EDGE OF SLAB FIRESTOP SOLUTIONS

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Firestop Contractors International Association

FCIA Virtual Fire-Resistance in Existing Buildings 'DIIM' Symposium Canada

THIS IS HILTI

Founded in 1941 in Schaan, Liechtenstein

Family-owned company
All shares and participation certificates are held by the Martin Hilti Family Trust

Construction technology
World market leader for professional fastening and demolition technology

Global reach
Present in more than 120 countries

International team
Some 30,000 worldwide employees

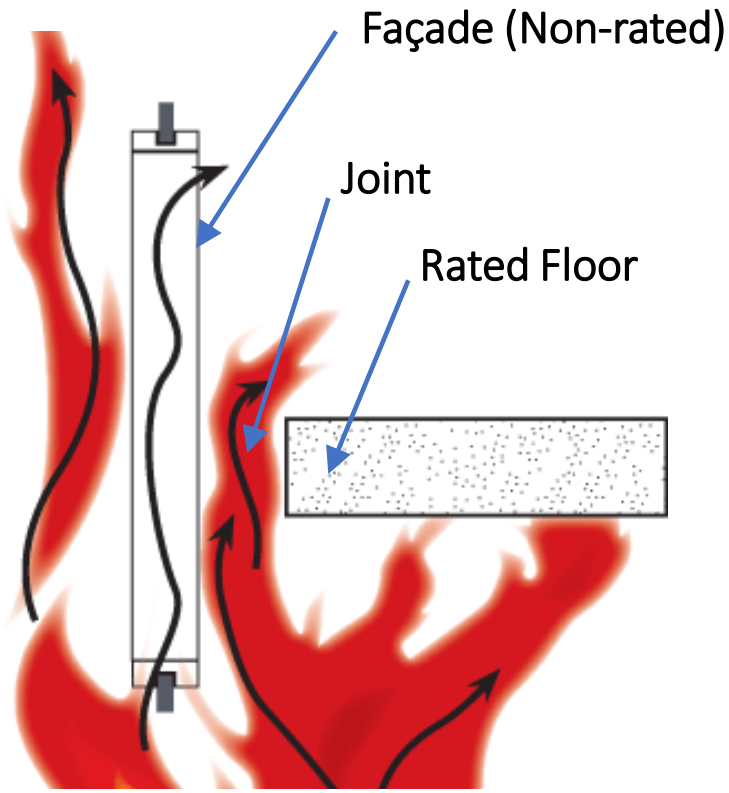
Unique characteristic
Direct sales model

AGENDA

- Life safety and fire behavior
- Perimeter Fire Barrier and Model Building Code Requirements
- Firestop Solutions – Products and Installation Procedures
  - Sealants
  - Sprays
  - Devices
- Typical Firestop Systems
- Repair – Considerations and Recommendations

LIFE SAFETY AND FIRE BEHAVIOR

- Fire begins on a lower floor
- Fire follows the flow of air currents (heat rises)
- If the void between the curtain wall and floor is not properly sealed, the fire spreads vertically
- Compartmentation is breached
- Fire engulfs curtain wall from both sides causing premature failure



WHAT HAPPENS DURING A FIRE AT THE EDGE OF SLAB

PERIMETER FIRE BARRIER & MODEL BUILDING CODE REQUIREMENTS

Section 3.1.8.3 Continuity of Fire Separations

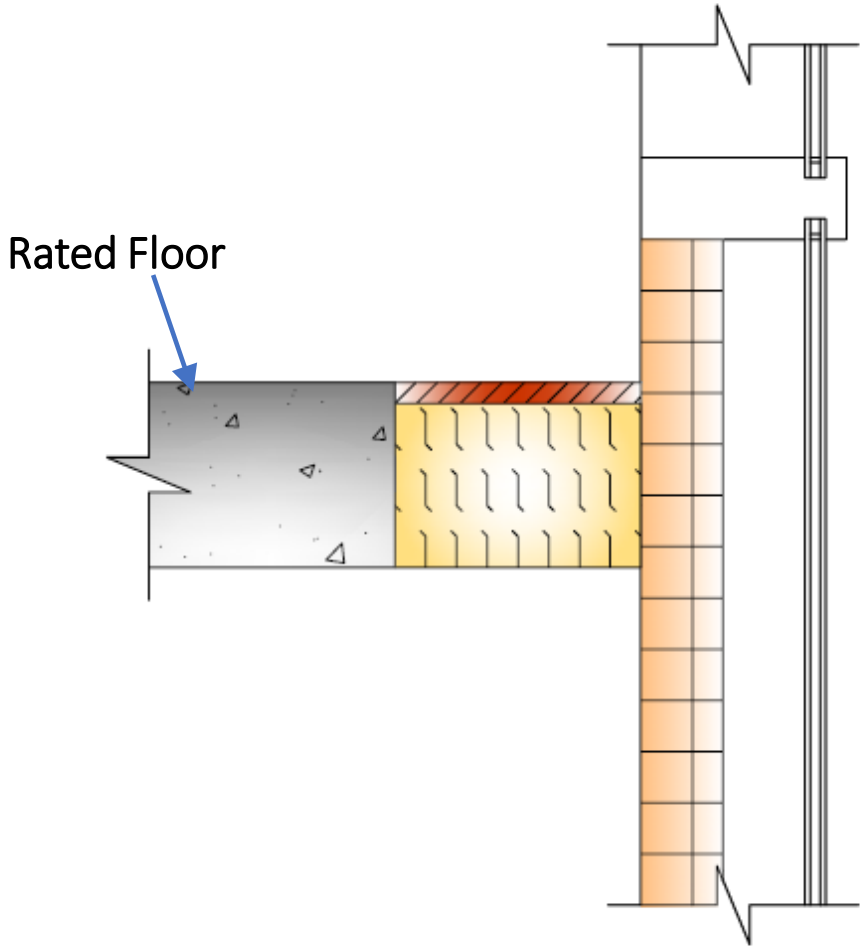
4) "The continuity of a **fire separation** shall be maintained where it abuts another **fire separation** , a floor, a ceiling, a roof, or an exterior wall assembly. (See Appendix A)

