

CRAFCO[®] **INC**
PRESERVATION PRODUCTS

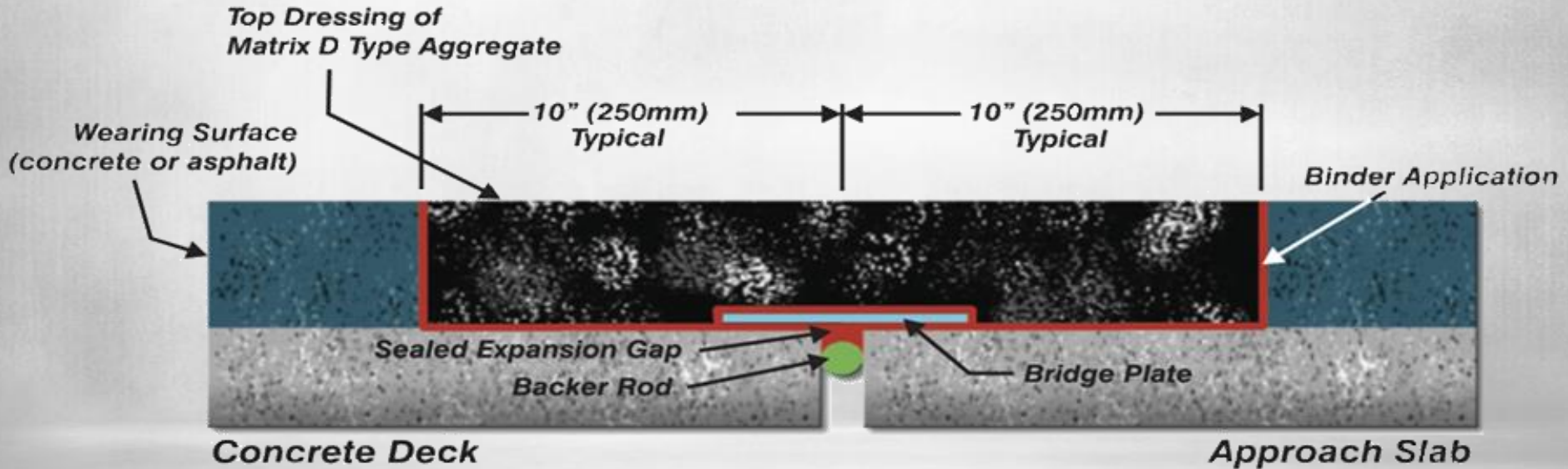
Delivering Confidence Through Innovation, Quality and Value Since 1976



Matrix 501

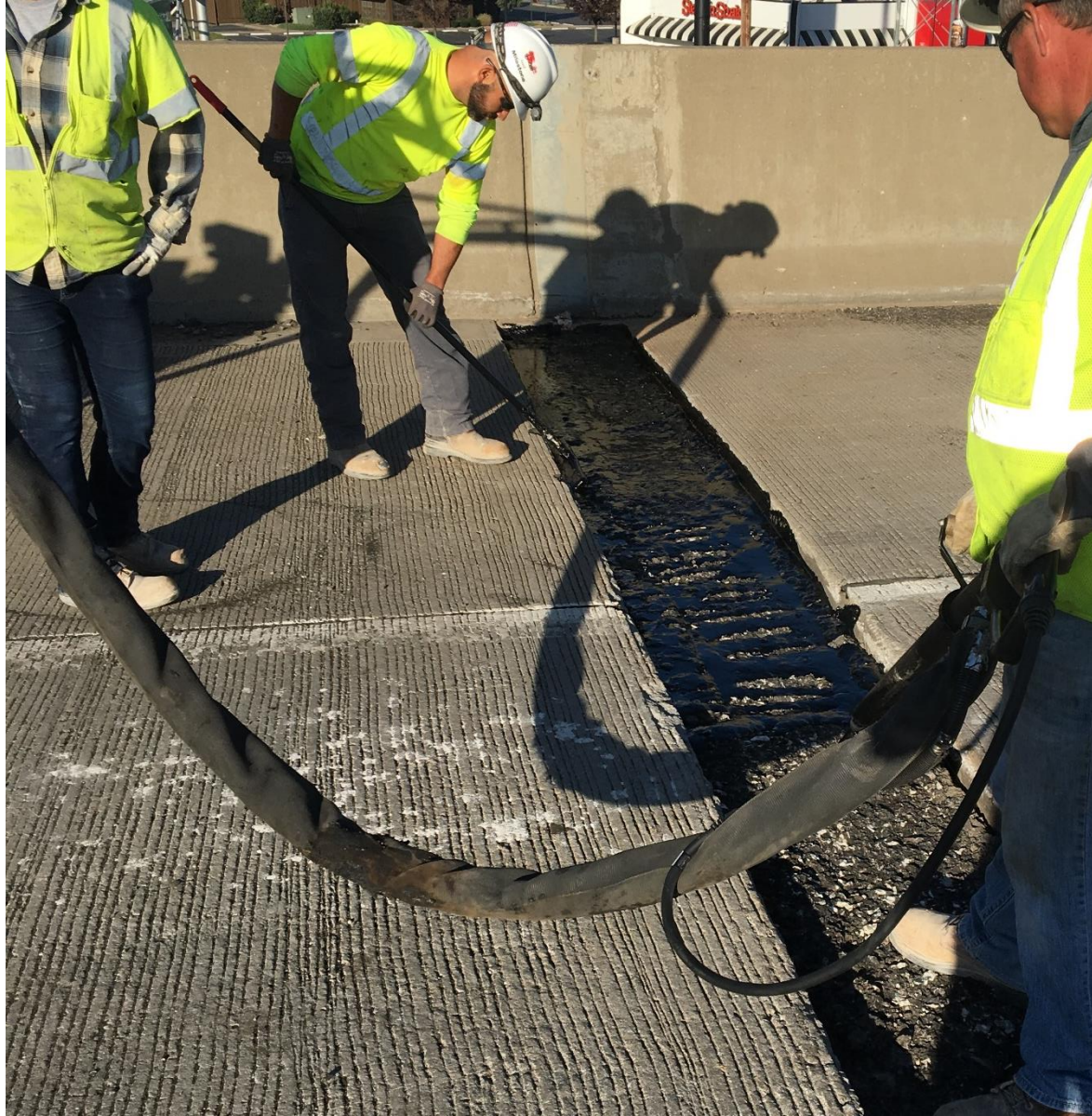
What is an Asphaltic Plug Joint?

