

Laboratory for Fire Safety

Summary of fire resistance:

Bostik FP 402 Fireseal Silicone connecting stone to stone

On behalf of Bostik Benelux BV, eight tests were performed for determination of the fire resistance of several linear joint seals with Bostik FP 402 Fireseal Silicone (further called FP 402 Fireseal Silicone or Bostik FP 402) in walls and floors of aerated concrete. The tests were performed in accordance with the European standard EN 1366-4:2006+A1:2010 and EN 1366-4:2021 using the standard heating curve.

This summary provides an outline of the product performance and the conclusions of the test. For a complete description of the examined linear joint seals, please refer to the reports mentioned in the footnote.

Based on the test performed in accordance with EN 1366-4:2006+A1:2010, EN 1366-4:2021 and the extended application in accordance with EN 15882-4:2012, the system was classified in accordance with EN 13501-2:2007+A1:2009 and EN 13501-2:2016.

Taking into account the possible classification times mentioned in the standard, a linear joint seal made out of FP 402 Fireseal Silicone, is classified according to the following combinations of performance parameters and classes.



<p>This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.</p>	<p>Reference HL/RO//YB 2500-2E-RA-003 13 October 2022</p>	<p>Page 1/8</p>	<p>Initials <i>[Signature]</i></p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------	----------------------------	-----------------------------------------------



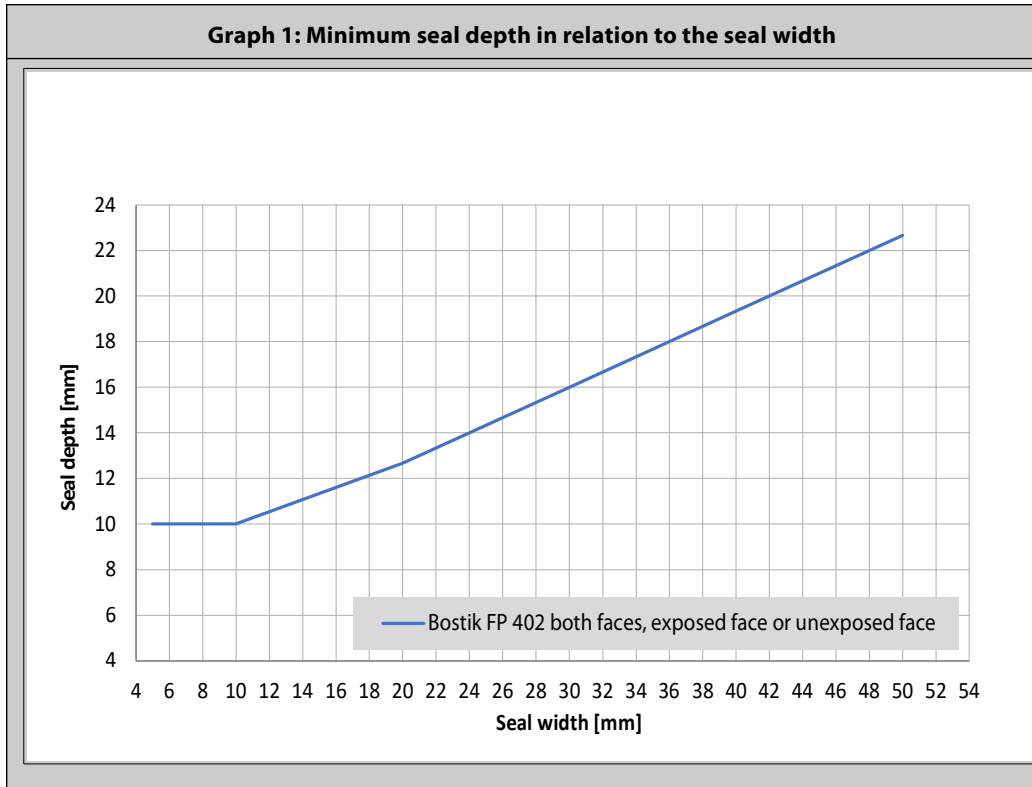
Fire resistance classification (linear joint seals in a stone wall)		
Connecting stone to stone wall thickness ≥ 100 mm		
Bostik FP 402 at both faces	Bostik FP 402 at exposed face	Bostik FP 402 at unexposed face
EI 180 – V – X – F – W 5 to 50	EI 30 – V – X – F – W 5 to 40	EI 60 – V – X – F – W 5 to 40
E 240 – V – X – F – W 5 to 50	EI 30 – T – X – F – W 5 to 50	E 240 – V – X – F – W 5 to 40
EI 180 – T – X – F – W 5 to 50		EI 60 – T – X – F – W 5 to 50
E 240 – T – X – F – W 5 to 50		

