PEUTZ

Laboratory for Fire Safety

Summary of fire resistance:

FP PU Foam connecting stone to stone and stone to wood

On behalf of Den Braven, four tests were performed for determination of the fire resistance of several linear joint seals with FP PU Foam in walls of aerated concrete and connection to wood. The tests were performed in accordance with the European test standard EN 1366-4:2006+A1:2010 using the standard heating curve.

The PU foam is available in a canister (FP PU Foam Hand Held) and as a canister for a PU gun (FP PU Foam Gun Grade). The composition of the FP PU Foam HAND Held and the FP PU Foam GUN Grade is identical and further defined as FP PU Foam.
This summary provides an outline of the product performance and the conclusions of the tests. For a complete description of the examined linear joint seals, please refer to the reports mentioned in the footnote.

Based on the tests performed in accordance with EN 1366-4:2006+A1:2010 and the extended applications 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 PU Foam, is classified according to the following combinations of performance parameters and classes.

Fire resistance classification (vertical linear joint seals in a stone wall)		
Vertically orientated connecting stone to stone		**Vertically orientated connecting stone to wood**
Wall thickness ≥ 100 mm EI 45 – V – X – F – W 10 to 30 EI 60 – V – X – F – W 8 to 10 EI 90 – V – X – F – W 8	**Wall thickness ≥ 115 mm** EI 45 – V – X – F – W 20 to 30 EI 60 – V – X – F – W 8 to 20 EI 120 – V – X – F – W 8	**Wall thickness ≥ 100 mm** EI 120 – V – X – F – W 8 to 20

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

This summary consists out of 4 pages. The classification reports that form the basis for this document are available for inspection at the client and are registered as YB 1567-1E-RA-002 June 24, 2015, YB 1692-1E-RA-002 September 16, 2016 and 18565C dated September 28, 2017.	**Reference**	**Page**	**Initials**
	HL/HL//YP 1692-10E-RA-001 27 February 2018	1/4	

Peutz bv, postbus 66, 6585 zh mook, +31 24 357 07 07, mook@peutz.nl, www.peutz.nl
All orders are accepted and executed according to 'De Nieuwe Regeling 2011' (The New Rules). Registerd under number 12028033 at CoC.
member NL-ingenieurs, iso-9001:2008 certified

mook – zoetermeer – groningen – düsseldorf – dortmund – berlijn – leuven – parijs – lyon – sevilla

YP 1692-10E-RA-001 /DDA5953E/ HARML

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 in the classifications (100 or 115 mm);
- if applicable, on the other side the linear joint seal connects to any type of wooden construction with a density of 500±50 kg/m^3 or more where the wooden construction is placed over the full thickness of the wall or minimal thickness as mentioned in the classifications (100 mm);
- the surfaces of the material on which the FP PU Foam is applied are thoroughly cleaned and moistened with water when needed;
- the allowed movement capability in practice is maximized to 7,5 %;
- the linear joint seal must be fully filled with FP PU Foam.

Fire resistance classification (horizontal linear joint seals in a stone wall)
Connecting stone to wood
Wall thickness ≥ 100 mm EI 90 – T – X – F – W 8 to 20

E = Criterion integrity, I = Criterion insulation, T = Horizontal application in a vertical wall, X = No movement applied, 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 with an orientation as mentioned (horizontal);
- the linear joint seal connects on one side 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 in the classifications (100 mm);
- on the other side, the linear joint seal connects to any type of wooden construction with a density of 500±50 kg/m^3 or more where the wooden construction is placed over the full thickness of the wall or minimal thickness as mentioned in the classifications (100 mm);
- the surfaces of the material on which the FP PU Foam is applied are thoroughly cleaned and moistened with water when needed;
- the allowed movement capability in practice is maximized to 7,5 %;
- the linear joint seal must be fully filled with FP PU Foam.

Classification of the fire resistance *FP PU Foam in combination with other FP Sealants*

Fire resistance classification (FP Hybrid Sealant in combination with FP PU Foam) FP Hybrid applied at the unexposed face, FP PU Foam applied at the exposed face	
Vertically orientated connecting stone to stone	
Wall thickness ≥ 115 mm EI 180 – V – X – F – W 8 to 25 EI 240 – V – X – F – W 8 E 240 – V – X – F – W 8 to 25	
Vertically orientated connecting stone to wood	**Horizontally orientated connecting stone to wood**
Wall thickness ≥ 100 mm EI 120 – V – X – F – W 8 to 20	**Wall thickness ≥ 100 mm** EI 120 – T – X – F – W 8 to 20

