BUILDING TRUST

US Patents: 9,670,666 9,644,368 9,637,915 9,528,262 9,068,297 8,739,495 C1 Patent Pending

INSTALL DATA SHEET

Emshield® DFR/WFR CE

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

Vertical and Horizontal installations use the same methods.
The illustrations of this installation guide are horizontal, but the same methods should be applied for vertical applications.

CE
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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 20°C (68°F). It will recover slower when cold and faster when warm.

Very Hot Days: Keep material out of direct sun when the temperature is greater than 15°C (60°F) 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

- Using duct tape, tape off the deck on both sides of the joint.

Mix Epoxy

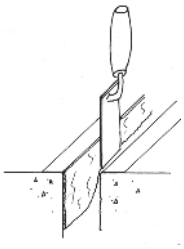
- Emseal epoxy adhesive may be used in the 5°C (40°F) to 35°C (95°F) temperature range.
- Using a trowel, transfer the entire contents of Part B (hardener) into the contents of Part A (base) .
- Mix the material thoroughly with a drill and mixing paddle. Scrape the walls and bottom of the container to 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 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 foam into the joint-gap.

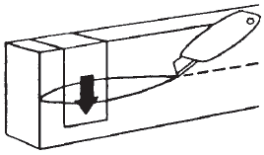
- If the epoxy cures before installing the foam

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 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 to remove the release agent.

TIP – Use the hardboard packaging as a flat, clean working surface.

6. Install Foam into Joint & Apply Sealant & Intumescent

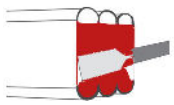
NOTE – Both bellows faces are trafficable. Either side can be installed as the top “traffic” face.

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

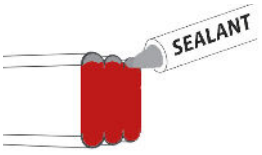
NOTE – When material is correctly expanded for a snug fit it will support its own weight in the joint.

- 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 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 foam MUST have a coating of intumescent on the faces of all joins. This ensures that joins do not compromise the fire barrier.

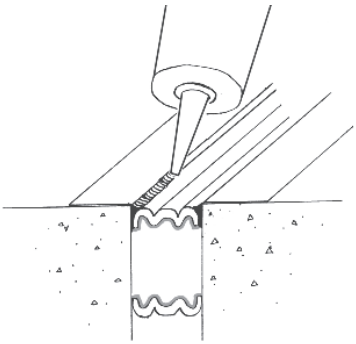
7. Install Next Length. Repeat.

- Work in one direction towards the previously installed length or end of joint. Do not stretch material.
- Leave the end to be joined to the previous length sticking proud of the joint — push the joining faces together.
- Push Hard on the stick to compress joins firmly together. Ensure there are no voids at joins.
- Once the full length is installed, push the protruding join into the joint and tool off the excess silicone.

Note –During low temperature installation, provide as much ambient heat as possible around installed foam to accelerate recovery.

8. Inject Sealant Bands & Tool Excess Sealant

- Wipe any excess epoxy from top of material using a clean rag.
- Before the epoxy cures, force the tip of the sausage caulk gun between the substrate and the foam. Inject a 20mm (3/4-inch) deep sealant injection 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 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 – The sealant band is only applied to the weather side of the foam.

Transitions, Ends, and Special Conditions

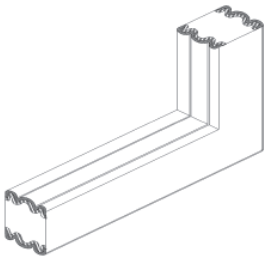
Sequencing – Install factory-fabricated transition and/or termination pieces FIRST. Connect straight run material to in-place terminations and transitions. Apply the joining sealant and intumescent on the straight length before inserting it into the joint (see step 6). Bring the join firmly against the butt end of the already installed Universal-90 and push the straight run stick towards this join throughout the process of installing it.

Note – If installing very long runs of material, to avoid having to work at distant ends of a joint run and in order to prevent epoxy from fully curing, the final factory-fabricated Universal-90 termination can be installed as the second-to-last piece.

Universal-90 Transitions

Universal-90's are designed to continue the DFR/WFR CE through changes in plane such as at floor-to-walls, curbs, treads and risers, or other such changes in slab thickness. They can be turned over to be used either as an upturn or a downturn. Install factory-fabricated transition and/or termination pieces first. Universal-90's may also be used to transition to another Emseal foam product.

Connect straight run material to in-place terminations and transitions (see step #7). Cut closing pieces 3/8-inch (10mm) longer than the opening to be joined. Compress material longitudinally to fit.

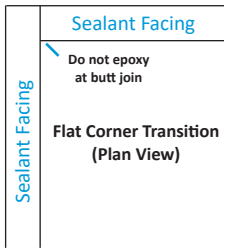


Flat Corners:

- Work towards the corner so that the last two pieces to install will join at the corner.
- Cut each piece to be joined 3/8-inch (10 mm) longer than needed.
- Install one piece so that it runs through the intersecting joint-gap. Firmly push and compress the extra length so that a tight fit in the corner is achieved.
- Firmly butt intersecting pieces into sides of already placed material.

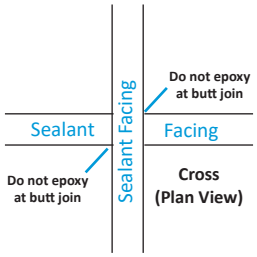
***IMPORTANT: Be sure that there is no epoxy on the sides or faces of foam at a butt join.*

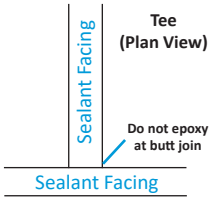
- Using a caulk knife, remove any excess sealant and blend the liquid sealant into the bellows to preserve the bellow shape.
  NOTE – The extra length will make it a tight fit — this results in a compression fit.
- Inject a bead of liquid sealant where the sealant faces join and where the sealant faces meet the substrate.



Crosses And Tees:

- Run one piece of material across the intersection. Coat sealant bellows end (only) of the intersecting material with sealant. Firmly butt intersecting pieces into sides of already placed material.
- Using a caulk knife, remove any excess sealant and blend the liquid sealant into the bellows to preserve the bellows shape.





Sealant-Coat Any Exposed Foam Ends:

IMPORTANT: If the DFR/WFR CE runs are not part of a closed loop system, and Universal-90 terminations are not used (run does not terminate in an upturn or downturn), lightly coat any exposed foam ends using the liquid sealant provided. This is critical in ensuring that the watertightness of the foam is sealed.

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