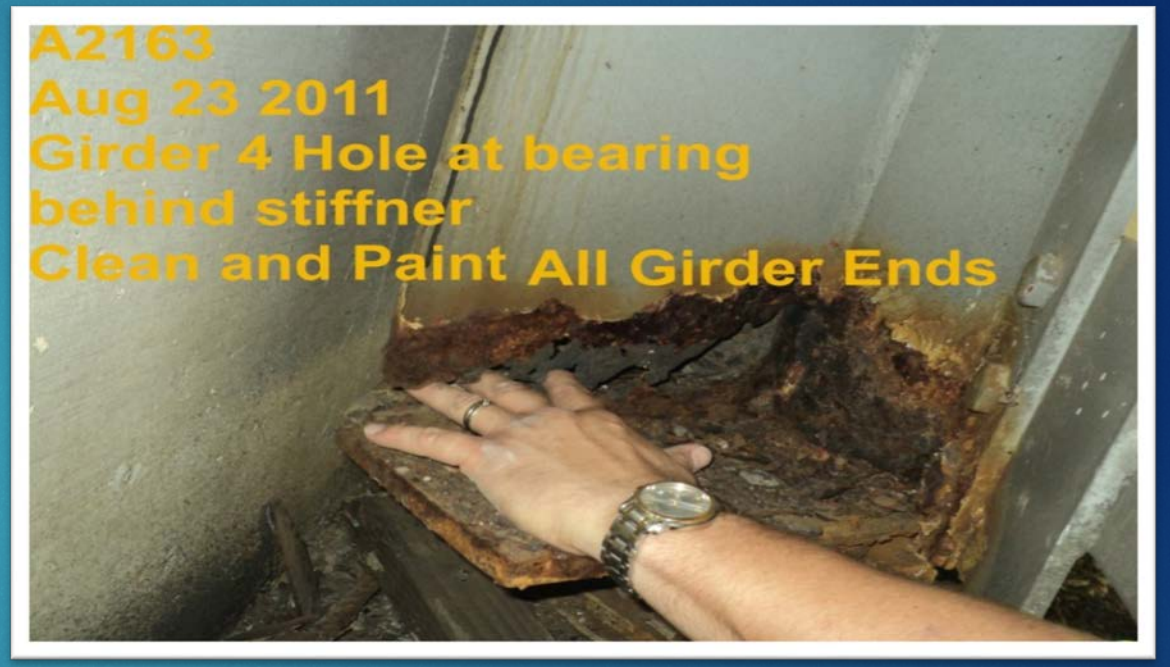
Small Movement Joint Maintenance

WATERPROOF WITHOUT REPLACEMENT


A2163
Aug 23 2011
Typical Bearing
Clean / paint / lube


A2163
Aug 23 2011
Girder 4 Hole at bearing
behind stiffner
Clean and Paint All Girder Ends