The acceptable solution for 3.1.8.3.4 is as follows:

Appendix A-3.1.8.3.(4) Fire Separation Continuity. The continuity of a **fire separation** where it abuts against another **fire separation**, a floor, a ceiling or an exterior wall assembly is maintained by filling all openings at the juncture of the assemblies with a material that will ensure the integrity of the fire separation at that location

NBC BUILDING CODE REQUIREMENTS - CANADA

PERIMETER FIRE BARRIER EXTENDS THE FIRE RATING OF THE FLOOR TO THE EXTERIOR WALL



MANDATORY!

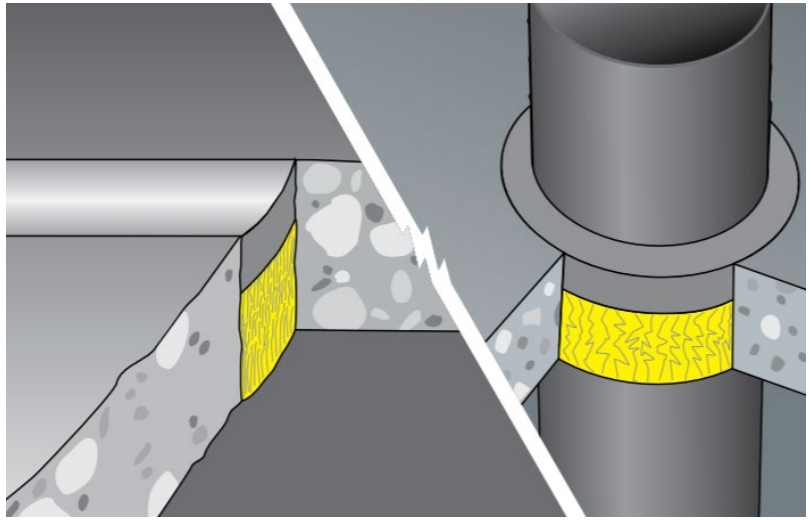
PERIMETER FIRE BARRIER EXTENDS THE FIRE RATING OF THE FLOOR TO THE EXTERIOR WALL

Firestop silicone self-leveling

Firestop silicone or water based joint spray

Preformed device

EDGE OF SLAB FIRESTOP SOLUTIONS - SEALANT



Firestop Silicone Joint Sealant

- Tested according to CAN/ULC-S115 and ASTM E2307
- Base materials: Concrete, Masonry, Metal
- Application temperature range: 2 - 40 °C
- Smoke, fume, water and UV resistant
- Excellent mold & mildew resistance

EDGE OF SLAB FIRESTOP SOLUTIONS - SPRAY

Firestop Water-Based Joint Spray

- Tested according to CAN/ULC-S115 & ASTM E2307
- Base materials: Concrete, Masonry, Gypsum, Metal
- Application temperature: 4 - 40 °C
- Water resistant after full cure
- Excellent mold & mildew resistance

