



Epoxy Bind



Helps to resolve these problems:



Epoxy Bind is used in the manufacture of Epoxy Modified Open Graded Porous Asphalt (EMOGPA) offering improved durability.

Epoxy bind is a two part epoxy modified binder used in the manufacture of Epoxy Modified OGPA in order to improve its resistance to oxidation.

Where to use Epoxy Bind:

- Recommended for use in Open Graded Porous Asphalt mixes where increased life is desired. The presence of the Epoxy Bind binder imparts excellent oxidation resistance to the OGPA mix, so that ravelling, the normal failure mode for OGPA, is greatly reduced.
- Can be used in design of EMOGPA conforming to the requirements of NZTA P/11E.

Benefits:

Epoxy Bind offers the benefit of a polymer modified binder with improved features as follows:

- Domestically manufactured and supplied
- Superior ravelling resistance
- Much improved service life
- Easy workability
- Greatly improved performance and life over all conventional bitumen based binders.

The formulation of the Epoxy Bind binder has balanced the superior long term performance properties with enhanced constructability.

Habitat



Specification

Epoxy Bind meets the requirements of NZTA P/11E.

Property	Method	Specification
Softening Point	ASTM D39	60 – 80°C
Viscosity @ 165°C, 20rpm	AGPT/T132	<200 MPas

Health & Safety

Epoxy Bind is handled at elevated temperatures and all precautions should be taken, as for handling hot bitumen. Please refer to the Road Science website "The Bitumen Safety Book" for advice on how to handle hot bitumen binders and to understand the risks involved

in handling these types of materials. Full personal protective equipment must be used at all times when pumping, transferring or sampling of Epoxy Bind.

A safety data sheet for Epoxy Bind is freely available on the Road Science website and must be read and understood prior to handling the Epoxy Bind binder.



Handling & Mixing Information

Open Graded Porous Asphalt Mixes	
Maximum safe handling temperature for Epoxy Bind binder:	150°C
<i>The Epoxy Bind binder should be circulated for at least 2 hours prior to commencing mixing.</i>	
Pumping Binder Temperature Part A	>40°C
Pumping Binder Temperature Part B	125°C – 130°C
Mixing Binder Temperature	125°C – 130°C

Epoxy Bind is a two part system consisting of Part A and Part B. Modification of the asphalt plant needs to be undertaken in order to allow for both parts to be mixed prior to addition to the asphalt drum. If plant modification is required, please consult the Road Science team to ensure modifications are compatible.

Storage Information

Epoxy Bind	
Medium Term Storage Temperature (up to 5 days)	120 - 130°C
Long term storage temperature (beyond 5 days)	<100°C

Critical: Long storage

If there is a need to postpone manufacture beyond 5 days, the storage temperatures of the Epoxy Bind should be dropped immediately to <100°C.

If there is considerable delay; it maybe economic to drop the product temperature to ambient and reheat when the binder is about to be used.

Critical: Rate of heating

The reheating of Epoxy Bind, especially from cold, needs to be undertaken slowly with the rate of heating not exceeding 10°C per hour.

Pulsed heating cycles are preferred when using burner tubes.

Prior to undertaking the manufacture of OGPA mixes; the design mix using the Epoxy Bind binder should be tested in the laboratory using a drain down test to ensure that the mixing temperature will not cause excessive drain down of the binder during transportation and paving.

Sampling

Samples should be taken following transfer from storage or transport.

Full PPE should be worn including face shield as the product is transferred at elevated temperatures and poses a major burns risk. It is important to ensure that the sample is representative and that any residual conventional bitumen is flushed out of the sample cock prior to collecting the Epoxy Bind sample.

Testing should only be carried out by an IANZ registered laboratory that is experienced in handling and testing polymer modified binders.

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