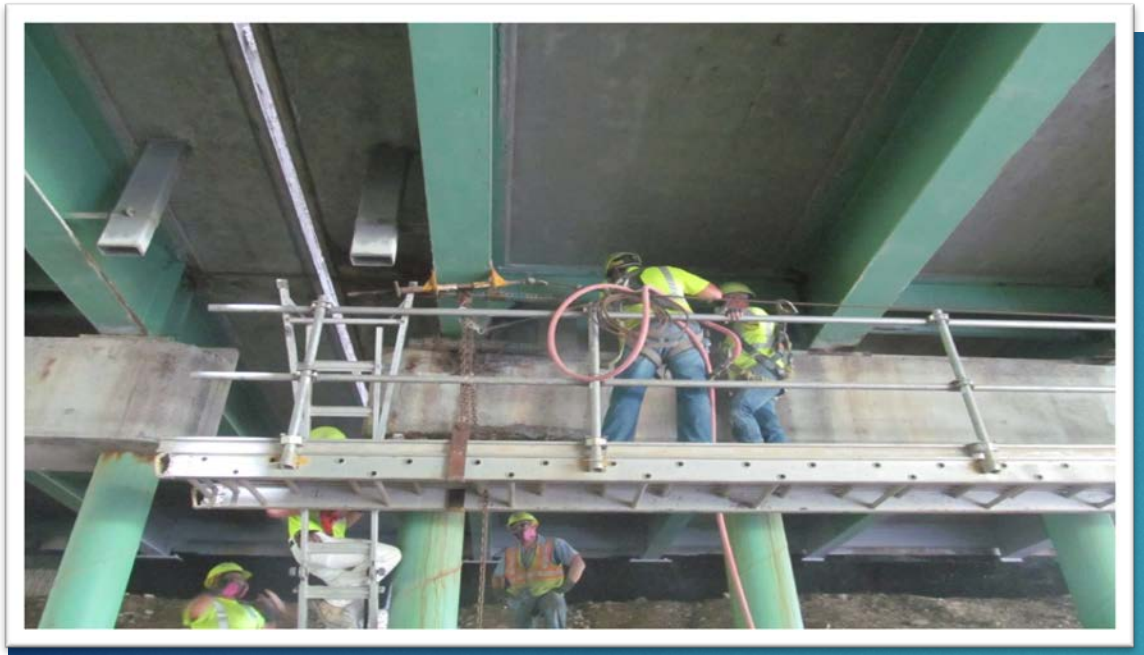

A2164
Aug 23, 2011
Typical Girder 1 EB Structure Only
Paint Lower Web and Bottom Flange (Pic East End)

VERTICAL STIFFNER
SECTION LOSS

HOLE IN WEB
OVER BEARING

REBAR EXPOSED

PAY NOW



OR PAY MORE LATER


Expansion Jt Hydroblast Removal
Kilian Corporation
Illinois Bridge (I-255 @ I-64)
Intermediate Bent

