

**EXTERNAL EXPOSURE TO FIRE
CLASSIFICATION REPORT
for roofs systems with bituminous roofing felts UAB MIDA LT**

02672/25/Z00NZP-ENG

(english version of raport no. 02672/25/Z00NZP)

on behalf of
OWNER OF CLASSIFICATION REPORT

**UAB MIDA LT
Gamyklos str. 19
Gargzdai
LT-96155 Klaipeda dis.**

Contract №: 02672/25/Z00NZP

1 Introduction

This classification report defines the classification assigned to roofs systems with bituminous roofing felts UAB MIDA LT in accordance with the procedures given in EN 13501-5:2016-07 method 1.

2 Description of the roof

Roof covering with roofing felts UAB MIDA LT.

Layer's arrangement from the underside of the roof (**layout 1**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- vapour barriers from polyethylene foils,
- EPS boards 100 mm,
- glass fleece with a weight of 120 g/m²,
- bituminous roofing underlayer MIDAELAST PV S5s with thickness 5,0 mm on the basis of polyester non-woven,
- bituminous roofing top layer MIDAELAST PV S5b with thickness 5,2 mm on the basis of polyester non-woven.

Layer's arrangement from the underside of the roof (**layout 2**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- vapour barriers from polyethylene foils,
- PIR boards 100 mm,
- bituminous roofing underlayer MIDAELAST PV S5s with thickness 5,0 mm on the basis of polyester non-woven,
- bituminous roofing top layer MIDAELAST PV S5b with thickness 5,2 mm on the basis of polyester non-woven.

Layer's arrangement from the underside of the roof (**layout 3**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- vapour barriers from polyethylene foils,
- mineral wool 100 mm,
- bituminous roofing underlayer MIDAELAST PV S5s with thickness 5,0 mm on the basis of polyester non-woven,
- bituminous roofing top layer MIDAELAST PV S5b with thickness 5,2 mm on the basis of polyester non-woven.

Layer's arrangement from the underside of the roof (**layout 4**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- bituminous roofing underlayer MIDAELAST PV S5s with thickness 5,0 mm on the basis of polyester non-woven,
- bituminous roofing top layer MIDAELAST PV S5b with thickness 5,2 mm on the basis of polyester non-woven.

Layer's arrangement from the underside of the roof (**layout 5**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- vapour barriers from polyethylene foils,
- EPS boards 100 mm,
- glass fleece with a weight of 120 g/m²,
- bituminous roofing single layer MIDA FIX TOP PV S5 with thickness 5,2 mm on the basis of polyester non-woven.

Layer's arrangement from the underside of the roof (**layout 6**):

- particle board planks with thickness 16 mm density 650 kg/m³. The gaps between the planks were c.a. 5 mm
- vapour barriers from polyethylene foils,
- EPS boards 100 mm,
- underlayment with a construction cardboard base,
- underlayment with a glass fiber fleece,
- glass fleece with a weight of 120 g/m²,
- bituminous roofing underlayer MIDAELAST PV S5s with thickness 5,0 mm on the basis of polyester non-woven,
- bituminous roofing top layer MIDAELAST PV S5b with thickness 5,2 mm on the basis of polyester non-woven.

3. Test reports and test results in support of this classification

3.1 Test reports

Name of laboratory	Name of sponsor	Test report ref. №	Test Method
Fire Research Laboratory of ITB	UAB MIDA LT Gamyklos str. 19 Gargzdai LT-96155 Klaipeda dis.	LZP01-02672/25/Z00NZP LZP02-02672/25/Z00NZP LZP03-02672/25/Z00NZP LZP04-02672/25/Z00NZP LZP05-02672/25/Z00NZP LZP05-02672/25/Z00NZP	CEN/TS 1187:2014, (method 1)

3.2 Test results for layout 1

Test report: LZP01-02672/25/Z00NZP

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,020	0,0	0,020	0,0	Yes
External fire spread upwards	< 0,700 m	0,060	0,010	0,040	0,010	Yes
Internal fire spread downwards	< 0,600 m	0,090	0,050	0,080	0,060	Yes
External fire spread downwards	< 0,600 m	0,280	0,120	0,245	0,125	Yes
Maximum burned length internal	< 0,800 m	0,090	0,050	0,080	0,060	Yes
Maximum burned length external	< 0,800 m	0,280	0,120	0,245	0,125	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	not applicable

