



BUILDING TRUST



PRODUCT DATA SHEET

SJS-FR Seismic Joint System

Fire-Rated, Watertight, Seismic and Large-Gap Deck Expansion Joint System for Decks — Parking, Stadium Concourses, Treads & Risers, etc.

US Patents: 8,341,908 | 10,787,805 | 10,787,806



SJS-FR sample shown here is displayed in substrate mock-up

Product Description

- SJS-FR1* and SJS-FR2* by Sika Emseal are designed to provide a watertight, fire-rated, trafficable joint System in 2-inch (50mm) through 10-inch (250mm) joint openings, in decks including parking decks, stadium concourses, stadium treads and risers, and other horizontal plane applications.
- The [SJS-FR System](#) builds on a track record of over 30 years of sealing horizontal plane joints with impregnated foam sealants. The SJS-FR System is two horizontal fire-rated joints pre-assembled in parallel adjacent to an extruded composite spline. The spline is designed as the receptor for the attachment of traffic plates that bear vehicle and other loads.
- SJS-FR has been tested and certified by Underwriters Laboratories (UL/ULC), to the rigors of UL 2079. SJS-FR1 is certified for a 1-hour fire-rating and SJS-FR2 is certified for 2-hour fire-rating.
- The sealant and impregnated-foam hybrid components act to anchor the System, ensure watertightness, absorb sound, and dampen vibration.
- Fire-retardant-impregnated foam is factory pre-coated on the underside with an intumescent fireproofing material. The traffic surface and the bottom both receive a watertight sealant outer coating. The resulting composite is then factory compressed to less than its nominal size for installation into structural or other openings.

The factory-assembled spline, bellows, and foam, are shipped with factory-attached installation hanger-bars.

Installation Summary

- Epoxy gel adhesive is field-applied to the faces of the joint opening.
- The sealing assembly is lowered into the joint gap where it self-expands into the epoxy adhesive.

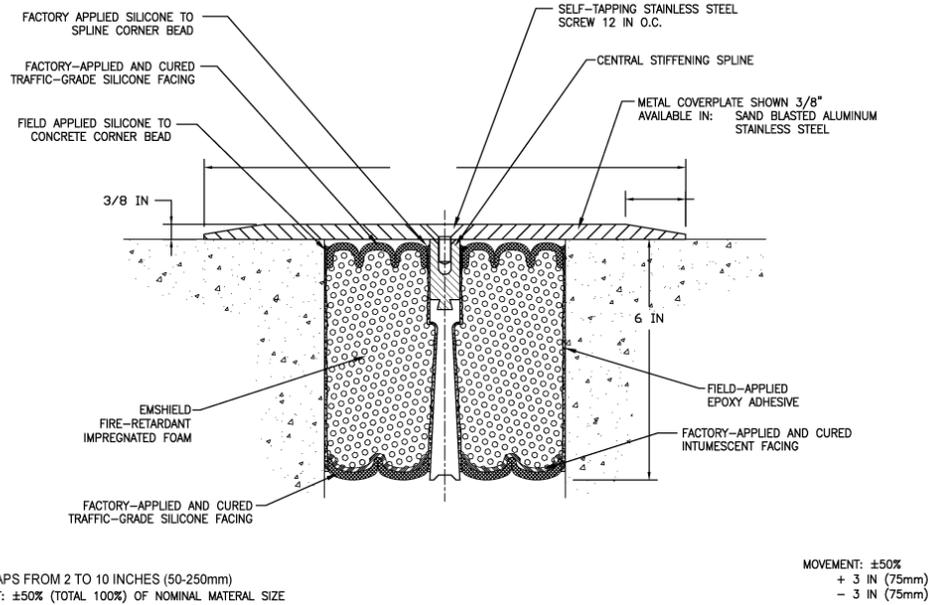
- Consecutive lengths are joined through the field-application of manufacturer-supplied, low-modulus, high-movement sealant to the spline and intersecting bellows surfaces. The fire-retardant foam ends are coated with a full layer of intumescent sealant.
- Friction fit alignment pins prevent the joints from moving during sealant cure.
- A field-applied sealant band is injected at the bellows to joint substrate interface to complete the waterproofing.
- The SJS-FR joint-sealing assembly installation hanger bars are removed sequentially as coverplates are lowered over the joint and screwed to the center spline, completing the installation.