E = Criterion integrity, I = Criterion insulation, V = Vertical application in a vertical wall, T = Horizontal application in a vertical wall,
X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 1 for seal depth)

The following conditions apply:

- the classifications are valid for linear joint seals in a wall with an orientation as mentioned (vertical or horizontal);
- the linear joint seals may connect to any type of wall of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned (100 mm);
- the surfaces of the material on which FP 402 Fireseal Silicone is applied are thoroughly cleaned and treated with Primer and moistened with water when needed;
- the use of suitable PE / PU backing material is mandatory;
- the required depth of FP 402 Fireseal Silicone depends on the width of the linear joint seal. The minimum depth of FP 402 Fireseal Silicone in relation to the width of the linear joint seal is shown in Graph 1 below. The required depth of the sealant may also be increased with respect to the Graph (the lines are the minimum and recommended seal depth);
- the allowed movement capability in practice is maximized to 7.5 %;
- when FP 402 Fireseal Silicone is applied at both faces, the classifications are valid for both directions. When FP 402 Fireseal Silicone is applied at one face, the classifications are valid with FP 402 Fireseal Silicone at the unexposed face or at the exposed face.

This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.	Reference	Page	Initials
	HL/RO//YB 2500-2E-RA-003 13 October 2022	2/8	



Fire resistance classification (vertical linear joint seals in a stone wall)	
Connecting stone to stone wall thickness ≥ 115 mm	
<p>Bostik FP 402 at unexposed face, Bostik FP 404 exposed face</p> <p>EI 180 – V – X – F – W 8 to 40 EI 240 – V – X – F – W 8 E 240 – V – X – F – W 8 to 40</p>	<p>Bostik FP 402 at unexposed face</p> <p>EI 60 – V – X – F – W 5 to 25 EI 240 – V – X – F – W 5 E 240 – V – X – F – W 5 to 25</p>

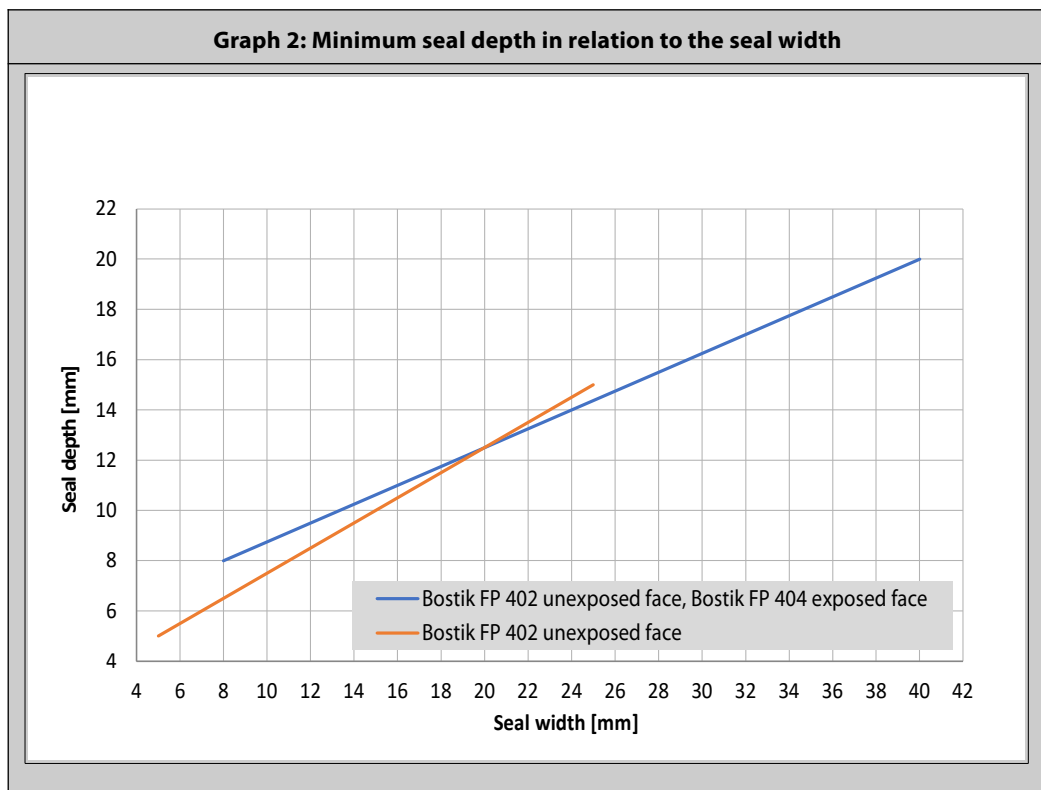
E = Criterion integrity, I = Criterion insulation, V = Vertical application in a vertical wall, X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 1 for seal depth)

