

CLASSIFICATION OF FIRE RESISTANCE

FIRES-CR-110-24-AUPE

Linear joint seals made with use of Gyso-Flammflex 417 installed in floor

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CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH EN 13501-2: 2023 with direct field of application

FIRES-CR-110-24-AUPE

Name of the product: Linear joint seals made with use of Gyso-Flammflex 417 installed in floor

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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to element Linear joint seals made with use of Gyso-Flammflex 417 installed in floor in accordance with the procedures given in EN 13501-2: 2023.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Linear joint seals made with use of Gyso-Flammflex 417 installed in floor, is defined as a vertical and horizontal linear sealing system with the fire separating function positioned in joints, voids, gaps or other discontinuities within one or between two or more construction elements.

2.2 PRODUCT DESCRIPTION

The element, Linear joint seals made with use of Gyso-Flammflex 417 installed in floor was tested as 20 pieces of horizontal linear joint seals with a length of 900 mm. The linear joint seals are installed in 8 pieces of aerated concrete floor modules with thickness of 100 mm.

Figure 1 position of the test specimens in supporting construction from unexposed side:

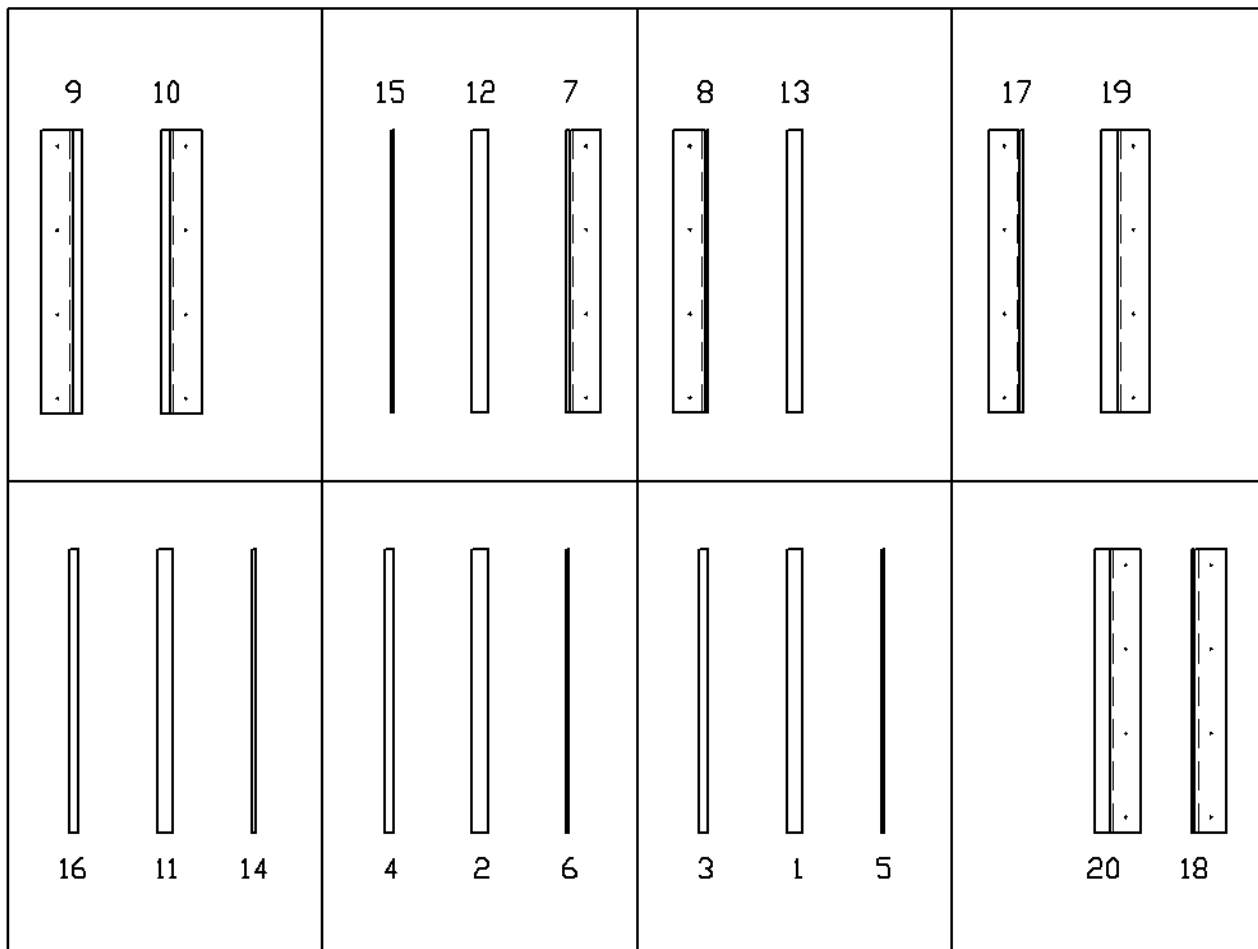
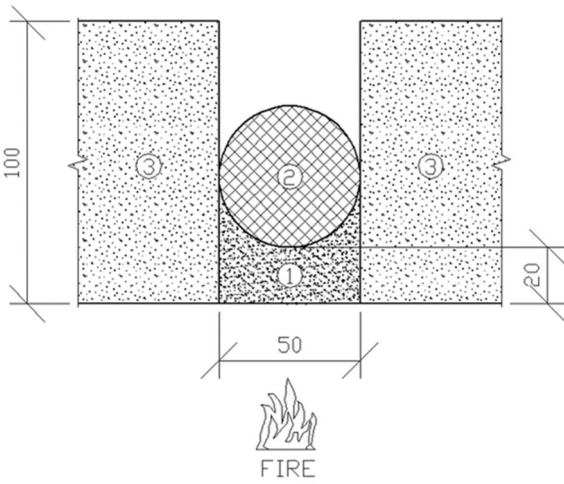
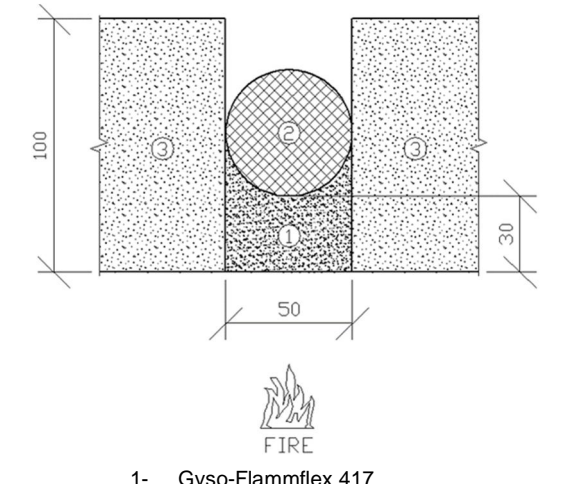
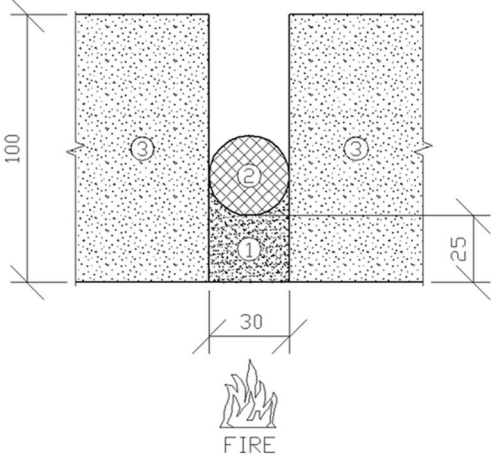
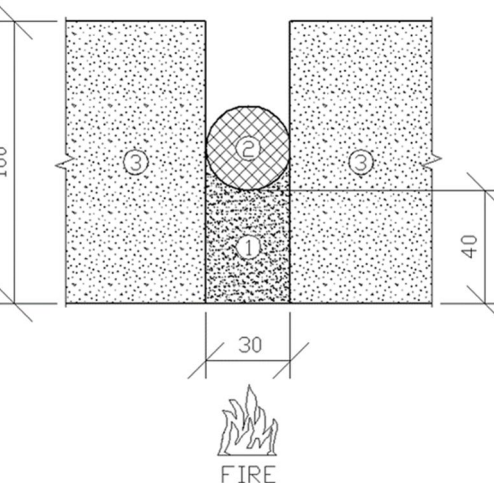




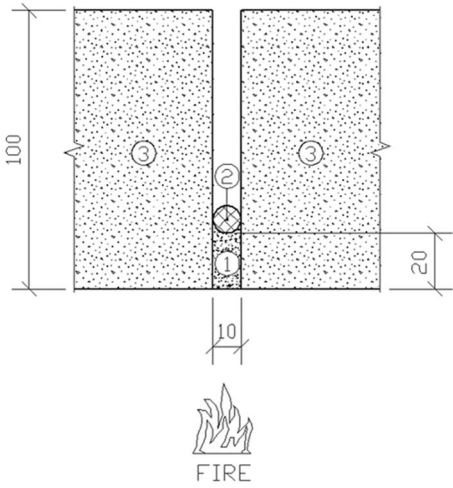
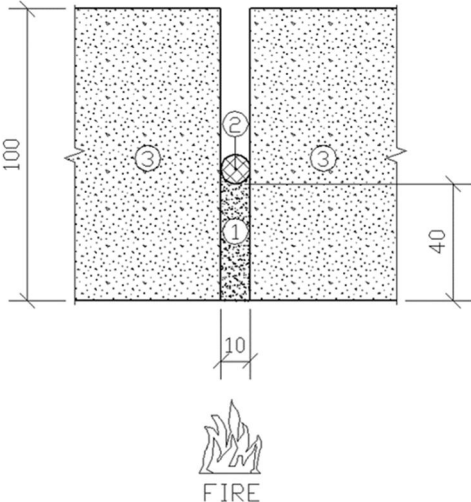
Table 2 Linear joint seals consist of components according following table and enclosed drawings:

Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
1	50	20	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ±2 kg.m⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <p>1- Gyso-Flammflex 417 2- PU open cell round cord Ø 55 mm 3- Aerated concrete</p>	horizontal
2	50	30	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ±2 kg.m⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <p>1- Gyso-Flammflex 417 2- PU open cell round cord Ø 55 mm 3- Aerated concrete</p>	horizontal

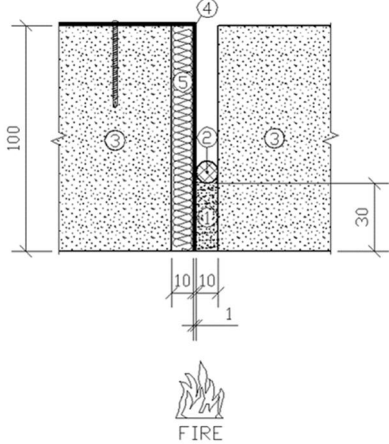
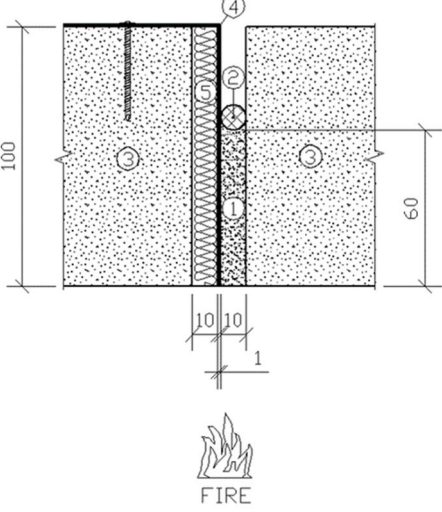


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
3	30	25	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 40 mm 3- Aerated concrete 	horizontal
4	30	40	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 40 mm 3- Aerated concrete 	horizontal

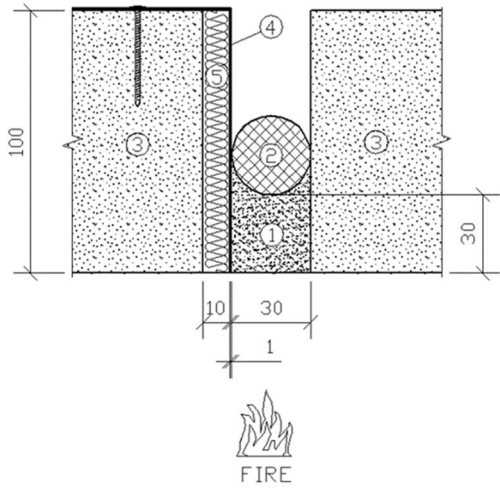
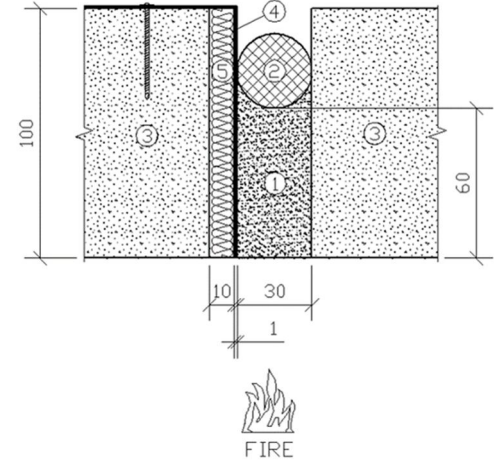


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
5	10	20	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <p>1- Gyso-Flammflex 417 2- PU open cell round cord Ø 15 mm 3- Aerated concrete</p>	horizontal
6	10	40	AC / AC	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <p>1- Gyso-Flammflex 417 2- PU open cell round cord Ø 15 mm 3- Aerated concrete</p>	horizontal

