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TECHNICAL REPORT

Unilin B.V. Ooigemstraat 3 8710 Wielsbeke Belgium	SATRA reference:	FLO8972P0Z0	
		2351	3
	Report ID/Issue number:	35706/2	
	Your reference:	2001757322	
	Date samples received:	15/12/2023	
	Date(s) work carried out:	15/12/2023 to 05/01/2024	
	Date of report:	08/01/2024	

Testing Requirements

Classification of one product, described by the customer as
"Unilin LVT Flex Looselay 4.5mm - 0.7mm" laid over "Xtrafloor Flexpro Underlay"
to EN 13501-1:2018. (L/CS)

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Report Signed by:

Reece Johnson

Report Signatory

TESTING OF ONE PRODUCT, DESCRIBED BY THE CUSTOMER AS "UNILIN LVT FLEX LOOSELAY 4.5MM – 0.7MM" LAID OVER "XTRAFLOOR™ FLEXPRO UNDERLAY" (4) TO EN 13501-1:2018. (L/CS)

As requested by Unilin B.V, SATRA have assessed the floor covering submitted to determine its fire classification in accordance with the procedures given in EN 13501-1:2018, as detailed below.

CONCLUSION

With regard to the properties assessed, the product "Unilin LVT Flex Looselay 4.5mm - 0.7mm" laid over "XtraFloor Flexpro Underlay" demonstrates compliance with the requirements for reaction to fire classification: **B_{fl} - s1** in accordance with EN 13501-1:2018 based on testing conducted in accordance with EN ISO 9239-1:2010 and EN ISO 11925-2:2020. See below report for details of relevant fields of application.

DETAILS OF CLASSIFIED PRODUCT:

The product, "Unilin LVT Flex Looselay 4.5mm – 0.7mm" laid over "Xtrafloor™ Flexpro Underlay", is defined as resilient flooring, and is described in full overleaf.
Appearance:

Date received:	15 December 2023
Date conditioning commenced:	18 December 2023
Testing conducted:	20, 21 December 2023 and 05 January 2024
Testing conducted by:	Dusan Pekarovic

TESTS CARRIED OUT

- EN ISO 9239-1:2010. Reaction to fire tests for floorings. Part 1: Determination of the burning behaviour using a radiant heat source. (L/CS) (2)
- EN ISO 11925-2:2020. Reaction to fire tests – Ignitability of products subject to direct impingement of flame. Part 2 – Single-flame source test. (L/CS) (2)

Notes:

(1) Information supplied by the customer. Not verified by SATRA.
(2) Results have been assessed against EN 13501-1:2018 Clause 12.
(3) The customer requested looselay installation over Xrafloor™ Flexpro Underlay over standard combustible substrate.

FULL DESCRIPTION OF TEST SPECIMENS (1)

The description of the specimen given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

General description of flooring system			Luxury Vinyl Tile
Product reference of flooring system			Unilin LVT Flex Looselay 4.5 mm - 0.7 mm
Colour reference			Not relevant
Name of Manufacturer			Unilin BV Division Flooring
Overall weight per unit area			7850 g/m²
Overall Thickness			4.5mm
Product Configuration			
Floor covering	Layer 1 (Lacquer)	Product Reference	Lacquer
		Generic Type	Note 2
		Name of Manufacturer	Unilin BV Division Flooring
		% Composition	Note 3
		Weight per unit area	Layer 1+2+3+4 = 1500 g/m²
		Thickness	Layer 1+3+4= 0,52 mm
		Trade name of flame retardant	Note 1
		Generic form of flame retardant	Note 1
		Amount of flame retardant	Note 1
	Layer 2 (Wear Layer)	Product Reference	PVC Wear layer
		Generic Type	PVC Wear layer
		Name of Manufacturer	Unilin BV Division Flooring
		% Composition	Note 2
		Weight per unit area	Layer 1+2+3+4 = 1500 g/m²
		Thickness	0.7 mm
		Flame Retardant details	Note 1
		Generic form of flame retardant	Note 1
		Amount of flame retardant	Note 1
	Layer 3 (Printed film)	Product Reference	PVC printed film
		Generic Type	Flex PVC print film
		Name of Manufacturer	Unilin BV Division Flooring
		Thickness	Layer 1+3+4= 0,52 mm
		Weight per unit area	Layer 1+2+3+4 = 1500 g/m²
		Flame Retardant details	Note 1
		Generic form of flame retardant	Note 1
		Amount of flame retardant	Note 1

Floor covering	Layer 4 (Glass fibre sheet incorporated in print and wear layer)	Product Reference	Glass fiber
		Generic Type	Glass fiber
		Name of Manufacturer	Note 3
		Thickness	Layer 1+3+4= 0,52 mm
		Weight per unit area	Layer 1+2+3+4 = 1500 g/m²
		Flame Retardant details	Note 1
		Generic form of flame retardant	Note 1
		Amount of flame retardant	Note 1
	Layer 5 (Backing Material incorporated glass fiber)	Product Reference	PVC backing layers
		Generic Type	PVC
		Name of Manufacturer	Unilin BV Division Flooring
		Thickness	3,28 mm
		Weight per unit area	6.350 g/m²
		Flame Retardant details	Note 1
		Generic form of flame retardant	Note 1
		Amount of flame retardant	Note 1
Brief Description of the manufacturing process			Note 2

CUSTOMER SUPPLIED UNDERLAY (4)

Adhesive	Product Reference	N/A
	Generic Type	N/A
	Name of Manufacturer	N/A
	Density (20ºC)	N/A
	Colour	N/A
Underlay	Product reference	Xtrafloor™ Flex Pro Underlay
	Generic type	Permanent resilient underlay
	Name of Manufacturer	Xtrafloor™
	Thickness	1.8mm
	Weight per unit area	2.6kg/m^2
	Flame Retardant details	Note 1
	Generic form of flame retardant	Note 1
	Amount of flame retardant	Note 1

LABORATORY SUPPLIED SUBSTRATE;

Adhesive	Product Reference	N/A
	Generic Type	N/A
	Name of Manufacturer	N/A
	Density (20ºC)	N/A
	Colour	N/A
Substrate	Product reference	'Wickes P5 Chipboard Flooring'
	Generic type	Particleboard (not fire retardant treated)
	Name of supplier	Wickes
	Thickness	22 mm
	Density	690 kg/m^3

Note 1: The sponsor of the test has failed to provide the information
Note 2: The sponsor has provided the required information but at the request of the sponsor it has been omitted from the final report.
Note 3: The sponsor was unwilling to provide the required information.

