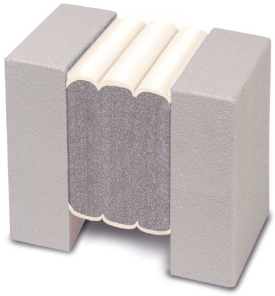
BUILDING TRUST

PRODUCT DATA SHEET

# Emshield® SecuritySeal® SSF2

***Traffic Durable, Watertight, 2-hour Fire-Rated Deck/Floor Expansion Joint***

US Patents: 10,941,562 | 10,934,704 | 10,934,702



SecuritySeal® SSF2 sample shown here is displayed in substrate mock-up

## *Product Description*

**SecuritySeal® SSF2** by Sika Emseal is a pick-resistant, watertight, 2-hour fire-rated expansion joint for locations requiring a hardened tamper-resistant surface. Concrete and institutional floors such as those found in high-security locations such as prisons, jails, detention centers, medical and psychiatric hospitals, are some of the many venues benefitting from SecuritySeal SSF2.

The system is comprised of fire-retardant-impregnated foam which is factory coated top and bottom with a waterproof, tamper-resistant polyurethane sealant. The system is supplied compressed smaller than the width of the joint gap. A field-injected polyurethane sealant band seals the bellows to the substrate at the installation surface. Sticks are joined using a field-applied polyurethane sealant at the bellows' edges of the join and intumescent caulking on the foam face producing a cohesive watertight fire-rated system.

SecuritySeal SSF functions as a watertight primary seal with movement capabilities of +/- 50% (100% total) available in widths for gaps ranging from 1/2-inch to 4-inches (12mm - 100mm).

## *Uses and Applications*

- Prisons
- Jails
- Holding Cells
- Anywhere vandalism is a concern
- Detention Centers
- Psychiatric Facilities
- Floor-to-Wall, Floor-to-Floor

For expansion joints in interior and exterior floors and where a combination of pick-resistance, watertightness, fire-rating, sound attenuation and thermal-efficiency are required. SSF2 can be used alone or under any other expansion joint coverplate or filler where depth of substrate allows. Its pick-resistant surface composition makes it an excellent choice where the integrity of the seal and tamper prevention is necessary.

## *The choice for Prisons and Detention Facilities: Pick-Resistant, 2-Hour Fire-Rated, Watertight, Horizontal Expansion Joint*

SecuritySeal SSF is watertight, fire-rated, sound-attenuating, and energy-efficient. It is manufactured with a pick-resistant outer polyurethane seal for use in both retrofit and new structural expansion gaps in horizontal-plane applications. It eliminates the need for additional fire blankets, mineral wools, liquid sealants, or other fire stopping materials.

SecuritySeal SSF2 continues the comprehensive Emshield line of breakthrough, multifunction, structural expansion joint materials now available from Sika Emseal. Tested and certified by Underwriters Laboratories (UL) and Underwriters Laboratories Canada (ULC), to the rigors of UL 2079, SecuritySeal SSF can work in conjunction with SSW2 -- the Emshield pick-resistant vertical 2-hour fire-rated wall expansion joint.

SecuritySeal expansion joints, in a single installation, provide a watertight, clean-handling, UV-stable, non-staining, low-temperature-flexible, high-temperature-stable, sound-attenuating, energyefficient, tamper-resistant, structural expansion joint seal.

Emshield SecuritySeal builds on Sika Emseal's track record of over 30 years of innovation in sealing structural expansion joints with impregnated foam sealants.

## *Four Times the Movement of Pick-Resistant Liquid Sealants*

Liquid sealants offered for security applications achieved their tamper resistance in part from their hardness -- however, hardness restricts movement. In general, pick-resistant liquid sealants have movement capability of +/- 12.5% or 25% total. Because of the bellows configuration of SecuritySeal, the tamper-resistant polyurethane sealant is not stretched or compressed as in typical field-applied "caulk and backer rod" installations. Instead, the bellows folds and unfolds with joint movement. This results in the ability to offer a full 100% total movement capability thereby extending the use of tamper-resistant sealant technology to structural movement joints.

## Features

**Secure Pick-Resistant Seal**
The outer watertight layer is made of a hardened flexible polyurethane which resists deterioration and destruction from picking. This deters vandalism common in detention facilities, jails and prisons.

**Watertight**
All Sika Emseal preformed-sealant expansion joint systems are manufactured to be "watertight by design". The impregnated open cell foam is factory coated with water-resistant polyurethane which acts as the primary waterproof seal.

**Fire-Rated** It has been tested and certified by Underwriters Laboratories (UL) to the rigors of UL 2079. As a single unit 2-hour fire-rated expansion joint SSF2 eliminates the need for additional fire stops at the joint gap thereby eliminating the need for multiple products to perform the roles of sealing, bridging and fire-rating joints.

**Sound Suppression**
A single-sided installation of standard 4-inch SecuritySeal yields a tested Sound Transmission Class rating of STC 62 in a STC 68 assembly. It also receives an Outdoor-Indoor Transmission Class rating of OITC 52 in an OITC 52 assembly.

**Non-Invasive Anchoring**
There are no hard metal-to-substrate connections with SecuritySeal such as embedded pins, anchors, screws, bolts or tracks, trays or rails, flanges or coverplates. The system is locked to the joint faces by means of 1) the backpressure of the foam, 2) epoxy adhesive, and 3) the injected sealant bands at the joint face. This method of single-unit installation accommodates installation at later construction stages where access, positioning, or the existing infrastructure may interfere.

