

**Hilti Firestop
Intumescent Sealant
CFS-IS**

European
Technical Approval
ETA N° 10/0406



Gemeente Breda

Bijlage bij besluit

Z2020-000974 -V01

19-06-2020 Ven L



Firestop intumescent sealant CFS-IS

A water-based acrylic intumescent firestop sealant for small to medium-sized cable and conduit penetrations



Applications

- Fire seal for single cables and bundles
- Sealing of conduits
- Sealing of blank openings
- Sealing of irregular openings

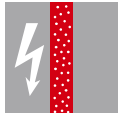
Advantages

- Solvent free sealant, easy to clean up
- Simple adding of cables later on
- Low shrinkage of sealant
- Paintable with most paints
- Impermeable to air, N₂, CO₂ and CH₄

The European Technical Approval (ETA) and the technical data sheet can be obtained via your local Hilti contact.

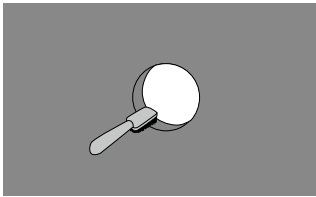
Technical data

| | CFS-IS |
|---|-----------------------------|
| Chemical basis | Water-based acrylic sealant |
| Volume shrinkage | 10-20 % |
| Intumescent | Yes |
| Cure Time (at 23°C/50% r.H) | ~ 3 mm / 72 h |
| Application temperature range | 5°C - 40°C |
| Storage and transportation temperature - range | 5 °C - 25 °C |
| Shelf life (@73°F/23°C and 50% relative humidity) | 12 month(s) |
| Reaction to fire classification according to EN 13501-1 | Class E |
| Approvals | ETA-10 / 0406 |



| Packaging | Volume | Color | Order designation | Sales Quantity | Item Number |
|-----------|--------|------------|--|----------------|-----------------|
| Cartridge | 310 ml | Anthracite | Firestop intumescent sealant CFS-IS | 1 pc | 02004613 |
| Cartridge | 310 ml | Anthracite | Firestop intumescent sealant CFS-IS | 1 pc | 02004614 |
| Cartridge | 310 ml | Anthracite | Firestop intumescent sealant CFS-IS | 1 pc | 02004615 |

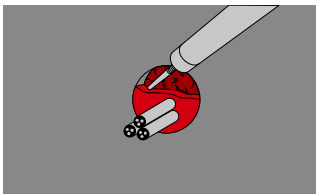
Installation instructions



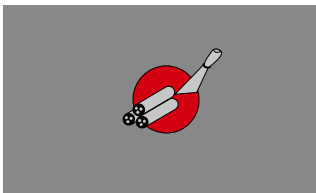
Clean the opening to be sealed. The material around the opening must be dry, in sound condition and free from dust or grease.



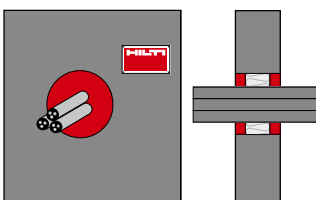
Pack mineral wool. Leave sufficient depth for applying CFS-IS.



Apply CFS-IS. Apply to the required depth in order to obtain the desired fire rating. Making sure CFS-IS contacts all surfaces to provide maximum adhesion.

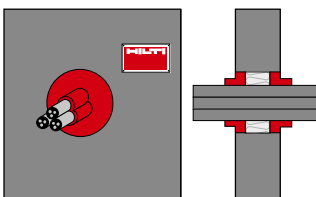


Smooth CFS-IS. Smooth before the skin forms using water and a spatula. Leave completed seal undisturbed for 48 hours.



For maintenance reasons, a penetration seal could be permanently marked with an installation plate.

For special seal types with additional sealant CFS-IS along the cables/conduits see ETA-10/0406.



Loose mineral wool products suitable for being used as backfilling material of Hilti Firestop Acrylic Sealant CFS-S ACR: Heralan LS (Knauf Insulation), Isover loose wool SL (Saint-Gobain Isover), Isover Universal-Stopfwolle (Saint-Gobain Isover), Rockwool RL (Rockwool), Paroc Pro Loose Wool (Paroc OY AB).