Fire resistance classification (FP Acrylic Sealant in combination with FP PU Foam) FP Acrylic sealant applied at the unexposed face, FP PU Foam applied at the exposed face
Vertically orientated connecting stone to stone
Wall thickness ≥ 115 mm EI 180 – V – X – F – W 8 to 30 EI 240 – V – X – F – W 8 E 240 – V – X – F – W 8 to 30

Fire resistance classification (FP Silicone Sealant in combination with FP PU Foam) FP Silicone sealant applied at the unexposed face, FP PU Foam applied at the exposed face
Vertically orientated connecting stone to stone
Wall thickness ≥ 115 mm 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

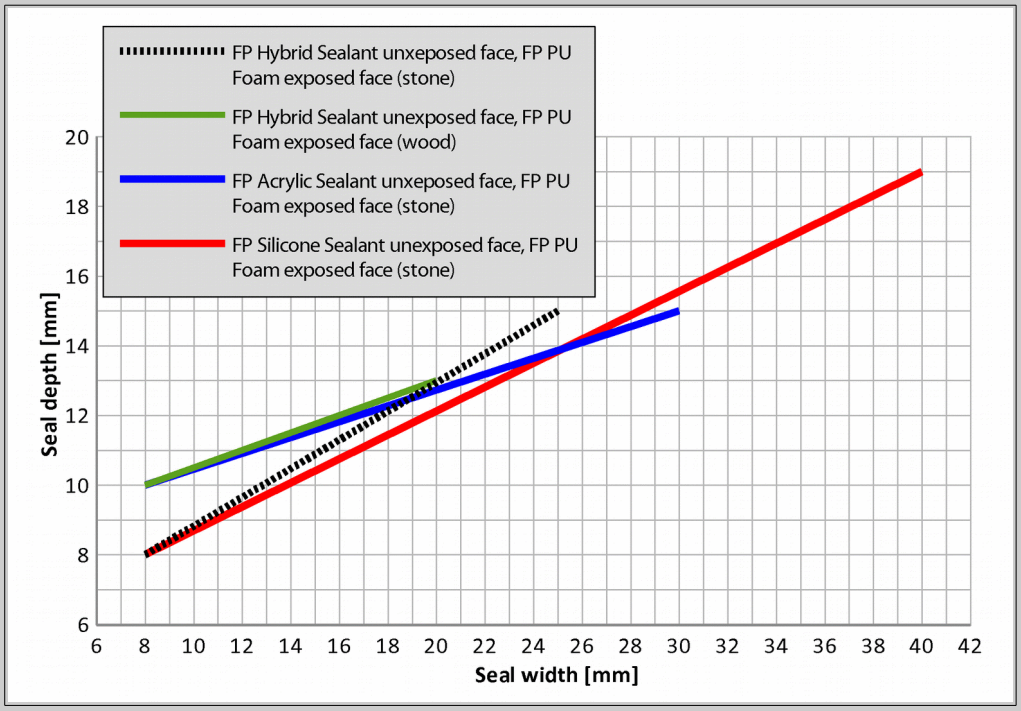
E = Criterion integrity, I = Criterion insulation, V = Vertical application in a vertical wall, T =Horizontal application in a vertical wall
X = No movement applied, F = Splice applied in the field, W = Permitted width range in millimetres

The following conditions apply:

- the classifications are valid for linear joint seals in a wall with an orientation as mentioned (horizontal or 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 in the classifications (100 or 115 mm);
- in combination with FP Hybrid Sealant, the linear joint seals may connect to any type of wooden construction with a density of 500±50 kg/m^3 or more where the wooden construction is placed over the full thickness of the wall or at least 100 mm;
- the surfaces of the material on which the FP Sealant and PF PU Foam is applied are thoroughly cleaned and treated with primer and moistened with water when needed;

- the required depth of the FP Sealant depends on the width of the linear joint seal. The minimum depth of the FP Sealant 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 rest of the slot is fully filled with FP PU Foam;
- the allowed movement capability in practice is maximized to 7.5 %;
- the classifications are valid for the FP Sealant applied at the unexposed face.

Graph 1: Minimum seal depth in relation to the seal width



This summary consists out of 4 pages. The classification reports that form the basis for this document are available for inspection at the client and are registered as YB 1567-1E-RA-002 June 24, 2015, YB 1692-1E-RA-002 September 16, 2016 and 18565C dated September 28, 2017.	Reference	Page	Initials
	HL/HL//YP 1692-10E-RA-001 27 February 2018	4/4	