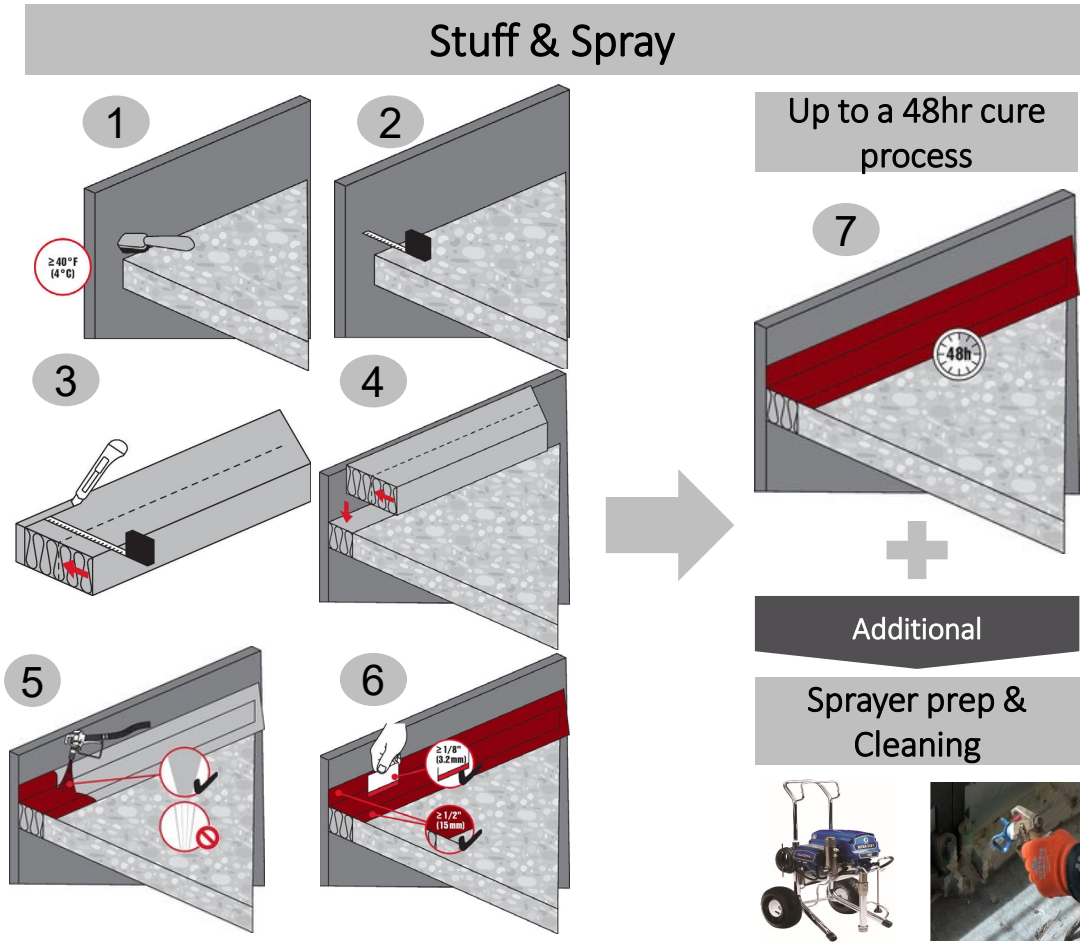
Firestop Silicone-Based Joint Spray

- Tested according to ASTM E2307
- Base materials: Concrete, Masonry, Gypsum, Metal
- Application temperature: 2 - 40 °C
- Rain-resistant after 1-2h of cure time
- Excellent mold & mildew resistance

