



A SIKA COMPANY

# PRODUCT DATA BEJS-PEDESTRIAN

**Watertight Expansion Joint System for Pedestrian-trafficked Sidewalks, Curbs, and Walkways**



BEJS-Pedestrian sample shown here is displayed in substrate mock-up

## Product Description

The **BEJS-Pedestrian System** (Bridge Expansion Joint Systems-Pedestrian) is an expansion joint designed for primary use in sealing sidewalks, walkways and curbs expecting pedestrian traffic. It is designed as a traffickable watertight barrier system within the expansion gap.

The system is comprised of: 1) Precompressed, silicone-and-impregnated-foam hybrid installed into 2) field-applied epoxy adhesive on the joint faces; with the silicone bellows locked to the joint faces with 3) a silicone sealant band on the watertight surface face (see Figure 1).

The BEJS-Pedestrian features an innovation in sealant technology in the form of a microsphere-modified, 100% acrylic impregnation infused into the cellular foam base material.

The material is odorless, clean handling, UV stable, non-staining, and features low temperature flexibility not previously available in asphalt, wax, or isobutylene-based predecessors or competitors.

The result is extension of the usability of the product to applications where asphalt and wax-based predecessors did not work well under conditions of thermal shock (rapid opening and closing of joints during large temperature swings). These applications include pedestrian traffic walkways, sidewalks and associated curbs.

Suitability is further extended to applications in colder geographical regions to which asphalt and wax-based predecessors have not previously been recommended.

## Features

**Watertight** – the tensionless silicone bellows are installed slightly recessed from the top/outer surface of the substrate. The addition of a final silicone band between the substrate and the bellows ensures watertightness to that particular face.

**Non-Invasive Anchoring** – there are no hard metal-to-concrete connections with the BEJS-Pedestrian. This includes embedded pins, anchors, screws, bolts or tracks, trays or rails. The system is locked to the joint faces by means of the backpressure of the foam; the epoxy adhesive, and the injected silicone sealant band at the joint face to foam and silicone bellows interface.

**Continuity of Seal** – as in all EMSEAL expansion joint systems, continuity of seal through changes in plane and direction is an essential performance differentiator. “Custom Transitions” are factory fabricated transition pieces from EMSEAL that can be installed at inside corners and outside corners. This often occurs at roadway-to-curb, curb to sidewalk, or a sidewalk to parapet transitions. These expansion joints are therefore warranted by EMSEAL to be watertight through the entire movement capability of the product.

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

**Aesthetics & Versatility** – Standard color is black. Uniform bellows appearance, fuel resistance, and an enhanced ability to handle variations in joint size are among other system features

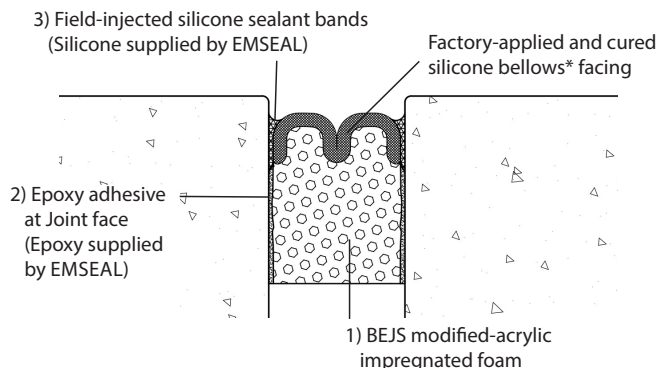
## Uses and Applications

- On sidewalks, walkways, curbs, and parapets.
- Primarily used in conjunction with BEJS (which is used in roadway and vehicular traffic applications.)
- Ideal for new construction as well as retrofit sidewalk and walkway in old or failed joint systems in concrete or rebuilt joint edges. Use in embedded metal angles where demolition or removal of the metal angles is not feasible and where existing joint opening is suited to the movement capability of BEJS.