SINUSOIDAL REINFORCEMENT


A5383
Dec 14, 2010
Typical Compression Seal


A2941 01-11-12
Rte 21 S/Old Hwy 21
N. Exp Jt Breaking Free @ Lane 1/2 line

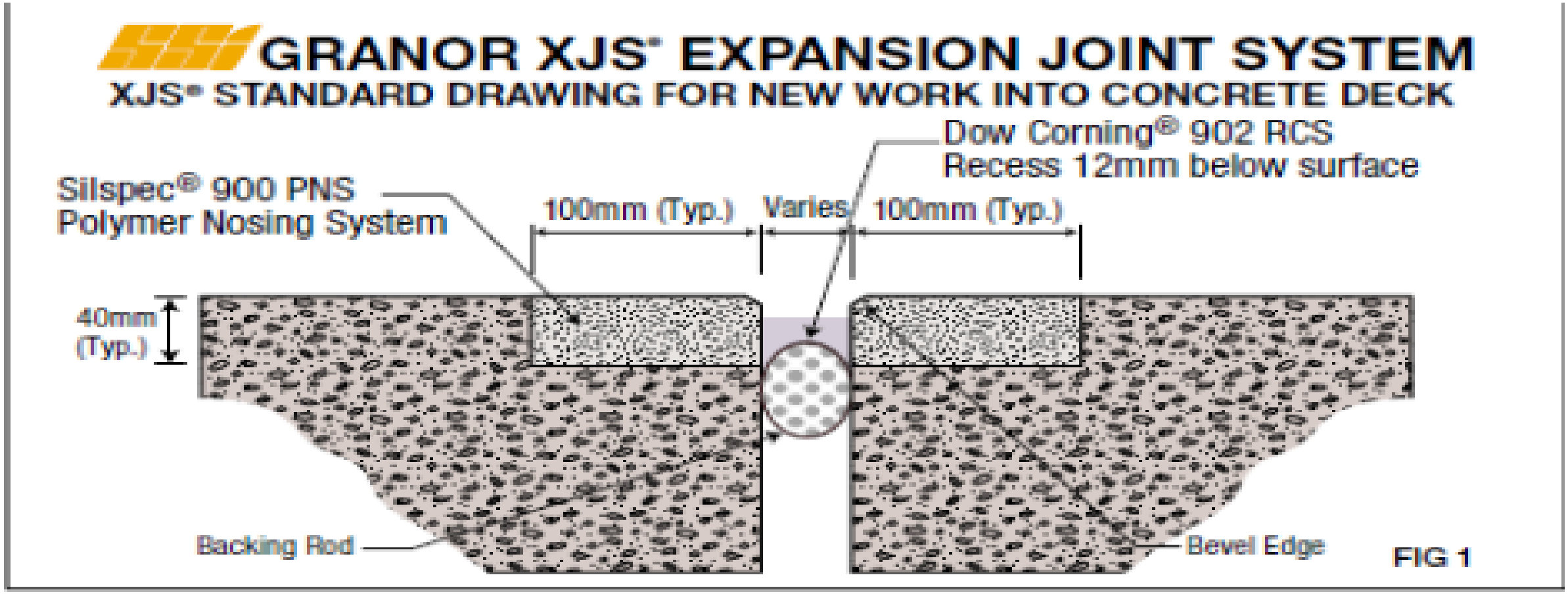

A3097 Jefferson Co 1/11/12
MO 21 S @ OR 21
Bent 1 Expansion
Replace with XJS

WATERPROOF WITHOUT REPLACEMENT

REVIEW OF:

- XJS – SILSPEC WITH SILICONE SELANT
- SILICOFLEX GLAND
- EVAZOTE GLAND
- EMSEAL GLAND

WHAT IS THE XJS SYSTEM



REMOVAL

SANDBLAST PREP

NOSING
SANDBLAST FOAM
PRIMER

`

BACKER ROD

SILICONE


Silicon debonded in east joint.


A3638 St. Louis Co. I-44 4-21-11
South expansion device - south bound
lanes (1 3/8 inches at 45).


A3638 St. Louis Co. I-44 4-21-11
South expansion device - south bound
lanes - silicon to narrow.

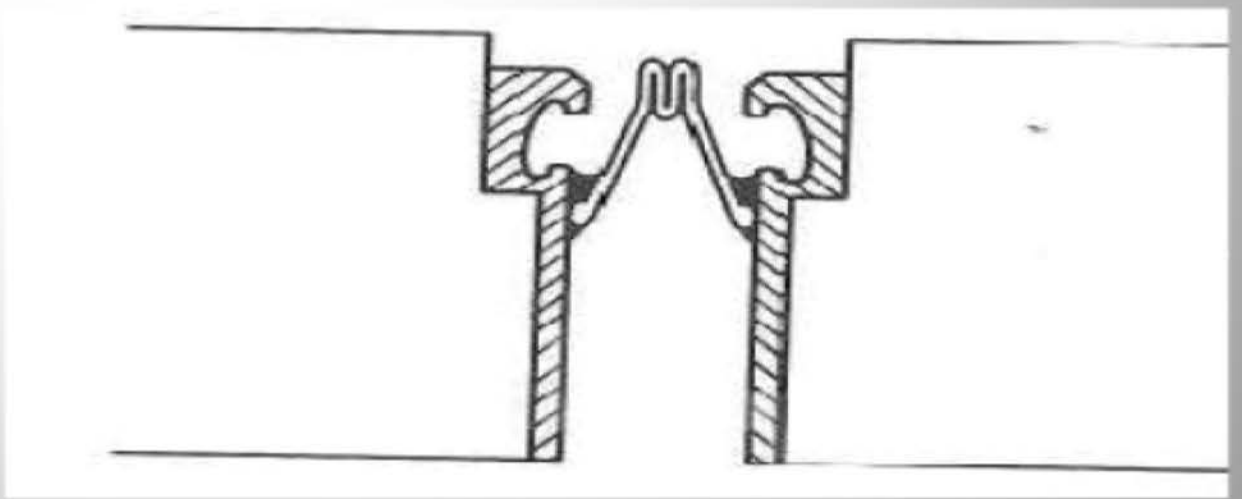

A4629 Jefferson Co 1/18/12
MO 30 E @ BIG RVR
Bent 4 Exp. joint failing
Repair expansion joint

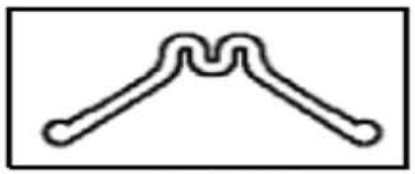

A3101 Jefferson Co. MO 21 4-21-11
Seal looks good - east joint
(2 3/8 inches at 50).


A2943 Jefferson Co. MO 21 4-21-11
East joint - 1 1/8 inches at 45 - good.