Cables and conduits

Flexible walls | Rigid walls

The intended use of the Hilti Firestop Intumescent Sealant CFS-IS is to reinstate the fire resistance performance of:

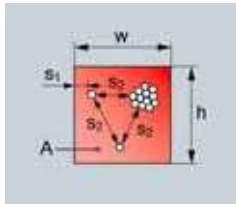
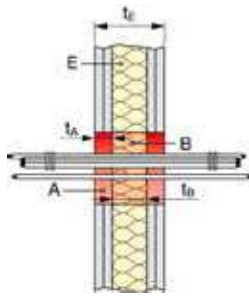
Flexible walls/drywall (E), minimum thickness 100 mm (t_E) with timber or steel studs lined on both faces with a minimum of two layers of 12.5 mm thick boards. For timber stud walls there must be a minimum distance of 100 mm between the seal and any stud, and the cavity must be filled with a minimum of 100 mm insulation of Class A1 or A2 in accordance with EN 13501-1.

Rigid walls (E) concrete, aerated concrete or masonry, minimum density of 550 kg/m³, minimum thickness 100 mm (t_E).

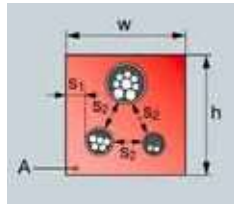
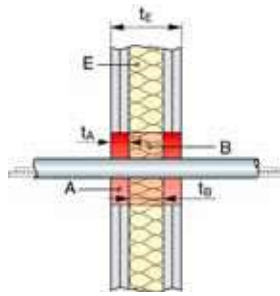
Relevant cables are all sheathed cables currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical, fibre cables).

| Penetration seal (A)/ services (C) | Wall type and thickness (t_E) | Classification E = integrity I = insulation | Special Seal type Minimum distances (s_1, s_2), mm | Other criteria Description |
|---|---------------------------------------|---|---|--|
| All sheathed cable types diameter ≤ 21 mm | Flexible Wall ≥ 100 mm | EI 120 | $s_1 = 0, s_2 = 0$ | Hilti Firestop Intumescent Sealant CFS-IS on both sides, thickness (t_A) 25 mm, mineral wool (B) tightly compressed as backfilling material, thickness (t_B) ≥ 50 mm (gap filled completely) Maximum seal size: 150x150 mm or circular openings of equivalent area. |
| All sheathed cable types diameter ≤ 80 mm | | EI 60 | $s_1 = 0, s_2 = 0$ | |
| Tied cable bundle, maximum diameter of 100 mm, maximum diameter of single cables 21 mm | | EI 90 | $s_1 = 10, s_2 = 0$ | |
| Small steel conduits and tubes diameter ≤ 16 mm | | EI 120-C/U | $s_1 = 10, s_2 = 0$ | |
| Small plastic conduits and tubes diameter ≤ 16 mm | | EI 120-U/C | $s_1 = 10, s_2 = 0$ | |
| Plastic conduits diameter 16–32 mm, wall thickness 1–3 mm | | EI 120-U/C | $s_1 = 10, s_2 = 10$ | |
| Blank Seal | | EI 120 | | |
| All sheathed cable types diameter ≤ 21 mm | Rigid Wall ≥ 150 mm | EI 90 | $s_1 = 0, s_2 = 0$ | Hilti Firestop Intumescent Sealant CFS-IS on both sides, thickness (t_A) 25 mm, mineral wool (B) tightly compressed as backfilling material, thickness (t_B) ≥ 100 mm (gap filled completely) Maximum seal size: 150x150 mm or circular openings of equivalent area. |
| All sheathed cables diameter 21–80 mm | | EI 60 | $s_1 = 0, s_2 = 0$ | |
| | | EI 120 | Additional sealant CFS-IS on both sides ($t_{2A} \geq 10$ mm, $L_A \geq 50$ mm), $s_1 = 0, s_2 = 0$ | |
| Tied cable bundle, maximum diameter of 100 mm, maximum diameter of single cables 21 mm | | EI 90 | $s_1 = 10, s_2 = 0$ | |
| | | EI 120 | Additional sealant CFS-IS on both sides ($t_{2A} \geq 10$ mm, $L_A \geq 50$ mm), $s_1 = 10, s_2 = 0$ | |
| Small steel conduits and tubes diameter ≤ 16 mm | | EI 120-C/U | $s_1 = 10, s_2 = 0$ | |
| Small plastic conduits and tubes diameter ≤ 16 mm | | EI 120-U/C | $s_1 = 10, s_2 = 0$ | |
| Plastic conduits diameter 16–32 mm, wall thickness 1–3 mm | | EI 120-U/C | $s_1 = 10, s_2 = 10$ | |
| Blank Seal | | EI 120 | | |

