SOUDAL

www.soudal.com

Fire range

Installation Instructions

in accordance with EN 1366-3 and EN 1366-4

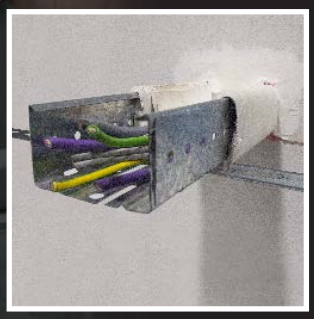

Table of Content

Introduction

The openings around metal pipes and cables, but even blank seals can allow a fire to penetrate. For this reason, these openings must be sealed against fire. For the above-mentioned types of openings, Soudal offers fire-resistant solutions tested in accordance with European standards (EN 1366-3).

These installation instructions are drawn up to guide the installer through the correct process of sealing openings against fire. The correct execution of these instructions ensures that the products are installed in accordance with the test certificates. Only then is it possible to guarantee the fire-resistant capacity of the products in accordance with EN 1366-3. Always ask for the test certificates before starting any work.

1. Soudal products

Fire Silicone B1 FR

Fire resistant silicone sealant up to 4 hours of fire resistance (EN 1366 Part 4 - NBN 713.020 - BS 476/20

Cartridges

Art. nr.: 108998	white	5411183037687	310ml	15/box
Art. nr.: 102530	grey	5411183017603	310ml	15/box

Foilpack 600ml

Art. nr.: 109952	grey	5411183039070	600ml	12/box

Firecryl FR

Fire retardant paintable acrylic up to 4 hours of fire resistance. intumescent at 120°C.

Cartridges

Art. nr.: 106329	white	5411183009448	310ml	15/box
Art. nr.: 107433	grey	5411183027558	310ml	15/box

Foilpack 600ml

Art. nr.: 105229	white	5411183037175	600ml	12/box
Art. nr.: 110947	grey	5411183042476	600ml	12/box

Soudaseal FR

Fire retardant Hybrid polymer. Up to 4 hours of fire resistance in joints. (EN 1366 Part 4 - NBN 713.020 - BS 476/20)

Foilpack 600ml

Art. nr.: 113628	grey	5411183102330	600ml	12/box

Cleaner & Degreaser

Powerfull quick-drying cleaner and degreaser for various maintenance and assembly jobs. Excellent for most surfaces

Spray

Art. nr.: 119708		5411183090682	400ml	6/Karton

Soudafoam FR

High quality fire rated PU foam with CE mark. For the installation of fire doors and joint sealing. Up to 240 minutes of Fire resistance. Excellent acoustic rating.

Hand held

Art. nr.: 108289	Pink	5411183036079	750ml	12/box

Gun

Art. nr.: 123233	Pink	5411183109322	750ml	12/box

Soudafoam 2K B2

Fast-curing, high density fire resistant foam. Applicable for penetration seals according to EN 1366-3.

Hand held

Art. nr.: 108061	purple	5411183029415	400ml	12/karton

Fire Blanket

Flexible and paintable. intumescent at 120°C. Sticky back side, straps might be necessary.

Roll

Art. nr.: 126933	1,8m x 0,3m		1/karton

PU backing rods

Ronde PU voegvulling met open cellen. (1m)

Rods

Art. nr.: 110283	grey	5411183024755	15mm x 1m	250m/box
Art. nr.: 110284	grey	5411183024915	20mm x 1m	200m/box
Art. nr.: 110285	grey	5411183025066	25mm x 1m	100m/box
Art. nr.: 110286	grey	5411183025219	30mm x 1m	100m/box
Art. nr.: 110287	grey	5411183022324	40mm x 1m	50m/box
Art. nr.: 110288	grey	5411183023376	50mm x 1m	50m/box

TESTED ACCORDING TO EN 1366-3 TESTED ACCORDING TO

International approvals

(available on request)

- RUG 9279C, WFRC C113610, BWA 45716-01, BWA 45717-01 (1)
- Warrington WFRG 13492B, EFECTIS PV n°09-A-276, Afiti n°1882T09, EFECTIS 2009-R0703, BWA 23751-00 (2)
- ITB LP-02491.1/09 (3)
- ITB LP-02491.2/09 (4)
- PV13-A-061

TESTED ACCORDING TO EN 1366-4 TESTED ACCORDING TO

2.1 cable duct through wall

- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.

- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the wall, on both sides of the wall.

- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

- Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.