SILICOFLEX

Bridge Deck Joint Sealing System



Model	Inst. Width	Max Closure	Max Opening
 SF150	**1” - 2” (25.4mm-50.8mm)**	**½” (12.7mm)**	**2” (50.8mm)**
 SF225	**1 ¼” - 3” (31.75mm – 76.2mm)**	**¾” (19mm)**	**3” (76.2mm)**
 SF400	**2 ½” – 4” (63.5mm – 101.6mm)**	**1” (25.4mm)**	**5” (127mm)**

IT STILL LOOKS GOOD


EXCESSIVE GLUE


GLAND FAILURE

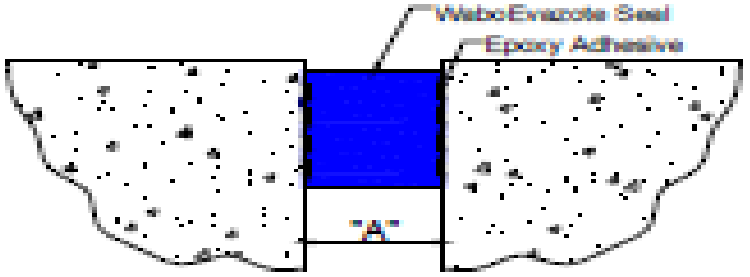

CANNOT TRIM

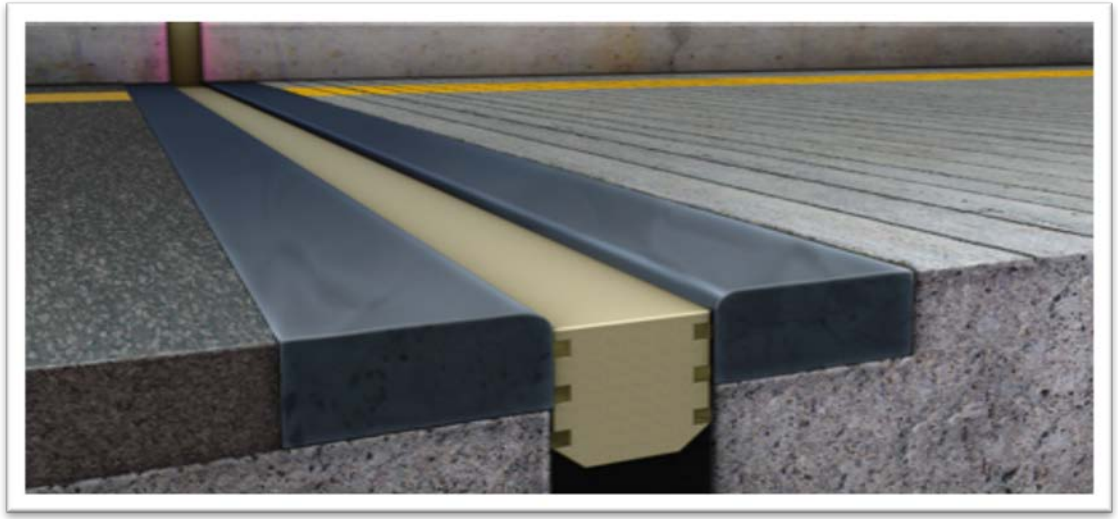

A5117
Nov 3, 2014
North Approach Slab to Approach Pavement
Now up to 6" at 60+ degrees

TECHNICAL DATA:

Design Information

The design of the seal shall be capable of accommodating movement and variations in joint widths through compression and tension of its shape. Grooved sidewalls shall be 1/8" (3mm) wide by 1/8" deep (3mm) and spaced between ¼" (6mm) to ½" (13mm) apart and run along the entire length of the bond surfaces of the seal to ensure an effective and quality surface for adhesion.






A4840 ST LOUIS 7/3/12
CRD JJ KELLEY MEM DR @ IS 270
ABUT 1 EVAZOTE EXP. JOINT
FACING NORTH

EMSEAL
Expansion Joints and Pre-Compressed Sealants

BEJS SYSTEM -- Bridge Expansion Joint System

Tech Data | Install Data | Guide Spec | CAD | Sample | Projects | Checklist | en español | BEJS Resources

Features
- Watertight, tensionless silicone bellows
- Traffic durable
- Pre-compressed
- Primary seal
- Rapid installation--new or retrofit
- Non-invasive anchoring
- Staged installation preserves traffic flow
- Joint-face adhered
- Continuity of seal through curbs, sidewalks, parapets
- 100% free of wax or asphalt compounds (Why does this matter?)

