Classification report for roofs/roof coverings exposed to external fire No. 19249C

Owner of the classification report

Renolit Belgium nv
De Bruwaan 43
9700 Oudenaarde

Introduction

This classification report defines the classification assigned to the roof/roof covering **"Alkorplan F"** in accordance with the procedures given in the standard EN 13501-5:2016: Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roof tests: Test 1: Method with burning brands.

This classification report consists of 7 pages.

1. DESCRIPTION OF THE ROOF/ROOF COVERING

	Nominal value	Measured value
SUPPORTING DECK		
Material	Wood particle board with gaps 5,0 ± 0,5 mmaccording to § 4.4.2. of the standard CEN/TS 1187	
VAPOUR BARRIER		
Material	Low-density polyethylene (LDPE) thermoplastic vapour control layer	
Trade name	**LDPE Alkorplus 81012**	
Manufacturer / Supplier	Renolit Belgium nv	
Colour	Opaque blue	
Thickness (mm)	0,25	0,25
Density (g/m³)	0,92	0,899
Flame retardants	No	(1)
Fixing method	Mechanically fixed in the corners	
Reaction to fire according to EN 13501-1	F	
INSULATING LAYER		
1.1 Insulation layer		
Material	PIR insulation board	
Trade name	**Powerdeck F**	
Backing/facing material (g/m²)	Mineral glass fleece, 150 g/m²	
Manufacturer	Recticel Insulation	
Supplier	Renolit Belgium nv	
Thickness (mm)	100	99
Density (kg/m³)	30	29
Flame retardants	Yes	(1)
Fixing method	Mechanically fixed in the corners	
Reaction to fire according to EN 13501-1	E	
Compressive strength (according to EN 826)	CS (10/Y) 120	
OR 1.1 Insulation layer		
Material	Polyurethane insulation board, faced on both sides with a multi-layer coated aluminum foil	
Trade name	**Eurothane Silver**	
Backing/facing material (g/m²)	Both sides: kraft aluminium laminate, 180 g/m²	
Manufacturer	Recticel Insulation	
Supplier	Renolit Belgium nv	
Thickness (mm)	100	101
Density (kg/m³)	30	31
Flame retardants	Yes	(1)
Fixing method	Mechanically fixed in the corners	
Reaction to fire according to EN 13501-1	F	
Compressive strength (according to EN 826)	CS (10/Y) 150	

(1) Not verified

	Nominal value	Measured value
ROOF COVERING		
Material	Waterproofing PVC laminated membrane, with woven polyester reinforcement	
Trade name	**Renolit Alkorplan F**	
Manufacturer / Supplier	Renolit Belgium nv	
Colour	Light grey	
Reinforcement (material + g/m²)	Polyester, 93 g/m²	
Thickness (mm)	1,2	1,2
Surface weight (g/m²)	1500	1585
Flame retardants	Yes	(1)
Fixing method	Mechanically fixed in the corners	
Reaction to fire according to EN 13501-1	E	

(1) Not verified

2. TEST REPORTS AND TEST RESULTS IN SUPPORT OF THIS CLASSIFICATION

a) Test reports

Name of the laboratory	Name of the sponsor	Test report No.	Test method
WFRGENT nv Belgium	Renolit Belgium nv Belgium	19249A (18/07/2018) 19249B (18/07/2018 & 26/07/2018)	CEN/TS 1187:2012: Test 1
WFRGENT nv Belgium	Renolit Belgium nv Belgium	19249D	CEN/TS 16459:2013 EXAP

b) Test results

Test conditions: 19249A

- Test pitch: 15°
- Supporting deck: Wood particle board with gaps 5,0 ± 0,5 mm
- Insulation 19249A-1: Powerdeck F
  Insulation 19249A-2: Eurothane Silver

Parameters	Criteria	Test results		Compliance
		19249A-1*	19249A-2	
Internal fire spread upwards (mm)	< 700 mm	160	130	Yes
External fire spread upwards (mm)	< 700 mm	160	130	Yes
Internal fire spread downwards (mm)	< 600 mm	70	0	Yes
External fire spread downwards (mm)	< 600 mm	70	0	Yes
Maximum burned length internal (mm)	< 800 mm	230	130	Yes
Maximum burned length external (mm)	< 800 mm	230	130	Yes
Burning, droplets/debris falling from exposed side	None	None	None	Yes
Burning, glowing particles penetrating the roof	None	None	None	Yes
Single through opening (mm²)	< 25 mm²	0	0	Yes
Sum of all through openings (mm²)	< 4500 mm²	0	0	Yes
Lateral fire spread	< edges(*)	< edges	< edges	Yes
Internal glowing combustion	None	None	None	Yes
Radius of fire spread (horizontal roof) (mm)	< 200 mm	(-)	(-)	(-)

(*) edges measuring zone (-) Not applicable

* This test result was reused for the official test 19249B (type 3a).