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density 650 ± 50 kg/m³. The gaps between the planks were c.a. 5 mm

3.3 Test results for layout 2**Test report: LZP02-02672/25/Z00NZP**

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
External fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
Internal fire spread downwards	< 0,600 m	0,0	0,0	0,0	0,0	Yes
External fire spread downwards	< 0,600 m	0,220	0,185	0,162	0,275	Yes
Maximum burned length internal	< 0,800 m	0,0	0,0	0,0	0,0	Yes
Maximum burned length external	< 0,800 m	0,220	0,185	0,162	0,275	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	<i>not applicable</i>

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density 650 ± 50 kg/m³. The gaps between the planks were c.a. 5 mm**3.4 Test results for layout 3****Test report: LZP03-02672/25/Z00NZP**

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
External fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
Internal fire spread downwards	< 0,600 m	0,0	0,0	0,0	0,0	Yes
External fire spread downwards	< 0,600 m	0,242	0,090	0,278	0,263	Yes
Maximum burned length internal	< 0,800 m	0,0	0,0	0,0	0,0	Yes
Maximum burned length external	< 0,800 m	0,242	0,090	0,278	0,263	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	<i>not applicable</i>

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density 650 ± 50 kg/m³. The gaps between the planks were c.a. 5 mm**3.5 Test results for layout 4****Test report: LZP04-02672/25/Z00NZP**

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
External fire spread upwards	< 0,700 m	0,0	0,0	0,0	0,0	Yes
Internal fire spread downwards	< 0,600 m	0,0	0,0	0,0	0,0	Yes
External fire spread downwards	< 0,600 m	0,230	0,189	0,263	0,150	Yes
Maximum burned length internal	< 0,800 m	0,0	0,0	0,0	0,0	Yes
Maximum burned length external	< 0,800 m	0,230	0,189	0,263	0,150	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	<i>not applicable</i>

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density $650 \pm 50 \text{ kg/m}^3$. The gaps between the planks were c.a. 5 mm

3.6 Test results for layout 5

Test report: LZP05-02672/25/Z00NZP

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,010	0,010	0,010	0,020	Yes
External fire spread upwards	< 0,700 m	0,010	0,020	0,020	0,040	Yes
Internal fire spread downwards	< 0,600 m	0,120	0,090	0,030	0,100	Yes
External fire spread downwards	< 0,600 m	0,380	0,180	0,120	0,295	Yes
Maximum burned length internal	< 0,800 m	0,120	0,090	0,030	0,100	Yes
Maximum burned length external	< 0,800 m	0,380	0,180	0,120	0,295	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	not applicable

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density $650 \pm 50 \text{ kg/m}^3$. The gaps between the planks were c.a. 5 mm

3.7 Test results for layout 6

Test report: LZP06-02672/25/Z00NZP

Parameter	Criteria	Test results				Compliance
		1	2	3	4	
Internal fire spread upwards	< 0,700 m	0,010	0,0	0,010	0,0	Yes
External fire spread upwards	< 0,700 m	0,010	0,0	0,010	0,0	Yes
Internal fire spread downwards	< 0,600 m	0,130	0,110	0,080	0,110	Yes
External fire spread downwards	< 0,600 m	0,380	0,325	0,290	0,310	Yes
Maximum burned length internal	< 0,800 m	0,130	0,110	0,080	0,110	Yes
Maximum burned length external	< 0,800 m	0,380	0,325	0,290	0,310	Yes
Burning, droplets/debris falling from expose side	No	N	N	N	N	Yes
Burning, glowing particles penetrating the roof	No	N	N	N	N	Yes
Single through opening	< 25 mm ²	0,0	0,0	0,0	0,0	Yes
Sum of all through openings	< 4500 mm ²	0,0	0,0	0,0	0,0	Yes
Lateral fire spread	< edge*	N	N	N	N	Yes
Internal glowing combustion	No	N	N	N	N	Yes
Radius of fire spread (horizontal roof)	< 0,200 m	-	-	-	-	not applicable

* - edge of the measurement zone

Test conditions: Temperature of air: 18,5°C

Test pitch: 15°

Substrate: particle board planks with thickness 16 mm density $650 \pm 50 \text{ kg/m}^3$. The gaps between the planks were c.a. 5 mm

4 Classification and field of application

4.1 Reference

This classification has been carried out in accordance with **EN 13501-5:2016-07** method 1.

