

ShaliPMB

Polymer Modified Bitumen



Description

ShaliPMB is the Polymer Modified **Bitumen** produced by blending Molten Bitumen with suitable thermoplastic polymers and additives. With the recent advancement of Flexible Pavement Technology Polymer Modified Bitumen is the latest binder for Hot Mixed Asphalt (**HMA**) i.e. a mixture of aggregate material bound together with bitumen binder for Bituminous Concrete/Macadam for Flexible Pavements.

ShaliPMB is available in grades 120, 70 and 40 in both **Thermoplastic Plastomer** and **Thermoplastic Elastomer**.

Characteristics

Characteristics	Elastomeric Thermoplastic Based Grade & Requirement			Plastomeric Thermoplastic Based Grade & Requirement		
	PMB			PMB		
	E 40	E 70	E 120	P 40	P 70	P 120
Penetration @ 25 °C 0.1 mm, 100 Gm, 5 Secs	30-50	50-90	90-150	30-50	50-90	90-150
Softening Point, (R&B), °C, Min	60	55	50	60	55	50
FRAASS breaking Point, °C, Min	-12	-16	-20	-12	-16	-20
Flash Point, by COC, °C, Min	220	220	220	220	220	220
Elastic Recovery of Half thread in Ductilometer @ 15 °C, %, Min	70*	70*	70*	30**	40**	50**
Separation, Difference in Softening Point, R&B, °C, Min	3	3	3	3	3	3
Viscosity @ 150 °C, Poise	3-9	2-6	1-3	3-9	2-6	1-3
Loss in Weight, % Max	1.0	1.0	1.0	1.0	1.0	1.0
Increase in Softening Point, °C, Max	5	6	7	5	6	7
Reduction in penetration of Residue @ 25 °C, % Max	35	35	35	35	35	35
Elastic Recovery of Half Thread in Ductilometer @ 25 °C, % Max	50	50	50	35	35	35

As per IS: 15462-2004

*75 as per IRC:SP:53-2002 and ** 50 as per IRC:SP:53-2002

Application

It is used for Wearing course & Binder course like Semi dense Bituminous Concrete (SDBC), Dense Bituminous Macadam (DBM) and Bituminous Concrete (BC) or Asphalt Concrete (AC).

Advantages

- Enhances life of periodical maintenance and overlays by about 1.5 times as compared to conventional Bitumen.
- Lower susceptibility to temperature variations
- Higher resistance to deformation wear and tear

- Low glass transition temperature which gives excellent performance properties of pavement at low temperatures.
- Stiffer blend reduces rutting and stability at high temperatures.
- Enhances dimensional stability and strength of pavement.
- Improves abrasion resistance of pavement.
- Improves fatigue resistance.
- Improves oxidation and aging resistance.
- Reduces structural thickness of pavement.
- Provides better adhesion between different aggregates.
- Delays cracking and reflective cracking

Application Methodology

- Like conventional Bitumen, Polymer Modified Bitumen shall be used in suitable Hot Mix Plant with dry aggregates, a little higher temperature than applied in case of conventional Bitumen.
- Before using, it should be agitated in molten condition with suitable device for homogeneity whether it is supplied in drums or tankers.
- It should not be heated repeatedly or over heated to retain its properties.
- For Bituminous Concrete, when PMB is used, it can be applied as tack coat by suitable sprayer for SAM(Stress Absorbing Membrane) or SAMI (Stress Absorbing Membrane Interface)

Health & Safety

- Use goggles, gumboots, nose covers and hand gloves during application
- Clean hands with warm soap water after application

Packing

Available in bulk and in 200 Kg Drums. It can also be processed at site as per bulk requirement.

Storage

Keep in cool and dry place under shed away from heat. Protect from frost.