2.1 cable duct through wall (continued)

- Remove all foam residue.

- Apply a layer of Firecryl FR of 4mm on both sides of the opening.

- When the entire surface of the opening is covered with a layer of Firecryl FR, a damp spatula can be used to smoothen the surface. Do this on both sides of the opening.
- Once the Firecryl FR has hardened, fire-resistance is guaranteed. The area can now be painted.

Classification:

- **Up to EI 120**
- **In accordance with EN 1366-3**
- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

2.2 pipes through wall

- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.

- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the wall, on both sides of the wall.

- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

- Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.

2.2 pipes through wall (continued)

• Remove all foam residue.

• Apply a layer of Firecryl FR of 4mm on both sides of the opening.

Classification

Material	Pipe diameter (min - max)	Pipe wall (min - max)	Transit (max. diameter)	EI (minutes)
Copper	8 -59,5 mm	1,7 - 14,2 mm	136 mm	120C/U*
	27,4 - 41,7 mm	1,3 - 14,2 mm	71 mm	120C/U*
Steel	33,5 - 86,0 mm	1,9 - 14,2 mm	136 mm	120C/U*
Stainless steel	34 - 89 mm	2,8 - 14,2 mm	136 mm	120C/U*
	34 - 116 mm	2,8 - 14,2 mm	151 mm	30C/U*

* The metal tube may not have an opening on both sides.

- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

2.3 cable duct & pipe through wall

- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.

- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the wall, on both sides of the wall.

- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

- Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.

2.3 cable duct & pipe through wall (continued)

- Remove all foam residue.

- Apply a layer of Firecryl FR of 4mm on both sides of the opening.

- Als de volledige oppervlakte van de doorvoer bedekt is met een laag Firecryl FR, Strijk dan de Firecryl FR glad met een vochtige spatel. Doe dit aan beide zijde van de doorvoer.
- Wanneer de Firecryl FR uitgehard is, dan is de brandweerstand gegarandeerd. Daarna kan de doorvoer overschilderd worden.

Classification:

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- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

2.4 cables in PVC pipes through a wall

- Install a PVC pipe of up to 50mm diameter in the opening (maximum diameter 111mm).
- The pipe must protrude for a minimum of 70mm and a maximum of 150mm on both sides.

- Apply a PU joint filler around the PVC pipe for half the thickness of the wall.

- Apply Firecryl FR around the pipe on both sides of the opening.

- Pull the cables through the pipe.

- Apply Soudafoam FR between the cables in the PVC pipe.

- Cut any excess foam away.

2.4 cables in PVC pipes through a wall (continued)

• Apply a layer of Firecryl on the foam.

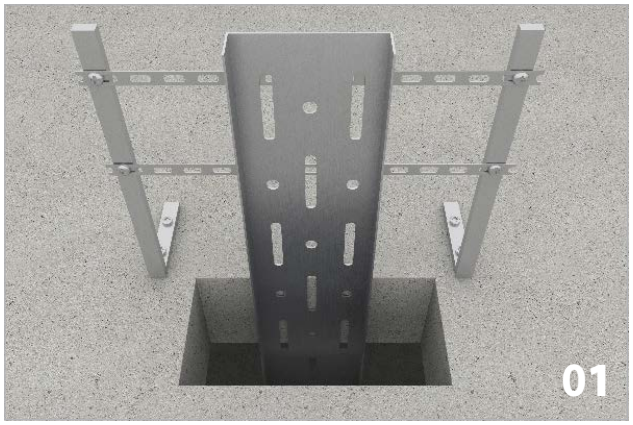
Classification:

- Up to EI 120
- In accordance with EN 1366-3
- Concrete, aerated concrete, brickwork
- At least 150mm wall thickness

Used products:

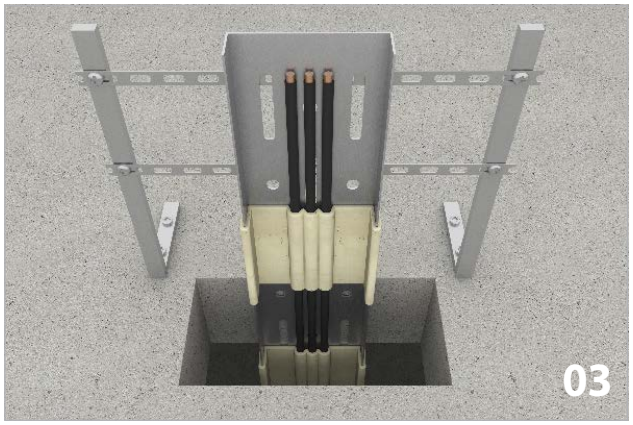
- PU Joint Filler
- Firecryl FR
- Soudafoam FR

