



Flexi Bind

Helps to
resolve these
problems:



CRACKING



RAVELLING



RUTTING

Flexi Bind Polymer Modified Binder is used in the manufacture of asphalt with improved fatigue and rut resistance.

Flexi Bind is a moderately modified SBS polymer based binder used in the manufacture of asphalt in order to improve the fatigue and rut resistant asphalt. This binder, when used in conventional asphalt mixes, improves the fatigue resistance of the asphalt mix to levels beyond that achievable with bitumen based binders. The improvement in fatigue life is combined with improved rut resistance, thereby giving an exceptional increase in performance life of any Flexi bind modified asphalt mix.

Where to use Flexi Bind:

- Recommended for use in Open Graded Flexi Bind mixes where increased life is desired. The presence of the Flexi Bind binder imparts excellent fatigue properties to the OGPA mix, so that ravelling, the normal failure mode for OGPA, is greatly reduced.
- Can be used in all OGPA designs including high shear designs. There is minimal change in handling characteristics of the OGPA mix when swapping from straight bitumen binder to Flexi Bind binder.
- Flexi Bind will impart much improved fatigue characteristics to the OGPA mix compared to straight bitumen binders.

Benefits:

Flexi Bind offers the benefit of a polymer modified binder with improved features as follows;

- Superior ravelling resistance
- Much improved fatigue life
- Easy workability
- Greatly improved performance and life over all conventional bitumen based binders.

The formulation of the Flexi Bind binder has balanced the superior long term performance properties with enhanced constructibility. The Flexi Bind binder, though mixed at slightly elevated temperatures, provides a mix which is easy to lay and compact.

Habitat



Residential



Motorway



Rural

Specification

Flexi Bind meets the requirements of NZTA MI-A:2016 for Grade V.

Property	Method	Specification
Softening Point	ASTM D36	70°C
Torsional Recovery	AGPT/T122	20%
Viscosity @ 165°C, 20rpm	ASTM/4403	400 m.Pas
Density		1.029 (kg/l)

Health & Safety

Flexi Bind is handled at elevated temperatures and all precautions should be taken, as for handling hot bitumen. Please refer to the Road Science New Zealand "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 Flexi Bind.

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

Properties:



Handling & Mixing Information

Open Graded Flexi Bind Mixes	
Maximum safe handling temperature for Flexi Bind binder:	190°C
<i>The Flexi Bind binder should be circulated for at least 2 hours prior to commencing mixing.</i>	
Mixing Binder Temperature	135°C – 150°C
Pumping Binder Temperature	160°C – 170°C

Storage Information

Flexi Bind	
Medium Term Storage Temperature (up to 5 days)	150 - 160°C
Long term storage temperature (beyond 5 days)	<150°C
Critical: Long Term Storage <i>If there is a need to postpone manufacture beyond 5 days, the storage temperatures of the Flexi Bind should be dropped immediately to <150°C.</i> <i>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.</i>	
Critical: Rate of heating <i>The reheating of Flexi Bind, especially from cold, needs to be undertaken slowly with the rate of heating not exceeding 10°C per hour.</i> <i>Pulsed heating cycles are preferred when using burner tubes.</i>	

Prior to undertaking the manufacture of OGPA mixes; the design mix using the Flexi 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 Flexi 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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