The following conditions apply:

- the classifications are valid for linear joint seals in a wall with an orientation as mentioned (vertical);
- the linear joint seals may connect to any type of wall of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned (115 mm);

<p>This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.</p>	<p>Reference</p> <p>HL/RO//YB 2500-2E-RA-003 13 October 2022</p>	<p>Page</p> <p>3/8</p>	<p>Initials</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------	-------------------------------	------------------------

- the surfaces of the material on which FP 402 Fireseal Silicone or FP 404 Fire Retardant PU (Gun)Foam is applied are thoroughly cleaned and treated with Primer and moistened with water when needed;
- except for the linear joint seal in combination with FP 404 Fire Retardant PU (Gun)Foam, the use of suitable PE / PU backing material is mandatory;
- the required depth of FP 402 Fireseal Silicone depends on the width of the linear joint seal. The minimum depth of FP 402 Fireseal Silicone in relation to the width of the linear joint seal is shown in Graph 2 below. The required depth of the sealant may also be increased with respect to the Graph (the lines are the minimum and recommended seal depth). When applicable, the rest of the slot shall be fully filled with FP 404 Fire Retardant PU (Gun)Foam;
- the allowed movement capability in practice is maximized to 7.5 %;
- when FP 402 Fireseal Silicone is applied at one face, the classifications are valid with FP 402 Fireseal Silicone at the unexposed face.



<p>This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.</p>	<p style="text-align: center;">Reference</p> <p>HL/RO//YB 2500-2E-RA-003 13 October 2022</p>	<p style="text-align: center;">Page</p> <p>4/8</p>	<p style="text-align: center;">Initials</p> <p style="text-align: center;"><i>HL</i></p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	-----------------------------------------------------------	-------------------------------------------------------------------------------------------------

Fire resistance classification (linear joint seals in a stone wall)	
Bostik FP 402 at exposed face, Bostik FP 404 unexposed face	
wall thickness \geq 150 mm	wall thickness \geq 200 mm
EI 60 – V – X – F – W 8 to 50	EI 45 – V – X – F – W 8 to 50


E = Criterion integrity, I = Criterion insulation, V = Vertical application in a vertical wall, X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres (depth see conditions)

The following conditions apply:

- the classifications are valid for a vertical orientation in a vertical wall;
- the linear joint seals may be applied to any type of wall of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness of 150 mm or 200 mm;
- the surfaces of the material on which the sealant is applied are thoroughly cleaned and treated with Primer when needed. The the surfaces of the material on which the FP 404 Fire Retardant PU (Gun)Foam is applied are thoroughly cleaned and moistened with water when needed;
- the required depth of the FP 402 Fireseal Silicone is minimal 3 mm. The rest of the slot is fully filled with FP 404 Fire Retardant PU (Gun)Foam;
- the linear joint seals are tested without mechanically induced movement, therefore the allowed movement capability in practice is maximized to 7.5 %;
- the classifications are valid for FP 402 Fireseal Silicone applied at the exposed face.

