

Additional classification report for roofs/roof coverings exposed to external fire No. 20783E

Owner of the additional classification report

BAILEY TOTAL BUILDING ENVELOPE
Blatchford Close
RH13 5RF WEST SUSSEX
UNITED KINGDOM

Introduction

This classification report defines the classification assigned to the roof/roof covering « **Bailey Atlantic TPO 2mm Un-Backed & Bailey Atlantic TPO 2mm Fleece-Backed** » 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 roofs tests: Test 4: Method with two stages incorporating burning brands, wind and supplementary radiant heat

This additional classification report consists of 9 pages

This report is additional to that issued as No. 19245R-rev.1, dated 1/8/2019. This report is drafted in accordance with the regulations of EGOLF Agreement EGA 08rev2:2013 “Application note: clause 5.10 / 4-2 – Amendment of reports: client changing product/company names (ii) for commercial reasons – Issue of additional reports”. The original report remains valid and is not replaced by this report. The product has not been retested and this report does not involve technical changes or technical reviews of the original report. The original and the new name of the product and of the company commercially responsible for the product, as well as the declarations concerning this additional report, are documented by the laboratory and maintained in the laboratory records. / The original and the new name of the sponsor, as well as the declarations concerning this additional report, are documented by the laboratory and maintained in the laboratory records.

1. DESCRIPTION OF THE ROOF/ROOF COVERING

This description is based on information given by the sponsor.

	Nominal value	Measured value
SUPPORTING DECK		
A) WOOD PARTICLE BOARD		
Thickness (mm)	16	
Density (kg/m ³)	680	
B) FIBER CEMENT BOARD		
Thickness (mm)	8	
Density (kg/m ³)	1800±200	
VAPOUR BARRIER		
Material	Self-adhesive fabric reinforced aluminium vapour barrier	
Trade name	KÖSTER Vapor Barrier FR	
Manufacturer / Supplier	Köster Bauchemie AG	
Colour	Silver/ White	
Reinforcement (material + g/m ²)	Aluminium+fabric 32,10 g/m ²	
Thickness (mm)	0,14	0,2
Surface weight (g/m ²)	150	222
Flame retardants	yes	(1)
Fixing method	Mechanically	
Reaction to fire according to EN 13501-1	E	
INSULATING LAYER		
Material	Rigid foam insulation panel with a fiber-free core, covered on both sides with a mineral glass fleece	
Trade name	Kingspan TR27FM	
Backing/facing material (g/m ²)	Mineral glass fleece, 330-410 g/m ²	
Manufacturer	Kingspan	
Supplier	Köster Bauchemie AG	
Thickness (mm)	60	58
	160	168
Density (kg/m ³) of the product		47
Density (kg/m ³) in the core	(2)	30
Flame retardants	(2)	(1)
Fixing method	Mechanically or Glued (stripes)	
Reaction to fire according to EN 13501-1	E	
Compressive strength according to EN826	(2)	

(1) Not verifiable (2) unknown to customer

GLUE		
Material	Quick-adhesive, self-mixing 2-component polyurethane adhesive	
Trade name	Köster 2C PUR Dachbahnenkleber	
Surface weight (g/m ²)	200	
Mass percentage %	(2)	
Flame retardants	No	
Application	Partially glued	
ROOF COVERING		
A) BAILEY ATLANTIC 2MM UN-BACKED		
Material	Polyolefin based waterproofing membrane with central glass fleece insert.	
Manufacturer / Supplier	Köster Bauchemie AG	
Colour	White/ light grey	
Reinforcement (material + g/m ²)	Glass fleece, 48 g/m ²	
Thickness (mm)	2,0	1,9
Surface weight (g/m ²)	1930	1978
Flame retardants	Yes	(1)
Fixing method	Mechanically	
Reaction to fire according to EN 13501-1	E	
B) Bailey Atlantic TPO 2mm Fleece-Backed		
Material	Polyolefin based waterproofing membrane with central glass fleece insert and an additional polyester fleece backing.	
Backing material (g/m ²)	Polyester fleece, 250g/m ²	
Manufacturer / Supplier	Köster Bauchemie AG	
Colour	White/ light grey	
Reinforcement (material + g/m ²)	Glass fleece, 48 g/m ²	
Thickness (mm)	2,0	2,3
Surface weight (g/m ²)	2215	1890
Flame retardants	Yes	(1)
Fixing method	Glued in stripes (Köster 2K PUR)	
Reaction to fire according to EN 13501-1	E	

