JOINT SEALING FOR SMALL SPAN BRIDGE DECKS

2014 National Bridge Preservation Conference Orlando, Fl

Joseph Becker
USA BRIDGES

- Structurally Deficient: 11%
- Functionally Obsolete: 13%
- Satisfactory: 76%
What Should I Look for in a Joint Sealing System
FUNCTION

Eliminate the Passage of Liquid and Debris
Allow the Safe Passage of Vehicles
Accommodate Directional Changes
LONGEVITY

• Low Tensile Stress During Cycling

• UV and Weather Resistance

• Temperature Insensitive

• Puncture Resistance

• Large Movement Range
INSTALLATION

• Rapid Installation for crews and the Traveling Public
  • Simplicity is Key
  • Adequate Installation Window
  • Simple Repair if Necessary
THERE ARE SO MANY OPTIONS, AND HOW DO I KNOW WHICH SIZE TO USE?
## COMPRESSION SEAL, NEOPRENE OR FOAM

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Width (W)</th>
<th>Nominal Height (H)</th>
<th>Max. Movement</th>
<th>Narrowest Opening</th>
<th>Widest Opening</th>
<th>Minimum Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 Model</td>
<td>1.25 (32)</td>
<td>1.25 (32)</td>
<td>0.50 (13)</td>
<td>0.56 (14)</td>
<td>1.06 (27)</td>
<td>1.63 (41)</td>
</tr>
<tr>
<td>163 Model</td>
<td>1.63 (41)</td>
<td>1.88 (48)</td>
<td>0.60 (15)</td>
<td>0.73 (19)</td>
<td>1.38 (35)</td>
<td>2.25 (57)</td>
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<tr>
<td>175 Model</td>
<td>1.75 (44)</td>
<td>1.75 (44)</td>
<td>0.70 (18)</td>
<td>0.79 (20)</td>
<td>1.49 (38)</td>
<td>2.40 (61)</td>
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<tr>
<td>200 Model</td>
<td>2.00 (51)</td>
<td>2.00 (51)</td>
<td>0.75 (19)</td>
<td>0.95 (24)</td>
<td>1.70 (43)</td>
<td>2.75 (70)</td>
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<tr>
<td>225 Model</td>
<td>2.25 (57)</td>
<td>2.33 (59)</td>
<td>0.90 (23)</td>
<td>1.01 (26)</td>
<td>1.91 (49)</td>
<td>3.00 (76)</td>
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<tr>
<td>250 Model</td>
<td>2.50 (64)</td>
<td>2.50 (64)</td>
<td>1.00 (25)</td>
<td>1.13 (29)</td>
<td>2.13 (54)</td>
<td>3.20 (81)</td>
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<tr>
<td>300 Model</td>
<td>3.00 (76)</td>
<td>3.25 (83)</td>
<td>1.20 (31)</td>
<td>1.34 (34)</td>
<td>2.55 (65)</td>
<td>4.25 (108)</td>
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<tr>
<td>350 Model</td>
<td>3.50 (89)</td>
<td>3.50 (89)</td>
<td>1.40 (36)</td>
<td>1.58 (40)</td>
<td>2.98 (76)</td>
<td>4.45 (113)</td>
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<td>400 Model</td>
<td>4.00 (102)</td>
<td>4.00 (102)</td>
<td>1.65 (42)</td>
<td>1.75 (44)</td>
<td>3.40 (86)</td>
<td>5.63 (143)</td>
</tr>
<tr>
<td>450 Model</td>
<td>4.50 (114)</td>
<td>4.50 (114)</td>
<td>2.20 (56)</td>
<td>2.03 (52)</td>
<td>3.83 (97)</td>
<td>6.13 (156)</td>
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<tr>
<td>500 Model</td>
<td>5.00 (127)</td>
<td>5.00 (127)</td>
<td>2.35 (60)</td>
<td>1.90 (48)</td>
<td>4.25 (108)</td>
<td>6.25 (159)</td>
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<tr>
<td>600 Model</td>
<td>6.00 (152)</td>
<td>6.00 (152)</td>
<td>2.90 (74)</td>
<td>2.20 (56)</td>
<td>5.10 (129)</td>
<td>7.75 (197)</td>
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<td></td>
<td>150</td>
<td>225</td>
<td>400</td>
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<tr>
<td><strong>Minimum Opening</strong></td>
<td>0.50 in.</td>
<td>0.75 in.</td>
<td>1.00 in.</td>
<td></td>
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<tr>
<td><strong>Maximum Opening</strong></td>
<td>2.00 in.</td>
<td>3.00 in.</td>
<td>5.00 in.</td>
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<tr>
<td><strong>Movement Capacity</strong></td>
<td>1.50 in.</td>
<td>2.25 in.</td>
<td>4.00 in.</td>
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</tbody>
</table>
ARE THERE JOINT SYSTEMS THAT CAN BE INSTALLED INTO ANY HEADER SYSTEM?
Silicoflex Bonds to Steel, Concrete and Elastomeric Concrete using the exact same Installation Procedures
SAN JUAN, PR
SJU AIRPORT

Silicoflex was tapped as the best possible option for the severely degraded Bridge Deck at the Main Terminal Building
EXISTING CONDITIONS
A COMPLETE SEALING SOLUTION PACKAGE WAS DELIVERED TO SJU

- Silicoflex SF225
- Polytron Elastomeric Concrete
- Extremely quick install time
- Inorganic Gland Selection resists UV in this sunny climate
- Install took place in Summer with Extremely warm, Extremely Humid Conditions
CONCERNS WHEN INSTALLING ELASTOMERIC CONCRETE

• MOISTURE
• Time Constraints
• Return to Traffic Time
• Mixing the Material
• Is your Material Premeasured
SILICOFLEX PLACEMENT
4-WAY AND “T” INTERSECTIONS
TESTING

IT'S OKAY TO ASK FOR 3RD PARTY TEST RESULTS
Maximum Load
2200 lbs.
@ -20°F
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JBECKER@RJWATSON.COM

THANK YOU