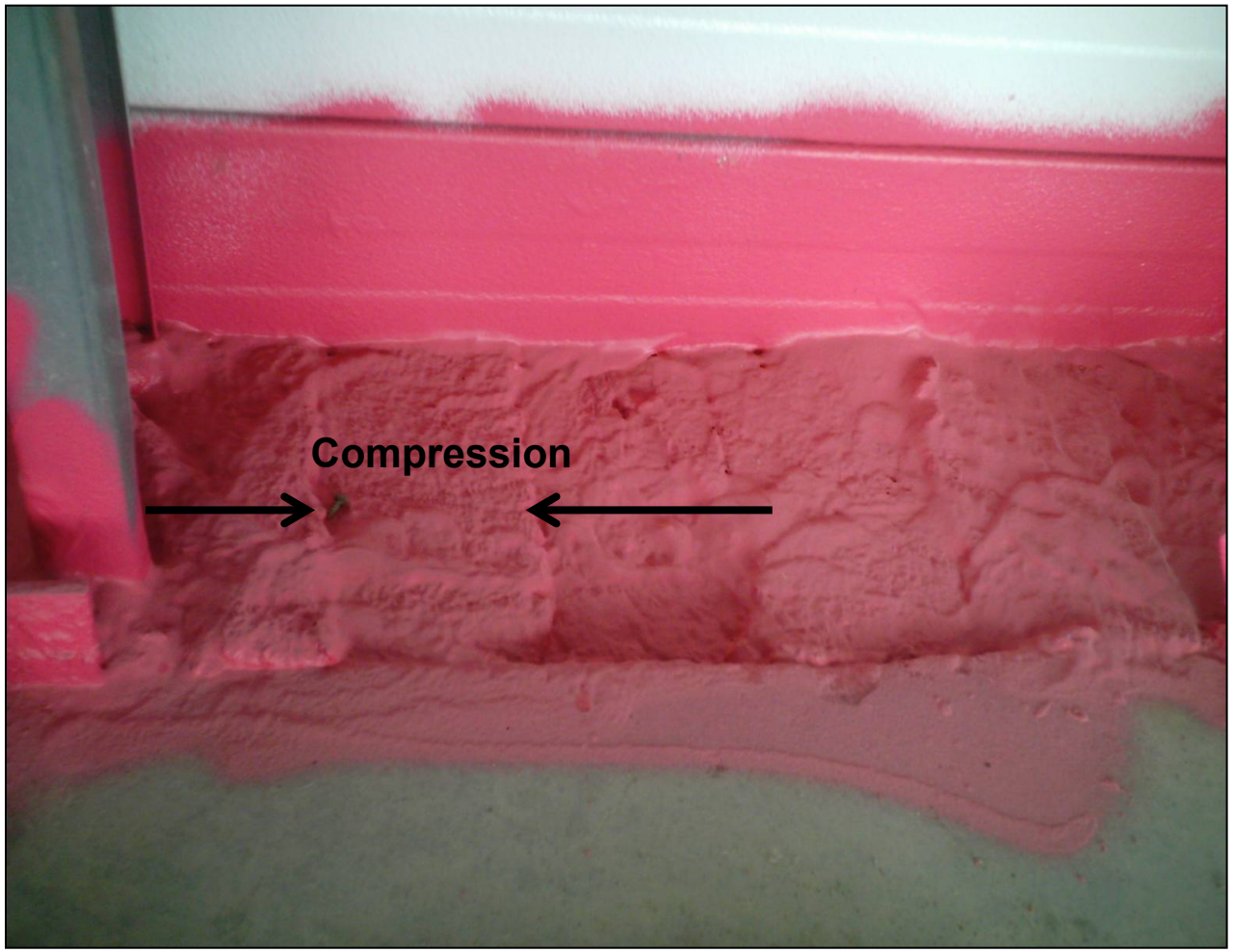
EDGE OF SLAB TRADITIONAL FIRESTOP STEPS

7 Step Process

1) Surface prep & cleaning
2) Trained installer measure joint widths
3) Installer must cut mineral to proper thickness to achieve compression
4) Compress, orientate & install
5) Spray equipment needed - access to water & electricity
6) Each spray product has a specific curing time
7) Set-up and cleaning time



TRIVIA QUESTION: WHAT IS WRONG IN THIS PICTURE?



ANSWER: Incorrect orientation of mineral wool safing

MINERAL WOOL SAFING INSULATION

Problem:

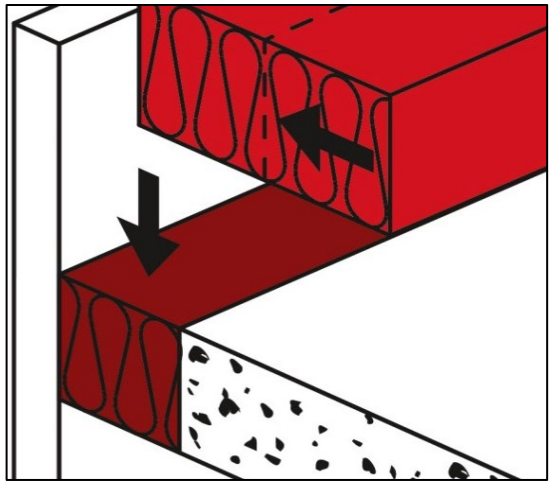
- Incorrectly installed safing insulation can dislodge and compromise the joint.
- Movement capacity diminished

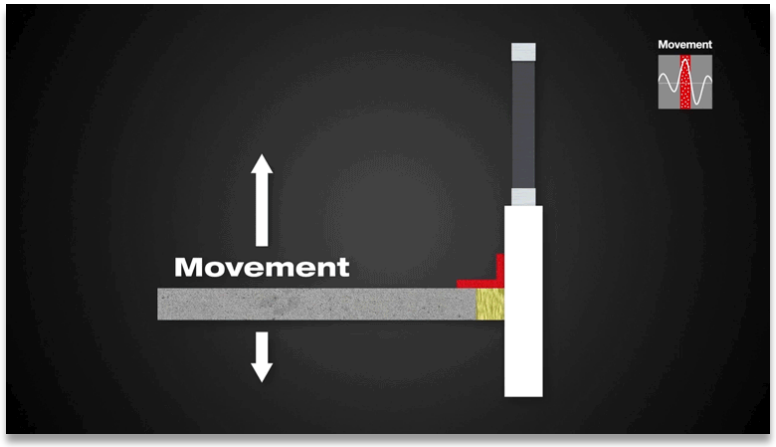
Solution:

- On-site installer training by manufacturer
- Choose manufacturers that offer job-site installer training services

$$\text{Safing Thickness} = \frac{\textbf{Joint Width x 100}}{\textbf{100} - \%\ \textbf{Compression}}$$

$$4'' = \frac{\textbf{3"x 100}}{\textbf{100} - \%\ \textbf{25}}$$





ALWAYS REFER TO THE LISTED SYSTEM FOR COMPRESSION REQUIREMENTS

EDGE OF SLAB FIRESTOP SOLUTIONS - DEVICE

Firestop Edge of Slab Quick Seal
CFS-EOS QS

Features

- The industry's first preformed solution for edge of slab and curtain wall firestopping
- Tested according to CAN/ULC-S115 and ASTM E2307
- Chemical Basis - Polyurethane foam
- Sizes – Small, Medium & Large
- Joint Ranges – 1.5" to 5.0"
- Application Temperature -5° to 50°C
- Color - Silver/ Red
- Length – 5'

Advantages

- Dry Installation - free from mineral wool fibers, spray or extra equipment
- Immediate Rain Resistance - eliminates the risk of water damage and wash-out
- Zero Wastage - simpler and more accurate bidding
- Suitable for a Wider Temperature Range

QUICK SEAL 4 STEPS CAN HELP ENSURE CORRECT INSTALLATION

CFS-EOS QS

Clean surfaces (concrete and CW)	Insert PUMA material into joint	Apply self-adhesive to substrates (one flap at a time)	Fill in bracket area
			
Use a PP brush to remove dust	No compression required	Preformed products require a small amount training	Application can be completed by 1 person

