BUILDING TRUST

INSTALL DATA SHEET

Emshield® DFR

Do not install this material until all members of your crew have read and understand these instructions. If you do not understand any part of these instructions CALL SIKA EMSEAL at 1-800-526-8365

***DFR2* and *DFR3* share the same installation method**

Installation Equipment and Material Storage

In addition to safety equipment required to comply with applicable Federal, state and local safety regulations, equipment to prepare and repair the joint-faces, as well as normal tools of the trade, the following are required:

Equipment Checklist:

- Tape measure
- Heavy duty, plug-in, low speed, high torque drill
- Minimum 2 each 1 1⁄2-inch diameter “jiffy mixers”
- Sausage caulk gun for 20-oz sausages provided
- Small caulking gun for 10-oz sealant tubes provided
- Serrated edge knives (8-inch / 200mm or longer)
- Hacksaw
- Spray bottle with water
- Masking Tape (2 1⁄2 times the length of joint)
- Spatula to scrape epoxy from can
- Chemical-resistant gloves
- 2-inch wide (50mm) margin trowels for applying epoxy adhesive on the substrate.
- 1/2-inch and 1-inch caulk knives for tooling sealant bands
- Acetone for cleaning joint-faces, trowels and mixer tools
- Lint-free rags

Cold Days: Store material, off the floor, inside at above 68°F (20°C). It will recover slower when cold and faster when warm.

Very Hot Days: Keep material out of direct sun at temperatures greater than 60°F (15°C) until immediately prior to installation.

Long-Term Storage: Indirect heat can be applied to the material to increase expansion rate if not installed immediately after delivery.

DO NOT REMOVE OUTER PLASTIC PACKING UNTIL YOU READ THESE INSTRUCTIONS.

- Proper performance of expansion seals necessitate proper installation from beginning through completion.
- Improper handling will cause product to expand prematurely**.**

1. Prepare & Solvent Wipe Joint Faces

Concrete:

- Remove loose particles and weak concrete to ensure sound c concrete substrate. Spalls, chipped edges and uneven surfaces must be repaired using suitable patching material and proper patching geometry and techniques. Joint faces must be parallel.
- Joints must have unobstructed depth greater than or equal to the full depth of the largest material supplied plus 1/2-inch (13mm).
- Remove all contaminants by sandblasting or grinding to ensure a thoroughly clean and sound substrate for the full sealant depth.

NOTE – *DO NOT use a wire wheel--this will polish the substrate and cause bond-failure.*

- Dry all wet surfaces.

NOTE – *DO NOT use flame to dry substrate--this will leave carbon on the substrate and cause bond-failure.*

- Wipe joint faces with solvent-dampened, lint-free rags to remove all concrete dust and contaminants.

Metal:

- Sandblast or grind to rough, white metal and solvent-wipe immediately.

IMPORTANT: Ensure that no oxidation (rusting) occurs before the epoxy is applied.

Other Substrates: Contact Sika Emseal

2. Mask Deck & Mix Epoxy Adhesive

- Tape off the deck on both sides of the joint.

Mix Epoxy

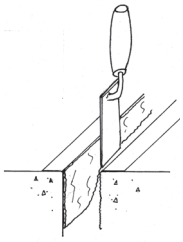
- Emseal epoxy adhesive may be used in the 40°F (5°C) to 95°F (35°C) temperature range.
- Using a trowel, transfer the entire contents of Part B (hardener) into the contents of Part A (base) .
- Mix the material thoroughly with a drill and "jiffy mixer." Scrape the walls and bottom of the container to ensure uniform and complete mixing.
- Always mix component B (hardener) into component A (base). Ensure that a uniform gray color with no black or white streaks is obtained.

IMPORTANT: DO NOT thin the epoxy.

Precaution: Wear chemical-resistant gloves and/or barrier hand cream when handling liquid sealant or epoxy. Remove promptly from skin with a commercial hand cleaner before eating or smoking. Avoid inhaling vapors.

3. Apply Epoxy to Substrate

- Ensure that the mixed epoxy adhesive is applied to the substrate before the pot life has expired (10 – 30 minutes depending on the ambient temperature).
- Apply epoxy to substrate walls 1/16-inch (2mm) thick and the depth of the DFR foam.



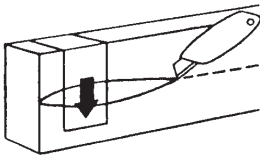
WARNING - Epoxy will harden more quickly when left in the pot. Apply it onto the joint face as soon as possible.

IMPORTANT: The epoxy must still be uncured when installing DFR foam into the joint-gap.

- If the epoxy cures before installing the DFR foam then reapply new epoxy. If work is interrupted for more than 2-hours after initial cure then grind the old epoxy, solvent wipe, and apply new wet epoxy.

