



CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1: 2002

Sponsor:	Forbo Flooring B.V. P.O. Box 13 NL-1560 AA KROMMENIE The Netherlands
Prepared by:	Centre for Fire Research TNO Van Mourik Broekmanweg 6 P.O. Box 49 NL-2600 AA Delft
Notified Body No:	1234
Product name:	Marmoleum / Artoleum - 2.0 to 3.2 mm - floor covering.
Classification report No.:	2006-CVB-R0396
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This classification report consists of four pages and may only be used in its entirety.

1. Introduction

This classification report defines the classification assigned to **Marmoleum / Artoleum linoleum floor covering product family - thickness range 2.0 mm to 3.2 mm**, in accordance with the procedures given in EN 13501-1:2002

2. Details of classified product

2.1 General

The product, Marmoleum / Artoleum linoleum floor covering product family – thickness 2.0 – 3.2 mm and mass per unit area range of 2.3 to 4.0 kg/m², is defined as a plain and decorative floor covering produced in accordance with EN 548.

2.2 Product description

The product, Marmoleum / Artoleum linoleum floor covering product family, as described below and is fully described in the test reports provided in support of classification listed in Clause 3.1.

Product description:
Family of products: Plain and decorative Linoleum produced in accordance with the requirements in EN 548.

Product names: Marmoleum
Artoleum
Nominal Thickness: 2.0 - 3.2 mm
Mass per unit area: app. 2.3 - 4.0 kg/m²

Marmoleum and Artoleum products are produced according with EN 548 and are based on a one- or two-layer homogeneous mixture of linoleum cement, wood flour, limestone and pigments, applied on a fibrous backing. Linoleum cement consists of a mixture of linseed oil and/or other vegetable drying oils and rosin.

The surface layer has a minimum thickness of 0.8 mm for products of 2.0 nominal thickness and a minimum thickness of 1.3 mm for products with a nominal thickness of 2.5 - 3.2 mm.

3. Test reports & test results in support of classification

3.1 Test report references

Name of Laboratory	Name of sponsor	Test report(s)	Test method(s)
TNO Centre for Fire Research The Netherlands	Forbo Flooring B.V. The Netherlands	TNO Report 2006-CVB-R0395	NEN-EN-ISO 11925-2: 2002 NEN-EN-ISO 9239-1: 2002

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m) (product thickness)	Compliance with parameters
EN-ISO 11925-2: 2002 Surface flame attack	Fs ≤150 mm	6	30 - 25 mm (2.0 – 3.2 mm)	Compliant
	Ignition of filter paper		-	-
EN ISO 9239-1: 2002	Critical Heat Flux	3	5.6 - 7.3 kW/m ² (2.0 – 3.2 mm)	Compliant
	Smoke density		243 -304 % x min (2.0 – 3.2 mm)	Compliant

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 11 of EN 13501-1:2002

4.2 Classification

The product, Forbo **Marmoleum / Artoleum** linoleum floor covering family – thickness 2.0 mm to 3.2 mm and nominal mass per unit area range of 2.3 to 4.0 kg.m², in relation to its reaction to fire behaviour is classified:

C_{fl}

The additional classification in relation to smoke production is:

s1

Reaction to fire classification: C_{fl} – s1

4.3 Field of application

This classification is valid for the following end use applications:

As a floor covering.

This classification is valid for the following product parameters:

Product thickness	2.0 to 3.2 mm
Nominal mass per unit area	2.3 to 4.0 kg/m ²

The classification is valid for the following substrates:

Glued onto:

- Wood-based substrates as defined in EN 13238:2001;
- non-combustible (A1 or A2) substrates.

5. Limitations

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

“The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 attestation of conformity and CE marking under the Construction Products Directive.

The manufacturer has made a declaration, which is held on file. This confirms that the product’s design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references to the manufacturer’s factory production control that is claimed to be relevant to the samples tested and that will provide for their traceability.”

SIGNED



W. Langstraat

APPROVED



Dr. F. Paap