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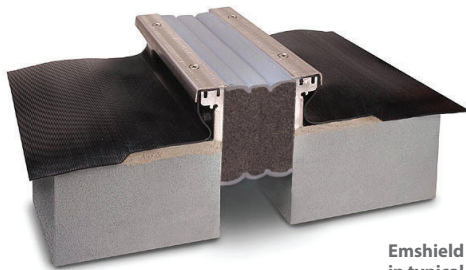


PRODUCT DATA SHEET

DFR-FP System

Water / Fire / Traffic / Movement / Sound Split-Slab Construction

US Patent: 10,934,702 10,934,704 10,941,562 9,670,666 9,637,915 9,068,297 8,739,495 C1



Emshield DFR-FP displayed in typical substrate.

Product Description

The **DFR-FP System** by Sika Emseal is a UL/ULC-certified 2-hour fire-rated system designed to provide a watertight, trafficable joint system in smaller 1/2" (12mm) to 4" (100mm) joint openings in decks of split-slab design. **DFR-FP** expands the use of the fire-rated DFR System to waterproofed split-slab deck designs through the use of side flashing sheets that integrate with the deck waterproofing membrane.

Emshield DFR, the material that bridges and seals between the DFR-FP mounting rails, is comprised of fire-retardant-impregnated foam which is factory pre-coated on the underside with an intumescent fireproofing material. It has been successfully tested and certified by Underwriters Laboratories (UL/ULC) to UL 2079.

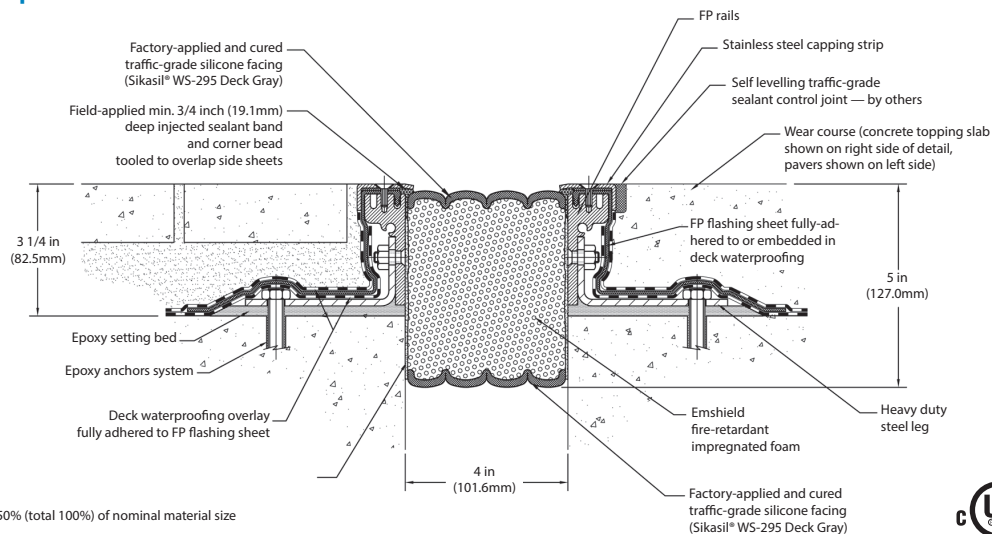
It provides a primary seal for horizontal expansion joints. The traffic surface has a traffic-grade silicone coating. This precompressed foam hybrid sealant ensures watertightness, absorbs sound, and dampens vibration.

The DFR-FP System consists of two subassemblies:

1. The structural-slab mounted supporting legs with integral waterproofing side sheets; and
 2. the silicone-faced, fire-rated precompressed, foam sealant — DFR System.
- The mounting leg assembly is delivered with opposing legs factory-set to the nominal joint size. It is installed onto a wet-setting bed of epoxy mortar and bolted to the deck.
 - Epoxy gel adhesive is applied to the faces-installed mounting leg assembly.
 - The DFR System precompressed foam sealant is installed into the joint gap where it self-expands into the wet epoxy adhesive.
 - Consecutive lengths are joined through the field-application to the intersecting bellows surfaces of Emseal-supplied, low-modulus, high-movement silicone.
 - To complete the waterproofing, a field-applied silicone sealant band is injected at the bellows to the mounting-leg interface and tooled over the side flashing sheet at its insertion point.
 - Stainless steel capping strips are installed over the top of the retainer legs and hold the side-flashing sheets firmly in compression.

(Cont. page. 2)

DFR-FP System Components



Product Description (cont.)

- With the DFR-FP side flashing sheets pulled out of the way, the deck waterproofing membrane is installed on the deck and brought over the top of, and up the DFR-FP mounting legs.
- The side flashing sheets are lowered into the liquid membrane (or into the non-sag mastic component of a sheet waterproofing system) and sandwiched with another layer of waterproofing. Drainage board and/or protection board are added in accordance with the designer's preference.
- Concrete, pavers, asphalt, or other topping slab or wearing course material is installed up to the stainless steel retaining caps on the DFR-FP mounting rails with or without a field-applied sealant control joint depending on the wear-course material (consult Emseal).