3.1 cable duct through ceiling

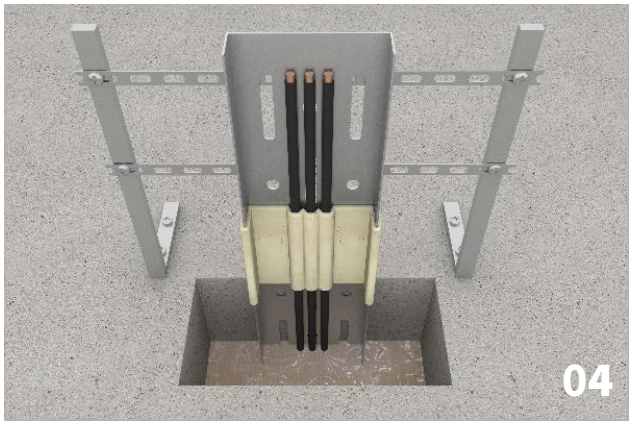


- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.



- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the floor, on both sides of the ceiling.

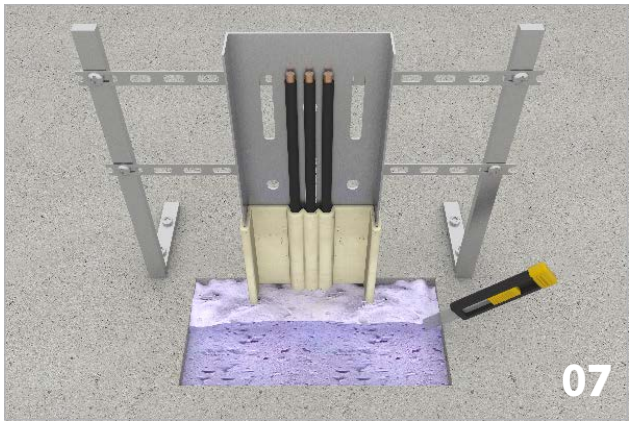


- Apply a piece of cardboard with PE foil below the opening.

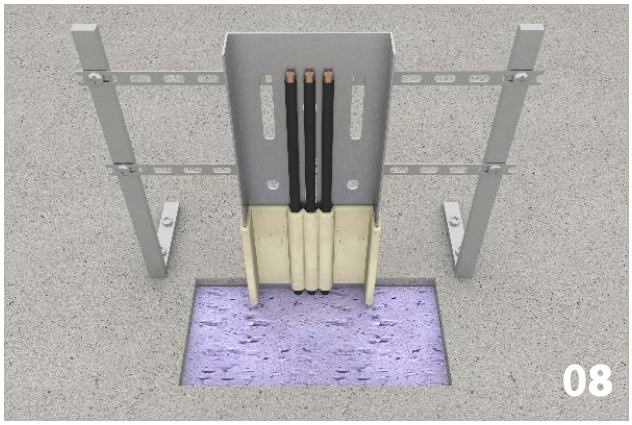
- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

3.1 cable duct through ceiling (continued)

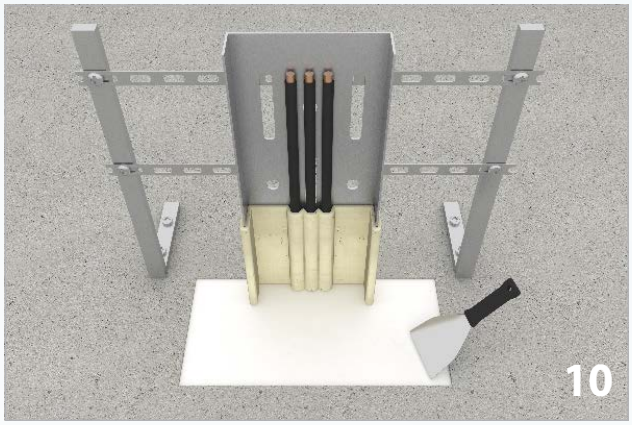


• Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.



• Remove all foam residue.

• Apply a layer of Firecryl FR of 4mm on both sides of the opening.



• Apply a layer of Firecryl FR of 4mm on both sides of the opening.

Classification:

- **Up to EI 120**
- **In accordance with EN 1366-3**
- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

3.2 tubes through ceiling

- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.

- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the wall, on both sides of the ceiling.

- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

- Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.

3.2 tubes through ceiling (continued)

- Remove all foam residue.

- Apply a layer of Firecryl FR of 4mm on both sides of the opening.

- Apply a layer of Firecryl FR of 4mm on both sides of the opening.

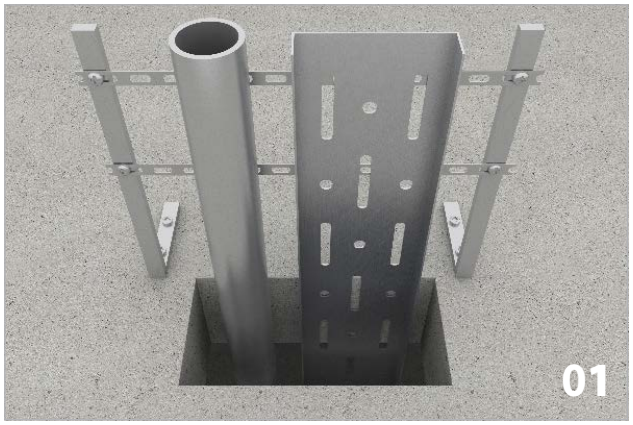
Classification:

- **Up to EI 120**
- **In accordance with EN 1366-3**
- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

3.3 cable duct and pipe trough ceiling



- **Note:** The opening should not be more than 700cm2.
- Ensure the openings are free from dust and grease to achieve an optimum adherence between the products and substrate.
- Degreasing a cable duct can be done with Cleaner and Degreaser.

- Put the cables in the cable duct.

- Apply a layer of Fire Blanket covering the cables for a length of 23cm from the wall, on both sides of the ceiling.

- Apply a PU joint filler around the PVC pipe for half the thickness of the floor.

- Activate the canister of Soudafoam FR 2K B2 by turning the black ring on the bottom 5 times in the direction indicated with arrows and shake the canister well 20 times. If the foam leaving the canister is homogenously purple, the canister is shaken thoroughly and ready for use.
- Fill the opening.
- **Note:** The canister will feel warm due to the chemical reaction between the components. The foam will increase up to 3 times in volume.

- After filling the opening, wait approx. 30 minutes for the foam to fully harden.

3.3 cable duct and pipe trough ceiling (continued)

• Cut any excess foam away. Cut the foam away up to a depth of 4mm across the whole surface along both sides of the opening. Use a sturdy knife.

• Remove all foam residue.

• Apply a layer of Firecryl FR of 4mm on both sides of the opening.

• Apply a layer of Firecryl FR of 4mm on both sides of the opening.

Classification:

- **Up to EI 120**
- **In accordance with EN 1366-3**
- **Concrete, aerated concrete, brickwork**
- **At least 150mm wall thickness**

Used products:

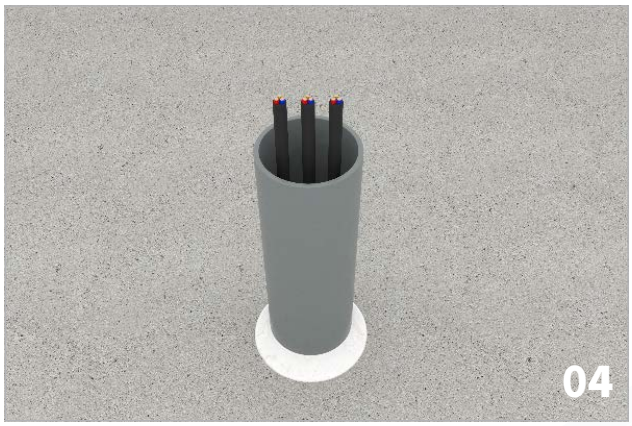
- **Fire Blanket**
- **Soudafoam FR 2K B2**
- **Firecryl FR**
- **Cleaner & Degreaser**

3.4 cables in PVC pipes through ceiling

- Install a PVC pipe of up to 50mm diameter in the opening (maximum diameter 111mm).
- The pipe must protrude for a minimum of 70mm and a maximum of 150mm on both sides.