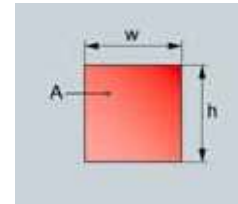
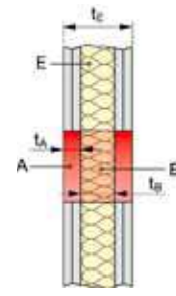
Flexible Wall Cables



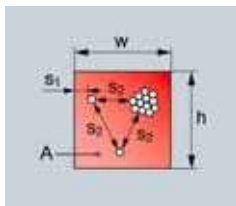
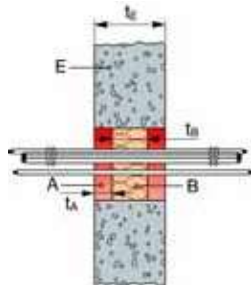
Conduits



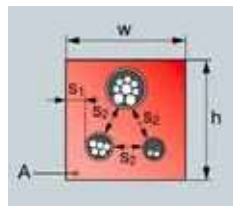
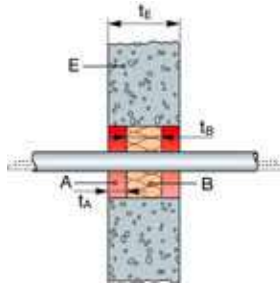
Blank Seal



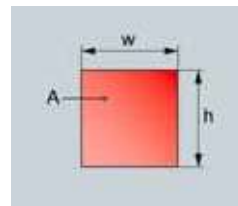
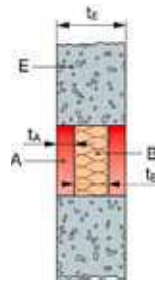
Rigid Wall Cables, conduits ≤ 16 mm



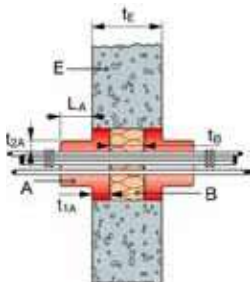
Conduits $16 \leq \phi \leq 32$ mm



Blank Seal



Special Seal Type



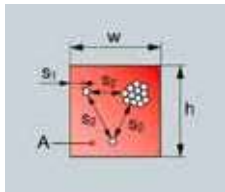
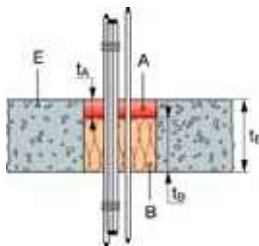
Cable and conduits Floors

Hilti Firestop Intumescent Sealant CFS-IS may be used to form penetration seals (A) in rigid floors (E) (concrete, aerated concrete minimum density of 550 kg/m³), minimum thickness 150 mm (t_E).

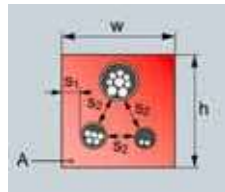
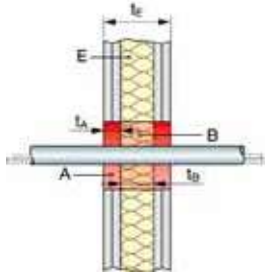
Relevant cables are all sheathed cables currently and commonly used in building practice in Europe (e.g. power, control, signal, telecommunication, data, optical, fibre cables).