Fire resistance classification (linear joint seals in a floor, applied at exposed side)		
\geq 100 mm (depth see Graph 3)	\geq 150 mm (depth see Graph 3)	\geq 150 mm (fixed depth 19 mm)
EI 90 – H – X – F – W 10 EI 30 – H – X – F – W 10 to 25 EI 20 – H – X – F – W 25 to 40 E 120 – H – X – F – W 10 E 60 – H – X – F – W 10 to 25	EI 90 – H – X – F – W 10 EI 45 – H – X – F – W 10 to 40 EI 60 – H – X – F – W 40 E 120 – H – X – F – W 10 to 40	EI 60 – H – X – F – W 10 to 40 E 120 – H – X – F – W 10 to 40

E = Criterion integrity, I = Criterion insulation, H = Horizontal supporting construction (floor), X = No movement applied
F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth or fixed seal depth of 19 mm)

This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.	Reference HL/RO//YB 2500-2E-RA-003 13 October 2022	Page 5/8	Initials 
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------	--------------------	----------------------------------------------------------------------------------------------------------

Fire resistance classification (linear joint seals in a with floor thickness \geq 100 mm, applied at unexposed side)
EI 120 – H – X – F – W 10 EI 90 – H – X – F – W 10 to 25 EI 45 – H – X – F – W 25 to 40 E 120 – H – X – F – W 10 to 40


E = Criterion integrity, I = Criterion insulation, H = Horizontal supporting construction (floor), X = No movement applied
F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth)

The following conditions apply:

- the linear joint seals may be applied at any type of floor of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned above;
- the surfaces of the material on which the FP 402 Fireseal Silicone is applied are thoroughly cleaned and treated with Primer when needed;
- the use of suitable PE / PU backing material is mandatory;
- the required depth of the FP 402 Fireseal Silicone depends on the width of the linear joint seal. The minimal depth of the sealant in relation to the width of the linear joint seal is shown in Graph 3 below. The required depth of the sealant may also be increased with respect to the Graph (the black line is the minimum and recommended seal depth);
- the allowed movement capability in practice is maximized to 7.5 %;
- the fire resistance classification is valid from below.

Fire resistance classification (linear joint seals in a wall abutting a floor applied at exposed side)		
Thickness wall and floor both \geq 100 mm (depth see Graph 3)	Thickness wall and floor both \geq 150 mm (depth see Graph 3)	Thickness wall and floor both \geq 150 mm (fixed depth 19 mm)
EI 90 – T – X – F – W 10 EI 30 – T – X – F – W 10 to 25 EI 20 – T – X – F – W 25 to 40 E 120 – T – X – F – W 10 E 60 – T – X – F – W 10 to 25	EI 90 – T – X – F – W 10 EI 45 – T – X – F – W 10 to 40 EI 60 – T – X – F – W 40 E 120 – T – X – F – W 10 to 40	EI 60 – T – X – F – W 10 to 40 E 120 – T – X – F – W 10 to 40

E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall abutting a floor, X = No movement applied,
F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth or fixed seal depth of 19 mm)

This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.	Reference HL/RO//YB 2500-2E-RA-003 13 October 2022	Page 6/8	Initials 
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------	--------------------	----------------------------------------------------------------------------------------------------------

Fire resistance classification (linear joint seals in a wall abutting a floor with thickness both ≥ 100 mm, applied at unexposed side)
EI 120 – T – X – F – W 10 EI 90 – T – X – F – W 10 to 25 EI 45 – T – X – F – W 25 to 40 E 120 – T – X – F – W 10 to 40

E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall abutting a floor,
 X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth)

The following conditions apply:


- the classifications are valid for a horizontal orientated joint in between a wall and abutting a floor. The classifications are not valid for horizontally orientated joint in a wall;
- the linear joint seals may be applied at any type of floor of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned above. The thickness applies for the wall and the floor as mentioned in the tables above;
- the surfaces of the material on which the FP 402 Fireseal Silicone is applied are thoroughly cleaned and treated with Primer when needed;
- the use of suitable PE / PU backing material is mandatory;
- the required depth of the FP 402 Fireseal Silicone depends on the width of the linear joint seal. The minimal depth of the sealant in relation to the width of the linear joint seal is shown in Graph 3. The required depth of the sealant may also be increased with respect to the Graph (the black line is the minimum and recommended seal depth);
- the allowed movement capability in practice is maximized to 7.5 %;
- the fire resistance in a wall abutting a floor is valid from one side, when applied at one side or is valid from both sides, when applied at both sides.