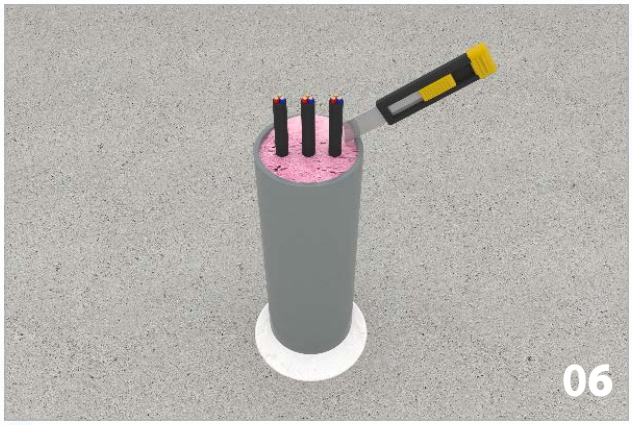
- Apply a PU joint filler around the PVC pipe for half the thickness of the ceiling.

- Apply Firecryl FR around the pipe on both sides of the opening.



- Pull the cables through the pipe.

- Apply Soudafoam FR between the cables in the PVC pipe.



- Cut any excess foam away.

3.4 cables in PVC pipes through ceiling (continued)

• Apply a layer of Firecryl on the foam.

Classification:

- Up to EI 120
- In accordance with EN 1366-3
- Concrete, aerated concrete, brickwork
- At least 150mm wall thickness

Used products:

- PU Joint Filler
- Firecryl FR
- Soudafoam FR

Three steps to the right solution

Step 1: Follow the decision tree below and find the correct table

Step 2: Find the fitting solution by consulting the table found in step 1

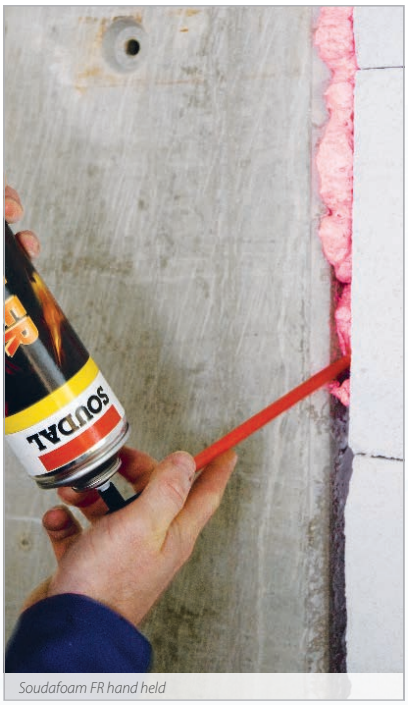
Step 3: Apply the Soudal solution

step 1 Decision tree

Building element	Joint	Minimum wall/ceiling thickness*	Table
Wall	Vertical	Min. 200 mm	Tabel 1
		Min. 115 mm	Tabel 2
		Min. 100 mm	Tabel 3
	Horizontal	Min. 200 mm	Tabel 4
		Min. 115 mm	Tabel 5
Ceiling		Min. 150 mm	Tabel 6

* The test results are valid in cellular concrete, concrete and brick. All systems can also be used for joints with smoke and gas tightness requirements. The solutions applicable for 100mm are also applicable for wall thickness of 115 mm and 200mm. The solutions applicable for 115 mm are also applicable for 200mm but not for 100 mm.

foilpack soudaseal FR



Soudafoam FR hand held


Fire

step 2 Find the fitting solution

* Round up the joint width (b.e. 16 mm becomes 20 mm)
Solutions above also applicable
Solutions left also applicable

Table 1: Wall, vertical joint, Wall thickness: min. 200 mm (The solutions given in table 2 and 3 are also applicable).

Fire resistance	Joint width in mm*: 60	50	40	30	25	20	15	10
EI 240	/	/	/	I / E1	←	← / J1	← / B1/C1	← / A/ K1 / D1
EI 180	/	/	/	↑ / K2	← ↑	← ↑	← ↑	← ↑
EI 120	/	/	G	← / ↑ / A	← ↑	← ↑	← ↑	← ↑
EI 90	/	/	↑ / A	← ↑	← ↑	← ↑	← ↑	← ↑
EI 60	M	← / L	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑

Table 2: Wall, vertical joint, Wall thickness: min. 115 mm (The solutions given in table 3 are also applicable).