EVIDENCE IN SUPPORT OF CLASSIFICATION

Test reports and extended application reports relating to this classification.

Testing Laboratory	Name of Sponsor	Test report / extended application report reference	Test method / extended application rules.
SATRA Technology Centre Ltd	Unilin B.V	FLO8972P0Z0 2351 1	EN ISO 9239-1:2010
SATRA Technology Centre Ltd	Unilin B.V	FLO8972P0Z0 2351 2	EN ISO 11925-2:2020

Test results relating to the test reports above.

Test method	Parameter	No. of tests	Results	Compliance with **B_{fl}-s1** parameters
EN ISO 9239-1 [a]	Critical flux [b] (kW/m²)	3	(*m'*) [d]: 8.0	**Compliant**
	Smoke production [c] (%.min)		mean: 377.40	**Compliant**
EN ISO 11925-2 [e]	F_S (mm)	6	Max : 35	**Compliant**

[a] Test duration = 30 minutes.
[b] Critical flux is defined as the radiant flux at which the flame extinguishes or the radiant flux after a test period of 30 min, whichever is the lower (i.e. the flux corresponding with the furthest extent of spread of flame
[c] **s1** = Smoke production ≤ 750 %.min; **s2** = not s1.
[d] The reported mean for a continuous parameter lies within the limits of the envisaged class, and is therefore reported as *m'*.
[e] Under conditions of surface flame attack with 15s exposure time.

CLASSIFICATION

The product, "Unilin LVT Flex Looselay 4.5mm – 0.7mm" laid over "Xtrafloor™ Flexpro Underlay" in relation to its reaction to fire behaviour is classified: **B_{fl}**
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**	
A1fl to **Ffl** (as applicable)	-	**s**	**1** or **2** (as applicable)

Reaction to fire classification: **B_{fl} - s1**

SATRA Report Reference: FLO8972P0Z0 2351
Report ID/Issue number: 35706/2

FIELD OF APPLICATION

As the product was tested loose laid (L) over the standard combustible substrate (CS) as specified in EN 13238:2010, this classification is valid for the following end use applications, providing the end use substrate density is at least 75% of the nominal value of the density of the standard substrate :

- Flooring applications, in combination with the Xtrafloor Flexpro Underlay (3) utilizing end use substrates of wood and of classes A1 and A2-s1,d0 are represented by testing over a not fire retardant treated particleboard (combustible substrate).
- Installed with or without adhesive

The reaction to fire classification may be valid for products within the same family, where family is defined as a range of products within defined limits of variability of its parameters, e.g. thickness, density, end use application, for which the reaction to fire classification is proven to be unchanged, or for which the field of application is extended in an extended application report.

LIMITATIONS

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

RELATIONSHIP BETWEEN CLASSES AND REFERENCE FIRE SITUATIONS

For information only, as discussed in Annex A of EN 13501-1:2018 the relationship between classes and reference fire situations for floorings is as follows:

Class F_{fl}: Products which cannot be classified in one of the classes $A1_{fl}$, $A2_{fl}$, B_{fl}, C_{fl}, D_{fl}, E_{fl}.

Class E_{fl}: Products capable of resisting a small flame.

Class D_{fl}: Products satisfying E_{fl} and in addition capable of resisting, for a certain period, a heat flux attack.

Class C_{fl}: As class D_{fl} but satisfying more stringent requirements.

Class B_{fl}: As class C_{fl} but satisfying more stringent requirements.

Class $A2_{fl}$: Satisfying the same requirements as class B_{fl} relating to heat flux. In addition under the conditions of a fully developed fire these products will not significantly contribute to the fire load and fire growth.

Class $A1_{fl}$: Class $A1_{fl}$ products will not contribute in any stage of the fire, including the fully developed fire. For that reason they are assumed to be capable of satisfying automatically all requirements of all lower classes.

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Tests marked ¥ are performed under SATRA's Flexible UKAS Schedule.

Uncertainty of Measurement and Decision Rules

Where values for uncertainty of measurement are included within the report then the uncertainty of the corresponding results are based on a standard uncertainty multiplied by a coverage factor k=2, which provides a coverage probability of approximately 95%.

When reporting results against a conformance statement (Pass/Fail or the allocation of a class or level) then uncertainty of measurement is taken into account based on a non-binary acceptance which itself is based on the guard band being equal to the expanded uncertainty.

Where the result corrected for uncertainty falls within the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 2.5% and SATRA will in this instance quote a Pass/Fail, class, or level.

Where the result corrected for uncertainty falls outside of the tolerance of the conformance statement then the risk of the conformance statement being a false accept or false reject is up to 50%. In this instance SATRA will not provide a Pass/Fail statement or a class or level but will include information in the notes in relation to the result obtained.

Where a report contains SATRA guidelines values then uncertainty of measurement values have been taken into account when determining the guideline values and as such are not considered when determining pass/ fail criteria.