



# Armourjoint® BP02HM

## Asphaltic Plug Joint System for Bridges



### INSTALLATION METHOD STATEMENT using - BJC - BJ10 - BJ30 - Super Tropical (HM) Grade 1/3

#### 1. GENERAL DESCRIPTION:

**Armourjoint** is flexible bridge jointing comprising a polymer modified bituminous bridge joint binder mixed with graded aggregates to form an asphaltic plug joint (APJ) in concrete and asphalt carriageways.

#### 2. PRODUCT:

**Armourjoint Systems** can accommodate a thermal movement range of  $\pm 25\text{mm}$  in a standard APJ of 500mm width x100mm depth. In service, they exhibit excellent adhesive and compressive properties for improved resistance to wheel track deformation over a wide range of service temperatures. The system is normally applied when the ambient air temperature is above  $5^{\circ}\text{C}$  however the material is designed for application at temperatures of  $0^{\circ}\text{C}$  and rising providing the surface is dry and free of frost and salt deposits.

#### 3. SURFACE PREPARATION:

- 3.1 The highway engineer should provide sufficient information to establish the line of the joint and full depth of surfacing and structural air gap.
- 3.2 The surfacing is removed by saw cutting vertically along each side of the marked joint line using a diamond bladed floor saw. The saw should be set to cut through the full depth of surfacing without damage to the bridge deck.
- 3.3. Using pneumatic tools, carefully break out the surfacing and waterproofing, remove to form the APJ recess and expose the concrete bridge deck. Remove the joint seal and caulking in the bridge deck expansion joint.
- 3.4 Thoroughly clean the expansion joint and APJ recess using HCA equipment taking care not to damage the saw asphalt faces. Remove all debris and loose material.

**NOTE:** APJ's cut into concrete surfaces should be primed with a bitumen primer prior to the installation of the **Armourjoint** System. The primer should be spray or brush applied at a rate of 10/20m<sup>2</sup> per litre depending on the porosity of the concrete surface and allowed the dry prior to the installation process.

#### 4. INSTALLATION PROCEDURE:

- 4.1 The **Armourjoint** binder should be heated in a suitable size preheater fitted with thermostatic controls and horizontally mounted agitator. The application temperature ( $170 - 190^{\circ}\text{C}$ ) and maximum safe heating temperature ( $200^{\circ}\text{C}$ ) of the material shall be controlled in accordance with the manufacturers recommendations.
- 4.2 Re-caulk the bridge deck expansion joint and re-seal using **Armourjoint** binder and locate the bridging plate in the centre of the joint. A fibreglass membrane may be placed over the bridging plate to allow the bridge deck joint to move independently of the APJ.
- 4.3 Tank out the APJ recess using hot **Armourjoint** binder to form a waterproof seal.
- 4.4 Fix a suitable heat resistant masking tape along each side of the APJ to form a neat finishing edge and to prevent hot material spreading on to the adjacent road surfacing.



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- 4.5 Heat the graded aggregate in suitably sized concrete mixer to a temperature of (150 - 170°C) and coat with hot **Armourjoint** binder. Place the hot matrix in the APJ recess and build up the joint in successive 50mm layers, flooding each layer in turn with hot binder until the **Armourjoint** is approximately 20 mm below the surrounding road surface.
- 4.6 The final 20 mm of the **Armourjoint** is completed using coated aggregate + hot binder mixed in the ratio of 7:1 and placed in the APJ to a level which is slightly proud of the adjacent road surface.
- 4.7 Allow the joint to cool and whilst it is still warm, tamp the surface of the joint to the profile of the surrounding road surface using a wacker plate or vibrating roller. When compacted the finished joint should have an aggregate to binder ratio of 3:1.
- 4.8 A final screed application of hot bridgejoint binder is applied to the joint surface filling up any voids, which may have formed during tamping.
- 4.9 Allow the joint to cool to ambient temperature, remove the masking tape and the installation can be opened to traffic.

**NOTE:** Where the surface of the APJ is required to have a skid resistance finish, the joint should be dressed with a suitable 3mm high PSV aggregate, which has been heated to 150-170°C, and applied immediately following the final screed application (4.8). The aggregate dressing should be lightly rolled into the surface of the APJ.

#### 5. SYSTEM INSTALLATION CHECKS:

A visual check should be carried out to determine the installation is uniform and level with the adjacent road surfacing.

#### 6. SAFETY CLOTHING & EQUIPMENT:

The following safety clothing and equipment must be worn **AT ALL TIMES** when handling, mixing or applying **Armourjoint** materials:

**Hand Protection:** Gloves - Industrial type, heat resistant with elasticated sleeves.

**Eye Protection:** Safety Glasses, Goggles, Face Shield (When Transferring Molten Material).

**Skin Protection:** High Visibility Jacket, Hard Safety Helmet, Overalls (Flame retardant), Closed Safety Boots.

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## Asphaltic Plug Joint System for Bridges



INSTALLATION METHOD STATEMENT using - BJC - BJ10 - BJ30 - Super Tropical (HM) Grade 3/3

**Issue Date : April 2016**

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