Uses
- Replaces old or failed bridge expansion joint systems
- Ideal for concrete-to-concrete substrates
- For Nosing Material-repaired substrates,
- Metal reinforced edges where demolition and removal of existing embedded metal angles is not feasible or affordable.
- As a replacement for failed strip-seal inserts
- To seal the joint under asphaltic-plug joints
- To seal control joints under continuous asphalt roadway surfaces

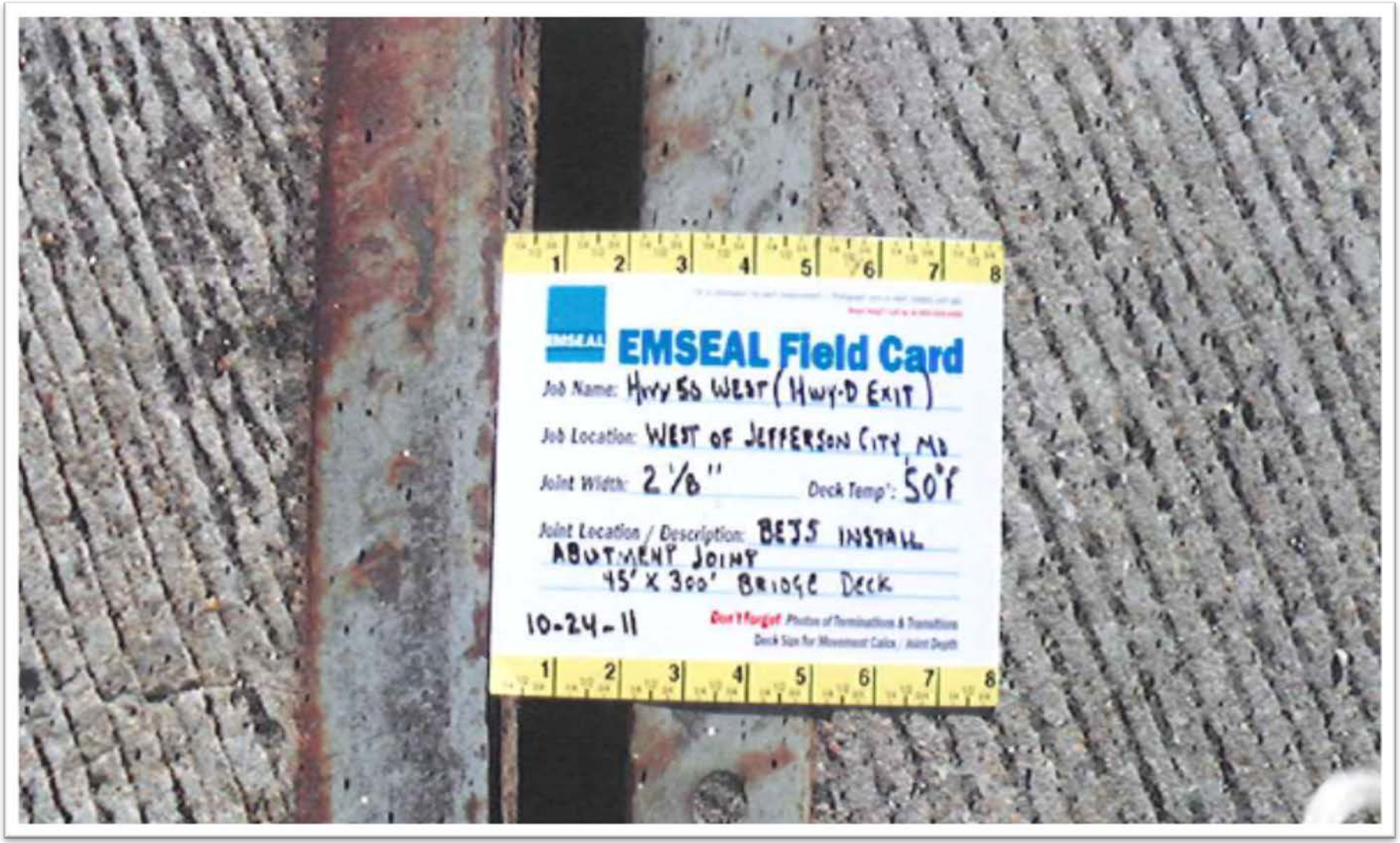
Standard Sizes
- 1/2" (12mm) to 4" (100mm)

Movement Capability
+50% and -50% (Total 100%) of nominal material size (see "Performance")

NEW!

