

## Laboratory for Fire Safety

### Summary of a fire resistance test:

### FP Hybrid Sealant connecting gypsum to stone and gypsum to gypsum

On behalf of Den Braven, a test was performed in the Peutz Laboratory for Fire Safety for determination of the fire resistance of several linear joint seals with FP Hybrid Sealant in a wall connecting stone to gypsum. The test is 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.

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



### Classification of the fire resistance vertically orientated

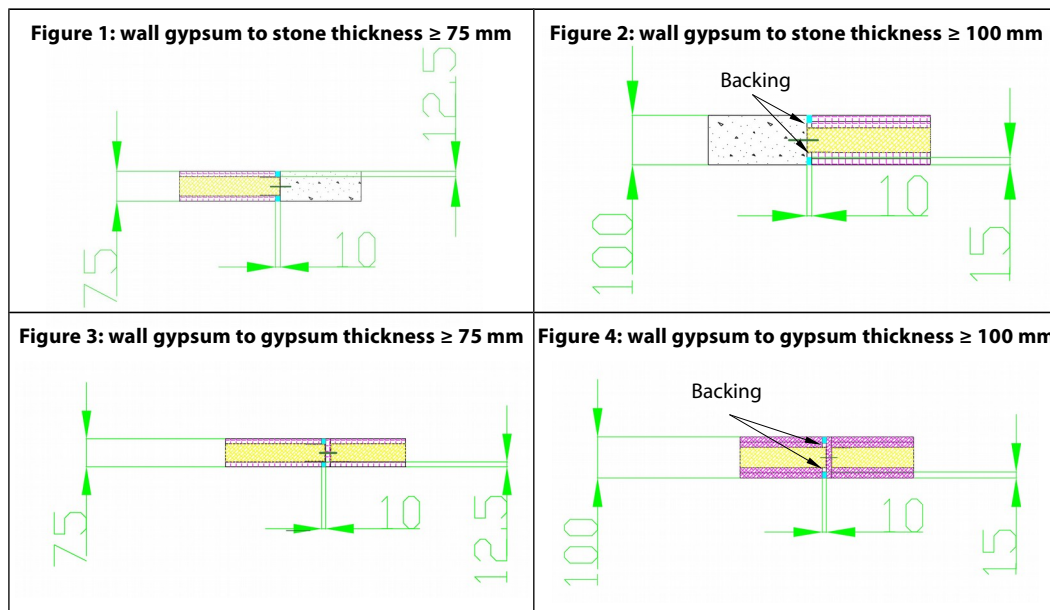
Fire resistance classification (vertical linear joint seals)			
Connecting gypsum to stone, applied at both faces		Connecting gypsum to gypsum, applied at both faces	
Wall thickness $\geq 75$ mm	Wall thickness $\geq 100$ mm	Wall thickness $\geq 75$ mm	Wall thickness $\geq 100$ mm
See figure 1	See figure 2	See figure 3	See figure 4
EI 60 – V – X – F – W 10	EI 120 – V – X – F – W 10	EI 60 – V – X – F – W 10	EI 120 – V – X – F – W 10

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

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The following conditions apply:

- the classifications are valid for linear joint seals in a wall with a orientated 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 (75 or 100 mm);
- the linear joint seals may connect to a gypsum wall with a minimum thickness as mentioned (75 or 100 mm). In practice, the metal profiles of the gypsum wall are mechanically fixed at a distance every 300 mm or less. Mechanically fixation of the metal profiles is mandatory;
- the classifications are only valid for constructions shown in figures 1 to 4;
- the surfaces of the material on which the sealant is applied are thoroughly cleaned and treated with primer when needed;
- the depth of the FP Hybrid Sealant in a wall of 75 mm is 12.5 mm at both faces, representing the full thickness of the gypsum panel, see figures 1 and 3. The depth of the FP Hybrid Sealant in a wall of 100 mm is 15 mm at both faces. The rest of the cavity behind the sealant is filled up with suitable PE / PU backing material, see figures 2 and 4;
- the allowed movement capability in practice is maximized to 7.5 %;
- the classifications are valid for both directions.



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## Classification of the fire resistance *horizontally orientated*


Fire resistance classification (horizontal linear joint seals)			
Connecting gypsum to stone		Connecting gypsum to stone	
Wall thickness ≥ 75 mm	Wall thickness ≥ 75 mm	Wall thickness ≥ 100 mm	Wall thickness ≥ 100 mm
Applied at the unexposed face, see figure 5	Applied at both faces, see figure 6	Applied at the unexposed face, see figures 7 and 9	Applied at both faces, see figures 8 and 10
EI 60 – T – M 25 <sup>1</sup> – F – W 10	EI 60 – T – M 25 <sup>1</sup> – F – W 10	EI 120 – T – M 25 <sup>1</sup> – F – W 10	EI 120 – T – M 25 <sup>1</sup> – F – W 10