4. Open Plastic Packaging

- Slit the plastic packing by cutting on the hardboard and remove hardboard and inner release liner. DO NOT cut along the sealant bellows.



IMPORTANT: Work quickly and deliberately after cutting the shrink-wrap to avoid material expanding beyond a usable size.

5. Wipe Release Agent Off Sealant Facing

- For packaging and production reasons, the sealant facing is coated in the factory with a release agent.
- Prior to installation, this agent must be wiped off using a damp rag in order for the injected sealant bands described in Step 8 to adhere to the sealant facing and to avoid contamination of the substrate at this point.
- Lightly, quickly and thoroughly wipe the cured sealant facing with a lint-free rag made damp with water.

6. Install DFR Foam & Apply Intumescent and Sealant

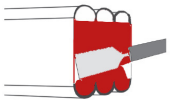
NOTE – Both bellows faces are trafficable on DFR2. Either side can be installed as the top "traffic" face. DFR3 is manufactured with a red intumescent and a precured sealant side. Ensure the precured sealant side is installed on the trafficable surface of the joint.

- Immediately install the foam into the joint. Ensure that epoxy on the joint face has not cured.
- When installed, the DFR must be recessed so that the top of the bellows is recessed 1/4-inch (6mm) below the deck surface.

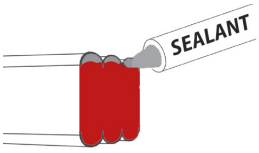
NOTE – When material has expanded for a snug fit, it will support its own weight in the joint.

- Feed material into joint, starting from one end. The material should fit snugly and must be eased into the joint with steady, firm pressure.
- Leave the end to be joined to the next length sticking slightly proud of the joint.
- Repeat step #5 for each new stick.
- On the end of the stick, use a sausage gun and the intumescent sealant provided and apply the intumescent sealant to the exposed end face of the DFR foam.

- Use a caulk knife or margin trowel to spread the intumescent sealant over the face of the foam to an even 1/16-inch (2mm) thickness.



- Hold back the intumescent from the upper face of the bellows for the application of the liquid sealant.
- Using a caulk gun and sealant provided, apply the liquid sealant to the exposed upper face following the shape of the bellows.



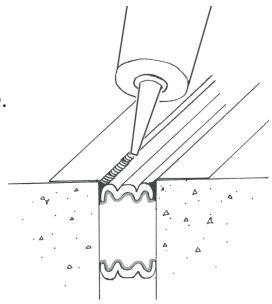
IMPORTANT: All sticks of DFR foam MUST have a coating of intumescent on the faces of all joins, transitions and terminations. This ensures that joins do not compromise the fire barrier.

7. Install Next Length. Repeat.

- Work in one direction towards the previously installed length or end of joint. Do not stretch material.
- Leave the end to be joined sticking proud of the deck surface. Push the joining faces together.
- Push Hard on the stick to compress the join firmly together. Ensure there are no voids at joins.
- During low temperature installation, ambient heat can be applied around installed DFR foam to accelerate recovery.
- Using a caulk knife, tool any sealant that squeezes out of the join and blend it into the precured bellows. Be sure not to fill in the valleys of the bellows as this will constrain movement.

8. Inject Sealant Bands and Tool Excess Sealant

- Wipe any excess epoxy from the face of material using a clean rag.
- BEFORE the epoxy cures, force the tip of the sealant caulk tube between the substrate and the DFR foam. Inject a 3/4-inch (20mm) deep sealant band between the foam, cured sealant facing and the joint-face.
- Tool the freshly applied sealant firmly to blend with the substrates and cured sealant facing, and to ensure a proper bond and seamless appearance.
- Where DFR foam meets at butt joins, tool the excess sealant that squeezes out from the top and between the bellows.



IMPORTANT: Sealant left between the wrinkles of the bellows could constrain movement — using a caulk knife, remove excess sealant and blend what remains into the bellows.

NOTE – Sealant band is only applied to the weather side of the DFR foam. No sealant band is needed on the other side.

SEALANT-COAT ANY EXPOSED FOAM ENDS:

IMPORTANT: Any stick of DFR which finishes with an open end, not terminating into another stick or structural termination, must be lightly coated on the exposed foam end using the liquid sealant provided. This is critical to ensure that the fire-retardant impregnated foam is sealed.

Design/System/Construction/Assembly Usage Disclaimer

This material has been tested to UL/ULC 2079 and is manufactured under UL's Follow-Up Service. The material is being supplied as a fire-rated component of a wall or floor assembly. It has been tested to UL 2079 in assemblies as depicted in Sika Emseal's various listings in the UL Online Certifications Directory. The published information in these listings cannot always address every construction nuance encountered in the field. Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products or materials. Authorities Having Jurisdiction should be consulted before construction to ensure that specific adjacent substrates and assemblies are detailed and constructed to meet local fire-rating requirements.

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