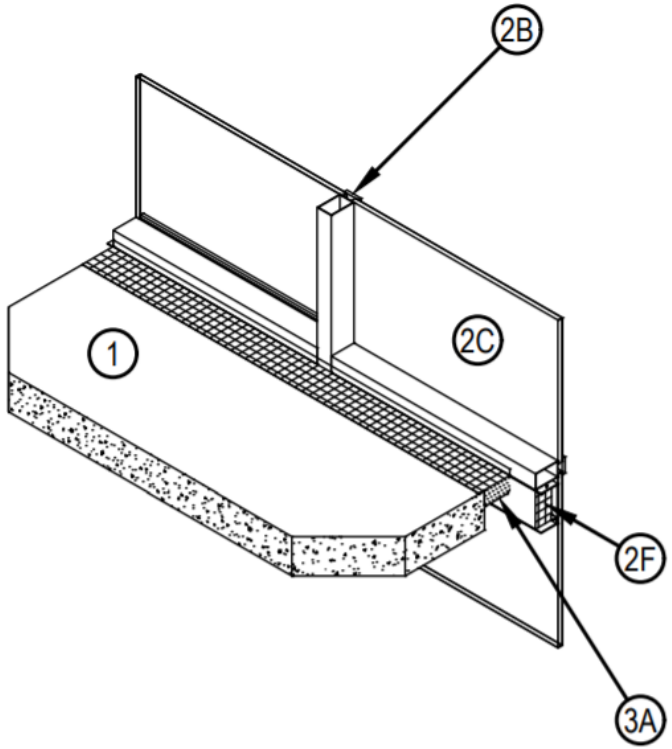
Easier Installation, Greater Reliability, Superior Product Performance & Increase the Productivity

IF THE PROJECT REQUIRES IT, ACHIEVE WATER TIGHTNESS WITH EOS WATER STOP

EOS WaterStop

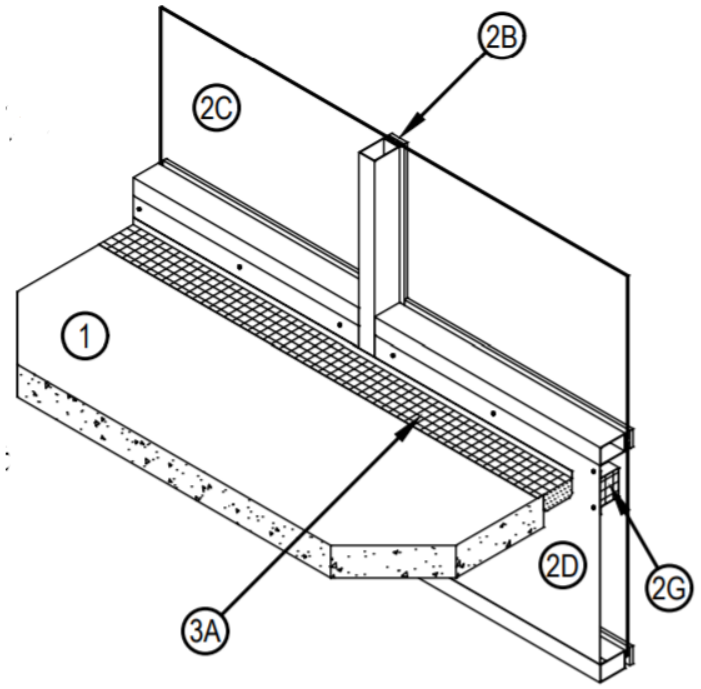
- Fast cure sealant
- Superior application ranges: -5°C – 40°C
- **Optional** - when water tightness is a project requirement
- Simple - brush on install
- Not required for fire rating

