

Laboratory for Fire Safety

Summary of a fire resistance test:

Bostik FP 403 Fireseal Hybrid connecting stone to stone

On behalf of Bostik, four tests were performed for determination of the fire resistance of several linear joint seals with Bostik FP 403 Fireseal Hybrid (further called FP 403 Fireseal Hybrid or Bostik FP 403) in walls or floors of aerated concrete. The tests are performed in accordance with the European standard EN 1366-4:2006+A1:2010 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 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 403 Fireseal Hybrid, is classified according to the following combinations of performance parameters and classes.



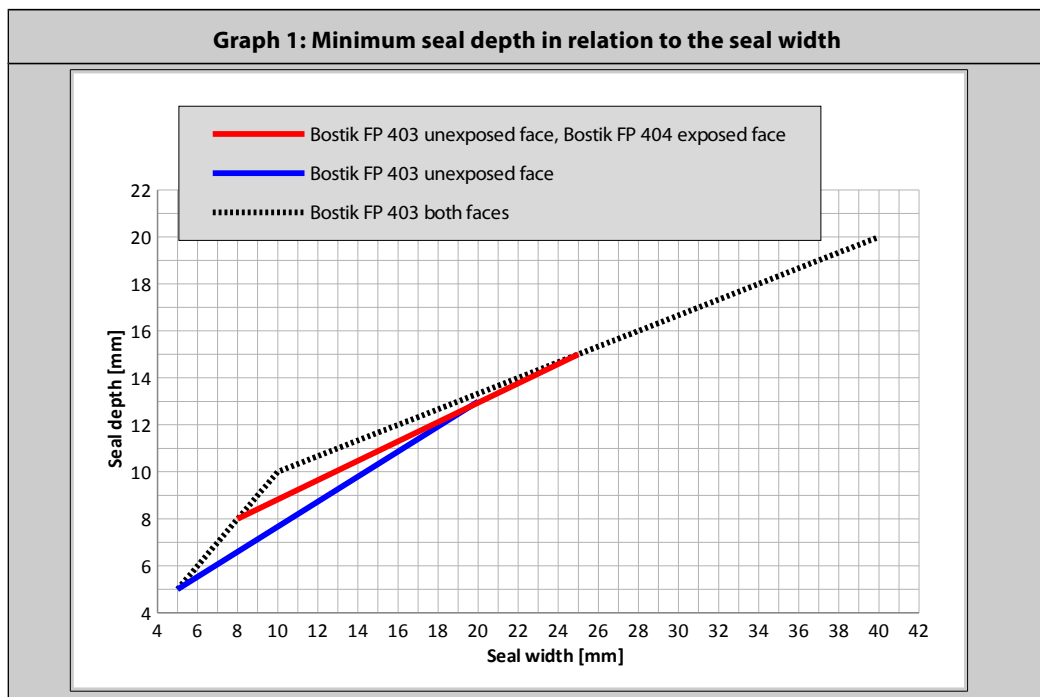
Fire resistance classification (vertical linear joint seals in a stone wall)			
Connecting stone to stone wall ≥ 115 mm			Connecting stone to stone wall ≥ 100 mm
Bostik FP 403 unexposed face, Bostik FP 404 exposed face	Bostik FP 403 applied at unexposed face	Bostik FP 403 applied at both faces	Bostik FP 403 applied at both faces
EI 180 – V – X – F – W 8 to 25	EI 60 – V – X – F – W 5 to 20	EI 240 – V – X – F – W 5 to 30	EI 240 – V – X – F – W 10
EI 240 – V – X – F – W 8	EI 180 – V – X – F – W 5	E 240 – V – X – F – W 5 to 30	EI 180 – V – X – F – W 10 to 40
E 240 – V – X – F – W 8 to 25	E 240 – V – X – F – W 5 to 20		E 240 – V – X – F – W 10 to 40

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)

This summary consists out of 5 pages. The classification reports that form the basis for this summary are available for inspection at the client and are registered as YB 1567-1E-RA-002, dated June 24, 2015, 18565C dated September 28, 2017 and YB 2088-1E-RA-001 dated November 18, 2019.	Reference HL/RO//YC 2088-4E-RA-001 30 January 2020	Page 1/5	Initials
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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 of 100 or 115 mm;
- the surfaces of the material on which FP 403 Fireseal Hybrid or Bostik 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 Bostik FP 404 Fire Retardant PU (Gun)Foam, the use of suitable PE / PU backing material is mandatory;
- the depth of FP 403 Fireseal Hybrid depends on the width of the linear joint seal. The minimum depth of FP 403 Fireseal Hybrid in relation to the width of the linear joint seal is shown in Graph 1 below. The 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 is fully filled with Bostik FP 404 Fire Retardant PU (Gun)Foam;
- the allowed movement capability in practice is maximized to 7.5 %;
- when FP 403 Fireseal Hybrid is applied at both faces, the classifications are valid for both directions. When FP 403 Fireseal Hybrid is applied at one face, the classifications are valid with FP 403 Fireseal Hybrid at the unexposed face.