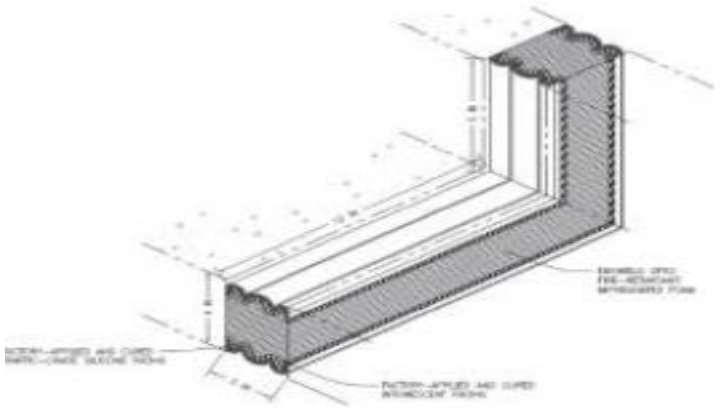
NEW!

NEW!

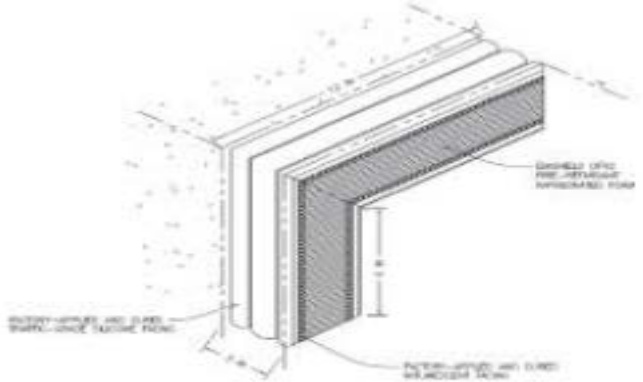

EMSEAL Field Card
Job Name: Hwy 50 WEST (Hwy-D EXIT)
Job Location: WEST OF JEFFERSON CITY, MO
Joint Width: 2 1/8"
Deck Temp°: 50°F
Joint Location / Description: BEJS INSTALL
ABUTMENT JOINT
45' X 300' BRIDGE DECK
10-24-11
Don't forget Photos of Terminations & Transitions
Deck Slot for Movement Cable / Joint Depth

EPOXY
INSERT GLAND
SILICONE ADHEASIVE

COMPLETED



Universal-90 Upturn Transition



Universal-90 Flipped-Over as Downturn Transition

UNIVERSAL 90

MAINE

SUCCESSFUL TRIAL

SOME MINOR DEBONDING – BUT NO LEAKS

INJECT SILICONE ADHESIVE MORE

MaineDOT

EMSEAL BEJS Watertight Joint System for Bridges
Old Bath Road Bridge over US Route One in Brunswick, Maine
First Interim Report
October 16, 2013

October 11, 2012 MaineDOT's Bridge Maintenance Forces and representatives of EMSEAL installed a demonstration bridge joint seal on the Old Bath Road Bridge (#6033) over US Route 1 in Brunswick. The EMSEAL (BEJS) is a 'pre-compressed' 100% acrylic cellular foam compression-type seal with a silicone external facing. The pre-compressed seal is confined between wood slats and shrink-wrap.

MaineDOT's Transportation Research Division inspected the joint on October 16, 2013 with Don McKenna, Region 1 Bridge Maintenance TOM.

We found a considerable amount of debris accumulated within the joint after one year. According to NCHRP 319, debris accumulation can be detrimental to the performance of these types of compression seals (NCHRP 219, p.12).