EOS – QS TYPICAL FIRESTOP SYSTEMS



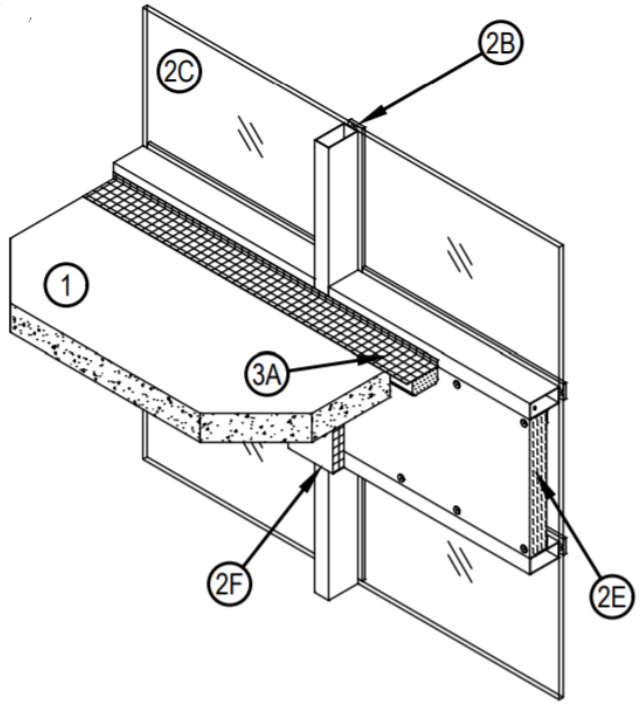
ZERO SPANDREL SYSTEM

HI/BPF 120-27



BACK PAN SYSTEM

HI/BPF 120-20

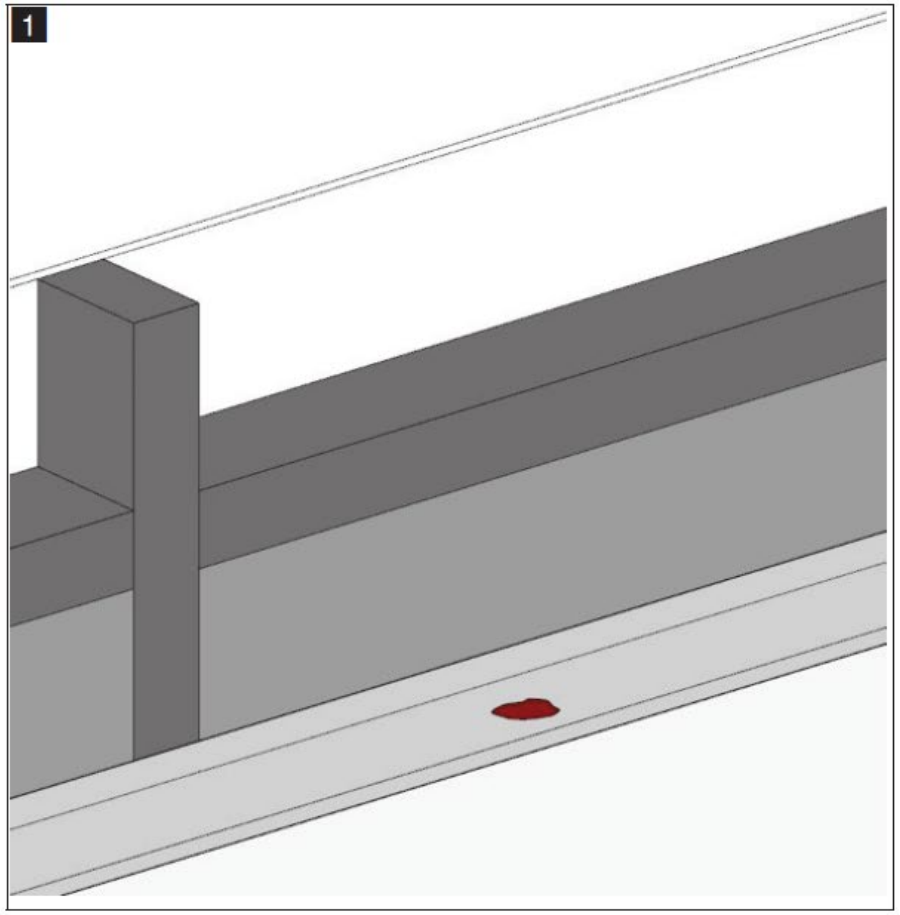


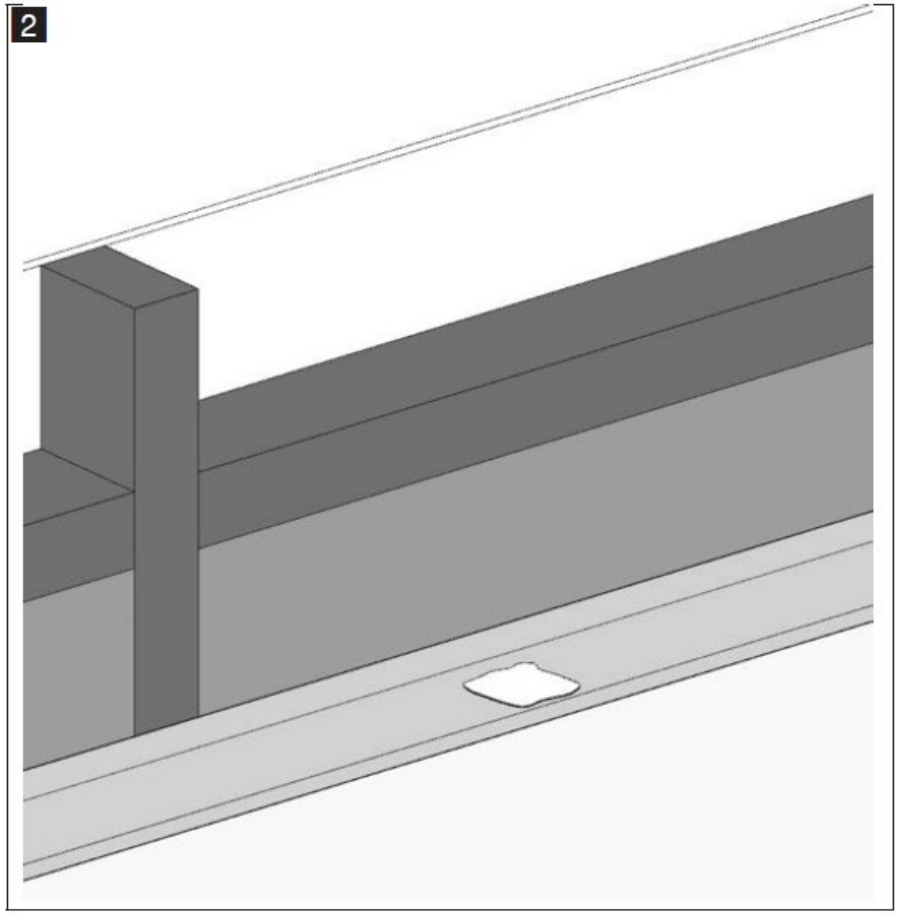
GLASS SPANDREL PANEL

HI/BPF 120-19

