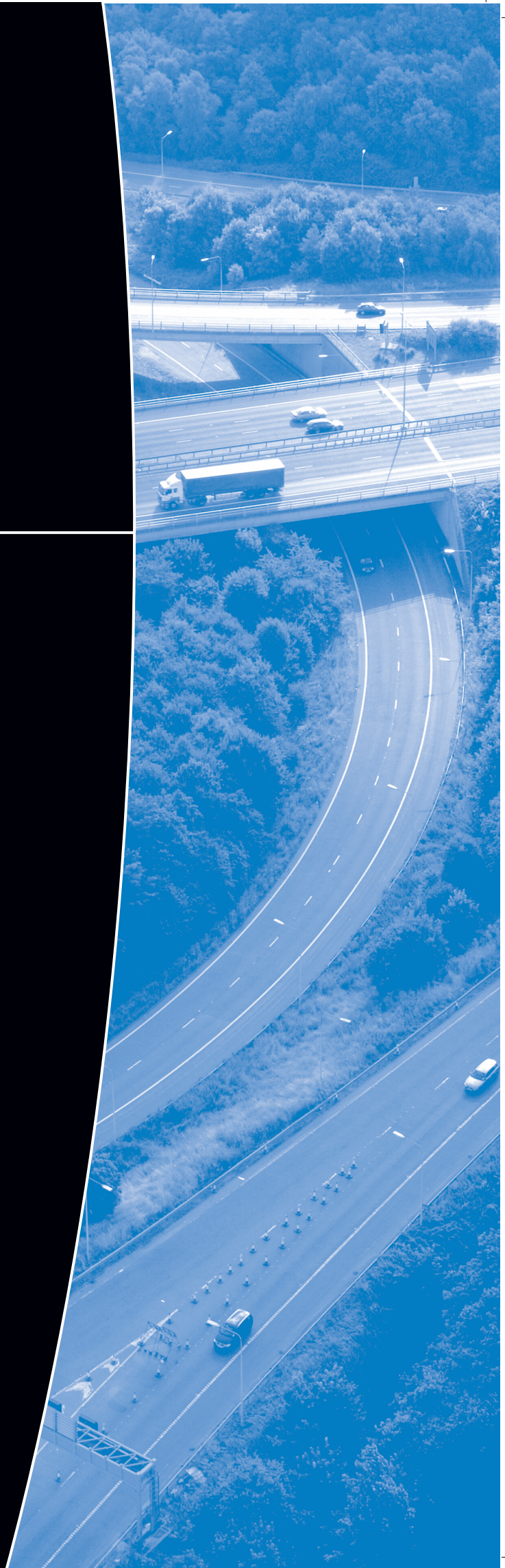




Bridge Joint

Durable, reliable asphaltic plug bridge joint system – flexible and watertight to give peace of mind and excellent results.



Rhino's proven asphaltic plug bridge expansion joints (APJ) are ideal for those looking for strength and performance along with the reliability of the Rhino name and dependable crews.

Bridge Joint

A combination of an elastomer modified bitumen binder and carefully selected single sized aggregate, the joint is constructed in layers, in-situ. The binder contains a special blend of bitumen, polymers and a surface active agent. These are specifically formulated to combine:

- Good fluidity at process temperatures
- Low temperature flexibility
- Ambient temperature flow resistance

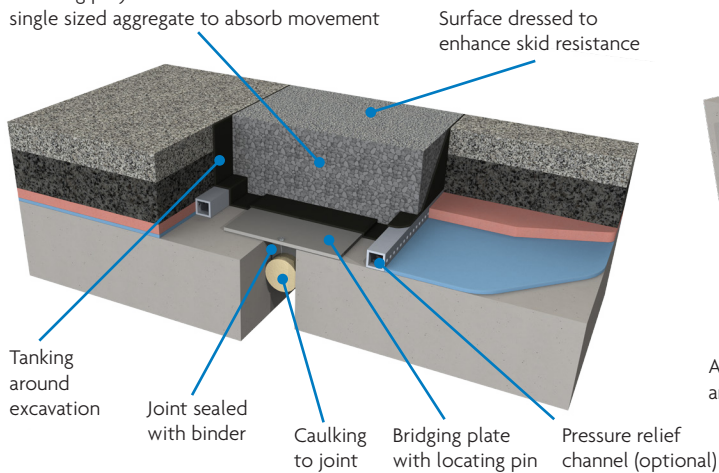
The joint develops a very strong bond to the concrete and to the vertical faces of the adjacent asphalt. The binder is heated on site in a special boiler and the joint is installed by our fully trained and competent crews in accordance with the installation method statement.