Uses and Applications

- For fire-rated new construction and retrofit of old or failed joint systems.
- For restoring watertightness to chronic leaking over occupied spaces.
- Uniquely suited to joint openings between split-slab and solid-slab construction
- Uniquely suited to deck-to-wall and deck-to-column conditions in split-slab construction

FIRE-RATED:

- Plaza and podium decks
- Split-slab or asphalt-overlay parking decks
- Airport roadways
- Mall bridge connectors
- Stadium concourses, etc.

Features

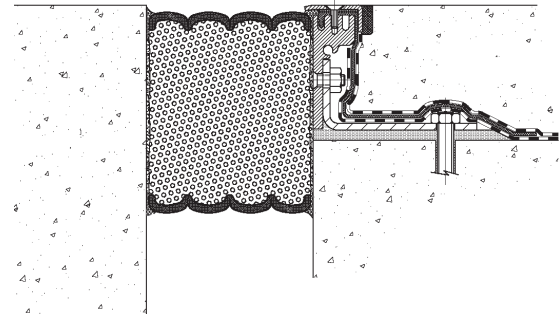
2-hr Fire-rating – The inclusion of Emshield DFR pre-compressed foam creates a single installation UL/ULC-certified 2-hour fire-rated system which eliminates the need for additional fire blankets, mineral wools, liquid sealants, cover plates, or other fire stopping materials.

Watertight Surface Joint – Emseal's DFR precompressed foam sealant serves as a watertight dual seal when installed between the DFR-FP System's two mounting legs or between a single mounting leg and another substrate on the opposite side of the joint. The need for moisture barriers and secondary gutter systems is eliminated or made optional. Movement capabilities are +/-50% (100% total) of nominal material size.

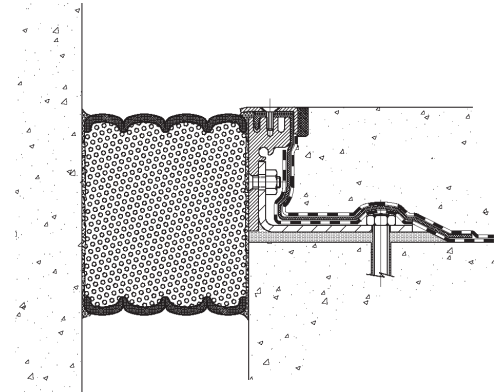
Watertight Integration with the Split-Slab Waterproofing Membrane – DFR-FP side flashing sheet integration into a sandwich with the deck waterproofing membrane ensures the deck-to-joint interface is watertight.

Sound Attenuation – The impregnated foam and silicone hybrid acts not only as the sealing mechanism, but also as a highly effective sound dampener.

Solid-Slab to Split-Slab Connections



Solid-Slab to Split-Slab Deck to Deck



Wall/Column to Split-Slab

DFR-FP is an effective watertight expansion joint for bridging split-slab and solid-slab construction. The watertight precompressed DFR foam sealant is held securely in place by utilizing the back-pressure of the expanding foam, epoxy adhesive, and a field-injected silicone sealant band at the substrate interface. The connection to solid-slab construction is made directly to the slab substrate. The split-slab connection is made to the DFR-FP mounting leg. The split-slab connection incorporates an integral waterproofing flashing sidesheet embedded between layers of the deck waterproofing membrane on the structural slab and beneath the topping slab.

Trafficable, Fuel-Resistant Surface – The DFR impregnated foam is compressed to handle normal pedestrian and vehicular traffic. The watertight bellows surface is made of a traffic-grade silicone which is not degraded by incidental contact with fuel.

Deck-To-Wall Conditions – Because the DFR System installs to substrates without the need for any supporting metal rails or invasive anchors, the DFR-FP System is uniquely suited to handling deck-to-wall, deck-to-column, entryway and other conditions.

Continuity of Seal – continuity of seal through changes in plane and direction is an essential performance differentiator. Factory-fabricated transitions in the mounting leg and side flashing sheets at curbs, sidewalks, parapets, tees, and crosses are available with the DFR-FP System. Details for watertight transitions between different Emseal product are available.



Performance & Selection

Joint Sizes – For mean-temperature, structural-slab, joint sizes from: **1-inch (25mm) up to 4-inches (100mm)** in the upper topping slab.

1/2-inch (12mm) up to 4-inches (100mm) in the lower structural slab. For special conditions consult Emseal.

For larger than 4" (100mm) see SJS-FP-FR.

Movement Capability – 100% (+/-50%) of nominal material size.

Leg Heights – 3-inches (75mm)

Emseal offers a variety of products to fire-rate expansion joint openings. Contact Emseal for more information.

Non Fire-Rated – For non-fire-rated, trafficable, watertight expansion joints for use in split-slab construction see Emseal's DSM-FP (1/2 to 4-inches) and SJS-FP (4-inches and larger)

CAD & Guide Specs

Guide Specifications and [CAD details](#) are available online at Emseal.com or by [contacting Emseal](#).

Warranty

Standard or project-specific warranties are available from Sika Emseal on request.

Availability & Price

DFR-FP is available for shipment internationally. Prices are available from local representatives and/or directly from the manufacturer. Sika Emseal reserves the right to modify or withdraw any product without prior notice.

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Product Data Sheet

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