Test conditions: 19249B

- Test pitch: 15°
- Supporting deck: Wood particle board with gaps 5,0 ± 0,5 mm
- Insulation 19249B: Powerdeck F

Parameters	Criteria	Test Results				Compliance
		1	2	3	4	yes/no
Internal fire spread upwards (mm)	< 700 mm	100	130	160	130	yes
External fire spread upwards (mm)	< 700 mm	100	130	160	130	yes
Internal fire spread downwards (mm)	< 600 mm	80	40	70	40	yes
External fire spread downwards (mm)	< 600 mm	80	40	70	40	yes
Maximum burned length internal (mm)	< 800 mm	180	170	230	170	yes
Maximum burned length external (mm)	< 800 mm	180	170	230	170	yes
Burning, droplets/debris falling from exposed side	None	None	None	None	None	yes
Burning, glowing particles penetrating the roof	None	None	None	None	None	yes
Single through opening (mm²)	< 25 mm²	0	0	0	0	yes
Sum of all through openings (mm²)	< 4500 mm²	0	0	0	0	yes
Lateral fire spread	< edges*	< edge	< edge	< edge	< edge	yes
Internal glowing combustion	None	None	None	None	None	yes
Radius of fire spread (horizontal roof only) (mm)	< 200 mm	(-)	(-)	(-)	(-)	yes

* edges measuring zone (-) Not applicable

3. CLASSIFICATION AND DIRECT FIELD OF APPLICATION

a) Reference

This classification has been carried out in accordance with clause 9 Test 1 of EN 13501-5:2016 and EN 13956.

b) Classification

The roof / roof covering **"Alkorplan F"** in relation to its external fire performance is classified:

B_{ROOF} (t1)

c) Direct field of application

The classification is valid for the system as described in §1 for the following conditions:

- Range of pitches: < 20°
- Nature of the deck:
  Any non-combustible continous deck with a minimum thickness of 10 mm
  Any wooden continuous deck

d) Extended field of application

The classification is valid for the system as described in §1 for the following conditions:

Layer 0: Top layer: PVC laminated membrane, with woven polyester reinforcement

Thickness:	1,2 mm to 2,4 mm
Surface weight:	1500 g/m² to 3000 g/m²
Reinforcement:	Polyester, 93 g/m² or lower Additional glass reinforcement is allowed
Fixation:	Mechanically fixed OR Loosely laid
Colour	All colours

Layer 1: Insulation: Polyurethane insulation board with facing and backing

Thickness:	100 mm or greater
Density:	30 g/m³ or greater
Facing and backing:	Kraft aluminium laminate, 180 g/m² OR Mineral glass fleece, 150 g/m²
Fixation:	Mechanically
Compressive strength (according to EN 826)	120 kPa or more
Reaction to fire according to EN13501-1:	F or better

Layer 2: The membrane: Vapour barrier : Self-adhesive bituminous or PE or no vapour barrier

Range of products:	Valid for self-adhesive bituminous vapour barriers (according to EN 13970:2004/A1:2006) and for PE vapour barriers (according to EN 13984:2013). OR no vapour barrier
Range of reaction to fire (only applicable to the bituminous vapour layer):	The vapour barrier can be replaced by any other material which have a reaction to fire classification of E or higher.

Layer 3: Support

Range of supporting deck:	Following CEN/TS 1187:2012

4. LIMITATIONS

At the time the standard EN 13501-5:2016 was published, no decision was made concerning the duration of validity of a classification document.

Provisions of Regulation (EU) 305/2011, commonly known as the Construction Products Regulation (CPR), prevail over any conflicting provisions in the harmonised standards and technical specifications.

5. WARNING

This classification report does not represent type approval nor certification of the product.

6. CONCERNING DECLARATION OF PERFORMANCE (DOP) ACCORDING TO THE CONSTRUCTION PRODUCT REGULATION (CPR)

Annex ZA of the harmonised standard EN 13956: 2012 - Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing declares that a System 3 Attestation of Conformity (AoC) under the Construction Products Directive (CPD: 89/106/EEC) is required for all external fire performance declarations better than class F_{roof} (t1, t2, t3, t4). Under the Construction Products Regulation (CPR: EU 305/2011) this corresponds with a System 1 of Assessment and Verification of Constancy of Performance (AVCP) as basis for a Declaration of Performance (DoP).

The classification assigned to the product in this report is appropriate to such a Declaration of Performance of the essential characteristics of the construction product by the manufacturer within the context of a System 1 Assessment and Verification of Constancy of Performance. Under the Construction Products Regulation a Declaration of Performance (DoP) is a requirement for affixing the CE marking.

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