EOS QS - REPAIR - CONSIDERATIONS AND RECOMMENDATIONS

Top Foil Holes

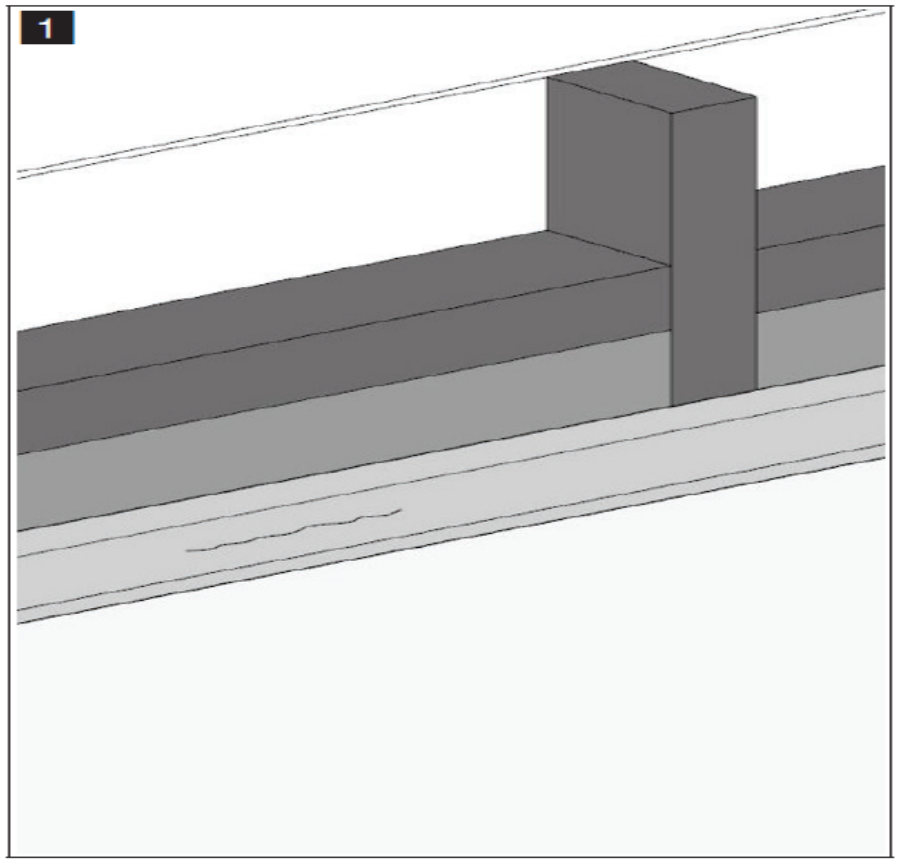


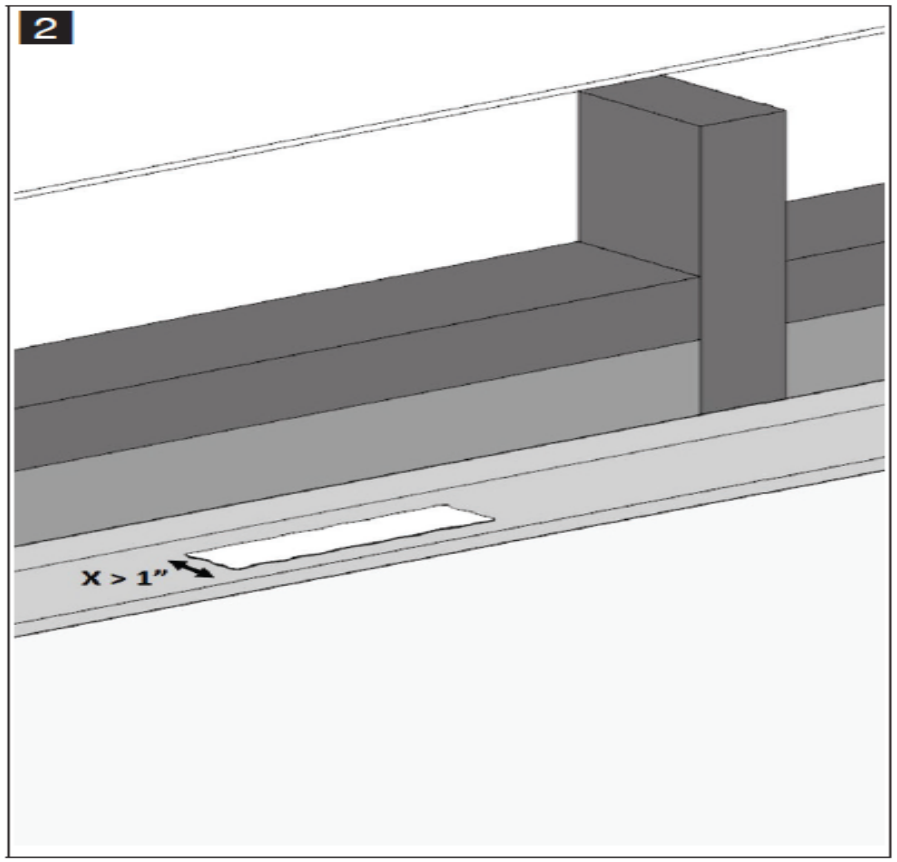


Apply min. 1/8” wet thickness of EOS Water Stop around the hole to prevent water intrusion. Oversize sealant by 1”.