| Penetration seal (A)/ services (C) | Wall type and thickness (t _E) | Classification E = integrity I = insulation | Special seal type Minimum distances (s ₁ , s ₂), mm | Other criteria Description | | |
|--|--|---|--|---|--|---|
| All sheathed diameter ≤ 21 mm | Rigid Floor ≥ 150 mm | EI 120 | s ₁ = 0, s ₂ = 0 | Hilti Firestop Intumescent Sealant CFS-IS, thickness (t _A) 25 mm, mineral wool (B) tightly compressed as back- filling material, thickness (t _B) ≥ 125 mm (gap filled com- pletely) | | |
| All sheathed cables diameter ≥ 21 – ≤ 80 mm | | EI 90 | s ₁ = 0, s ₂ = 0 | | | |
| Tied cable bundle, maximum diameter of 100 mm, maximum diameter of single cables 21 mm | | EI 120 | Additional sealant CFS-IS on top side only (t _{2A} ≥ 10 mm, L _A ≥ 100 mm), s ₁ = 0, s ₂ = 0 | | | |
| | | EI 90 | s ₁ = 10, s ₂ = 0 | | | |
| | | EI 120 | Additional sealant CFS-IS on top side only (t _{2A} ≥ 10 mm, L _A ≥ 50 mm) s ₁ = 10, s ₂ = 0 | | | |
| Small steel conduits and tubes diameter ≤ 16 mm | | EI 90-C/U | s ₁ = 20, s ₂ = 0 | | Maximum seal size: 150 x 150 mm or circular openings of equivalent size. | |
| | | EI 120-C/U | Additional sealant CFS-IS on top side only (t _{2A} ≥ 10 mm, L _A ≥ 50 mm), s ₁ = 20, s ₂ = 0 | | | |
| Small plastic conduits and tubes diameter ≤ 16 mm | | EI 90-U/C | s ₁ = 20, s ₂ = 0 | | | Blank seal: in case services are to be added later on, the classifications given in the tables have to be consid- ered. |
| | | EI 120-U/C | Additional sealant CFS-IS on top side only (t _{2A} ≥ 10 mm, L _A ≥ 50 mm), s ₁ = 20, s ₂ = 0 | | | |
| Plastic conduits diameter ≥ 16–32 mm, wall thickness 1–3 mm | | | EI 120-U/C | Additional sealant CFS-IS on both sides (t _{2A} ≥ 10 mm, L _A ≥ 50 mm), s ₁ = 10, s ₂ = 10 | | |
| Blank Seal | | EI 120 | | | | |

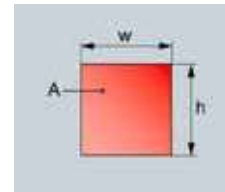
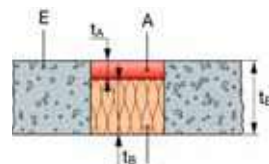
Cables and Conduits ≤ 16 mm



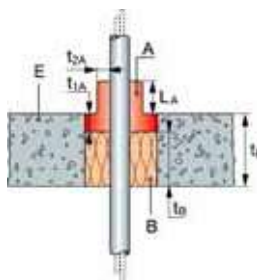
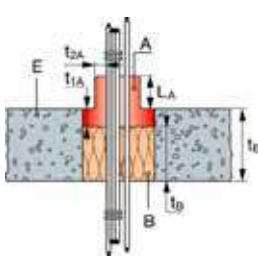
Conduits 16 $\leq \phi \leq 32$ mm



Blank Seal



Special Seal Type



Characteristics of CFS-IS

Additional Attributes

Hilti Firestop products are comprehensively tested and individually tailored to the technical requirements of a building's mechanical and electric installations. In addition to their superior behaviour in passive fire protection, Hilti Firestop products also meet additional requirements in building construction that continue to gain significance and also help the designer and installer in meeting these additional requirements. The assessment of fitness for use has been made in accordance with EOTA ETAG No 026 – Part 2.



| Charecteristics | Assessment of charecteristics | Norm, standard, test |
|---|---|-------------------------------------|
| Health and the environment Air permeability (gas thightness) | Impermeable for air, Nitrogen (N ₂), CO ₂ and Methane (CH ₄) determined for 50 mm thickness of CFS-IS | EN 1026 |
| Dangerous substances | CFS-IS is in compliance concerning the registration, evaluation, authorization and restriction of Chemicals (REACH). The product specification has been compared with the list of dangerous substances of the European Commission to verify that it does not contain such substances above the acceptable limits. | Material safety data sheet |
| Durability and serviceability | Use category Y ₂ , (-5/+70)°C (suitable for penetration seals intended for use at temperatures between -5° C and +70° C, no exposure to rain or UV). | ETAG 026-2 |
| Electrical properties | Volume resistivity 164 x 10 ¹⁰ ± 55 x 10 ¹⁰ Ohm Surface resistivity 318 x 10 ⁶ ± 84 x 10 ⁶ Ohm | DIN IEC 60093 (VDE 0303 Part 30) |
| Reaction to fire | Class E | EN 13501-1 |

Service

With more than 20 years of experience worldwide, Hilti is one of the leading suppliers of firestop systems. We actively help you manage your firestop projects better by providing:

- Quick engineering judgements
- Extensive technical literature
- On-site training and demonstration
- Sophisticated jobsite logistics
- Assurance of conformity with specific application requirements
- International network of Hilti firestop specialists

Our network of experienced sales representatives, field engineers, firestop specialists and customer service representatives is just a phone call away (use the local toll-free Hilti number).

Hilti. Outperform. Outlast.

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