

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.

Owing to its high bonding strength and high flexibility to accommodate temperature related expansion and contraction **ShaliPMB** can be used to bond bituminous waterproofing membranes to the primed substrate.

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 sec | 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, Max | 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), Bituminous Concrete (BC) or Asphalt Concrete (AC).
- It is used as adhesive and binder for Bituminous WaterProofing Membranes and may also used for levelling the substrate.

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

- Avoid contact with skin / eyes and avoid swallowing.
- Ensure adequate ventilation and avoid inhalation of vapour.
- Wear suitable protective clothing, gloves and eye protection.
- In case of skin contact, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent to clean the contacted area.
- In case of eye contact, wash with plenty of clean water and seek medical advice.
- If swallowed, seek medical attention immediately. Do not induce vomiting.

Packing

Available in bulk and in 200 kg drum. 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.



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