**Energy Efficiency**
Sika Emseal's foam technology also acts as an efficient thermal barrier. This means that indoor air quality and HVAC balance can be controlled while insulating the interior space from hot and cold exterior conditions. The non-metallic, non-invasive anchoring means that with SecuritySeal there are no thermal breaks introduced at structural or other joint openings.

**Joint-Size Variation**
Uniform bellows appearance, and the ability to handle variations in joint size through size-switching is a unique feature of precompressed, impgregnated foam sealants.

## Colors

Polyurethane face is available in either Tru White or Limestone.

## Bellows Configuration

Widths from 1/2" (12mm) to 1 1/2" (40mm) are coated with a single bellow. Widths from 1 3/4" (45mm) to 4" (100mm) are coated with a multiple bellows seal.

**SSF2 System Sizing**

| Product Code* | Nominal Material Size (Joint Size at Mean T°F) | Depth of Seal |
|---|---|---|
| SSF2-0050 | 1/2 " (12mm) | 4" (100mm) |
| SSF2-0075 | 3/4" (20mm) | 4" (100mm) |
| SSF2-0100 | 1 " (25mm) | 4" (100mm) |
| SSF2-0125 | 1 1/4" (30mm) | 4" (100mm) |
| SSF2-0150 | 1 1/2" (40mm) | 4" (100mm) |
| SSF2-0175 | 1 3/4" (45mm) | 4" (100mm) |
| SSF2-0200 | 2 " (50mm) | 4" (100mm) |
| SSF2-0225 | 2 1/4" (55mm) | 4" (100mm) |
| SSF2-0250 | 2 1/2" (65mm) | 4" (100mm) |
| SSF2-0275 | 2 3/4" (70mm) | 4" (100mm) |
| SSF2-0300 | 3 " (75mm) | 4" (100mm) |
| SSF2-0325 | 3 1/4" (85mm) | 4" (100mm) |
| SSF2-0350 | 3 1/2" (90mm) | 4" (100mm) |
| SSF2-0375 | 3 3/4" (95mm) | 4" (100mm) |
| SSF2-0400 | 4 " (100mm) | 4" (100mm) |

*NOTE: Product Code begins with SSF2 designation.
[e.g. SSF2-0100 = 1-inch (25mm) SSF2]

## Performance

Capable of movements of +50%, -50% (100% total) of nominal material size.

Standard sizes from 1/2" (12mm) to 4" (100mm).

Depth of Seal for all sizes = 4" (100mm).

Note: Substrates must be capable of resisting, without deflection, 2.5 psi backpressure from the foam across the area of contact as determined by the supplied materials' nominal dimensions. Consult Sika Emseal.

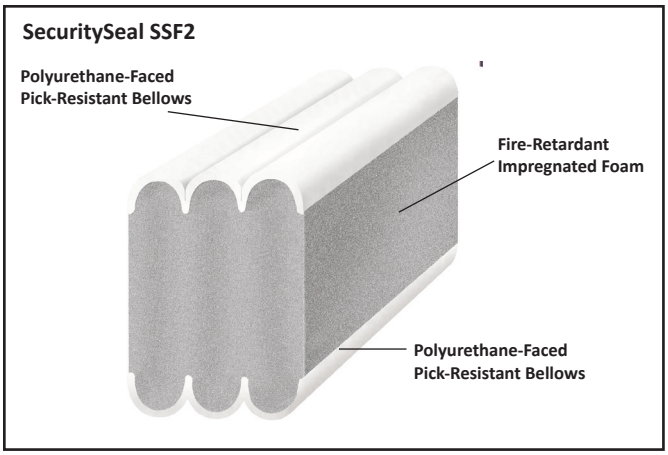
**Performance Limitations:**
For applications in larger joints (3-inches and above) where full extension movement and high point load, small-diameter-wheel conditions (ex. shopping cart, luggage carts, etc.) exist, the designer should consider use of a cover plate over the SSF2 or instead specify the SJS-FR system.

## Testing and Standards

SecuritySeal SSF2 has been tested and certified under UL 2079 and as a result meets the requirements of ASTM E1966, ASTM E119 and ASTM E1399.

UL 2079, like ASTM E1966, was developed to encompass the fire testing of ASTM E119 and the movement cycling regime of ASTM E1399.

**Laminations:** SecuritySeal SSF2 has passed UL 2079 when configured with either vertical, compression-bonded laminations OR with horizontal, adhesive-bonded laminations. The orientation or presence of laminations in any form is inconsequential to the performance of the product under the UL2079 testing criteria.




Emshield products have been tested and exceed air leakage requirements of ASTM E283, water penetration requirements of ASTM E331, and air pressure maintenance requirements of ASTM E330. All tests were conducted at greater than hurricane force winds and with the product at the full extent of its published movement range.

## *Design/System/Construction/Assembly*

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. Use of this material in assembly configurations other than depicted in the named UL listings will not encumber or lower the resistance of the deck or wall assembly but is done so at the designers' discretion and responsibility for designing substrates as part of a fire rated assembly that meet applicable standards for the project. Similarly, the published information in the UL 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.

## *CAD & Guide Specs*

Guide Specifications and CAD details are available online at emseal.com or by contacting Sika Emseal.

## *Warranty*

Standard or project-specific warranties are available from Sika Emseal on request. Each product can only perform its designed function if it, and the joint-gap into which it is installed, is sized to suit anticipated joint movements in consideration of the movement capability of the product and in consideration of the temperature at time of installation, and if it is installed in strict accordance with Sika Emseal's installation instructions.

## *Availability & Price*

Emshield SecuritySeal SSF2 is available for shipment internationally. Prices are available from local representatives and/or directly from the manufacturer. The product range is continually being updated, and accordingly 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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