

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 Board, 2003, NCHRP Synthesis 319 Bridge Deck Joint Performance, 46 p.

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

**Submitted:**

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October 24, 2013