



TECHNICAL DATA SHEET (TDS)

Polymer Modified Bitumen PMB 70

Product Name: Polymer Modified Bitumen PMB 70

Abbreviation: PMB 70

Product Type: Polymer Modified Asphalt Binder

Supplier: Basekim Kimyasal Ürünler LTD

Application: High-performance paving, highways, bridges, airports and heavy-duty asphalt construction

1. Product Description

Polymer Modified Bitumen PMB 70 is a high-performance asphalt binder produced by modifying petroleum bitumen with selected polymer materials.

The polymer network improves the elastic behavior, temperature resistance, adhesion and deformation resistance of conventional bitumen.

Consequently, PMB 70 provides improved performance in asphalt pavements exposed to:

- Heavy traffic
- Repeated axle loading
- High pavement temperatures
- Temperature cycling
- Rutting stress
- Fatigue stress
- Water exposure
- Cracking

PMB 70 provides a balanced combination of penetration, elasticity and high-temperature stability.



2. Typical Technical Specification

Property	Unit	Specification / Typical Requirement	Test Method
Penetration @ 25°C, 100 g, 5 sec	0.1 mm	50–90	ASTM D5 / EN 1426
Softening Point, Ring & Ball	°C	Min. 55	ASTM D36 / EN 1427
Elastic Recovery	%	Min. 60	ASTM D6084 / EN 13398
Flash Point, COC	°C	Min. 250	ASTM D92
Density @ 25°C	g/cm ³	Approx. 1.00–1.05	ASTM D70 / equivalent
Fraass Breaking Point*	°C	Max. –10 to –16 typical	EN 12593
Solubility	% mass	≥99 typical	ASTM D2042
Water Content	%	≤0.2 typical	ASTM D95
Appearance	—	Black homogeneous binder	Visual
Water Solubility	—	Insoluble	—

*Low-temperature requirements can vary according to the project specification and climatic grade requested.

Important: Final contractual specifications should follow the Certificate of Analysis supplied for each production batch.

3. Key Performance Characteristics

High Elastic Recovery

The polymer-modified structure enables PMB 70 to deform under traffic loads and recover significantly after the load disappears.

This property reduces permanent deformation and improves resistance to rutting.

Improved Rutting Resistance

PMB 70 maintains greater stiffness at elevated pavement temperatures than conventional penetration-grade bitumen.



Therefore, it performs particularly well in:

- Heavy traffic lanes
- Intersections
- Roundabouts
- Bus lanes
- Truck terminals
- Industrial yards

Enhanced Crack Resistance

The polymer network increases flexibility and improves resistance to cracking caused by repeated traffic loading and temperature changes.

High Softening Point

With a softening point of at least approximately 55°C, PMB 70 provides improved stability during hot-weather pavement service.

Strong Aggregate Adhesion

PMB 70 provides strong bonding with suitable mineral aggregates.

Improved adhesion helps reduce stripping and moisture-related pavement deterioration.

Better Fatigue Performance

The binder's elastic behavior allows asphalt layers to accommodate repeated loading more effectively than conventional unmodified bitumen.

4. Typical Applications

PMB 70 is suitable for:

Highway Asphalt

Used in high-volume roads exposed to continuous passenger and commercial vehicle traffic.



Airport Pavements

Suitable for airport runways, taxiways and aprons where surfaces experience heavy wheel loads and high shear forces.

Bridge Decks

The flexibility and adhesion of PMB 70 make it suitable for asphalt layers installed over structures subject to vibration and movement.

Heavy-Duty Pavement

Recommended for:

- Container terminals
- Ports
- Industrial yards
- Logistics centers
- Truck parking areas

Urban Roads

PMB 70 can improve durability at:

- Traffic intersections
- Roundabouts
- Bus stops
- High-load urban streets

Waterproofing Systems

The binder may also be incorporated into suitable polymer-modified waterproofing and bituminous membrane formulations.

Asphalt Repair

PMB 70 can support durable rehabilitation and repair mixtures requiring improved adhesion and flexibility.



5. Advantages of PMB 70

Compared with conventional paving bitumen, PMB 70 provides:

- Higher elasticity
- Better rutting resistance
- Improved fatigue resistance
- Greater resistance to permanent deformation
- Improved cracking resistance
- Better aggregate adhesion
- Greater temperature stability
- Improved water resistance
- Longer pavement service life
- Reduced maintenance requirements

6. Physical Characteristics

Property	Description
Color	Black
Appearance	Homogeneous bituminous material
Ambient State	Solid / semi-solid
Heated State	Viscous liquid
Odor	Mild petroleum odor
Water Solubility	Insoluble
Relative Density	Approx. 1.00–1.05
Binder Type	Polymer Modified Bitumen

7. Recommended Processing Temperature

PMB 70 normally requires controlled heating before pumping, mixing or application.