4.2 Classification

Roof system described in the section 2, in relation to its fire performance is classified:

B_{ROOF} (t1)

4.3 Field of application

This classification is valid for the following conditions:

- 1) Decks:
 - a. any wood particle board deck, constructed from planks 250 mm wide × 16 mm thick, density (650 ± 50) kg/m³ with plain edges and tightly but jointed so that gaps between planks do not exceed 0,5 mm;
 - b. any wood particle board deck thickness from 16 mm, reaction to fire class, D-s2,d0 / A2-s1,d0, thickness from 10 mm, with plain edges with gaps of (5,0 ± 0,5) mm
 - c. any substrates from profiled or none profiled, not perforated steel and any non-combustible deck with minimum thickness 10 mm, or old refurbished roofing felt
- 2) Vapor barriers:
 - a. vapor barrier felts acc. to EN 13707 or EN 13970 or EN 13984 with minimum fire class E acc. to EN 13501-1;
 - b. polyethylene foils or any foils;
 - c. or none vapor barrier at all.
- 3) Thermal insulation:
 - a. from EPS 200, EPS 150, EPS 100, EPS 80, EPS 70, NEOPOR boards with thickness minimum 50 mm with minimum reaction to fire class E acc. to EN 13501-1. In systems with bituminous roofing on the basis of polyester non-woven directly on the EPS thermal insulation, a separation layer of glass fleece with a minimum weight of 120 g/m² should be used.
 - b. from mineral wool boards with thickness minimum 20 mm with minimum reaction to fire class A2-s3, d0 acc. to EN 13501-1
 - c. from PIR panels with minimum reaction to fire class E acc. to EN 13501-1
 - d. from stone or glass wool panels with a thickness minimum 20 mm
 - e. from a system consisting of sloping PIR or stone or glass wool or polystyrene foam (minimum reaction to fire class E) roof panels with a thickness minimum 20 mm.
- 4) Waterproof layer:
 - a. bituminous roofing underlayer manufactured by MIDA: MIDA BALT PV S3s; MIDA GLASS G200 S4; MIDA SELF BASE GV S3 HMS SBS; MIDA SELF BASE GV S3 HPS SBS; MIDA SELF PV S 2,00 s; MIDA STANDART PV S3 EPP SBS; MIDA STANDART PV S4 EMP SBS; MIDA YEP6500; MIDA YEP4500; MIDA YEP3500; MIDABIKRO EPP 3.0; MIDABIKRO EPP 4.0; MIDAPOL EPP 3,0; MIDAPOL STANDART EPP; MIDAELAST PV S4s; MIDAELAST PV S5s; MIDAFLEKS K-MS 170/4000; MIDAFLEKS K-MS 170/4000 sand; MIDAFLEKS PV S3s; MIDAELAST K-MS 170/3000 EMM SBS; MIDAELAST K-MS 170/4000; MIDAFLEKS EMP 3,7; MIDAFLEKS EPP 4.0; MIDA LIGHT G Euro; MIDA LIGHT S Euro; MIDA ROOF FIX black grit; MIDA ROOF FIX EMM SBS; MIDA SELF PRO; MIDA SELF SA P 2 mm; MIDA YEP2500; MIDA YEP2200
 - b. bituminous roofing top layer manufactured by MIDA (any colors): MIDA BALT PV S4b; PYE PV250 S5 AJ-20; MIDABIKRO EKP 4.0; MIDAPOL EKP 4.0; MIDAPOL STANDART EKP; MIDAELAST PV S4b; MIDAELAST PV S5b; MIDAFLEKS K-MS 170/4000; MIDAFLEKS K-PS 170/5000; MIDAFLEKS PV S4b; MIDAELAST EKP 5500; MIDAELAST K-PS 170/5000; MIDAFLEKS EKP 5.0;
 - c. bituminous single layer manufactured by MIDA: MIDA FIX TOP PV S5; MIDA K-YS 5500
- 5) The classification applies to the following systems (layer's arrangement from top to bottom of the roof):
 1. Layout