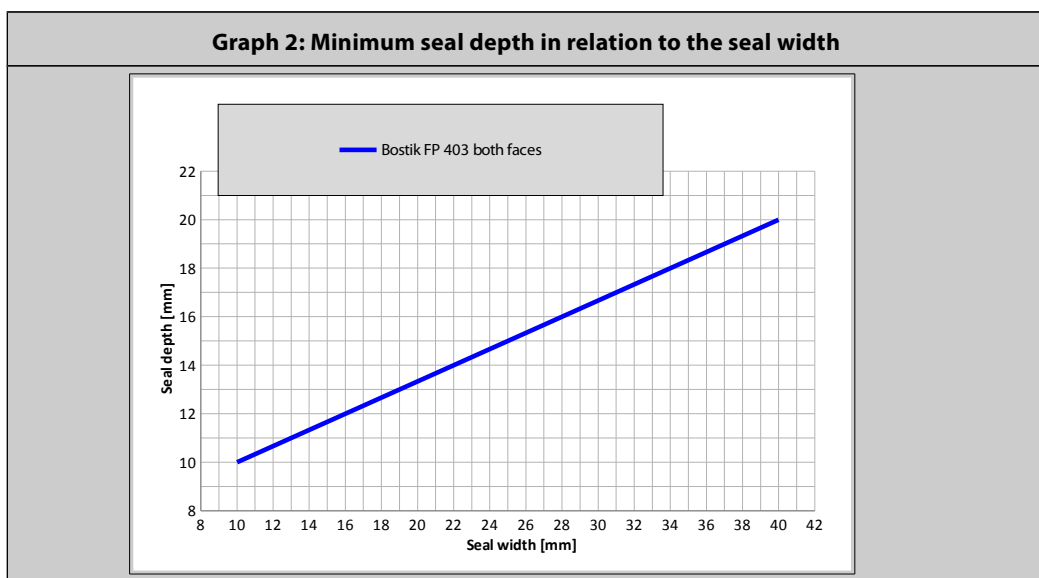
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Fire resistance classification (horizontal linear joint seals in a stone wall and a wall abutting a floor)
Bostik FP 403 connecting stone to stone, applied at both faces Wall / floor with thickness ≥ 100 mm
EI 240 – T – M 25 – F – W 10 to 30 EI 180 – T – M 25 – F – W 30 to 40 E 240 – T – M 25 – F – W 10 to 40

E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall and a wall abutting a floor, M = Movement induced in %, F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 2 for seal depth)

The following conditions apply:

- the classifications are valid for linear joint seals in a wall and a wall abutting a floor, ceiling or roof with an orientation as mentioned (horizontal);
- the linear joint seals may connect to any type of construction of aerated concrete (class G4/600 or heavier), concrete, block work or masonry with a minimal thickness as mentioned (100 mm);
- the surfaces of the material on which FP 403 Fireseal Hybrid 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 FP 403 Fireseal Hybrid depends on the width of the linear joint seal. The minimum depth of FP 403 Fireseal Hybrid 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 line gives the minimum and recommended seal depth);
- deformation of the linear joint seals in practice is maximized to 25 %;
- the classifications are valid for both directions.



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Fire resistance classification (linear joint seals in a floor with thickness ≥ 100 mm)	
Applied at exposed side	Applied at unexposed side
EI 90 – H – X – F – W 10 EI 30 – H – X – F – W 10 to 40 E 120 – H – X – F – W 10 to 40	EI 120 – H – X – F – W 10 EI 60 – H – X – F – W 10 to 40 E 120 – H – X – F – W 10 to 25 E 60 – H – X – F – W 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)

Fire resistance classification (linear joint seals in a wall abutting a floor with thickness both ≥ 100 mm)	
Applied at exposed side	Applied at unexposed side
EI 90 – T – X – F – W 10 EI 30 – T – X – F – W 10 to 40 E 120 – T – X – F – W 10 to 40	EI 120 – T – X – F – W 10 EI 60 – T – X – F – W 10 to 40 E 120 – T – X – F – W 10 to 25 E 60 – T – X – F – W 40

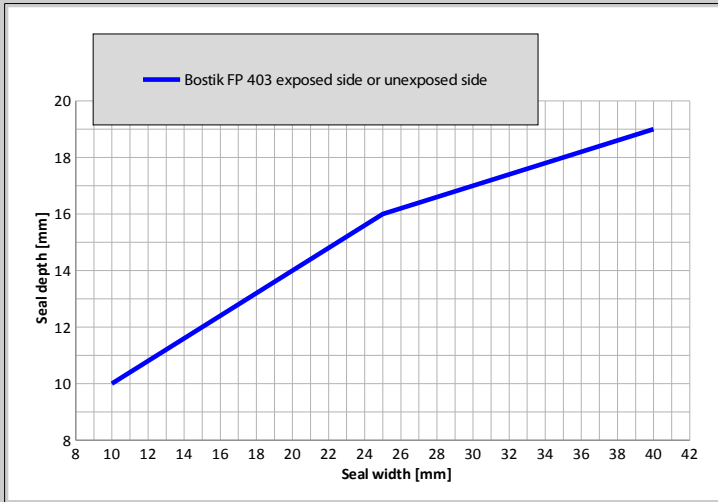
E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a wall abutting a floor, X = No movement applied,
F = Splice applied in the field, W = Permitted width range in millimetres (see Graph 3 for seal depth)

The following conditions apply:

- the linear joint seals may be applied at any type of floor and / or wall of aerated concrete (class G4/600 or heavier), concrete, block work, limestone or masonry with a minimal thickness as mentioned above. In a floor application, the fire resistance applies from below. The fire resistance in a wall abutting a floor application is valid from one side;
- the classifications are not valid for horizontally orientated joints in a wall;
- the surfaces of the material on which the FP 403 Fireseal Hybrid 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 403 Fireseal Hybrid 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 line gives the minimum and recommended seal depth);
- the allowed movement capability in practice is maximized to 7.5%.

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



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