The horizontal movement capacity (+/- 25mm) of the joint is key to providing a watertight seal which prevents the ingress of water and de-icing salts to the bridge deck structure, thereby playing its part in protecting the bridge. The versatility of an APJ makes it the ideal bridge joint for use across the full width of the structure including carriageway, verge, kerbs, footways and/or hard shoulders.

Our APJ's are available in standard grade or motorway grade (for improved performance in heavy traffic environments). They can be installed full depth or can re-top an existing joint which has been planed off as part of a resurfacing project.

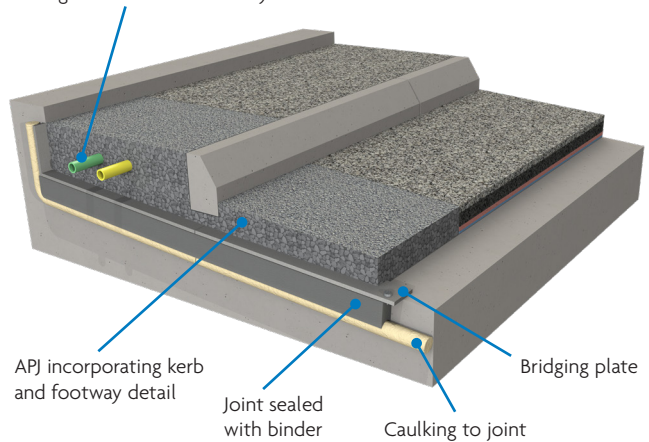
ASPHALTIC PLUG JOINT DETAIL (IN THE CARRIAGEWAY)

Asphaltic plug joint bridge expansion joint featuring polymer modified bitumen and single sized aggregate to absorb movement

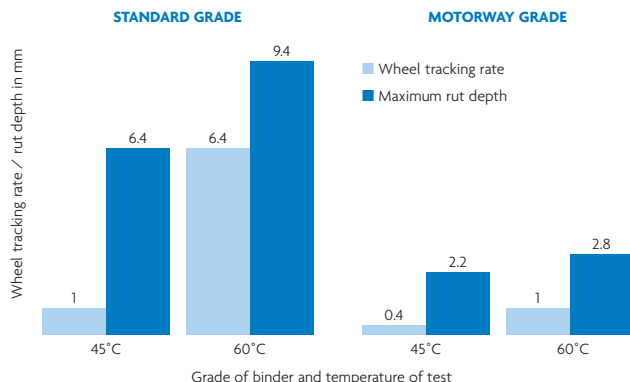


ASPHALTIC PLUG JOINT (KERB/FOOTWAY) DETAIL

Service ducts accommodated through sleeves during installation of footway detail



DATA SHOWING SUPERIOR PERFORMANCE OF MOTORWAY GRADE APJ BINDER COMPARED TO STANDARD BINDER, MAKING IT IDEAL FOR HEAVILY TRAFFICKED ENVIRONMENTS



	STANDARD GRADE APJ	MOTORWAY GRADE APJ
DEFORMATION (MM) ON SITE TRIALS IN THE WHEEL TRACK	8mm	2mm to 4mm
60°C WHEEL TRACK TEST RUT DEPTH (IN MM)	9.4mm	2.8mm
SOFTENING POINT	>65°C	>100°C
CONE PENETRATION	25 to 40 dmm	10 to 35 dmm

KEY FEATURES

- Quick installation: less disruption.
- Watertight seal: protects the bridge deck.
- Flexible: accommodates both horizontal and vertical movement.
- Level finish: for a smooth transition between joint and surface course.
- Easy to repair.
- Optional pressure relief/drainage systems.
- Can be installed in part widths, minimising disruption to one lane at a time.
- Can be planed through when resurfacing with subsequent re-topping repairs to just those top layers affected.
- Versatile for use across the full width of the bridge including verges, kerbs and hard shoulders.
- Overnight works ensure disruption free travel the following day.
- Surface dressed to enhance skid resistance.
- Large volume outputs capable by assigning multiple crews to a contract.