No doubt, a contributing factor to the debris accumulation is that the seal was carried up the face of curb creating a dam, rather than running the seal straight through which would allow water and non-compressible materials to exit the road surface.

The joint seal splices (left photo) seem to be holding up well. The seal is supplied in 6.56 LF (2 m) lengths and is bonded end to end in the field with a silicone adhesive prior to insertion into the joint. The silicone sealant bead that runs the length of the seal and bonds to the steel is still holding up well for the most part.

It was noted that in some areas the bond has begun to weaken on the seal side of the bead and has caused some separation. It is unclear to what depth the debondment extends to. See photo below.

Overall, the joint seal is performing well. Bridge Maintenance noted that they have seen no evidence of leakage underneath the deck.

References:
Transportation Research Bo… …NCHRP Synthesis 319 Bridge Deck Joint Per… 46 p.

EMSEAL Joint Systems Ltd, 25 Bridle Lane, Westborough, MA 01581, BEJSSYSTEM TECH DATA sheet

Submitted:
Dale Peabody & Doug Gayne
Maine Department of Transportation
Transportation Research Division
October 24, 2013

IOWA

TRIAL PHOTOS – LOOKS LIKE GOOD SILICONE INJECTION

WASHINGTON

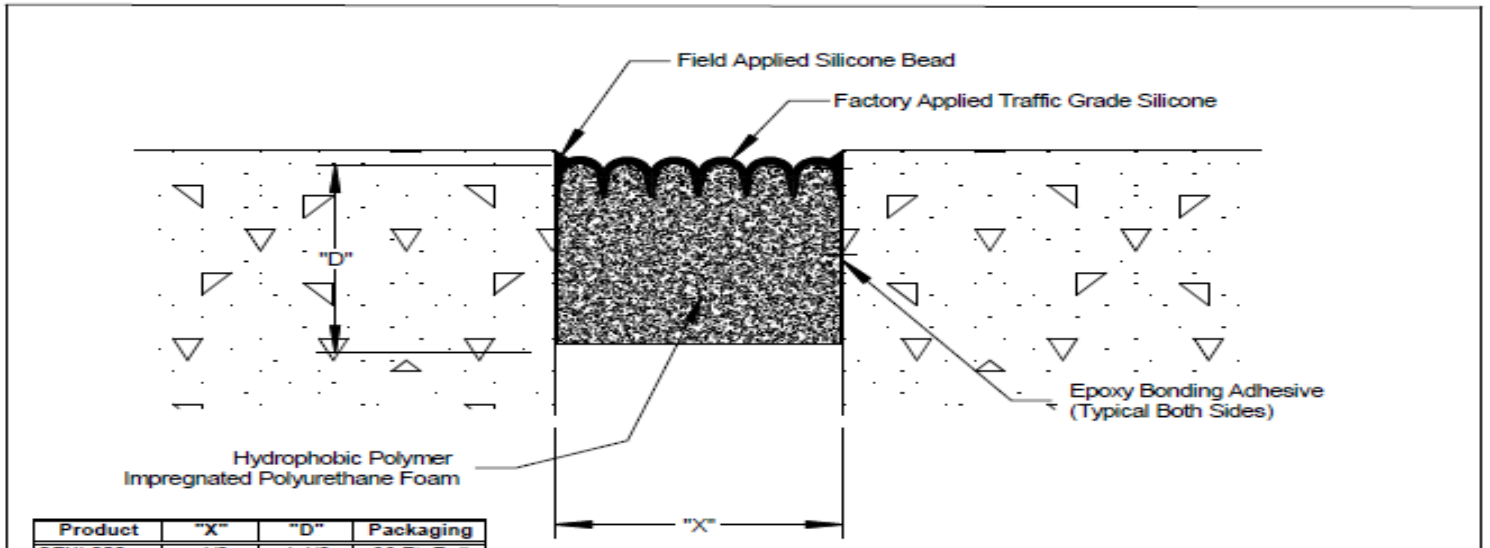
"It has held up well and remains water tight" - Rick Rodda

