Product: Britflex BEJ - Bridge Expansion Joints

Product Description:

The BEJ expansion joint is a surface mounted mechanical system, with an elastomeric insert between two metal runners or carrier rails. It is unique in that the rails which house the insert are set into a rapid curing elastomeric resin compound know as Britflex Resin Mortar.

Anchorage to the deck is achieved through the excellent bonding qualities of the polyureide resin, without the need for any mechanical fixings. The system has an unrivalled worldwide track record of in service performance in excess of 30 years.

Ideal for maintenance:

The Britflex BEJ is system is ideally suited for maintenance schemes to replace other failed joints. The benefits of rapid on site assembly allow phased working outside peak traffic hours resulting in minimum traffic disruption which results in significant saving of associated traffic management costs.

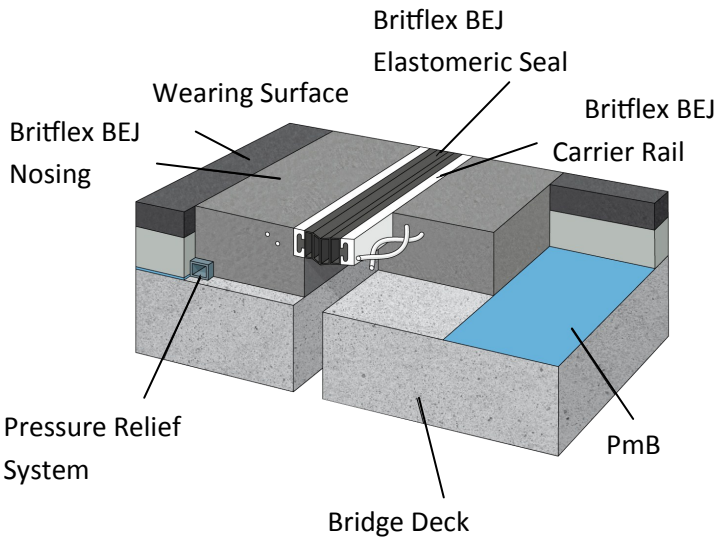
Features

- Completely watertight
- Flexible in all directions
- Rapid installation
- Convenient partial width installation
- Versatile
- Unique, safe and custom design

Alternative applications:

- As an improvement over asphaltic plug joints for low movement joints in heavily trafficked areas.
- On heavily skewed joints
- As a longitudinal joint between two deck halves
- On building structures, car parks and elevated ramps with a need for a heavy duty expansion joint system.
- On marine quayside structures
- Footbridge applications

System Build Up:



Design detail

BEJ	Movement Capacity	
	Horizontal (mm)	Vertical (mm)
3	35mm	±12
5	50mm	±15
8	80mm	±15
10	100mm	±15
13	130mm	±15
15	150mm	±15

Note: Elastomeric insert changes according to joint size

Specification:

1) Polyuriede Resin

The Britflex Polyureide Resin is a two part liquid system comprising one component (base) and one black (hardener). Packed in colour coded drums.

2) Aggregate

The aggregate is a graded mix supplied in 20kg sealed plastic bags.

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3) Carrier Rails

The metal rails are supplied in either mild steel to EN10025:2004 grade S355JO with factory applied corrosion protection. Stainless steel rails are available at an additional cost. The rails are nominally 25mm wide x 48mm deep with welded sinusoids to provide anchorage into the Britflex Resin Mortar. The rails are generally delivered in 7500mm lengths and cut to length on site.

For special applications a 25mm wide x 43mm deep carrier rail is available.

4) Kerb Units

The metal carrier rails are cut, mitred and welded on site, to suit the kerb upstand detail.

5) Elastomeric Insert

The extruded EPDM insert is available in various sizes, each capable of accommodating a different range of movement. The inserts are supplied in coils of lengths between 25 to 60m.

6) Hydraulic Relief

Standard hydraulic relief channel is 20 x 20mm square aluminium tubing, in 5 metre lengths. The channel has 11mm diameter holes drilled on one face at 90mm.

If specified, the channel is installed to the deck side of the joint along the carriageway length.

7) Discharge Tube

When an in-joint hydraulic relief channel is specified, this is terminated with a braided PVC flexible tube with a 25mm internal diameter (32mm external diameter), discharging to a suitable collection point.

8) Polystyrene

25mm and 50mm sheets of expanded polystyrene are cut to size to form a temporary shutter in the expansion gap between the nosings and also in the kerb area.

10) Spacer Plates

The spacer plates set the rails at the appropriate gap setting during installation.

They are available in 5mm increments.

11) Strongbacks/Hangers

The spacer plates are connected to the hangers which suspend the rails over the expansion gap at carriageway level.

12) Kerb/Footway Cover Plates

(Optional Additions)

These may be supplied fabricated from 4.5mm thick aluminium plate with five bar tread pattern.

General Installation Steps:

Surface Preparation

All surfaces should be clean, dry and free from all loose material.

Mixing

The two resin components are warmed in dedicated oil jacketed gas fired heaters and maintained at 55-60°C. The two resin components are mixed for priming the surfaces of the joint trench. Once the materials have reached the correct, stable temperature, the polyureide resin is batched from separate jugs, which have been individually calibrated to ensure the correct mixing ratio is maintained, of the two components and mixed with a powdered paddle for approximately 1 minute until a homogeneous and streak free mix is achieved.

The resin mortar is batched by first pre-heating the requisite quantity of aggregate to approximately 70°C in a powered mixer. One batch of mixed resin compound is then added and mixed for 2-3 minutes until homogeneous and all aggregate particles are thoroughly coated.

If required a measure of Aerosil may be added towards the end of the mixing cycle to make the mix stiffer for placing in steeply graded areas.

Application:

The resin mortar is placed into the prepared trench in the carriageway to approximately three quarters the depth of the joint along the full length of the section being laid.

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Great care should be taken to ensure that the resin flows adequately to avoid air entrapment and that all voids are completely filled.

Whilst the first layer of resin mortar is still tacky the top layer is applied and the resin mortar trowelled flush with the rails and surfacing.

Curing:

If required, once the section of joint has been completed, curing hoods may be erected over the joint and hot air at a temperature of 60-70oC applied for 2-3 hours until the resin mortar has cured.

Whilst external heat is being applied the resin will remain in a semi-plastic state and will only fully harden once this heat has been removed and the material allowed to cool.

BEJ Elastomeric Insert Infil:

Britflex Resin can be utilised to infil the surface profile of the joint to provide a smooth running surface, this system of surface profiling is often used on larger movement joints to allow the smooth passage of peddle cycles over the joint.

Application of Profile Infil:

Clean the surface of the rubber using a fast evaporating solvent (Acetone), once dry, mix the Britflex Resins only and pour into the slot until the desired profile is achieved. On slopes, the resin will require modifying by the addition of Cabosil, the quantity of addition will depend on the slope, approximately between 5gms to 30gms per kilo of mixed resin. Cure the resin as normal.

Packaging:

Britflex Base and Hardener components are available in 25kg units.

Storage:

Britflex Resin should be stored at normal temperatures away from foodstuffs and out of the reach of children.

Ancillaries:

Pitchmastic PmB International provide a range of products to compliments the Britdex MDP system. These include:

- PmB - Polyurethane spray applied waterproofing
- Britdex MDP - Methyl Methacrylate spray applied waterproofing
- PDS - Lightweight kerb and drainage units

Health and Safety:

Britflex Resin, like similar products, is capable of irritating unprotected sensitive skin, we therefore recommend the use of a suitable barrier cream and/or gloves.

A Global Reputation:

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