## Performance

- Substrates must be parallel, plumb and capable of resisting approx. 2.5 psi backpressure from the foam.
- Standard sizes from 1 1/2" (40mm) to 4" (100mm). Other sizes available subject to review of application: consult EMSEAL.
- Fuel Resistance: Silicone sealant is not degraded by contact with fuel. Some swelling of the silicone material will normally occur, but it will return to its original shape upon evaporation of the fuel.

**Figure 1: BEJS-Pedestrian System in Typical Installation — New or Retrofit**



### Composition

- BEJS-Pedestrian is produced by coating an impregnated cellular foam with highway-grade silicone on the traffic side of the joint.
- The silicone external facing is factory applied to the foam at a width greater than maximum joint extension and is cured before final compression.
- Silicone application and curing takes place in a factory-controlled environment. In contrast to field applied liquid sealant and backer rod installations, no movement takes place during curing that can cause deformation or stresses in the material.
- When compressed, a bellows is created in the coating. As joint movement occurs the bellows simply folds and unfolds free of tension on the bondline, and virtually free of tensile stresses in the silicone material.
- The foam provides a resilient backing to the silicone coating, making the system capable of resisting reasonable transient point loads.
- BEJS SYSTEM is precompressed to less than the joint size for easy insertion. After removal from the shrink-wrap and hard board restraining packaging, it expands gradually.

### Installation

*IMPORTANT: The following instructions are a summary. Refer to "BEJS System Install Data" and job-specific instructions of an EMSEAL technician for complete procedures.*

- Store indoors at room temperature. Expansion is quicker when warm, slower when cold.
- Properly prepare substrates.
- Ensure material nominal size matches joint size.
- Mix epoxy and trowel a thin layer onto the joint faces to at least the depth of the BEJS foam
- Apply a thin layer of epoxy to both sides of the joint face.
- Remove shrink-wrap packaging, hardboard. If necessary, heat using torch to expand material to a snug fit in the joint.
- Insert material into joint with a 1/4" (6mm) recess.
- Join lengths by pushing silicone coated ends firmly together.
- Wipe silicone facing using clean, lint-free rag made damp with solvent.
- Before the epoxy cures, force the tip of the sealant tube between the foam and the substrate and inject a silicone sealant band. Tool overflow sealant into a cove bead between the top of the silicone bellows and the substrate. Tool silicone between joined lengths so that bellows is not restrained by excess silicone.

**Table 4: BEJS-Pedestrian SYSTEM Sizing**  
 (see "Performance" for movement capabilities & limitations)

Nominal Material Size (Joint Size at Mean T°F)	Depth of Seal	Min. Joint (closes to)	Max. Joint (opens to)
1-1/2" (40mm)	2 1/2" (65 m)	3/4" (20mm)	2-1/4" (55mm)
1-3/4" (45mm)	2 1/2" (65 m)	7/8" (22mm)	2-5/8" (68mm)
2" (50mm)	2 1/2" (65 m)	1" (25mm)	3" (75mm)
2-1/4" (55mm)	2-1/2" (65mm)	1-1/8" (28mm)	3-3/8" (60mm)
2-1/2" (65mm)	2-3/4" (70mm)	1-1/4" (30mm)	3-3/4" (95mm)
2-3/4" (70mm)	3 1/4" (80mm)	1-3/8" (35mm)	4-1/8" (105mm)
3" (75mm)	3 1/4" (80mm)	1-1/2" (40mm)	4-1/2" (115mm)
3-1/4" (85mm)	3-1/2" (90mm)	1-5/8" (42mm)	4-7/8" (120mm)
3-1/2" (90mm)	3-1/2" (90mm)	1-3/4" (45mm)	5-1/4" (135mm)
3-3/4" (95mm)	4" (100mm)	1-7/8" (47mm)	5-5/8" (140mm)
4" (100mm)	4" (100mm)	2" (50mm)	6" (150mm)

For joint sizes larger than 4-inches consult EMSEAL

Select nominal material size to correspond to joint-gap size at mean temperature.

