



# BIOTUM® PMB 10/40-65

Polymer Modified Bitumens according to EN 14023:2010

## Description

BIOTUM® PMB is a polymer-bitumen binder with improved resistance to permanent deformation, low temperature and fatigue cracking. BIOTUM® PMB binders are designed for pavements with intensive transport effects under adverse environmental conditions.

## Characteristics

**Polymer-bitumen binders possess improved strength and performance properties in comparison with conventional bitumen of equal paving grade:**

- **Improved elastic recovery and resistance to permanent deformation** within the large temperature range make pavements resistant to rutting and thermal cracking
- **Improved resistance to fatigue cracking** guarantees a long-life cycle of pavements
- **Improved adhesion/cohesion** link aggregates and make pavement water-resistant
- **Stable homogeneous structure** provides long-distance transportation of hot BIOTUM® PMB preserving physical properties and high quality

RPE BIOTUM manufactures binders in conformity with the requirements of National Annexes (NA) of the EN 14023 standard. Our specialists produce BIOTUM® PMB according to local requirements of NA. Order BIOTUM® PMB according to your individual specification.

### EXAMPLE OF PRODUCT SPECIFICATION\*

| PROPERTIES, UNIT                                     | TEST METHOD             | BIOTUM® PMB 10/40-65 |
|--|-------------------------|----------------------|
| Penetration at 25 °C, 0.1 mm                         | EN 1426                 | 10-40                |
| Softening point, °C                                  | EN 1427                 | ≥ 65                 |
| Elastic recovery at 25 °C, %                         | EN 13398                | ≥ 60                 |
| Fraas breaking point, °C                             | EN 12593                | ≤ -5                 |
| Force Ductility at 10 °C, J/cm <sup>2</sup>          | EN 13589<br>EN 13703    | ≥ 2                  |
| Flash point, °C                                      | EN ISO 2592             | ≥ 235                |
| Retained penetration, %                              | EN 1426                 | ≥ 60                 |
| Change in softening point, °C                        | EN 1427                 | ≤ 8                  |
| Change of mass, %                                    | EN 12607-1              | ≤ 0.5                |
| Elastic recovery at 25 °C after EN 12607-1, %        | EN 12607-1,<br>EN 13398 | ≥ 50                 |
| Storage stability: Difference in softening point, °C | EN 13399,<br>EN 1427    | ≤ 5                  |
| Drop in softening point after EN 12607-1, °C         | EN 12607-1,<br>EN 1427  | TBR (To Be Reported) |

\*Complies with EN 14023:2010. We produce PMB according to your individual specification

## Application

BIOTUM® PMB 10/40-65 is hard polymer-modified bitumen. It can be applied for base and binder courses. It is recommended for high-density traffic pavements with static loads: crossroads, bus lanes, parking lots.



## Application instructions

To obtain high performance properties strict temperature control during mixing and paving is required.

### PROCESS TEMPERATURES

| TECHNOLOGICAL PROCESS                    | TEMPERATURE |
|--|-------------|
| Max. heating temperature                 | 185 °C      |
| Temperature while bitumen pumping        | >140 °C     |
| Adding bitumen to asphalt mix            | 175–185 °C  |
| Temperature of asphalt mix in the hopper | >160 °C     |
| Asphalt mix compaction temperature       | >120 °C     |

## Storage and transportation

### Drummed PMB

BIOTUM® PMB is packed in patented drums made of galvanized steel with a capacity of 240, 260 or 330 kg. Drum seams are marked with WWW.BIOTUM.RU. There are 4 drums on a palette 1,14 x 1,14 m. Drummed PMB can be transported by trucks, railway and sea containers.

### DRUMMED BIOTUM® PMB TRANSPORTATION

| TYPE OF TRANSPORT           | BIOTUM® PMB Net weight, kg | BIOTUM® PMB Gross weight, kg |
|-----------------------------|----------------------------|------------------------------|
| Truck                       | 19200                      | 20380                        |
| ISO-container TEU (20 feet) | 20800                      | 21980                        |
| ISO-container FEU (40 feet) | 25080                      | 26201                        |
| Covered train car           | 64160                      | 67464                        |

Drummed BIOTUM® PMB does not require any specific conditions while transportation. It can be stored up to 3 levels high in open storage grounds. We highly recommend drum melting system BIOTUM® DMS (capacity of 10 - 200 tons per hour) with automatic unpacking, loading and unloading systems. Learn more about BIOTUM® DMS on [biotum.ltd](http://biotum.ltd) in the Partnership section.

Storage period of drummed bitumen is more than 12 months as from the date of production. On long storage it is necessary to test the properties of the product.

### Hot PMB

Hot PMB is transported in clean heated bitumen trucks. Hot PMB must be stored in leak-proof tanks with thermal oil heating system and repetitive agitation or circulation pumps (min 2 hours a day). Before application it is recommended to agitate BIOTUM® PMB during 2 hours under high temperature.

Follow the recommendations on storage to avoid ageing and thermal destruction of the material.

In case bituminous binders are stored under high temperatures more than 10 days, one of the properties has to be observed to control ageing degree: penetration at 25 °C, softening point or elastic recovery at 25 °C.

### STORAGE OF BIOTUM® PMB

| Storage period | Temperature |
|----------------|-------------|
| 10 days        | 110 °C      |
| 7 days         | 140 °C      |
| 3 days         | 160 °C      |
| 24 hours       | 180 °C      |

## Safety requirements

General safety principles must meet the ADR requirements. Please note that bitumen is flammable under high temperatures and recommended process temperatures should be followed. The more detailed information is available in BIOTUM® PMB Material Safety Data Sheet.



The information about the product conforms with our current information; The specified data is the average value under standard conditions. The end consumer must test the material applicability for intended purposes. Feel free to contact our engineering team to get more technical information. We guarantee high quality of our materials within the framework of our sales and shipping conditions.

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