REVIEW

- XJS
- SILICO FLEX
- EVAZOTE
- EMSEAL

ALL THESE SYSTEMS HAVE SIZING AND INSTALLATION INSTRUCTIONS ON THE INTERNET

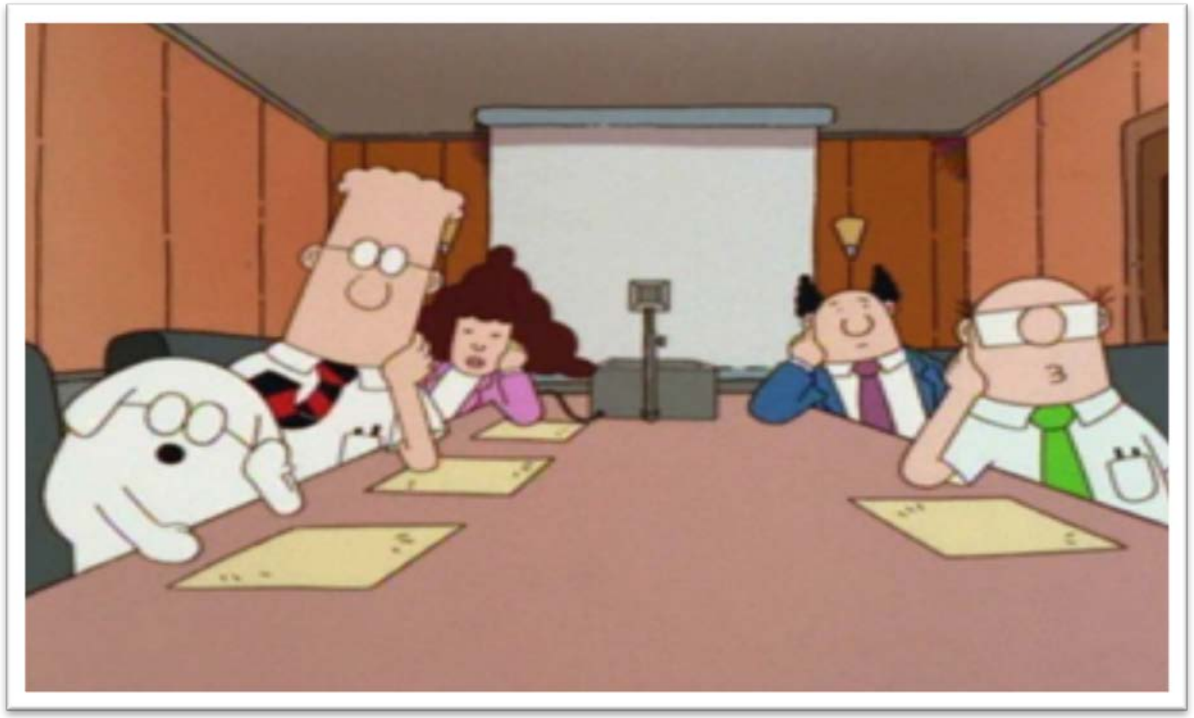
LYMTAL SILFAST XL



Product	"X"	"D"	Packaging
SFXL050	1/2	1 1/2	39 Ft. Roll
SFXL062	5/8	1 1/2	39 Ft. Roll
SFXL075	3/4	1 1/2	39 Ft. Roll
SFXL100	1	2	39 Ft. Roll
SFXL125	1 1/4	2	39 Ft. Roll
SFXL150	1 1/2	2	39 Ft. Roll
SFXL175	1 3/4	2	39 Ft. Roll
SFXL200	2	3	39 Ft. Roll
SFXL225	2 1/4	3	39 Ft. Roll
SFXL250	2 1/2	3	39 Ft. Roll
SFXL275	2 3/4	3	39 Ft. Roll
SFXL300	3	3	39 Ft. Roll
SFXL325	3 1/4	3	39 Ft. Roll
SFXL350	3 1/2	3	39 Ft. Roll
SFXL375	3 3/4	4	39 Ft. Roll
SFXL400	4	4	39 Ft. Roll

LymTal International, Inc.	
Scale: NTS	Drawn By: LAG
Date: 1/15	Revised: 2/20/15
Iso-Flex Silfast XL Expansion Joint	
	Drawing Number: 2856-01

QUESTIONS or COMMENTS?



Presenter: Mark Croarkin

Email:
Mark.croarkin@modot.mo.gov