- bituminous roofing top layer - bituminous roofing underlayer - bitumen primer - concrete	- bituminous roofing single layer - bitumen primer - concrete
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 2. Layout

- bituminous roofing top layer - bituminous roofing underlayer - mineral wool, thickness 20-50 mm - EPS (class E), thickness from 20 mm - vapor barrier - mineral wool, thickness 20-50 mm - trapezoidal profiled steel deck	- bituminous roofing single layer - mineral wool, thickness 20-50 mm - EPS (class E), thickness from 20 mm - vapor barrier - mineral wool, thickness 20-50 mm - trapezoidal profiled steel deck
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3. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

4. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- concrete

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- concrete

5. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- concrete

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- concrete

6. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- trapezoidal profiled steel deck

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- trapezoidal profiled steel deck

7. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- trapezoidal profiled steel deck

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- trapezoidal profiled steel deck

8. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer
- mineral wool, thickness 20-50 mm
- mineral wool, thickness from 50 mm / or no layer
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

9. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- concrete

- bituminous roofing single layer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- concrete

10. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- trapezoidal profiled steel deck

- bituminous roofing single layer

- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- trapezoidal profiled steel deck

11. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer

- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

12. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- concrete

- bituminous roofing single layer

- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm
- vapor barrier
- concrete

13. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- any wood particle board deck thickness from 10 mm, reaction to fire class, D-s2, d0

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- any wood particle board deck thickness from 10 mm, reaction to fire class, D-s2, d0

14. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm / or no layer
- any wood particle board deck thickness from 10 mm, reaction to fire class, A2-s1, d0

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm / or no layer
- any wood particle board deck thickness from 10 mm, reaction to fire class, A2-s1, d0

15. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- concrete

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- concrete

16. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

17. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- concrete

- bituminous roofing single layer

- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- PIR (class E), thickness from 50 mm
- vapor barrier
- concrete

18. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- PIR (class E), thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- PIR (class E), thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

19. Layout

- bituminous roofing top layer
- self-adhesive or mechanically fastened bituminous underlayer
- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- PIR (class E), thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- concrete

- bituminous roofing single layer

- glass fleece with a minimum weight of 120 g/m²
- EPS (class E), min EPS 100 thickness from 50 mm
- PIR (class E), thickness from 50 mm
- EPS (class E), thickness from 20 mm / or no layer
- vapor barrier
- concrete

20. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- concrete

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- concrete

21. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm as a slope
- mineral wool, thickness 50 mm
- vapor barrier
- concrete

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm as a slope
- mineral wool, thickness 50 mm
- vapor barrier
- concrete

22. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm as a slope
- mineral wool, thickness 50 mm
- mineral wool, thickness 20-50 mm / or no layer
- vapor barrier
- trapezoidal profiled steel deck

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- EPS (class E), thickness from 20 mm as a slope
- mineral wool, thickness 50 mm
- mineral wool, thickness 20-50 mm / or no layer
- vapor barrier
- trapezoidal profiled steel deck

23. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

- bituminous roofing single layer

- mineral wool, thickness 20-50 mm
- trapezoidal profiled steel deck

24. Layout

- bituminous roofing top layer
- bituminous roofing underlayer
- old roofing layer (renovation)

- bituminous roofing single layer

- old roofing layer (renovation)

6) Roofs with pitch no more than 20°.

5 Limitations

5.1 Validity

This classification given remains valid till **31.12.2028**, as long as the composition, structure and/or the production's technology remains unchanged.

5.2 Restrictions

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5.3 Warning

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

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