EOS QS - REPAIR - CONSIDERATIONS AND RECOMMENDATIONS

Cuts

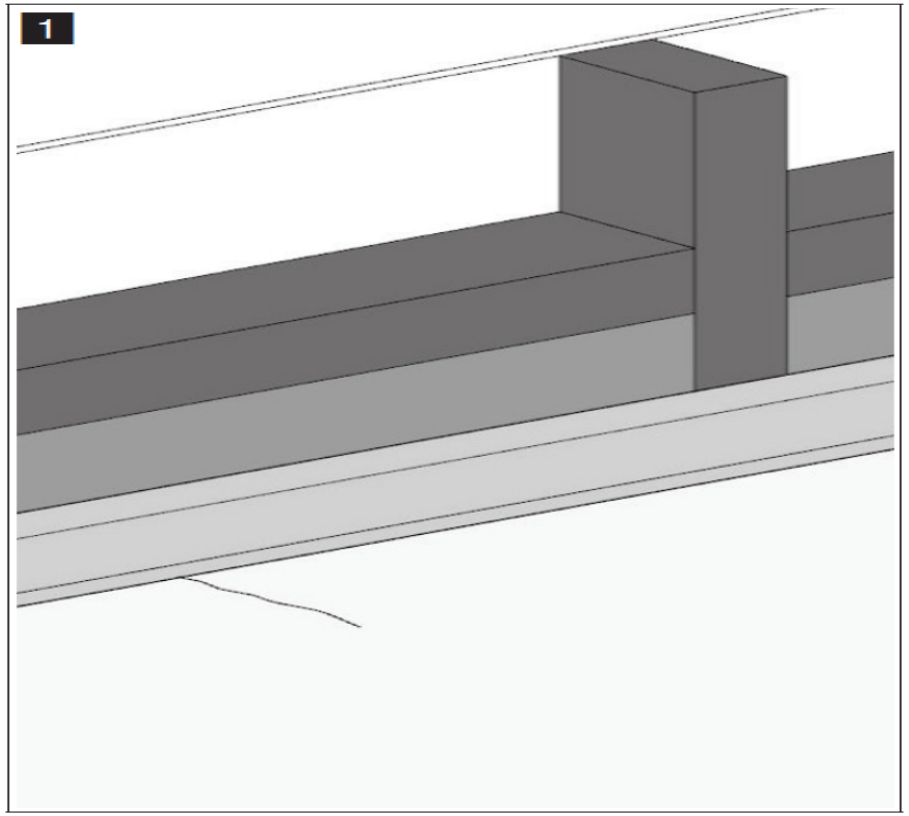


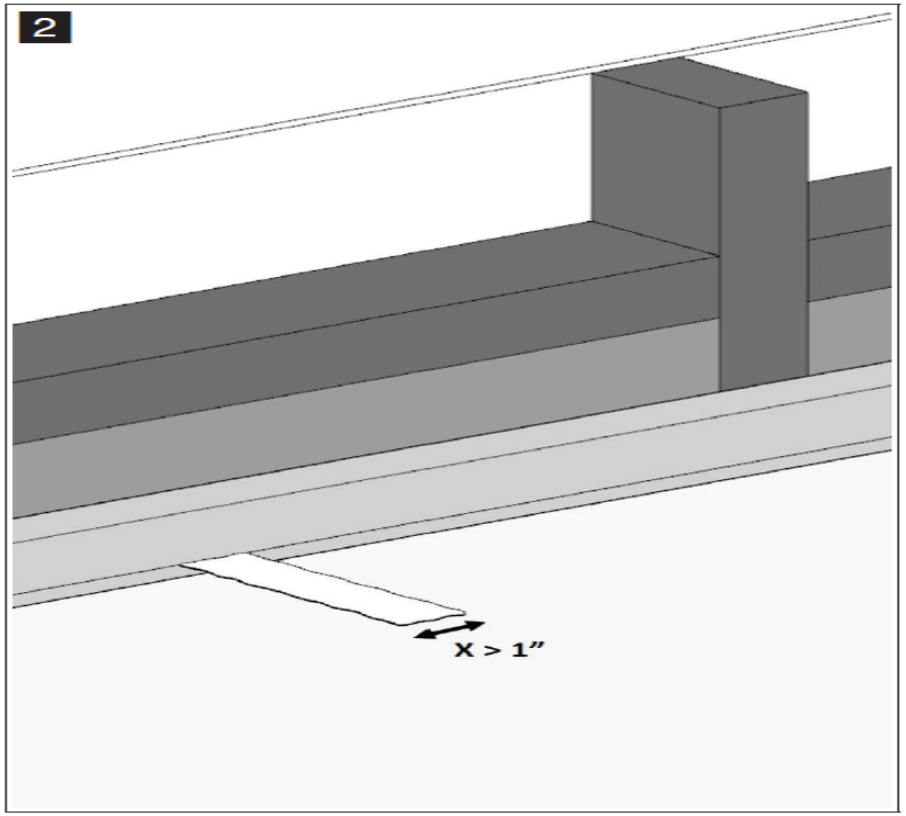


Apply min. 1/8" wet thickness of EOS Water Stop around the cut to prevent water intrusion.

EOS QS - REPAIR - CONSIDERATIONS AND RECOMMENDATIONS

Cracks





- Apply min. 1/8” wet thickness of EOS Water Stop around the cut to prevent water intrusion.
- EOS WS needs to overlap with the wing making sure EOS WS is in contact with the glue to ensure water tightness.

Technical Support

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Customer Service

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THANK YOU, QUESTIONS?