### CAD & Guide Specs

Guide specifications and CAD details are available online at emseal.com or by contacting EMSEAL.

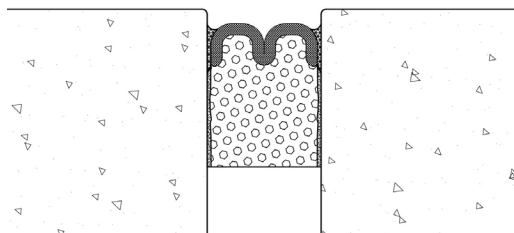
### Warranty

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

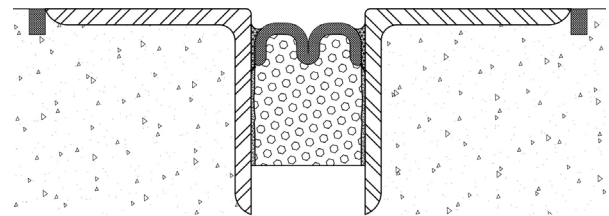
### Availability & Price

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

### TYPICAL APPLICATIONS



BEJS-Pedestrian Typical Concrete



BEJS-Pedestrian in Metal Angles (Retrofit)

**Table 1: Typical Physical Properties of Preformed, Precompressed, Foam Supported Silicone Expansion Joint System**

*The base material is an odorless, clean handling, UV stable, non-staining polyurethane open cell foam with 100% acrylic, microsphere-modified, water based impregnation infused into the cellular foam base material. Continuity of seal can be achieved using field or factory fabricated transitions.*

Property	Value	Test Method
Thermal Movement	500 cycles at -60%, +60% Movement, Pass	ASTM E1399
Acrylic Impregnation	100%, Microsphere Modified, Water-based	
Base Material	Min 5.65 kg/m <sup>3</sup> Cellular, High Density, Polyurethane Foam	ASTM D3574
Density	Min. 6 lbs/cu ft	ASTM D545
Tensile Strength	Min. 18 psi	ASTM D3574
Elongation	Min. 150%	ASTM D3574
UV / Moisture Resistance	No Changes - 2000 hours, Pass	ASTM G155-00A
Compression Set	Max 3%	ASTM D3574
Temperature Service Range	-40°F to 185°F	ASTM C711

**Note:** All testing conducted with a minimum silicone coating, at center line of the joint seal (between silicone coating bellows), of 1.5mm

**Table 2: Typical Physical Properties of Silicone Coating & Sealant Bands**

*The highway grade silicone coating is cured in a factory environment and installed in the field with the SAME fuel resistant, UV resistant, highway grade silicone. Continuity of seal is achieved using ONLY a single component to join and seal the Preformed Pre-Compressed, Silicone Coated, Self-Expanding Sealant System. When sized correctly silicone is NEVER in tension.*

Property	Value	Test Method
Single Component Coating	Sikasil® 728 NS	Coatings, Joints, and Bands
Hardness	Shore OO, 40 Shore AA, 3-5	ASTM C 661 & ASTM D 2240
Movement Capability	+100%, -50%	ASTM C719
Tensile Strength	175 psi	ASTM D412
Elongation at Break	1100%	ASTM D412

**Table 3: Typical Physical Properties of Epoxy Adhesive**

*The 2-component, 100% solids, solvent free, moisture tolerant, high strength, structural epoxy adhesive applied to the substrate at the approximate depth of the joint seal at a paper thin (≈1/16") thickness.*

Property	Value	Test Method
Tensile Strength	3500 psi	ASTM D638
Elongation at Break	0.20%	ASTM D638
Shear Strength	3100 psi	ASTM D732
Bond Strength	Hardened Concrete, Min. 3100 psi Steel, Min. 3260 psi	ASTM C882
Compressive Strength	13400 psi	ASTM D695
Pot Life	60 minutes (at 72°)	
Tack Free Time	1.5 to 2.5 hours	30 mils (≈1/4") thick