Uses

- For new construction and retrofit of old or failed joint Systems.
- For restoring watertightness to chronic leaking over occupied spaces.
- Uniquely suited to joint openings designed for seismic separation of structural building elements needing a 1-hour or 2-hour fire rating.
 - parking decks
 - airport roadways
 - mall bridge connectors
 - stadium concourses
 - stadium treads and risers

Note: See the [SJS System](#) for applications which do not need a fire-rating. For split-slab, plaza and podium decks not needing a fire-rating see the [SJS-FP](#).

Figure 1: System Components (6-inch system for illustration. Available from 2-inch to 10-inch with Sealant Coating)



Features

- **Watertight** – The tensionless sealant bellows are installed flush to or just below the deck surface and just below the coverplate. This ensures that watertightness is achieved at the deck surface. The need for moisture barriers and secondary gutter Systems is eliminated.
- **1-hour or 2-Hour Fire Rating** – UL/ULC certified (UL 2079) 1-hour (SJS-FR1) or 2-hour (SJS-FR2) fire-rated expansion joint. It eliminates the need for additional fire blankets, mineral wools, liquid sealants, or other fire stopping materials.
- **Non-Invasive Anchoring** – There are no hard metal-to-concrete connections in the coverplate System at all. This includes embedded pins, anchors, screws, bolts or tracks, trays or rails. The coverplate assembly is locked to the joint faces by means of the backpressure of the foam and the epoxy adhesive, and by the weight of the assembly.
- **Sound Attenuation** – The flanking impregnated foam and sealant acts not only as the anchoring system, but also as a highly effective sound and shock dampener. Optional sound attenuating polyurethane nosing material further dampens sound and provides a plate levelling mechanism. The result is a sound-attenuated, watertight coverplate System.
- **Self-Locating Coverplate Screws** – The center spline is a continuous receptor for the coverplate screws that are self-tapped into the anchor channel. This feature dramatically reduces installation-related problems of locating self-centering, sliding ball devices and pantographs. The probability of screws being left out is eliminated by the ease of anchoring which also ensures proper plate alignment between sections.
- **Self-Locking, Vibration-Dampened Screws** – Vibration in alternative Systems that rely on metal-to-metal connections and contact points is the primary cause of screw loosening. Vibration that might otherwise work to loosen screws in these technologies is, in the SJS-FR, first dampened by the massive and continuous springs of impregnated foam along the entire length of the joint. In addition, 30 pounds of force is required to loosen the screws which translates into excellent resistance to loosening without the need for thread-lock compounds.
- **Field-Adjustable Plate Support** – Installation over a level surface provides the opportunity to fine-tune the support of the coverplate sections. Systems that attach or embed extruded rails to receive self-centering bars and sliding ball and socket devices cannot be adjusted to eliminate unevenness across and down the length of the joint.
- **Continuity of Seal** – as in all Sika Emseal expansion joint systems, continuity of seal through changes in plane and direction is an essential performance differentiator. Factory-fabricated transitions at curbs, sidewalks, parapets, tees, crosses, and tread/risers are available with the SJS-FR System. Details for watertight, warranted, factory-fabricated transitions between the different Sika Emseal product systems are additionally available.

Performance & Selection

Joint Sizes – For mean-temperature, structural-slab, joint sizes from: 2-inches (50mm) up to 10-inches (250mm).

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

Coverplates – Standard coverplate is 3/8-inch (10mm) shot-blasted aluminum or stainless steel. Other custom metals are available-- consult Sika Emseal.

Coverplate thicknesses can be customized to suit load and traffic expectations — consult Sika Emseal.

Coverplate edge-chamfer available in standard or optional low-slope configurations — consult CAD details at www.emseal.com.

Ordering Information and Product numbers – Please consult Sika Emseal for the specifically-sized SJS-FR System for your application.

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

SJS-FR is available for shipment internationally. Prices are available from local representatives or direct 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.

Please note that, in appearance, the SJS-FR1 and SJS-FR2 Systems are identical. They do vary in the amount of fire-retardant-impregnated foam in the build. This difference is monitored by UL as part of their ongoing certification. In your specification you will specify the 1 or 2 hour rating and the model reference—SJS-FR1 or SJS

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