

TFI Report 450008-02

Classification

of the Reaction to Fire according to EN 13501-1:2010

Customer

NOX Corporation
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137-865 Seocho-Ku, Seoul
SOUTH KOREA

Product

textile floor covering
NOX LOOM+ (woven LVT)

Responsible at TFI

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This report includes 6 pages and 0 annex(es).

Aachen, 25 February 2015

Dr. Ernst Schröder

The present document is provided with a qualified electronic signature and is valid without autograph signature.



This report only applies to the tested specimens and has been established to the best of our knowledge. Only the entire report shall be reproduced. Under no circumstances, extracts shall be used. Furthermore, we apply the "General Terms and Conditions for the Execution of Contracts" of the Textiles & Flooring Institute GmbH, also with regard to the order execution.

1 Transaction

Test order	Classification of the reaction to fire according to EN 13501-1:2010
Order date	11 December 2014
Your reference	R.-F. Peter, Clark Mun
Product designation(s)	Product 1: NOX LOOM+ (woven LVT) 3.0 mm (50 x 50) Product 2: NOX LOOM+ (woven LVT) 5.0 mm (50 x 50) Product 3: NOX LOOM+ (woven LVT) 3.0 mm (50 x 100) Product 4: NOX LOOM+ (woven LVT) 5.0 mm (50 x 100)
TFI sample number	15-01-0024, 15-01-0219 15-01-0025, 15-01-0217, 15-01-0026, 15-01-0218 15-01-0027, 15-01-0220

2 Product specification

The construction products are completely described in the test reports mentioned under item 3 and in the corresponding Annexes KT. The test reports provide the basis for the present classification.

3 Results

3.1 Test reports and test results used for the classification

Test laboratory	Customer	Test report no.	Test method
Textiles & Flooring Institute GmbH	NOX Corporation	450008-01 dated 25 February 2015	EN ISO 9239-1:2010
			EN ISO 11925-2:2010 (15 s ignition time)
Textiles & Flooring Institute GmbH	NOX Corporation	450008-03 dated 25 February 2015	EN ISO 9239-1:2010
			-

3.2 Test results

	Test method	Parameter	Number of tests	Result	
				Mean value	Requirements fulfilled (Y/N)
Product 1	EN ISO 9239-1:2010	Average critical heat flux [kW/m ²]	3	9.6	
		Integrated smoke value [% x min.]		262	
	EN ISO 11925-2:2010	Flame tip < 150 mm	6	-	Y

	Test method	Parameter	Number of tests	Result	
				Value*	Requirements fulfilled (Y/N)
Product 2	EN ISO 9239-1:2010	Average critical heat flux [kW/m ²]	2	10.7	
		Integrated smoke value [% x min.]		249	
	EN ISO 11925-2:2010	Flame tip < 150 mm	-	-	-

*Worse result for the average critical heat flux and the corresponding integrated smoke value from the Radiant Panel Test with a reduced number of samples.

	Test method	Parameter	Number of tests	Result	
				Value*	Requirements fulfilled (Y/N)
Product 3	EN ISO 9239-1:2010	Average critical heat flux [kW/m ²]	2	9.4	
		Integrated smoke value [% x min.]		264	
	EN ISO 11925-2:2010	Flame tip < 150 mm	-	-	-

*Worse result for the average critical heat flux and the corresponding integrated smoke value from the Radiant Panel Test with a reduced number of samples.

	Test method	Parameter	Number of tests	Result	
				Value*	Requirements fulfilled (Y/N)
Product 4	EN ISO 9239-1:2010	Average critical heat flux [kW/m ²]	2	10.5	
		Integrated smoke value [% x min.]		315	
	EN ISO 11925-2:2010	Flame tip < 150 mm	-	-	-

*Worse result for the average critical heat flux and the corresponding integrated smoke value from the Radiant Panel Test with a reduced number of samples.

3.3 Classification and field of application

The construction products "NOX LOOM+ (woven LVT)" are classified as follows with regard to the reaction to fire:

B_{fl}

The additional classification with regard to the smoke development is:

s1

The additional classification with regard to burning droplets/particles is:

-

The format of the reaction to fire classification for floor coverings is:

Reaction to fire		Smoke development	
B _{fl}	-	s	1

Classification of the reaction to fire: B_{fl} - s1

This classification is valid for the following product parameters:

Product characteristics [unit]	Range
Total thickness [mm]	3.0 - 5.0
Mass per unit area [g/m ²]	4900-8900
Typ of product	tiles (0.5 m x 0.5 m) tiles (0.5 m x 1.0 m)

This classification is valid for the following end use application:

Type of end use application	horizontally laid floor covering
Substrate	noncombustible substrates (Euroclass A1 and A2-s1,d0) with a gross density $\geq 1350 \text{ kg/m}^3$
Underlay for installation	no
Type of fixation	glued or unglued
Joint according to EN ISO 9239-1:2010	yes (tiles 0.5 m x 0.5 m) no (tiles 0.5 m x 1.0 m)

Limitations

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

The classification assigned to the construction product in this report is suited for a declaration of conformity by the manufacturer or a Declaration of Performance within the context of system 3 attestation of conformity and CE marking under the Construction Products Directive or Construction Products Regulation.

The manufacturer has made a declaration, which is held on file. This declaration confirms that the design of the product does not require any specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic contents 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 for the attestation of conformity respectively system 3 for the assessment and verification of the constancy of performance is appropriate

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