Index 458-100 Expansion Joint System - Strip Seal

Design Criteria

AASHTO LRFD Bridge Design Specifications; Structures Design Guidelines (SDG)

Design Assumptions and Limitations

Use Index 548-100 in accordance with the requirements of SDG 6.3 and 6.4.

Plan Content Requirements

Show Strip Seal Expansion Joints on Superstructure and Approach Slab detail sheets and other sheets as required. Label Expansion Joint by name or Index number. Show Sidewalk Cover Plates at all expansion joint locations that intersect with sidewalks.

Complete the "Strip Seal Expansion Joint Data Table Index 548-100" using the instructions provided and include the table in the plans. See Introduction I.3 for more information regarding use of Data Tables.

Instructions:

1. Total Design Movement is the absolute value of the total factored temperature movement (expansion and contraction), measured in the direction of movement. Use Figures 1 through 4, for determining the Direction of Movement.

2. Include a value for Dimension A in the Data Table. Dimension A (measured perpendicular to the joint) @ 70°F is normally set at 2 inches to accommodate installation of the neoprene seal and a total design movement up to 3 inches. Set Dimension A to account for skews or greater design movements while meeting the design limitations below:
   a. the minimum factored joint opening in the Direction of Movement is ½ inch;
   b. the maximum factored joint opening in the Direction of Travel ("W" per SDG 6.4) is 4 inches;

3. Dimension A adjustments for 10°F shall be based on the unfactored movements perpendicular to the centerline of the joint.

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### Strip Seal Expansion Joint Data Table

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TOTAL DESIGN MOVEMENT IN DIRECTION OF MOVEMENT</th>
<th>PARALLEL TO Q JOINT</th>
<th>MOVEMENT ANGLE α</th>
<th>SKEW ANGLE LEFT SIDE</th>
<th>SKEW ANGLE RIGHT SIDE</th>
<th>DIM. A @ 70°F</th>
<th>DIM. A ADJUSTMENT PER 10°F</th>
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**Note:**

Dim. A adjustment per 10°F shown is measured perpendicular to Q Expansion Joint. For theoretical direction of movement, see Index 458-100, Sheet 1.
Figure 1  Curved Bridge (Single Continuous Unit) with Skewed Joints
Figure 2 Curved Bridge (Single Continuous Unit) with Radial Joints

- Approach Slab
- Gutter Line
- Point of Fixity

90° (Tangent to Curve), Left Side
Skew Angle = 0°

90° (Tangent to Curve)

90° (Tangent to Curve), Right Side
Skew Angle = 0°
Figure 3 Curved Bridge (Multiple Continuous Units) with Radial Joints
Figure 4 Straight Bridge with Skewed Joints

Payment

<table>
<thead>
<tr>
<th>Item number</th>
<th>Item Description</th>
<th>Unit Measure</th>
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<tbody>
<tr>
<td>458-1-12</td>
<td>Bridge Deck Expansion Joint, New Construction - F&amp;I; Strip Seal</td>
<td>LF</td>
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