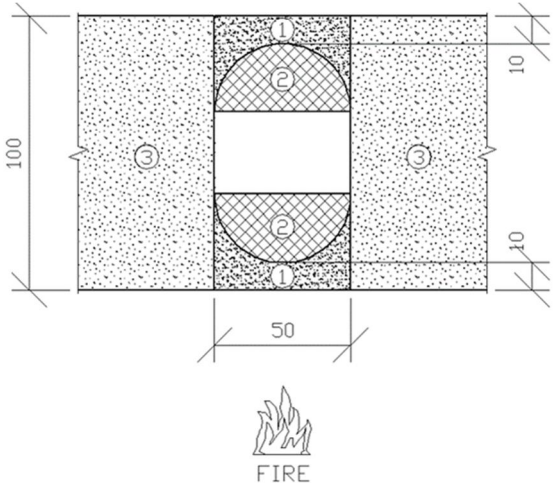
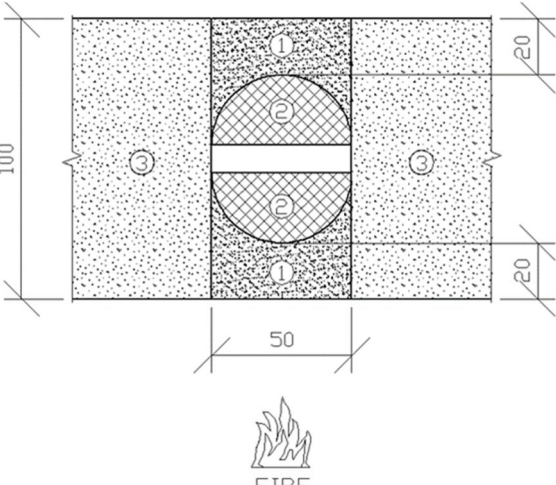


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
7	10	30	AC / ST	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 15 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal
8	10	60	AC / ST	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 15 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal

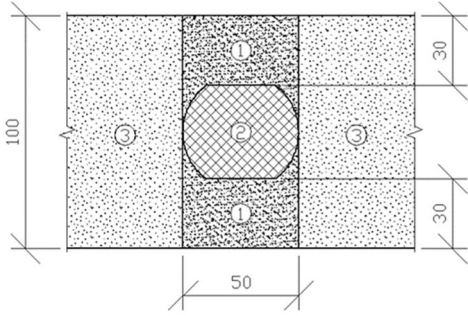
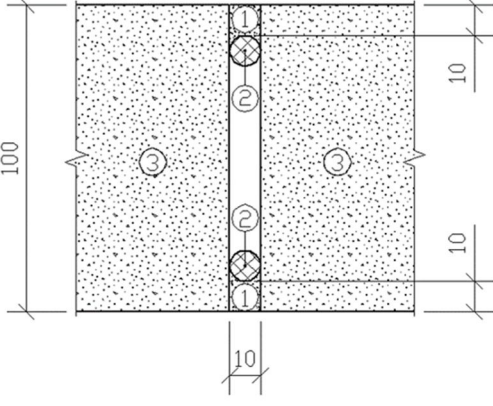


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
9	30	30	AC / ST	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 40 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal
10	30	60	AC / ST	<p>One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 40 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal

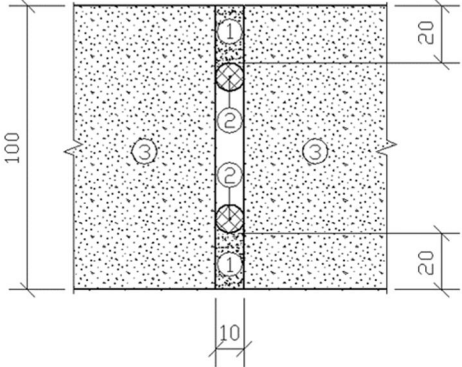
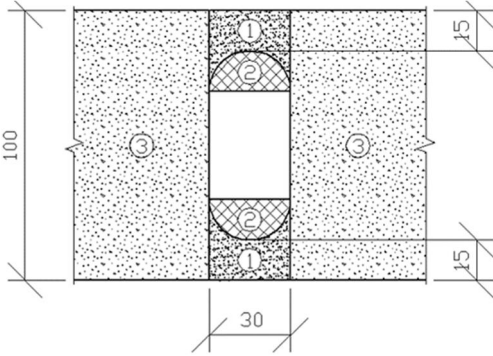


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
11	50	10	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x ½ Ø 55 mm 3- Aerated concrete 	Horizontal
12	50	20	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x ½ Ø 55 mm 3- Aerated concrete 	Horizontal

