b>

i.e. **B<sub>FL</sub> – s1**

**Reaction to fire classification: B<sub>FL</sub>– s1**

#### 4.6 Extended Field of application

This classification is valid for the following end use applications:

- i) Floorcovering applications applied over any substrate with a minimum density of 1800kg/m<sup>3</sup>, having a minimum thickness of 6mm and a fire performance of A2<sub>FL</sub> or better.
- ii) Loose laid or bonded with acrylic adhesive specified by Forbo Flooring UK Limited

This classification is also valid for the following product parameters:

- |                   |  |
|-------------------|--|
| ▪ Total thickness | No variation allowed   |
| ▪ Total weight    | No variation allowed   |
| ▪ Colour          | Any colour allowed   |
| ▪ Pattern         | Any pattern allowed  |
| ▪ Application     | Loose laid or Bonded   |
| ▪ Adhesive        | Bonded with acrylic adhesive specified by Forbo<br>Flooring UK Limited |

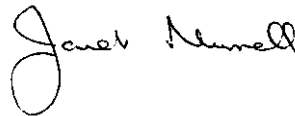
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