

# POLYMER-MODIFIED BITUMEN EMULSION P M B E



# PMBE

## POLYMER-MODIFIED BITUMEN EMULSION

CE  
EN 13808



### DESCRIPTION, PROPERTIES, TYPES

#### What is bitumen emulsion ?

Bitumen emulsion is an emulsified liquid bitumen obtained by mixing bitumen with an aqueous solution of an emulsifying agent. The mixture is homogeneous in consistency and has good adhesive properties. Its basic color is brown, with shades ranging from light to dark.

The low viscosity of the emulsion allows the treatment of stone materials without heating, which significantly reduces the emission of harmful substances into the atmosphere compared to the use of hot bitumen.

#### Types of bitumen emulsions

Depending on the type of emulsifier used in the production process, bitumen emulsions can be classified as:

- **Cationic bitumen emulsion** – K (contains positively charged particles)
- **Anionic bitumen emulsion** – E (contains negatively charged particles)

According to the breaking setting (the rate at which bitumen separates from water), bitumen emulsions can be divided into:

- Rapid-setting or **unstable (N)**
- Medium-setting or **semi-stable (P)**
- Slow-setting or **stable (S)**

Bitumen emulsions are labeled with abbreviations that indicate their type and composition, for example: **KN-60** - K for cationic, N for unstable (rapid-breaking), and 60 for the bitumen content (60%) in the emulsion. **EN-40** - E for anionic, N for unstable (rapid-breaking), and 40 for the bitumen content (40%) in the emulsion.

#### BIM a.d. Sveti Nikole produce:

Cationic bitumen emulsions: **KN-40, Bitulit KN-50, KN-55, KN-60, KN-65, KP-55, KP-60, KS-60, KS-65.**

Anionic bitumen emulsions: **EN-40, EN-56, EN-60, ES-60, APR-56.**

### INTENDED USE

Bitumen emulsion is used for road construction as well as for road maintenance and repair.

- Bonding layers in road construction
- Mixing with aggregates for the preparation of cold asphalt mixtures
- As a micro-surfacing layer for protection and rehabilitation of asphalt surfaces
- For waterproofing and similar applications

Bitumen emulsion is stored in:

1 tin barrels

3 tank trucks

Bitumen emulsion is applied using a cold method at temperatures above 5 °C.

2 Using hand sprayers

3 tank truck  
(bitumen sprayers)

### APPLICATION



1.



2.



3.

## WHAT IS POLYMER-MODIFIED BITUMEN EMULSION **PMBE** ?

**Polymer-Modified Bitumen Emulsion (PMBE)** is a bitumen-in-water emulsion that has been modified with polymers (most commonly SBS, SBR, or latex) to improve its physical and mechanical properties. PMBEs represent a special class of bitumen emulsions that differ from traditional cationic and anionic (unmodified) emulsions in terms of enhanced performance. They are considered high-quality binders in road construction, especially for roads subjected to high traffic loads.

### ADVANTAGES OF PMBE

Polymer-modified bitumen emulsions (PMBE) have higher performance compared to conventional bitumen emulsions. They exhibit improved mechanical and functional properties due to the presence of polymers such as SBS or latex.



**Improved elasticity and flexibility**

**Greater resistance to water and weather conditions**

**Better adhesion to aggregates**

**Long-term cost-effectiveness**

### WHERE IS **PMBE** USED ?

Polymer-modified bitumen emulsion (PMBE) has a wide range of applications in the construction and maintenance of modern road infrastructure, especially for high-traffic areas.

- **Highways**
- **Airport runways**
- **Urban roads and streets etc.**

### PMBE is most commonly used in:



As a bonding layer between pavement layers where the asphalt mixtures are made with PMB (Polymer-Modified Bitumen).



As a binder mixed with fine aggregates in microasphalt or micro-surfacing applications.



As a surface layer for sealing micro-cracks to rehabilitate asphalt surfaces.



As a binder for the production of cold asphalt mixtures.

**BIM a.d.** producing  
**POLYMER-MODIFIED  
CATIONIC UNSTABLE  
BITUMEN EMULSION**

**PmB KN-50**

**PmB KN-60**

**PmB KN-65**

CE  
according EN 13808



FACTORY FOR PRODUCTION OF  
BITUMEN WATERPROOFING MATERIALS

**BIM a.d. Sveti Nikole**

📍 St. Zeleznichka 164, 2220 Sveti Nikole, Macedonia

☎ + 389 32 455 177; 455 377

**Representative office in Skopje**

📍 Maksim Gorki 25, loc. 1, 1000 Skopje

☎ + 389 2 3227 908

✉ [bim@t.mk](mailto:bim@t.mk)

🌐 [www.bim.com.mk](http://www.bim.com.mk)

📘 Бим Ад Свети Николе

📷 [@bimsveti\\_nikole](https://www.instagram.com/bimsveti_nikole)