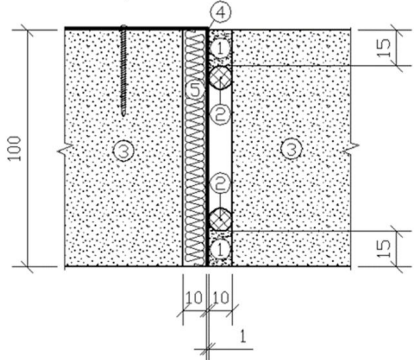
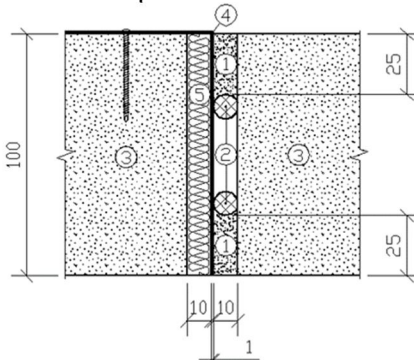


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
13	50	30	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on trimmed (shaped) backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 55 mm (trimmed) 3- Aerated concrete 	Horizontal
14	10	10	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density of 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 15 mm 3- Aerated concrete 	Horizontal

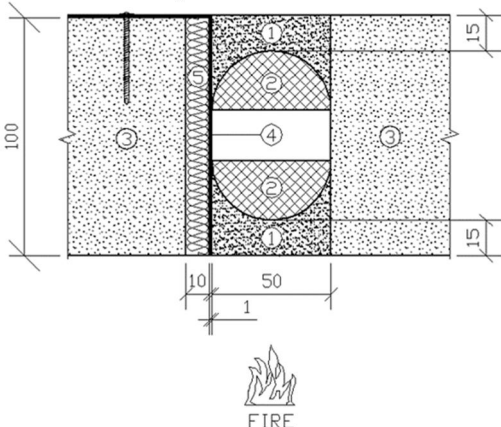
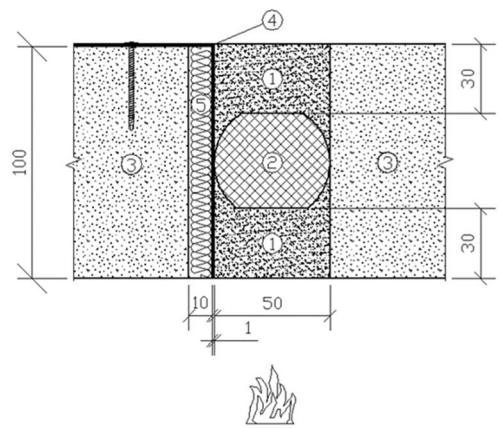


Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
15	10	20	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">10 FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x Ø 15 mm 3- Aerated concrete 	Horizontal
16	30	15	AC / AC	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cord ½ Ø 40 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">30 FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x ½ Ø 40 mm 3- Aerated concrete 	Horizontal



Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
17	10	15	AC / ST	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x Ø 15 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal
18	10	25	AC / ST	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <p style="text-align: center;">FIRE</p> <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x Ø 15 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal



Joint No.	Width of opening (joint width) [mm]	Depth ¹⁾ [mm]	Type of joint face ²⁾	Specification	Orientation
19	50	15	AC / ST	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord 2 x ½ Ø 55 mm 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal
20	50	30	AC / ST	<p>Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on trimmed (shaped) backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ±2 kg.m⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.</p>  <ul style="list-style-type: none"> 1- Gyso-Flammflex 417 2- PU open cell round cord Ø 55 mm (trimmed) 3- Aerated concrete 4- Steel sheet 1,0 mm thick 5- Mineral wool 10 mm thick 	Horizontal



- 1) Joint seal depth stated without backing material acc. to EN 1366-4 cl. 7.2.6 (reaction to fire of backing materials - Class F);
- 2) AC – aerated concrete;
 ST – standard configuration with the steel angle thickness of 1,0 mm on one joint face combined with mineral wool, type STEPROCK ND (manufacturer: Rockwool), with dimensions (10 x 100) mm (width x height) and bulk density of 130 kg.m⁻³ (stated by mineral wool manufacturer).

More detailed information is shown in the drawings which form an integral part of test report [1].

