

## CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1:2007+A1:2009

Classification no.	2017-Efectis-R000983
Sponsor	Forbo Flooring B.V. P.O. Box 13 1560 AA KROMMENIE THE NETHERLANDS
Product name	<b>Marmoleum Real FR for massive wall application</b>
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## 1. INTRODUCTION

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This classification report defines the classification assigned to **Marmoleum Real FR for massive wall application** in accordance with the procedures given in EN 13501-1:2007+A1:2009.

## 2. DETAILS OF CLASSIFIED PRODUCT

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### 2.1 GENERAL

The product, **Marmoleum Real FR for massive wall application**, is defined as a wall covering.

### 2.2 MANUFACTURER

Forbo Flooring B.V.  
P.O. Box 13  
1560 AA KROMMENIE  
THE NETHERLANDS

### 2.3 PRODUCT DESCRIPTION

Marmoleum Real FR is produced in accordance with EN ISO 24011.

Design: 63048, article number: 77510, batch: 11063

- It is based on a one or two layer homogeneous mixture of linoleum cement, wood flour, aluminium trihydroxide, limestone and pigments, calendered on a fibrous backing;
- Linoleum cement consists of a mixture of linseed oil and or other vegetable drying oils and rosin;
- For the products with a nominal thickness of 2.5 mm the minimum surface layer thickness is 1.3 mm.

The product has a total thickness of 2.5 mm and a mass per unit area of  $2.9 \text{ kg/m}^2 \pm 10\%$ .

The product will be glued with Eurocol 350.

## 3. STANDARDS, REPORTS, RESULTS AND CRITERIA IN SUPPORT OF THIS CLASSIFICATION

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### 3.1 APPLICABLE (PRODUCT) STANDARDS

EN ISO 11925-2:2010	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test
EN 13823:2010+A1:2014	Reaction to fire tests for building products - Building products, excluding floorings exposed to the thermal attack by a single burning item
EN 13501-1:2007+A1:2009	Fire classification of construction products and building elements Part 1: Classification using data from reaction to fire tests

### 3.2 REPORTS

Name of Laboratories	Name of sponsor	Report ref. no.	Test method
Efectis Nederland BV THE NETHERLANDS	Forbo Flooring B.V. THE NETHERLANDS	2017-Efectis-R000977 2017-Efectis-R000980	EN ISO 11925-2:2010 EN 13823:2014

### 3.3 TEST RESULTS

Test method and test number	Parameter	No. tests	Results	
			Continuous parameter – mean (m)	Compliance with parameters
<b>EN ISO 11925-2</b>				
surface flame impingement	Fs ≤150 mm	6	33	-
	Ignition of filter paper		-	Compliant
Edge flame Impingement	Fs ≤150 mm	6	125	-
	Ignition of filter paper		-	Compliant
<b>EN 13823</b>				
Marmoleum FR for a massive wall application	FIGRA <sub>0.2MJ</sub> [W/s]	3	476	-
	FIGRA <sub>0.4MJ</sub> [W/s]		476	-
	THR <sub>600s</sub> [MJ]		20.7	-
	LFS < edge		-	Compliant
	SMOGRA [m <sup>2</sup> /s <sup>2</sup> ]		19.8	-
	TSP <sub>600s</sub> [m <sup>2</sup> ]		107	-
	Flaming debris - flaming ≤ 10 s - flaming > 10 s		- -	Compliant Compliant

### 3.4 CLASSIFICATION CRITERIA

<b>Fire classification of construction products and building elements</b> Excluding floorings and linear pipe thermal insulation products			
<b>Classification criteria</b>			
Class	<b>B</b>	<b>C</b>	<b>D</b>
Test method(s)			
<b>EN ISO 11925-2</b> Exposure = 30 s	F <sub>s</sub> ≤ 150 mm within 60 s Ignition of the paper in EN ISO 11925-2 results in a d2 classification.		
<b>EN 13823</b>	FIGRA <sub>0,2 MJ</sub> ≤ 120 W/s LFS < edge of specimen THR <sub>600s</sub> ≤ 7.5 MJ	FIGRA <sub>0,4 MJ</sub> ≤ 250 W/s LFS < edge of specimen THR <sub>600s</sub> ≤ 15 MJ	FIGRA <sub>0,4 MJ</sub> ≤ 750 W/s
<b>Additional classification</b>			
Smoke production	<b>s1</b> = SMOGRA ≤ 30 m <sup>2</sup> /s <sup>2</sup> and TSP <sub>600s</sub> ≤ 50 m <sup>2</sup> ; <b>s2</b> = SMOGRA ≤ 180 m <sup>2</sup> /s <sup>2</sup> and TSP <sub>600s</sub> ≤ 200 m <sup>2</sup> ; <b>s3</b> = not s1 or s2		
Flaming Droplets/particles	<b>d0</b> = no flaming droplets/ particles in EN 13823 within 600 s; <b>d1</b> = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s; <b>d2</b> = not d0 or d1.		

## 4. CLASSIFICATION AND FIELD OF APPLICATION

### 4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 11 of EN 13501-1:2007+A1:2009.

### 4.2 CLASSIFICATION

The product, **Marmoleum Real FR for massive wall application**, in relation to its reaction to fire behaviour is classified:

**D**

The additional classification in relation to smoke production is:

**s2**

The additional classification in relation to flaming droplets / particles is:

**d0**

**Reaction to fire classification: D – s2, d0**

#### 4.3 FIELD OF APPLICATION

This classification is valid for the following product parameters:

Thickness	2.5 mm
Surface density	2.9 kg/m <sup>2</sup> ± 10%
Other properties	glued with Eurocol 350

This classification is valid for the following end use applications:

Substrate	Non-combustible (class A1/A2 according to EN 13238:2010)
Application	Fixed on non-combustible walls
Air gap	No
Methods and means of fixing	glued
Joints	Vertical
Other aspects of end use conditions	Closed surface, no openings or gaps between components and different designs and colours

#### 4.4 DURATION OF THE VALIDITY OF THIS CLASSIFICATION REPORT

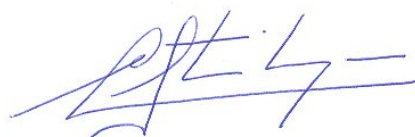
There are no limitations in time on the validity of this report.

### 5. LIMITATIONS

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



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