UNISEAL® AP77 BITUMEN JOINT

HOT-APPLIED BRIDGE JOINT SEALANT
BLINDER FOR ASPHALTIC PLUG BRIDGE EXPANSION JOINT



Product Features

AP77 BITUMEN JOINT is a homogeneous mixture of synthetic rubber, chemical additive, mineral filler and special type of bitumen compound designed for use as an expansion joint sealant for horizontal joints in asphalt or concrete pavement, airfield aprons, bridges, roads, cargo terminals, warehouses, and parking areas.

AP77 BITUMEN JOINT remains solid, stable and still flexible under extreme tropical weather conditions. It possesses good adhesion to concrete and asphalt materials too. It offers a very high extension over a wide range of service temperatures, high resistance to flow, excellent pourability at temperatures well below the maximum permissible heating temperature of the material, without separation of the incorporated rubber.

AP77 BITUMEN JOINT is formulated to ASTM D1190 and BS 2499.

Advantages

- **Tropical Weather Resistance:** Remains stable and flexible under severe tropical climates.
- **Excellent Substrate Adhesion:** Bonds strongly to both concrete and asphalt pavements.
- **Easy Pourability:** Pours smoothly below maximum heating temperatures without rubber separation.
- **Homogeneous Formulation:** Uniform blend of synthetic rubber, bitumen, and chemical additives.
- **Standards Compliance:** Formulated to ASTM D1190 and BS 2499.

Fields of Application

Roads	Parking Areas
Bridges	Airfield Aprons
Pavements	Cargo Terminals
Warehouses	Floor Joints in Tunnels / Subways
Urban Infrastructure	Ports & Harbour Infrastructure

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Technical Properties

Property	Test Method	Unit Measurement	Value
Softening Point	ASTM D 36	°C	> 95
Flash Point	ASTM D 92	°C	Approx. 250
Flow Resistance	ASTM D 1191	mm	1, max @ 60°C, 5 h
Cone Penetration	ASTM D 217	dmm	10 - 30 @ 25°C
Extension	BS 2499 (25°C)		50%, 3 cycles
Pouring Temperature		°C	180 - 200
Application Temperature		°C	>5
Solid Content		%	100

Physical Properties

Material	:	Rubberised Bitumen
Colour	:	Black
Size & Packing	:	20kg / carton
Shelf Life	:	36 months (unopened, dry storage)

Theoretical Coverage Rates

Formula	:	kg per linear metre = Width (mm) x Depth (mm) x 0.0016
Example 1	:	10mm wide x 25mm deep joint = 0.40 kg per linear metre
Example 2	:	30mm wide x 25mm deep joint = 1.20 kg per linear metre

Theoretical values – allow for site wastage.

Health & Safety

Ensure working areas remain well ventilated and wear suitable protective clothing, including approved gloves, boots, and overalls. Do not melt contents in metal containers using localized heating at the bottom, as pressure buildup can trigger an explosion. Prevent any contact between hot AP77 BITUMEN JOINT and water to avoid a violent reaction. Above its flash point temperature of 250°C, the product will ignite upon contact with open flames. Keep a foam or dry powder fire extinguisher and sand readily accessible near the kettle; never use water to extinguish a bitumen fire.

This technical data sheet is given in good faith and does not guarantee the application work.
All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice.
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Installation Procedures

1 Surface Preparation | 2 Priming | 3 Application

Step 1
SURFACE PREPARATION

All surfaces to be applied with **AP77 BITUMEN JOINT** shall be structurally sound, clean, dry, free of dust, grease, and free from contamination. Remove any traces of curing compounds, paint coatings, laitance, organic growth or any other loose materials. This is best obtained by using high pressure water or light grit blasting. Substrate containing honeycombing, damaged or deteriorated concrete should be repaired using suitable repair mortars before sealing.

Step 2
PRIMING

Prime all joint surfaces with **UNICOAT BITUMEN 300** on concrete, stone and brick paving. Allow primer to dry completely for at least 30 minutes. The joint must be dry – never pour onto a damp surface. Pour sealant within 6 hours of priming.

Step 3
APPLICATION

It is essential that the correct equipment be used for re-melting **AP77 BITUMEN JOINT** to ensure that the subsequent performance is not impaired by damage through overheating or pouring at the wrong temperature. The heating apparatus must be equipped with a thermometer, an oil jacket and a means of stirring the molten compound. Direct heating should be limited to low flame and equipment fitted with a mechanically driven stirrer.

