

Classification report for roofs/roof coverings exposed to external fire No. 18675L-rev.1

Owner of the classification report

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Introduction

This classification report defines the classification assigned to the roof/roof covering «**BauderTEC SPRINT DUO + BauderFLEX K4E charcoal grey**» 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 classification report consists of 8 pages

1. DESCRIPTION OF THE ROOF/ROOF COVERING

This description is based on information given by the sponsor.

	Nominal value
SUPPORTING DECK	
Material	OSB substrate
Thickness (mm)	18
Density (kg/m ³)	616
Flame retardants	No
VAPOUR BARRIER	
Material	Self-adhesive elastomeric bitumen vapour barrier with a mica finished upper surface.
Trade name	BauderTEC KSD mica
Manufacturer / Supplier	Bauder GmbH
Reinforcement (material + g/m ²)	PET-aluminium-glass mat, 200 g/m ² (12µm PET / 7 µm Aluminium / 12 µm PET, 200 g/m ² glass woven)
Thickness (mm)	2,5
Surface weight (g/m ²)	3200
Surface weight mineral finishing (g/m ²)	100
Surface weight self-adhesive strip (material and g/m ²)	Not communicated by the sponsor
Flame retardants	No
Fixing method	Completely self-adhesive
Reaction to fire according to EN 13501-1	E
GLUE	
Material	Foaming chemical adhesive
Trade name	Bauder PU insulation adhesive
Manufacturer	Apollo
Supplier	Bauder GmbH
Used amounts (g/m ²) (dry)	75
Density (kg/m ³) at 20°C	1120
Solid content (m/m)	Not communicated by the sponsor
Flame retardants	No
INSULATING LAYER	
Material	PIR insulation with an aluminium facing/backing
Trade name	BauderPIR FA/FA TE
Backing/facing material (g/m ²)	Aluminium, 37 µm
Manufacturer / Supplier	Bauder GmbH
Thickness (mm)	60 (18675D-1) 240 (18675D-2/ 18675F)
Density (kg/m ³) of the core material	33
Surface weight (g/m ²) of the product as such (core material and facing/backing)	Not communicated by the sponsor
Flame retardants	No
Fixing method	Partially glued by Bauder PU insulation adhesive (75 g/m ²)
Reaction to fire according to EN 13501-1	E

Nominal value	
ROOF COVERING	
1.1 <u>First layer</u>	
Material	Cold self-adhesive elastomeric (bituminous) membrane.
Trade name	BauderTEC SPRINT DUO
Manufacturer/ Supplier	Bauder GmbH
Reinforcement (material + g/m ²)	Glass fleece, 120 g/m ²
Thickness (mm)	2,0
Total surface weight (g/m ²)	2600
Surface weight of self-adhesive strip (material and g/m ²)	Not communicated by the sponsor
Flame retardants	No
Fixing method	Completely self-adhesive
1.2 <u>Top layer</u>	
Material	Polymeric bituminous waterproofing sheet with a mineral finishing
Trade name	BauderFLEX K4E charcoal grey
Manufacturer / Supplier	Bauder GmbH
Reinforcement (material + g/m ²)	PES fleece, 250 g/m ²
Thickness (mm)	4,2 (mineral finishing included)
Surface weight (g/m ²)	5300 (mineral finishing included)
Surface weight (g/m ²) of the mineral finishing	1300
Flame retardants	No
Fixing method	Completely welded. The specimen was enveloped by the top layer.

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 Ghent - Belgium	Paul Bauder GmbH & Co. KG	18675D (5/10/2017) 18675F (6/10/2017)	CEN/TS 1187:2012: Test 4
WFRGENT nv Ghent - Belgium	Paul Bauder GmbH & Co. KG	18675K*	CEN/TS 16459:2013

*The revision-1 of this classification report rephrases the thickness range obtained in the extended application report, in view of testing the maximum thickness in the test apparatus as valid for all greater thicknesses.

b) Test results

Test conditions: 18675D-1: system with 60 mm PIR insulation
18675D-2: system with 240 mm PIR insulation

- Test pitch: 0°
- Deck: 18 mm OSB board

	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	18675D-1	Did not penetrate	0:00	60
	18675D-2(*)	Did not penetrate	0:00	60
Stage 2	18675D-1	Did not penetrate	(-)	(-)
	18675D-2(*)	Did not penetrate	(-)	(-)

(-) not applicable

(*) This test result was reused for the official test 18675F.

Test conditions: 18675F: system with 240 mm PIR insulation

- Test pitch: 0°

- Deck: 18 mm OSB board

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)		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	0:00	Yes	Yes	Yes	Yes
Flame spread distance	< 0,38 m	< 0,38 m	< 0,38 m	No limit	0,06 m	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	> 60 min	> 60 min	> 60 min	> 60 min
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 13707:2013.

b) Classification

The roof / roof covering « **BauderTEC SPRINT DUO + BauderFLEX K4E charcoal grey** » in relation to its external fire performance is classified:

BR00F (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

This extended application for the product as described in §1, is valid for the following end-use applications:

- Range of layer 0: The top layer: a bituminous waterproofing membrane: BauderFLEX K4E charcoal grey

Thickness:	4,2 mm (mineral finishing included)
Surface weight:	5300 g/m ²
Reinforcement:	PES- fleece, 250 g/m ²
Surface weight of the mineral finishing:	1300 g/m ²
Flame retardants:	No
Fixing method:	Completely welded

- Range of layer 1: the first layer: BauderTEC SPRINT DUO

Thickness:	2,0 mm
Surface weight:	2600 g/m ²
Reinforcement:	Glass fleece, 120 g/m ²
Flame retardants:	No
Fixing method :	Completely self-adhesive (surface weight of the self-adhesive strips was not communicated by the sponsor)

- Range of layer 2: Insulation: One layer PIR insulation faced on both sides with aluminium

Thickness:	60mm and all greater thicknesses (single or multi-layer).
Density of the foam:	33 kg/m ³
Facing, backing:	37 µm aluminium
Reaction to fire classification:	E
Flame retardants:	No
Fixing method:	Partially glued by Bauder PU Insulation adhesive

- Range of layer 3: Glue:

Type of product:	Foaming chemical adhesive
Solid content:	Not communicated by the sponsor
Applied amount:	75 g/m ²
Flame retardants:	No

- Range of layer 4: Vapour barrier: Bituminous vapour barrier

Thickness:	2,5 mm
Surface weight:	3200 g/m ²
Reinforcement:	PET-aluminium-glass mat, 200 g/m ² (12µm PET / 7 µm Aluminium / 12 µm PET, 200 g/m ² glass woven)
Surface weight of the mineral finishing:	100 g/m ²
Flame retardants:	No
Fixing method:	Completely self-adhesive (surface weight of the self-adhesive material was not communicated by the sponsor)

- Range of layer 5: OSB substrate

Thickness:	18 mm or thicker
Density:	616 kg/m ³
Flame retardants:	No

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 13707: 2013 – “Flexible sheets for waterproofing - Reinforced bitumen 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 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

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