Typical Temperature Guidelines

Operation	Recommended General Range
Storage / Circulation	150–170°C
Pumping / Transfer	150–175°C
Asphalt Mixing	160–180°C
Application	According to mix design and project requirements

These ranges serve as general guidance only.

The optimum temperature depends on:

- Binder viscosity
- Asphalt plant configuration
- Aggregate temperature
- Polymer system
- Mix design
- Environmental temperature
- Project specification

Avoid unnecessary overheating.

8. Storage Requirements

Store PMB 70 in suitable bitumen tanks or properly sealed containers.

For best performance:

- Keep the material free from water.
- Prevent contamination with other bitumen grades.
- Use temperature-controlled storage systems.
- Avoid excessive storage temperatures.
- Avoid prolonged heated storage.
- Maintain suitable circulation during extended bulk storage where required.
- Keep storage tanks clean and properly insulated.

Because polymer-modified binders can undergo separation during long-term heated storage, circulation or gentle agitation may be necessary.



9. Handling Recommendations

Operators should use appropriate industrial handling systems.

When heating PMB 70:

- Increase temperature gradually.
- Avoid localized overheating.
- Ensure tanks contain no free water.
- Maintain proper ventilation.
- Minimize fume generation.
- Wear heat-resistant PPE.
- Follow plant-specific operating procedures.

Never introduce water into hot PMB 70 because rapid steam formation can cause dangerous splashing.

10. Packaging

PMB 70 can be supplied according to project and destination requirements.

Typical supply options include:

- New steel drums
- Jumbo bags where technically suitable
- Bulk road tankers
- Bitutainers
- Heated bulk containers
- Customized export packaging

Bulk delivery generally provides the most efficient solution for large asphalt plants and infrastructure projects.

11. Quality Control

Each production batch should undergo appropriate laboratory testing before dispatch.



Typical quality-control tests include:

- Penetration
- Softening point
- Elastic recovery
- Flash point
- Viscosity
- Density
- Storage stability
- Low-temperature performance

A **Certificate of Analysis (COA)** should accompany commercial shipments where required.

12. Applicable Test Standards

PMB 70 may be evaluated using internationally recognized methods including:

- ASTM D5 – Penetration of Bituminous Materials
- ASTM D36 – Softening Point of Bitumen
- ASTM D92 – Flash Point by Cleveland Open Cup
- ASTM D6084 – Elastic Recovery of Asphalt Materials
- ASTM D4402 – Viscosity Determination
- ASTM D70 – Density of Semi-Solid Bituminous Materials
- ASTM D2042 – Solubility of Asphalt Materials
- EN 1426 – Needle Penetration
- EN 1427 – Softening Point
- EN 12593 – Fraass Breaking Point
- EN 13398 – Elastic Recovery

Specific project standards may supersede these general methods.

13. Recommended Uses by Performance Requirement

Performance Requirement	PMB 70 Performance
Heavy Traffic	Excellent



Performance Requirement	PMB 70 Performance
Rutting Resistance	Excellent
High Temperature Stability	Very Good
Elasticity	High
Fatigue Resistance	Very Good
Aggregate Adhesion	Very Good
Waterproofing	Very Good
Crack Resistance	High
Long-Term Pavement Durability	Excellent

14. Product Benefits for Road Construction

PMB 70 improves asphalt pavement performance by strengthening the binder matrix.

As a result, properly designed asphalt containing PMB 70 can:

- Maintain pavement shape under heavy loads.
- Reduce wheel-track rutting.
- Delay fatigue cracking.
- Reduce moisture damage.
- Improve surface durability.
- Extend maintenance intervals.
- Increase pavement service life.

Actual pavement performance depends on aggregate quality, asphalt mix design, construction quality, traffic conditions and climate.

15. Supplier Information

Basekim Kimyasal Ürünler LTD supplies Polymer Modified Bitumen PMB 70 for international road construction, infrastructure and waterproofing projects.

Available documentation can include:



- Technical Data Sheet
- Material Safety Data Sheet
- Certificate of Analysis
- Packing information
- Commercial invoice
- Certificate of Origin where applicable
- Export documentation

16. Technical Disclaimer

The values shown in this Technical Data Sheet represent standard, typical or recommended properties for **Polymer Modified Bitumen PMB 70**.

Because raw materials, manufacturing conditions and customer specifications may vary, the values should not automatically be interpreted as guaranteed limits unless stated in the commercial contract.

For procurement, tender or engineering approval, the **batch Certificate of Analysis (COA)** should be used as the final confirmation of product conformity.