



## POLYMER MODIFIED BITUMEN

### Styrelf® PMB

A technology of TotalEnergies

#### APPLICATIONS:

STYRELF® PMB comprises a range of elastomerically modified bitumen. It is developed to provide high performance over a range of different applications and different conditions. STYRELF® PMB meets specifications of IRC SP53:2010 having advanced properties of softening point & elastic recovery. Styrelf® PMB Bitumen is modified with elastomeric polymers using a TotalEnergies innovative cross-linking technology which gives them exceptional properties in terms of storage stability, cohesiveness, elongation capacity and resistance to aging. The Styrelf® PMB is homogenous and superior quality PMB; which enhances life of the pavement.

**PRODUCT CERTIFICATIONS:** Bureau of Indian Standards (BIS): CM/L-No-3269160

#### AVAILABLE GRADES:

- STYRELF® PMB 40
- STYRELF® PMB 70
- STYRELF® PMB 40 Super

#### BENEFITS:

- Resistance at higher temperatures surface against rutting and ambient temperatures against fatigue.
- Higher resistance at low temperatures against thermal cracking because of viscoelastic nature.
- Better stripping resistance and ITSR (Indirect Tensile Strength Ratios).
- Better resistance against aging and oxidation.
- Proven record of longer life of pavement.
- Saves natural resources and reduced pollution levels by deferring the frequency of overlays and period maintenance.
- Suitable as per Indian geography of moderate to extreme temperatures with lower susceptibility to temperature variation.
- For national/ state highway/ city roads/ fly overs/ round about etc. with overall improved mix performance.

**PACKING:** STYRELF® PMB is available in Bulk.

#### FOR TECHNICAL QUERIES, PLEASE CONTACT:

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IndianOil



TotalEnergies

## TECHNICAL SPECIFICATIONS

Property	Test Method	STYRELF PMB - 40	STYRELF PMB -70	STYRELF PMB-40 Super
Penetration at 25°C, 0.1mm, 100gm.5Sec	IS 1203-1978	30-50	50-80	30-50
Softening Point, (R & B), °C, Min	IS 1205-1978	60*	55	70
FRAASS breaking point, °C, Max	IS 9381-1979	-12	-16	-12
Flash Point, COC, °C, Min	IS 1209-1978	220	220	220
Elastic Recovery of half thread in ductilometer 15°C, %, Min	IRC: SP: 53-2010 ANNEX-2	60	60	70
Complex Modulus (G*/Sin δ) as Min. 1.0 kPa at 10 rad/s, at a temperature °C.	IRC: SP: 53-2010 ANNEX-1	76	70	76
Separation, difference in Softening point (R & B), °C, Max	IRC SP 53-2010 ANNEX -3	3	3	3
Viscosity at 150°C, Poises	1206 Part 1	5-9	3-6	5-9
Thin film oven tests on residue				
Loss in Mass, %, Max	IS 9382-1979	1.0	1.0	1.0
Increase in Softening point, °C, Max	IS 1205-1978	5	6	5
Reduction in penetration of residue, at 25 °C, %, Max	IS 1203-1978	35	35	35
Elastic Recovery of half thread in ductilometer 25 °C, %, Min	IRC: SP: 53-2010 ANNEX-4	50	50	50
OR Complex Modulus (G*/Sin δ) as Min. 2.2 kPa at 10 rad/s, at a temperature °C	IRC: SP: 53-2010 ANNEX-1	76	70	76

Procedure	Recommended Temperature Range
Mixing / Coating with Aggregates	170 - 185 °C
Laying of Mix	150-170 °C
Beginning of Compaction	Over 140 °C
End of Compaction	110-120 °C