(1) Not verifiable (2) unknown to customer

The table below summarizes the different build-up's and tested parameters (according to CET/TS 1187:2012):

Parameter/ Test	Top layer	Fixation	Under layer	Insulation (type, mm)	Fixation	Vapour barrier	Fixation	Substrate
19245-1 10/07/2018	Bailey Atlantic TPO 2mm Un- Backed	Mechanically	-	Kingspan TR27FM 160mm	Mechanically	Köster Vapor Barrier FR	Mechanically	Wood Particle Board
19245-3 10/07/2018	Bailey Atlantic TPO 2mm Fleece- Backed	Glued in stripes (Köster 2K PUR Dachbahnenkleber)	-	Kingspan TR27FM 160mm	Mechanically	Köster Vapor Barrier FR	Mechanically	Wood Particle Board
19245-6 13/07/2018	Bailey Atlantic TPO 2mm Fleece- Backed	Glued in stripes (Köster 2K PUR Dachbahnenkleber)	-	Kingspan TR27FM 60mm	Mechanically	Köster Vapor Barrier FR	Mechanically	Wood Particle Board
19245-9 25/07/2018	Bailey Atlantic TPO 2mm Fleece- Backed	Glued in stripes (Köster 2K PUR Dachbahnenkleber)	-	Kingspan TR27FM 60mm	Glued in stripes (Köster 2K PUR Dachbahnenkleber)	Köster Vapor Barrier FR	Mechanically	Wood Particle Board
19245-11 01/08/2018	Bailey Atlantic TPO 2mm Fleece- Backed	Glued in stripes (Köster 2K PUR Dachbahnenkleber)	-	Kingspan TR27FM 60mm	Mechanically	Köster Vapor Barrier FR	Mechanically	Fiber Cement Board

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

a) Test reports

Name of the laboratory	Name of the sponsor	Test report ref. no.	Test method
WFRGENT nv Belgium	BAILEY TOTAL BUILDING ENVELOPE United Kingdom	19245M 19245N	CEN/TS 1187:2012: Test 4
WFRGENT nv Belgium	BAILEY TOTAL BUILDING ENVELOPE United Kingdom	19245P	CEN/TS 16459:2013 EXAP

Test results

Test conditions: 19245M

Test pitch: 0°

	Specimen number	Time to fire penetration (min:sec)	Duration of flaming after withdrawal of test flame (min:sec)	Maximum flame spread distance (mm)
Stage 1	19245-1	Did not penetrate	00:00	130
	19245-3*	Did not penetrate	00:00	140
	19245-6	Did not penetrate	00:00	105
	19245-9	Did not penetrate	00:00	150
	19245-11	Did not penetrate	00:00	90
Stage 2	19245-1	Did not penetrate	(-)	(-)
	19245-3*	Did not penetrate	(-)	(-)
	19245-6	Did not penetrate	(-)	(-)
	19245-9	Did not penetrate	(-)	(-)
	19245-11	Did not penetrate	(-)	(-)
	Average	Did not penetrate	(-)	(-)

(-) not applicable (*) retested in the official test 19245N

Test conditions: 19245N

- Test pitch: 0°

- Deck: Wood particle board

- Build-up: Wood particle board + Köster vapour barrier + Kingspan TR24+ Bailey Atlantic TPO 2mm Fleece-Backed

PRELIMINARY TEST (STAGE 1)

Parameter	Criteria				Test ^(a) results	Compliance			
	Class B _{ROOF} (t4)	Class C _{ROOF} (t4)	Class D _{ROOF} (t4)	Class E _{ROOF} (t4)	Spec. 1	Class B _{ROOF} (t4)	Class C _{ROOF} (t4)	Class D _{ROOF} (t4)	Class E _{ROOF} (t4)
Burn time	< 5 min	< 5 min	< 5 min	< 5 min	00:00	Yes	Yes	Yes	Yes
Flame spread distance	< 0,38 m	< 0,38 m	< 0,38 m	No limit	0,14	Yes	Yes	Yes	Yes
Penetration	None	None	None	None	None	Yes	Yes	Yes	Yes

(a) Not for extended application.

