KingExtra® AP30

Hot-applied polymer modified asphaltic plug joint.

DESCRIPTION

KingExtra AP30 is a polymer modified hot-applied asphaltic binder. In combination with a carefully graded aggregate, KingExtra AP30 provides an easy to apply flexible asphaltic plug to accommodate slight structural movement in bridges expansion joints.

APPLICATIONS

- Provides a reliable modified asphaltic joint plug for in-situ constructed expansion joints in bridges with movement accommodation up to ± 20 mm.
- Acts as a flexible and smooth transition strip between the approach pavement and the bridge deck.
- Can be used as a repairing and patching system for localized defective areas in roads and pavements.

Note: The actual movement accommodation of KingExtra AP30 depends on the blockout width and thickness, for further information, please consult KINGKRETE's Technical Department.

ADVANTAGES

- Highly workable.
- Excellent asphalt compatibility.
- Highly durable.
- Maintains good flexibility at low temperature.
- Excellent bond properties.
- Low maintenance requirements.
- Minimum traffic downtime.

STANDARDS

KingExtra AP30 complies with the requirements of Standard Specification for Asphaltic Plug Joints for Bridges, ASTM D6297 (see technical properties table).

AGGREGATE PROPERTIES

A low absorbent hard wearing aggregate of 10 - 25 mm size should be used, consult with KINGKRETE's technical department for more details about the suitability of other types and sizes of aggregates.

The mixing ratio for the binder part with the aggregate is highly dependent on the aggregate size and type, method of installation and other site conditions, a recommended start-up mix ratio is as follows:

1 part binder : 3 parts aggregate (by weight).

*Technical properties as per the requirement of ASTM D6297 for KingExtra AP30 binder.

TECHNICAL PROPERTIES

Softening point: ASTM D36	≥ 75oC
Tensile adhesion: ASTM D5329	≥ 750% (Pass)
Ductility @ 25oC: ASTM D113	≥ 450 mm (Pass)
Penetration @ 25oC: ASTM D5329	< 7.5 mm (Pass)
Penetration @ -18oC: ASTM D5329	> 1.00 mm (Pass)
Flow @ 60oC, 5 hr: ASTM D5329	< 3.0 mm (Pass)
Resilience @ 25oC: ASTM D5329	40 - 70% (Pass)
Asphalt compatibility: ASTM D5329	Pass
Bond strength, 3 cycles, 100% extension@ 25oC: ASTM D5329	Pass
Flexibility @ -7oC: ASTM D5329	Pass

METHOD OF USE

Substrate Preparation

The substrate must be clean, dry, even, dense and free from oil, grease, dust and other contaminants. A clean surface ensures maximum adhesion between the substrate and the system.

Blockout should be prepared by removing any loose material, latencies and contamination which can affect the adhesion of KingExtra AP30. Blockout should have a minimum depth of around 50 mm and a width of 300 up to 700 mm. Consult with KINGKRETE's technical department for more details about the suitability of other blockout dimensions.

PRIMING

A backing rod (Don Hotrod) should be placed in the deck gap to eliminate the loss of binder when applied. After placing the backing rod, pour a suitable quantity of the heated KingExtra AP30 binder filling the joint gap, afterwards, use the heated binder to coat the inside surfaces of the blockout, the binder will act as a primer.

MIXING AND PLACEMENT

Place a bridging plate of suitable size with thickness not less than 6.0 mm, the plate should extend to a minimum width of 35 mm to either side of the deck gap. After fixing

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the plate, use the heated KingExtra AP30 binder to coat the surfaces of the plate.

Place the packed aggregate into a rotating drum mixer and heat using a heating lance to a temperature of around 185 - 200 ºC. Meanwhile, place KingExtra AP30 binder packs in an agitated melter. Heat KingExtra AP30 binder to a temperature between 185ºC - 200ºC, the material should be continuously agitated to distribute the heat evenly.

Once the binder reaches the needed temperature, pour the recommended amount of the heated binder into a container of known volume and add it to the heated aggregate. Mix the aggregate with the binder until it is fully coated with the binder. Make sure that the mixture temperature does not fall below 185ºC.

Lay the heated mixture into the blockout and level it using a compactor, continue the procedure mentioned above until KingExtra AP30 mixture is level with the surrounding surface. Once the material is levelled, the surface should be sealed using a heated KingExtra AP30 binder.

If needed, while the binder is still hot, it can be broadcasted with fine silica sand.

Alternatively, the material can be applied by laying the heated aggregates into the primed blockout. The heated binder should be poured directly over the hot aggregate and spread using a suitable tool until the aggregate is fully coated. Perform the compaction and finishing as stated above.

Note: Follow the same procedure for heating the binder when it is used for filling the joint gap and coat the insides of the blockout and the bridging plate.

REMARKS

For joints above 100 mm in-depth, it is recommended to apply KingExtra AP30 as layers, each layer should be left slightly to cool, and then it is coated with a thin layer of the heated binder before applying the next layer.

CLEANING

All equipment should be cleaned immediately after finishing using xylene, acetone or other suitable solvents.

PACKAGING

KingExtra AP30 binder is available in 15 kg blocks, one block per carton.

STORAGE

Shelf life is 1 year when stored under cover, out of direct sunlight and protected from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult KingKrete's Technical Services Department.

HEALTH AND SAFETY

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well ventilated areas and avoid inhalation.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local KingKrete representative. KingKrete Inc. reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from KingKrete's Middle East facility are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, ISO 14001 and ISO 45001.

* Properties listed are based on laboratory-controlled tests.

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