Fire resistance	Joint width in mm*: 100	60	50	40	30	25	20	15	10
EI 120	H	←	←	← / G	← / L / F1 / I	← / E1	← / F2	←	←
EI 90	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑
EI 60	↑	← / ↑ / M	← / ↑ / L	← ↑	← ↑	← / ↑ / D2	← / ↑ / B1/C2	← ↑	← ↑

Table 3: Wall, vertical joint, Wall thickness: min. 100 mm

Fire resistance	Joint width in mm*: 30	25	20	15	10
EI 240	/	/	/	/	J2
EI 180	/	/	J1	←	← ↑
EI 120	/	/	↑	← ↑	← / ↑ / K1
EI 90	K2	←	← ↑	← ↑	← / ↑ / A
EI 45	↑ / A	← ↑	← ↑	← ↑	← ↑

Table 4: Wall, horizontal joint, Wall thickness: min. 200 mm

Fire resistance	Joint width in mm*: 50	40	30	25	20	15	10
EI 240	/	/	/	E1 / F1	←	←	←
EI 120	L	←	←	← ↑	← ↑	← ↑	← ↑
EI 90	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑
EI 60	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑

Table 5: Wall, horizontal joint, Wall thickness: min. 115 mm

Fire resistance	Joint width in mm*: 50	40	30	25	20	15	10
EI 120	L	←	←	←	←	←	←
EI90	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑
EI 60	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑

Table 6: Ceiling: min. 150 mm

Fire resistance	Joint width in mm*: 100	60	50	40	30	25	20	15	10
EI 120	H	← / M	← / L	G / E2	← / I / F1	← / D2	← / A / B1 / C2	←	←
EI 90	↑	← ↑	← ↑	← ↑	← / ↑ / A / B2	← ↑	← ↑	← ↑	← ↑
EI 60	↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑	← ↑

step 3 Apply the Soudal solution

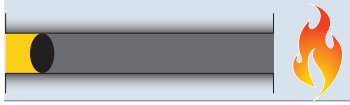
Legende

- Soudaseal FR
- Firesilicone B1 FR
- Firecryl FR
- Soudafoam FR

A, B, C, D, E, F, G, H: These solutions are one sided applications
I, J, K, L, M: These solutions are two sided applications

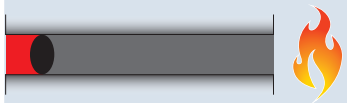
De oplossingen

A. Fill the entire joint with Soudafoam FR



B1. Place the PU backing in the joint at the non-exposed side and finish off with 15 mm Soudaseal FR
B2. Place the PU backing in the joint at the non-exposed side and finish off with 20 mm Soudaseal FR

C1. Place the PU backing in the joint at the non-exposed side and finish off with 15 mm Firecryl FR
C2. Place the PU backing in the joint at the non-exposed side and finish off with 20 mm Firecryl FR

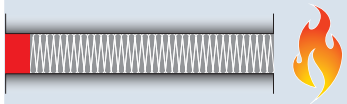


D1. Place the PU backing in the joint at the non-exposed side and finish off with 10mm Firesilicone B1 FR
D2. Place the PU backing in the joint at the non-exposed side and finish off with 15 mm Firesilicone B1 FR

E1. Fill the joint with Soudafoam FR and finish off with 20 mm Soudaseal FR at the non exposed side
E2. Fill the joint with Soudafoam FR and finish off with 25 mm Soudaseal FR at the non exposed side

F1. Fill the joint with Soudafoam FR and finish off with 25 mm Firecryl FR at the non exposed side
F2. Fill the joint with Soudafoam FR and finish off with 20 mm Firecryl FR at the non exposed side

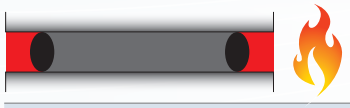
G. Fill the joint with Soudafoam FR and finish of with 20 mm Firesilicone B1 FR at the non exposed side



H. Fill the joint with mineral wool (>80kg/ m^3) and finish off with 30 mm Firesilicone B1 FR at the non exposed side

I. Place the PU backing at both sides and finish of with 20mm Soudaseal FR at both sides

J1. Place the PU backing at both sides and finish of with 20 mm Firecryl FR at both sides
J2. Place the PU backing at both sides and finish of with 10 mm Firecryl FR at both sides



K1. Place the PU backing at both sides and finish of with 10 mm Firesilicone B1 FR at both sides
K2. Place the PU backing at both sides and finish of with 20 mm Firecryl FR at both sides

L. Fill the joint with Soudafoam Fr end finish off with 3 mm Firecryl FR at both sides

M. Fill the joint with Soudafoam FR and finish off with 20 mm Firesilicone B1 FR at both sides

Notes

SOUDAL

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Onderneming van het Jaar® 2011
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