2.2.1 DESCRIPTION AND PROPERTIES OF LINEAR JOINT SEALS COMPONENTS

The characteristics of seal material:

Elastic SMP based joint seal, type Gyso-Flammflex 417

- is a flame-retardant made of silane modified polymer
- free foamed density (dry): (1,47 ±0,05) g.cm⁻³
- applied with gun
- temperature resistance after curing: - 40 °C to + 90 °C
- application temperature: + 5 °C to + 40 °C
- reaction to fire: Class E

PU round cords

- grey polyurethane foam round cords with open cells
- bulk density declared by manufacturer: (20,0 ±2) kg.m⁻³
- range of thicknesses: (15 – 55) mm
- reaction to fire: Class F

2.3 PRODUCT INSTALLATION

The linear joint seals are installed in 8 pieces of aerated concrete floor modules with bulk density in according to EN 1363-1: 650 kg.m⁻³ ±200 kg.m⁻³ (the manufacturer's stated value in the dried steady-state is 450 kg.m⁻³). The thickness of the supporting construction is 100 mm.

The specimens No. 7, 8, 9, 10, 17, 18, 19, 20 simulated steel joint face – standard configuration with steel angles on one joint face with thickness of 1,0 mm combined with mineral wool, type STEPROCK ND (manufacturer: Rockwool), with dimensions (10 x 100) mm (width x height) and bulk density of 130 kg.m⁻³ (stated by mineral wool manufacturer).

3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS

No.	Name of laboratory	Test report No.	Date of the test	Test method	Type of the test
[1]	FIRES, s.r.o., Batizovce, SR	FIRES-FR-315-22-AUNE	11. 11. 2022	EN 1366-4: 2021	A

Type of the test:

- A – accredited,
- N – non-accredited

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test



3.2 TEST SPECIMENS

Test report No.	Samples information	Conditioning	Pre-fire tests
[1]	<p>FIRES, s.r.o., Certification Body for Products carried out sampling of individual component Gyso-Flammflex 417 (black). Sampling data are recorded in Sampling report No. FIRES-SR-066-22.</p> <p>and</p> <p>FIRES, s.r.o., Certification Body for Product carried out sampling of test specimens. Sampling data are recorded in Sampling report No. FIRES-SR-067-22.</p>	<p>The specimens were stored in the hall of testing laboratory and conditioned according to EN 1363-1 under following climatic conditions:</p> <p>Ambient air temperature: 19,9°C, st. deviation 1,1°C</p> <p>Relative air humidity: 48,5%, st. deviation 5,6%</p>	-

3.3 TEST RESULTS

No./ Test method	Parameter	Results	
[1] Linear joint No. 1 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	37 minutes
		sustained flaming	37 minutes
	thermal insulation	I	37 minutes
	Induced movement		NO
type of joint face ³⁾		AC - AC	
[1] Linear joint No. 2 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	83 minutes
	Induced movement		NO
type of joint face ³⁾		AC - AC	
[1] Linear joint No. 3 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	61 minutes
	Induced movement		NO
type of joint face ³⁾		AC - AC	



No./ Test method	Parameter	Results	
[1] Linear joint No. 4 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	110 minutes
		sustained flaming	110 minutes
	thermal insulation	I	110 minutes ⁴⁾
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 5 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	46 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 6 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	91 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 7 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	145 minutes
		sustained flaming	145 minutes
	thermal insulation	I	45 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - ST		
[1] Linear joint No. 8 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	145 minutes
		sustained flaming	145 minutes
	thermal insulation	I	23 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - ST		



No./ Test method	Parameter	Results	
[1] Linear joint No. 9 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	51 minutes
	Induced movement	NO	
[1] Linear joint No. 10 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	128 minutes
		sustained flaming	128 minutes
	thermal insulation	I	114 minutes
	Induced movement	NO	
[1] Linear joint No. 11 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	58 minutes
		sustained flaming	58 minutes
	thermal insulation	I	53 minutes
	Induced movement	NO	
[1] Linear joint No. 12 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	133 minutes
		sustained flaming	133 minutes
	thermal insulation	I	133 minutes ⁴⁾
	Induced movement	NO	
[1] Linear joint No. 13 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	182 minutes no failure
	Induced movement	NO	
type of joint face ³⁾	AC - AC		