A watertight expansion joint system placed in the bridge deck surfacing layer



Crafco's Matrix Joint Systems

- Quality closed joint solutions for new bridge construction or bridge rehabilitation
- Can be used for expansion, fixed end and pressure relief joints
- Used for expansion \pm 1 inch (25 mm) of annual joint movement
 - skew angles up to 45°
 - joint gaps up to 6" (15 cm)



Matrix 501 System

Matrix 501 is a single component blend of asphalt binder and aggregate

System Components:

- Matrix 501 Mastic
- Matrix 501 Adhesive
- Surfacing Aggregate
- Backer rod
- Bridging plates and locating pins



Features Common to Matrix 501

- Easy to install and maintain, compared to anchored joint systems
- Aggregate provides mass, stability
- Durable, long-term repair
- Performs in all weather extremes





Features Common to Matrix 501

- Smooth, quiet ride
- Good joint extension
- Resists tracking and shoving
- Meets ASTM D6297 specification



Matrix 501 - Exclusive Features/Benefits



- Pre-packaged; pre-measured consistency
- Eliminates separate heating of rock and binder
- Fewer components to inventory and handle
- No compaction required
- Increased production
- Less equipment
- Less manpower

Matrix Application Proper Equipment

- Use only an indirectly-heated melter with sufficient agitation such as the Crafcro Patcher II for melting Matrix 501
- Use melters with pumps only to melt Matrix Binder
- Sealant melters should never be used for material with aggregate



If appropriate melters are not used, application difficulties, pump system damage, and extreme wear can result!



Matrix 501 Project Steps

- 1. Measure and Cut Joint**
- 2. Clean and Dry Blockout**
- 3. Install Backer Rods**
- 4. Apply Matrix 501 Adhesive**
- 5. Install Steel Bridge Plates**
- 6. Apply Mastic 501 Material**
- 7. Apply Surface Aggregate**



Measure, Mark, Cut



- Center over gap
- Minimum 2" (5cm) depth
- Standard width is 20" (51cm)

**MATRIX
501**

Joint Blockout



- Remove debris between saw cuts
- Leave flat; no height differences greater than 1/8 inch (3 mm)
- If needed, a rapid setting concrete patch may be used to level the joint surfaces



**MATRIX
501**

Clean & Dry Blockout



**MATRIX
501**

Pavement Temp

Ensure the **pavement** temperature exceeds
40°F (4°C) during installation





Material Temp

Matrix 501 application temperature must be a minimum of 380°F (193°C) and a maximum of 400°F (204°C)



We recommend applying the product toward the higher side of these ranges to increase adhesion and workability of product.

Best practice to measure material temperature is with a handheld heat gun.



Backer Rod



- Backer rods are placed in expansion joint gaps that are 1/8 inch (3mm) or wider.
- The backer rod should sit at a minimum depth of 1/2 inch (12mm) and not exceeding 1 inch (25mm).

**MATRIX
501**

Heat/Apply Adhesive

- Heat Matrix 501 Adhesive to recommended application temperature
- Pour into expansion gap, overfilling
- Spread to cover all blockout surfaces (sides and bottom)



**MATRIX
501**

Steel Bridging Plates, Locating Pins



- Bridging plates are cut to extend the full length of joint with no overlap or gap
- Immediately embed steel bridging plates into the Matrix 501 Adhesive
- Center over the expansion gap using locating pins



Tank (Coat) the Blockout

- Tank all exposed surfaces of the joint blockout with heated Matrix 501 Adhesive
- Cover the bridging plates
- Must be minimum thickness of 1/32" (1mm) and max of 1/8" (3mm)



**MATRIX
501**

Apply Matrix Mastic



- For joint depths up to 2½” (63mm) apply Matrix Mastic in one lift, up to ¼” (6.4mm) above pavement surface
- For joint depths deeper than 2½” (63mm), apply Matrix Mastic in layers:
 - Each lift is less than 2½” (63mm) deep
 - Lifts will end ¾” to 1” (19-25mm) below pavement surface
 - Allow Matrix 501 surface to cool to 180°F (82°C) before applying the final layer



**MATRIX
501**

Matrix 501 Mastic Final Lift



- The final lift is approx. 1" (25mm) thick and installed to 1/4" (6.4mm) above the payment surface
- No compaction required for Matrix 501



Apply Surface Aggregate

- When the surface has cooled to 225- 250°F (107-121°C), immediately broom the Surface Aggregate over the repair area
- Surface aggregate is applied while the mastic is hot to achieve proper adhesion
- After cooling, sweep the joint surface with a push broom to remove excess aggregate



**MATRIX
501**

Finished Application



The completed Matrix 501 Bridge Joint is allowed to cool and will be ready for traffic approximately 1-2 hours after completion