TECHNICAL DATA

CRITERIA	RESULT
HORIZONTAL MOVEMENT CAPACITY	0 to 50mm Standard Grade 0 to 70mm Motorway Grade
VERTICAL MOVEMENT CAPACITY	± 1mm
CONSTRUCTION	<ul style="list-style-type: none"> • Single size stone • Metallic plate • Heat resistant foam/rubber • Elastomer modified bitumen binder
TEMPERATURE RANGE ACCOMMODATION (AMBIENT)	-30°C to +50°C
MAXIMUM GRADIENT ON INSTALLATION	4%
INSTALLATION DEPTH	40/50mm (for re-topping existing APJ after resurfacing) 100mm standard 175mm maximum (on carriageways) Greater depths subject to approval
INSTALLATION WIDTH	Minimum 300mm Standard 500mm Maximum 750mm
MAXIMUM SKEW ANGLE ON INSTALLATION	45° (for maximum movement capability) NB: greater skew angle can be accommodated with reduced movement capability
AGGREGATE	Single sized 14mm (up to 75mm joint depth) Single sized 20mm (over 75mm joint depth) Basalt, Gritstone, Gabbro or Granite

RE-TOPPING AN APJ FOLLOWING RESURFACING

Asphaltic Plug Joints do not need full depth replacement following resurfacing. Only the top layer (which was planed off) needs replacing. With the following benefits:

- **Same performance:** APJ performance is unaffected as the new layer fuses seamlessly with the original joint.
- **Saves time:** quicker operation due to lower volume of materials replaced.
- **Less disruption:** less work shifts are required hence fewer lane closures.
- **Lower cost:** partial depth replacement cheaper than full depth.
- **Environmental benefits:** saves replacing materials unnecessarily.

METHOD OF RE-TOPPING

Resurfacing a bridge may typically involve the removal of 40mm of surface course by mechanical cold planer, which will also remove the top 40mm of any APJ. Instead of replacing the APJ at full depth, it is only necessary to replace the amount of joint that was removed by:

1. **Saw cut** and break out the new asphalt above the bridge joint.
2. **Coat** the excavated surfaces with APJ binder.
3. **Construct** the new layer in accordance with the installation method statement.



Bridge Joint – the facts

- Approved for use on UK network.
- Can be re-topped following resurfacing.
- Easily incorporates pressure relief channel.
- Polymer modified bitumen for greater movement capability.
- Partial width installation allows traffic lanes to remain open during works.
- Easily installed around kerbs, footways and service ducts.
- Motorway grade for improved rut resistance.
- Can be installed all year round.
- Quiet running under traffic.
- Site open to traffic at the end of each shift.

OUR PROMISE

Our senior management team has over 100 combined years experience of the highways repair and maintenance market, so we know the industry's 'best', as well as its 'worst' practices. When we set up Rhino, we were adamant that we would build a business based on:

- Excellent customer service
- Providing a highly responsive service
- Being flexible to meet customers' specific requirements.

Therefore, when you deal with Rhino, you are guaranteed that there are no hidden extras. The price we quote includes:

- All materials, labour and plant necessary to complete the work.
- A site inspection, if required - to assess the works prior to quotation.
- A programme which specifies timescales required to complete the works - and we keep to it.
- A clear, unambiguous, firm quotation which we honour.

Our pledge to you is that we will always provide you with a highly responsive and flexible service, use the best material for the job and never over promise and under deliver.

Steve Loader

Director