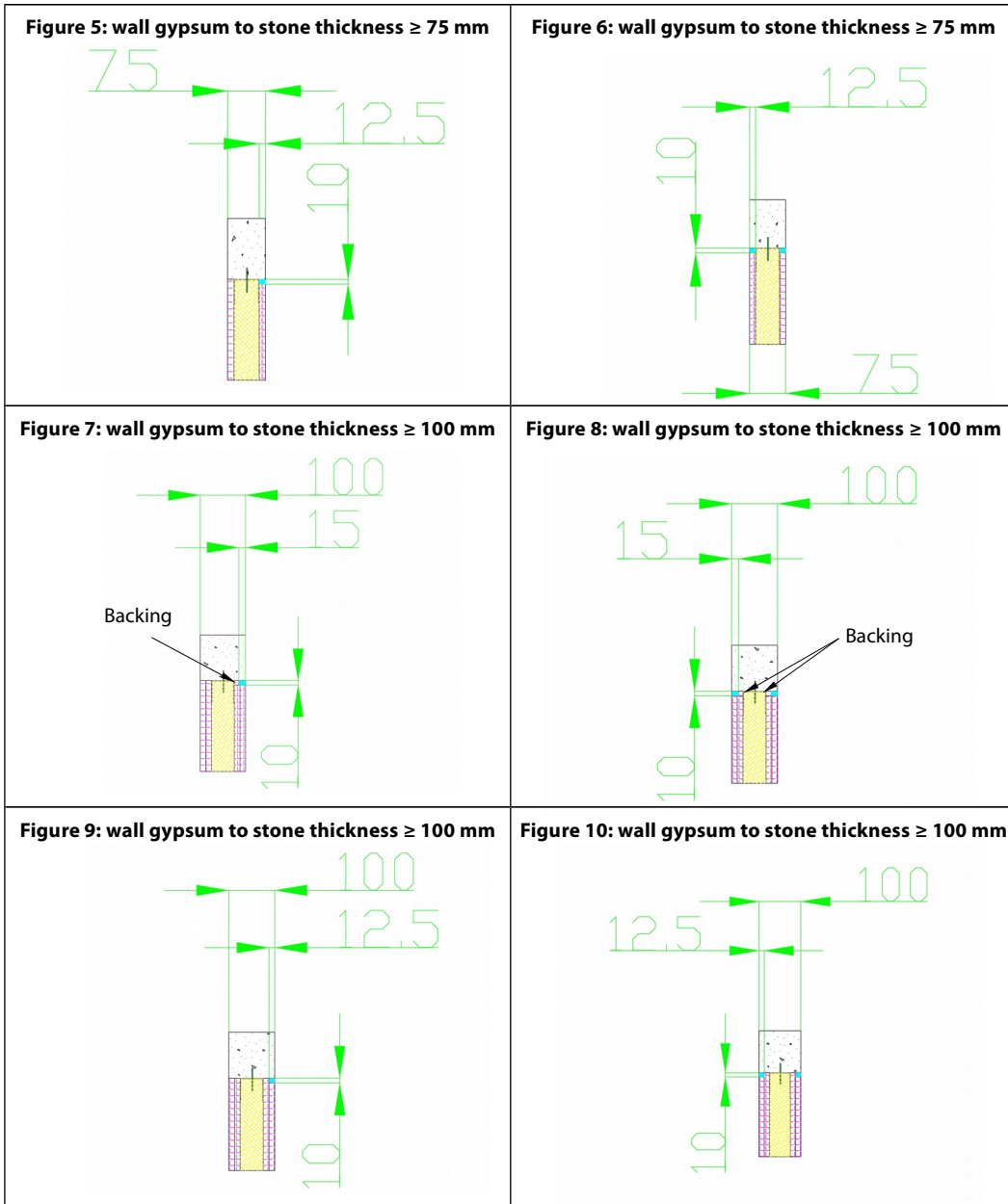
E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall, M 25 = Movement induced 25 %, F = Splice applied in the field, W = Permitted width range in millimetres


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 a 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 (75 or 100 mm);
- the linear joint seals may connect to a gypsum wall with a minimum thickness as mentioned. In practice, the metal profiles of the gypsum wall are mechanically fixed at a distance every 300 mm or less. Mechanically fixation of the metal profiles is mandatory;
- the classifications are only valid for constructions shown in figures 5 to 10;
- the surfaces of the material on which the sealant is applied are thoroughly cleaned and treated with primer when needed;
- the depth of the FP Hybrid Sealant in a wall of 75 mm is 12.5 mm at both faces or at the unexposed face, representing the full thickness of the gypsum panel, see figures 5 and 6;
- the depth of the FP Hybrid Sealant in a wall of 100 mm is 12.5 mm at both faces or at the unexposed face, representing the full thickness of the gypsum panel, see figures 9 and 10;
- the depth of the FP Hybrid Sealant in a wall of 100 mm is 15 mm at both faces or at the unexposed face. The rest of the cavity behind the sealant is completely filled up with suitable PE / PU backing material, see figures 7 to 8;
- the allowed movement capability of the linear joint seals in practice is maximized to 25 %;
- when the FP Hybrid Sealant is applied at both faces, the classifications are valid for both directions. When the FP Hybrid sealants is applied at one face, the classifications are valid with the FP Hybrid Sealant at the unexposed face.

<sup>1</sup> In practise, the metal profile from the gypsum wall that abuts the floor will be mechanically fixed and no shear movement is possible. The movement that was applied prior to the test therefore results in a deformation of the sealant and is added to simulate the deformation of the gypsum wall during a fire

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