BEJS- Pedestrian by Sika Emseal

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

Features	Benefits
• 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.
• 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

Features	Benefits
• Movement Capability	+50% and -50% (Total 100%) of nominal material size.
• Continuity of Seal	Continuity of seal through changes in plane and direction is an essential performance differentiator. “Custom Transitions” are factory fabricated transition pieces from Watson Bowman Acme 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 Watson Bowman Acme to be watertight through the entire movement capability of the product.

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DESCRIPTION:

The **BEJS-Pedestrian System** (Bridge Expansion Joint System-Pedestrian) is an expansion joint designed for primary use in sealing sidewalks, walkways and curbs expecting pedestrian traffic. It is designed as a trafficable 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.

USES AND APPLICATIONS:

• On sidewalks, walkways, curbs, and parapets.

• Primarily used in conjuction 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.

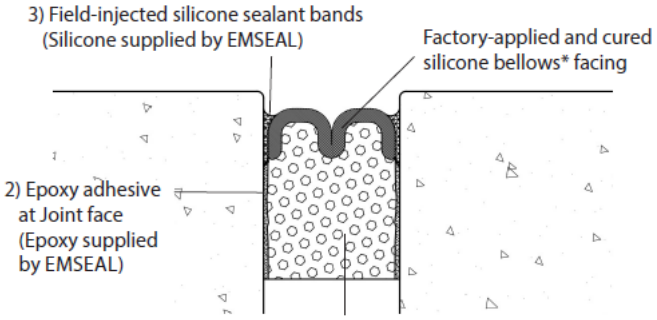
PERFROMANCE:

• 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.

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- 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 Watson Bowman Acme 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.

CAD & GUIDE SPECS:

Guide Specifications and CAD details are available online at watsonbowmanacme.com

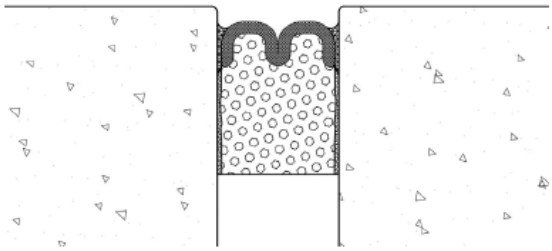
WARRANTY:

Standard or project-specific warranties are available from Watson Bowman Acme request.

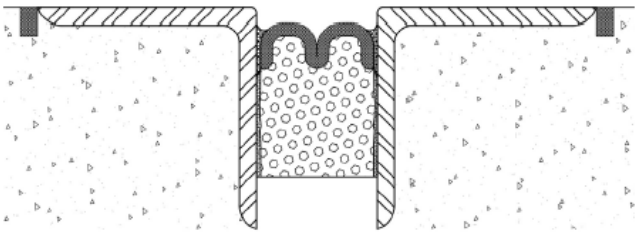
AVAILABILITY & PRICE:

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

TYPICAL APPLICATIONS:



BEJS -Pedestrian Typical Concrete



BEJS-Pedestrian in Metal Angles (Retrofit)

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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
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Acrylic Impregnation	100%, Microsphere Modified, Water-based	
Base Material	Min 5.65 kg/m³ 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*

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® WS-295	Coatings, Joints, and Bands
Shore A Hardness	Min. 25	ASTM C661
Movement Capability	+50%, -50% (Total 100%)	ASTM C719
Tensile Strength	Min. 175psi	ASTM D412
Elongation at Break	Min. 600%	ASTM D412

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	Min. 2900 psi	ASTM D638
Elongation at Break	0.20%	ASTM D638
Shear Strength	Min. 2700 psi	ASTM D732
Bond Strength	Hardened Concrete, Min. 3100 psi Steel, Min. 3260 psi	ASTM C882
Compressive Strength	Min. 9000 psi	ASTM D695
Pot Life	60 minutes (at 72°F)	
Tack Free Time	1.5 to 2.5 hours	30 mils

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FOR BEST RESULTS:

- Periodically inspect the applied material and repair localized areas as needed. Consult a Watson Bowman Acme representative for additional information.
- Make certain the most current version of the product data sheet is being used. Please consult the website (www.watsonbowmanacme.com) or contact a customer service representative.

RELATED DOCUMENTS:

- Material Safety Data Sheets
- BEJS Installation Procedure

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