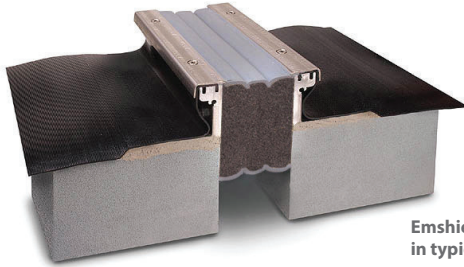


PRODUCT DATA Emshield™ DFR-FP

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

A SIKA COMPANY



Emshield DFR-FP displayed in typical substrate.

The **DFR-FP System** 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.

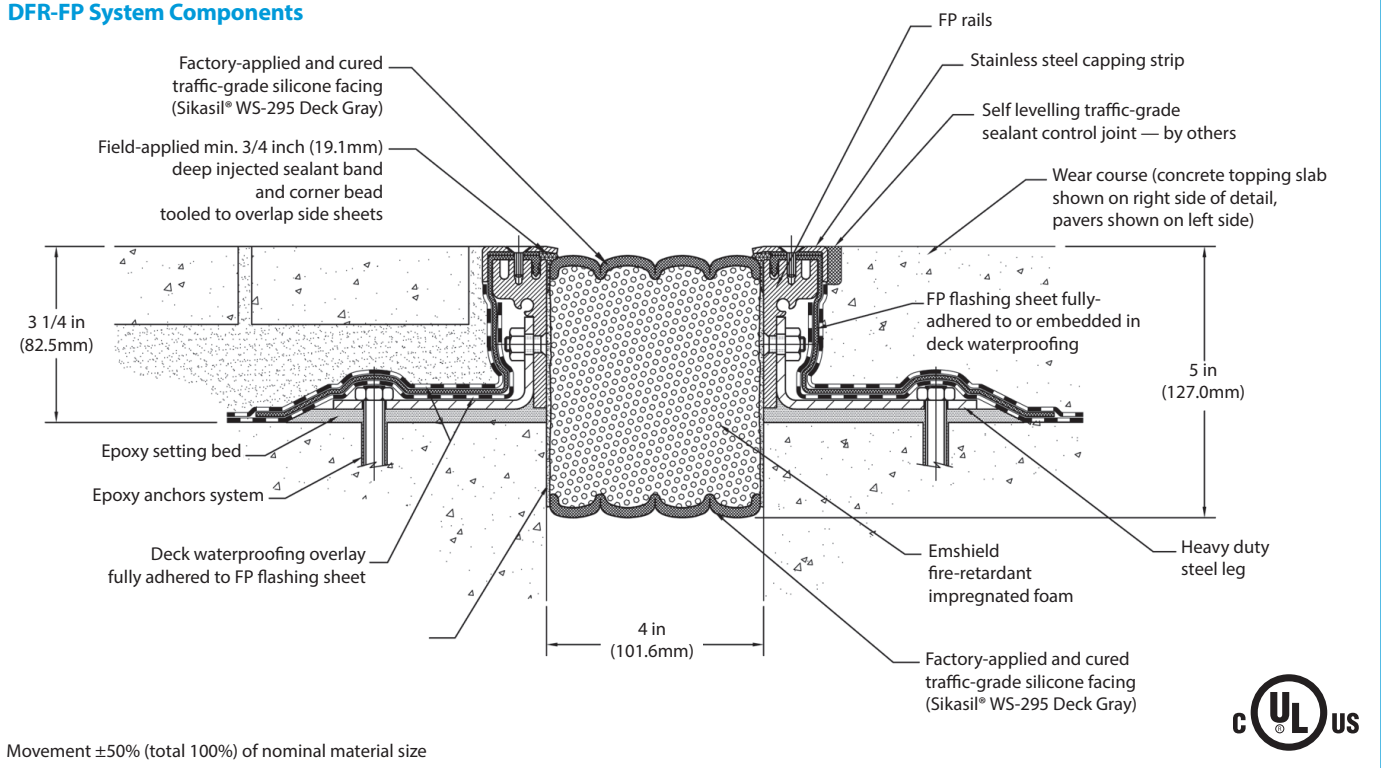
Emshield DFR, the material that bridges and seals between the DFR-FP mounting rails, is comprised of fire-retardant-impregnated foam which is factory pre-coated on the underside with an intumescent fireproofing material. It has been successfully tested and certified by Underwriters Laboratories (UL/ULC)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

Product Description

- The DFR-FP System consists of two subassemblies:
 - The structural-slab mounted supporting legs with integral waterproofing side sheets; and
 - 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.

DFR-FP System Components



- 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.

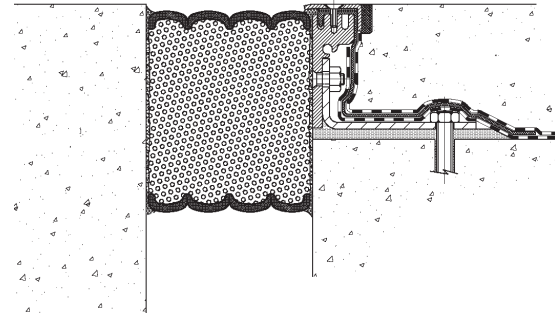
Watertight Integration with the Split-Slab Waterproofing Membrane – DFR-FP side flashing sheet integration into a sandwich with the deck waterproofing membrane ensures the deck-to-joint interface is watertight.

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

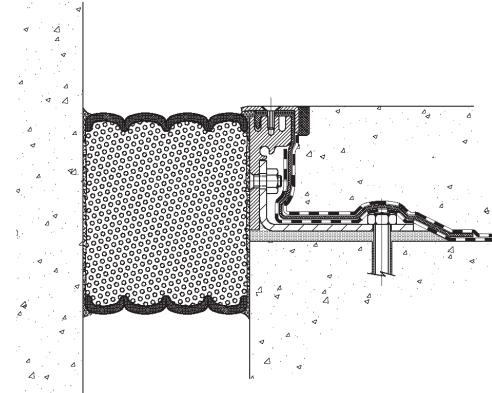
Trafficable, Fuel-Resistant Surface – The DFR impregnated foam is compressed to handle normal pedestrian and vehicular traffic. The watertight bellows surface is made of a traffic-grade silicone which is not degraded by incidental contact with fuel.

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.

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.

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 EMSEAL on request.

Availability & Price

DFR-FP is available for shipment domestically and internationally. Prices are available from local representatives or direct from the manufacturer. The product range is continually being updated, and accordingly EMSEAL reserves the right to modify or withdraw any product without prior notice.