Heat **AP77 BITUMEN JOINT** with a kettle. Temperature control is important. The temperature of the melted sealant should not exceed 200°C. **AP77 BITUMEN JOINT** will pour satisfactorily at temperatures between 180 – 200 °C. Stir the contents of the kettle at frequent intervals during the melting process. Once melted, it should be used within 2 hours. Do not use material that has gone cold and been re-heated.

Direct flame of the LPG torch may be used to remelt applied material for levelling off. Avoid localized flame heating exceeding 10 seconds, as this may ignite the material.

NOTE :
It is recommended that the aggregate used in asphaltic expansion joint sealant is as follows:

Aggregate Abrasion Value (A.A.V.)	:	max 5.0
Polished Stone Value (P.S.V.)	:	min 62
Aggregate Impact Value (A.I.V.)	:	max 16
Aggregate Crushing Value (A.C.V.)	:	max 10 to 25%

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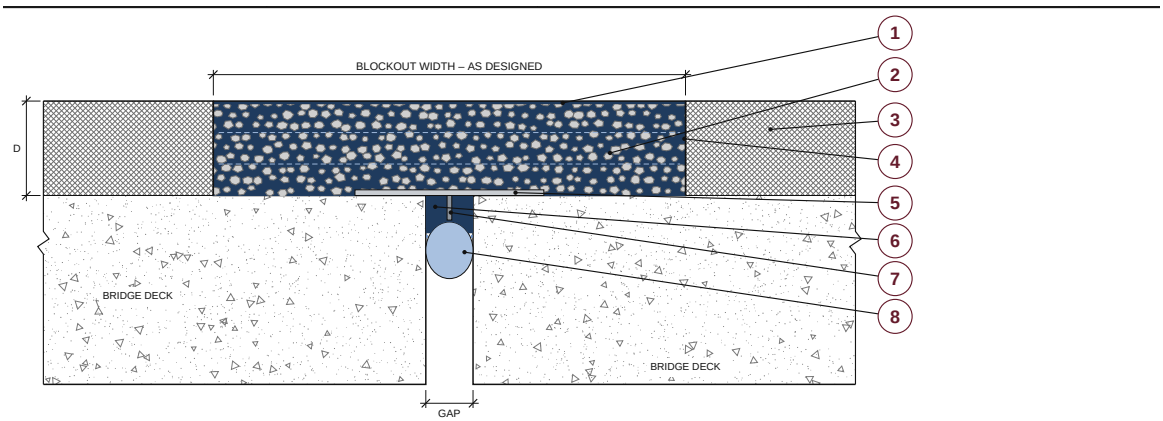
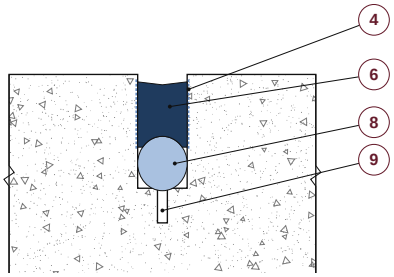
UNISEAL® AP77 BITUMEN JOINT

Typical Drawing

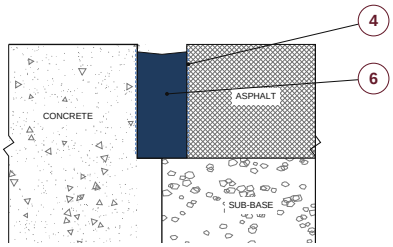
1 ASPHALTIC PLUG JOINT — Bridge expansion joint



2 PAVEMENT JOINT — Hot-poured



3 ASPHALT / CONCRETE JUNCTION — Not to scale



LEGEND

1. UNISEAL® AP77 top seal (flush)
2. UNISEAL® AP77 binder + aggregate
3. Asphalt wearing course
4. UNICOAT® BITUMEN 300 primer
5. Steel bridging plate (by others)
6. UNISEAL® AP77 poured hot
7. Locating pin (by others)
8. Heat-resistant backer rod
9. Saw cut (by others)

Illustrations only – not for construction. Refer to drawing UR-SL-04.

Site Photos





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