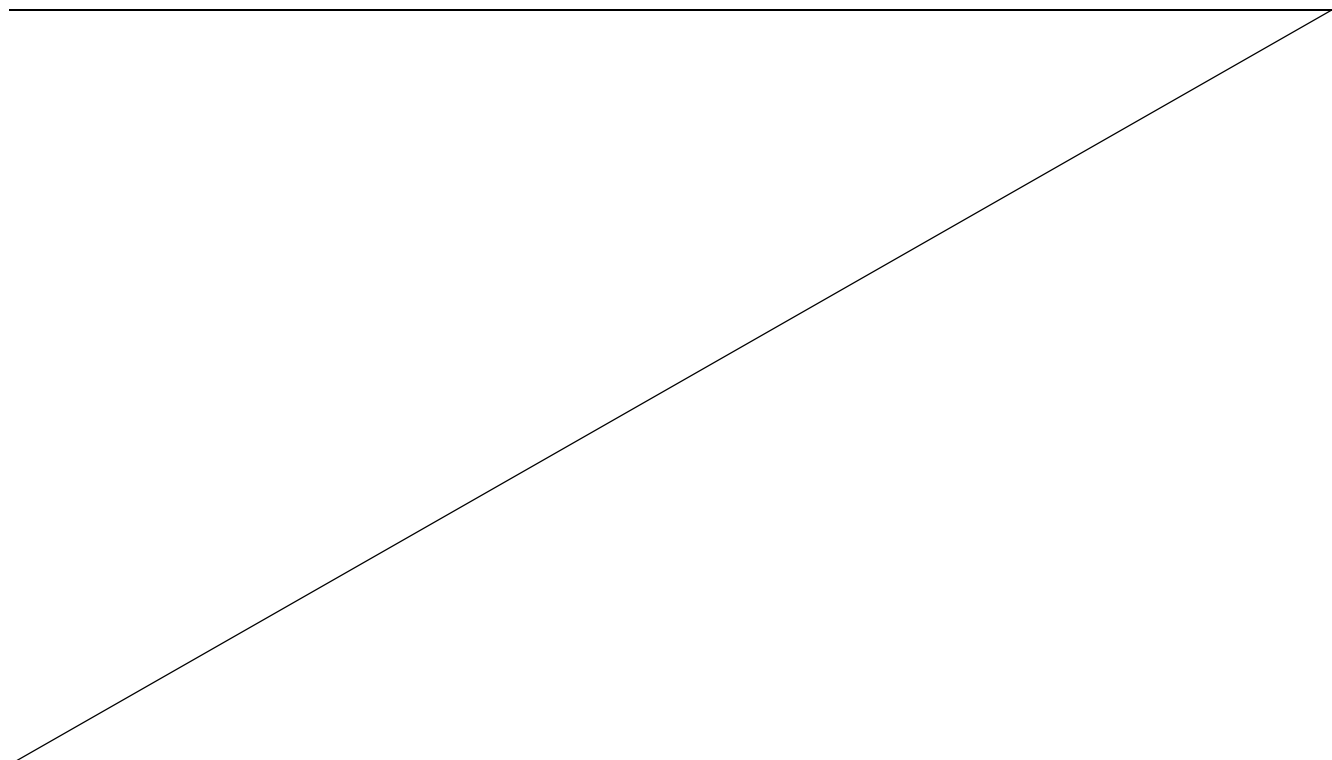
No./ Test method	Parameter	Results	
[1] Linear joint No. 14 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	131 minutes
		sustained flaming	131 minutes
	thermal insulation	I	130 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 15 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	182 minutes no failure
		sustained flaming	182 minutes no failure
	thermal insulation	I	182 minutes no failure
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 16 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	99 minutes
		sustained flaming	99 minutes
	thermal insulation	I	99 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - AC		
[1] Linear joint No. 17 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	132 minutes
		sustained flaming	132 minutes
	thermal insulation	I	111 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - ST		
[1] Linear joint No. 18 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	144 minutes
		sustained flaming	144 minutes
	thermal insulation	I	141 minutes
	Induced movement	NO	
type of joint face ³⁾	AC - ST		



No./ Test method	Parameter	Results	
[1] Linear joint No. 19 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	69 minutes
		sustained flaming	69 minutes
	thermal insulation	I	61 minutes
	Induced movement		NO
[1] Linear joint No. 20 / EN 1366-4: 2021	supporting construction	standard rigid supporting construction made of aerated concrete blocks, 100 mm thick with bulk density 650 kg.m ⁻³ ±200 kg.m ⁻³ ; straight joint, 900 mm long	
	temperature curve	standard temperature time curve	
	integrity	cotton pad	127 minutes
		sustained flaming	127 minutes
	thermal insulation	I	127 minutes ⁴⁾
	Induced movement		NO
	type of joint face ³⁾	AC - ST	

- 3) Note: AC – aerated concrete;
 ST – standard configuration with the steel angle thickness of 1,0 mm on one joint face combined with mineral wool.
- 4) Note: *The performance criteria of insulation are automatically assumed not to be satisfied when the criterion of integrity ceases to be satisfied (acc. to clause 11.4.2 of EN 1363-1).

[1] The test was terminated after period of 182nd minute of test.





4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 7.5.8 of EN 13501-2: 2023.

4.2 CLASSIFICATION

The element, Linear joint seals made with use of Gyso-Flammflex 417 installed in floor, is classified according to the following combinations of performance parameters and classes as appropriate.

Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Element	Classification
1	50	20	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	EI 30-H-X-B-W 00 to W 50
2	50	30	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 180-H-X-B-W 00 to W 50 EI 60-H-X-B-W 00 to W 50
3	30	25	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 180-H-X-B-W 00 to W 30 EI 60-H-X-B-W 00 to W 30



Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Specification	Orientation
4	30	40	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	EI 90-H-X-B-W 00 to W 30
5	10	20	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 180-H-X-B-W 00 to W 10 EI 45-H-X-B-W 00 to W 10
6	10	40	AC / AC	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 180-H-X-B-W 00 to W 10 EI 90-H-X-B-W 00 to W 10
7	10	30	AC / ST	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of 20 ± 2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 120-H-X-B-W 00 to W 10 EI 45-H-X-B-W 00 to W 10



Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Specification	Orientation
8	10	60	AC / ST	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 15 mm with bulk density of 20 ±2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 120-H-X-B-W 00 to W 10 EI 20-H-X-B-W 00 to W 10
9	30	30	AC / ST	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of 20 ±2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 180-H-X-B-W 00 to W 30 EI 45-H-X-B-W 00 to W 30
10	30	60	AC / ST	One layer of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by PU open-cell round cord Ø 40 mm with bulk density of 20 ±2 kg.m ⁻³ (reaction to fire Class F) from exposed side of the floor. Gyso-Flammflex 417 sealant in one line with exposed side of the floor.	E 120-H-X-B-W 00 to W 30 EI 90-H-X-B-W 00 to W 30
11	50	10	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 45-H-X-B-W 00 to W 50



Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Specification	Orientation
12	50	20	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 120-H-X-B-W 00 to W 50
13	50	30	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on trimmed (shaped) backing material formed by PU open-cell round cord Ø 55 mm with bulk density of 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 180-H-X-B-W 00 to W 50
14	10	10	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density of 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 120-H-X-B-W 00 to W 10
15	10	20	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 180-H-X-B-W 00 to W 10



Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Specification	Orientation
16	30	15	AC / AC	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cord ½ Ø 40 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 90-H-X-B-W 00 to W 30
17	10	15	AC / ST	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	E 120-H-X-B-W 00 to W 10 EI 90-H-X-B-W 00 to W 10
18	10	25	AC / ST	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords Ø 15 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 120-H-X-B-W 00 to W 10
19	50	15	AC / ST	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on backing material formed by 2 pcs of PU open-cell round cords ½ Ø 55 mm with bulk density 20 ±2 kg.m ⁻³ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 60-H-X-B-W 00 to W 50



Joint No.	Width of opening (joint width) [mm]	Depth [mm]	Type of joint face	Specification	Orientation
20	50	30	AC / ST	Two layers of permanently elastic SMP based joint sealant Gyso-Flammflex 417 applied on trimmed (shaped) backing material formed by PU open-cell round cord Ø 55 mm with bulk density of $20 \pm 2 \text{ kg.m}^{-3}$ (reaction to fire Class F) from both sides of the floor. Gyso-Flammflex 417 sealant in one line with exposed and unexposed side of the floor.	EI 120-H-X-B-W 00 to W 50

4.3 FIELD OF APPLICATION

This classification is valid according to EN 1366-4: 2021 for the following end use applications:

Construction	The construction of the linear joint seal must not change from that tested; Depth of linear seal may be increased (see clause 2.2);
Orientation of linear joint seal	Linear joint in a horizontal fire separating construction; Horizontally oriented linear joint in a vertical fire separating construction;
Supporting construction	The results are valid for aerated concrete, concrete, blockwork and masonry separating elements (floor) of a minimal thickness of 100 mm and density equal to or greater than $650 \text{ kg.m}^{-3} \pm 200 \text{ kg.m}^{-3}$; The results of linear joint seals No. 7, 8, 9, 10, 17, 18, 19, 20 are valid for steel angle standard supporting construction on one joint face apply to separating elements made of aerated concrete, concrete, blockwork and masonry faced on one side with steel of a thickness equal to or greater than 1,0 mm (see clause 2.2);
Seal position	The results of linear joint seals No. 1 to No. 10 are valid for positions as is written in clause 2.2 (joint seal at bottom of joint) and also for joint seal at top of joint and joint seal centred in joint (position 3 and 5 of Figure 17 of standard 1366-4); The results of linear joint seals No. 11 to No. 20 are valid only for positions as is written in clause 2.2;



5. LIMITATIONS

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

The classification is valid provided that the product, field of application and standards and regulations are not changed.

Approved by:

Ing. Marek Gorlický
Head of the Testing Laboratory

Prepared by:

Bc. Matúš Korenko
Technician of the Testing Laboratory