PENETRATION TEST (STAGE 2)

Parameter	Criteria			
	Class B _{ROOF} (t4)	Class C _{ROOF} (t4)	Class D _{ROOF} (t4)	Class E _{ROOF} (t4)
Penetration	≥ 60 min	< 60 min ≥ 30 min	< 30 min	< 30 min
Parameter	Test ^(a) results			
	Spec. 1	Spec. 2	Spec. 3	Mean ^a
Penetration	None	None	None	None
Parameter	Compliance			
	Class B _{ROOF} (t4)	Class C _{ROOF} (t4)	Class D _{ROOF} (t4)	Class E _{ROOF} (t4)
Penetration	Yes	Yes	Yes	Yes

(a) If one or two of the specimens have not failed at one hour, a time of 60 min shall be used in calculating the mean time of penetration.

3.

CLASSIFICATION AND FIELD OF APPLICATION

a) Reference

This classification has been carried out in accordance with clause 9 test 4 of EN 13501-5:2016 and EN 13956:2006.

b) Classification

The roof / roof covering « **Bailey Atlantic TPO 2mm Un-Backed & Bailey Atlantic TPO 2mm Fleece-Backed** » in relation to its external fire performance is classified:

BROOF (t4)

c) Direct field of application

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

- Range of pitches: $\leq 10^\circ$

d) Extended field of application

- Layer 0: Top layer: Polyolefin based waterproofing membrane with central glass fleece insert and an additional polyester fleece backing.

Product(s):	Bailey Atlantic TPO 2mm Un-Backed & Bailey Atlantic TPO 2mm Fleece-Backed
Thickness:	2,0 mm
Surface weight:	
<i>Bailey Atlantic TPO 2mm Un-Backed</i>	1930 g/m ²
<i>Bailey Atlantic TPO 2mm Fleece-Backed</i>	2215 g/m ²
Reinforcement:	
<i>Bailey Atlantic TPO 2mm Un-Backed</i>	Glass fleece of 48 g/m ²
<i>Bailey Atlantic TPO 2mm Fleece-Backed</i>	Glass fleece of 48 g/m ²
Fixation:	Glued in stripes Mechanically
Reaction to fire according to EN13501-1:	E or better

- Layer 1: Insulation

Product(s):	PIR-insulation
Thickness:	60 to 160 mm
Fixation:	Mechanically or Glued (stripes)
Backing/facing	Facing: glass fleece 330-410 g/m ²
Reaction to fire according to EN13501-1:	E or better

- Layer 2: Glue

Product(s):	PUR Glue
Surface weight of glue:	200 g/m ² or lower
Flame retardant	No
Application	Partially glued

- Layer 3: Vapour barrier

Range of vapour barrier	Valid for fabric reinforced aluminium vapour barrier (according to EN 13956:2006)
Reaction to fire according to EN13501-1:	E or better

- Layer 4: Support:

Range of supporting deck:	-16mm wood particle board with joints or thicker -8mm fibre cement board or thicker
---------------------------	--

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: 2006 – “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 $F_{\text{roof}}(t_1, t_2, t_3, t_4)$. Under the Construction Products Regulation (CPR: EU 305/2011) this corresponds with a System 3 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 3 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.

PREPARED BY

APPROVED BY

This document is the original version of this classification report and is written in English.

This report may be used only literally and completely for publications. - For publications of certain texts, in which this report is mentioned, our permission must be obtained in advance.

The authenticity of the electronic signatures is assured by Belgium Root CA.