Fire resistance classification (linear joint seals in a wall, thickness ≥ 100 mm abutting a floor with thickness ≥ 150 mm, applied at both sides)
EI 240 – T – X – F – W 5 to 50

E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall (abutting a floor),
 X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth)

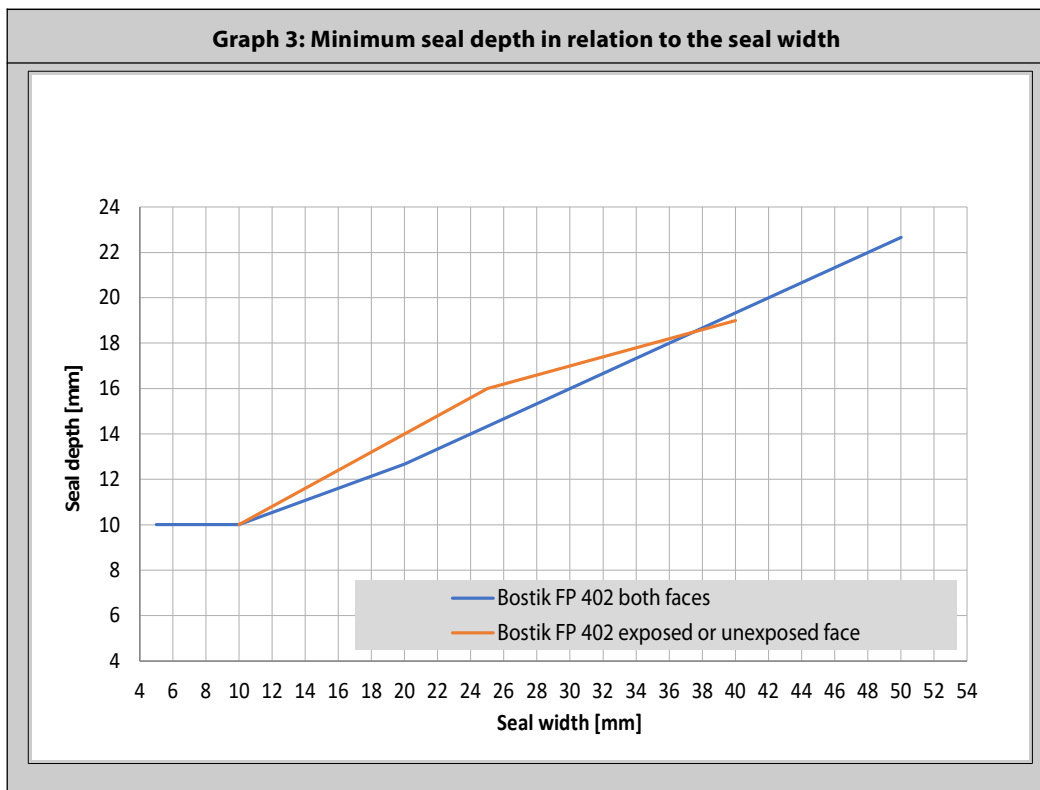
The following conditions apply:

- the classifications are valid for a horizontal orientated joint in between a wall and abutting a floor. The classifications are also valid for horizontally orientated joint in a wall;

This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.	Reference HL/RO//YB 2500-2E-RA-003 13 October 2022	Page 7/8	Initials 
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------	--------------------	----------------------------------------------------------------------------------------------------------

- the linear joint seals may be applied at any type of floor of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned above. The thickness applies for the wall and the floor as mentioned in the tables above;
- the surfaces of the material on which the FP 402 Fireseal Silicone is applied are thoroughly cleaned and treated with Primer when needed;
- the use of suitable PE / PU backing material is mandatory;
- the required depth of the FP 402 Fireseal Silicone depends on the width of the linear joint seal. The minimal depth of the sealant in relation to the width of the linear joint seal is shown in Graph 3. The required depth of the sealant may also be increased with respect to the Graph (the black line is the minimum and recommended seal depth);
- the allowed movement capability in practice is maximized to 7.5 %;
- the fire resistance is valid from both sides.

Graph 3: Minimum seal depth in relation to the seal width



<p>This summary consists out of 8 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-3E-RA, dated February 4, 2020, 18565C dated September 28, 2017, YA 2500-2E-RA-003 dated October 5, 2022 and YB 2088-1E-RA-001 dated November 18, 2019.</p>	<p>Reference HL/RO//YB 2500-2E-RA-003 13 October 2022</p>	<p>Page 8/8</p>	<p>Initials <i>[Signature]</i></p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------	----------------------------	-----------------------------------------------