



PLASTOMERIC BITUMINOUS  
WATERPROOFING MEMBRANES (APP -10 °C)

### GENERAL DESCRIPTION

Plastomeric waterproofing membranes **ESHAGUM** are produced from special types of bitumen and selected polymer materials based on propylene (APP). This special composition enables **ESHAGUM** to withstand extremely high climatic temperatures and exposure to solar radiation, while maintaining all its characteristic qualities at very low temperatures.

**ESHAGUM** is a guarantee for the absolute and long-term waterproofing of works which exposed to extreme climate temperature changes and intense sunlight.

The selection of the appropriate combination of reinforcement, surface finishing and weight/thickness of the membrane offers a variety of applications and high quality solutions in every problem of waterproofing, like:

- Waterproofing of flat and inclined roofs
- Waterproofing of metal decks
- Re-roofing, refurbishment
- Waterproofing of underground works / Foundations
- Waterproofing of bridge-decks & parking decks
- Waterproofing of reservoirs (tanks) and canals

### CHARACTERISTICS/ADVANTAGES

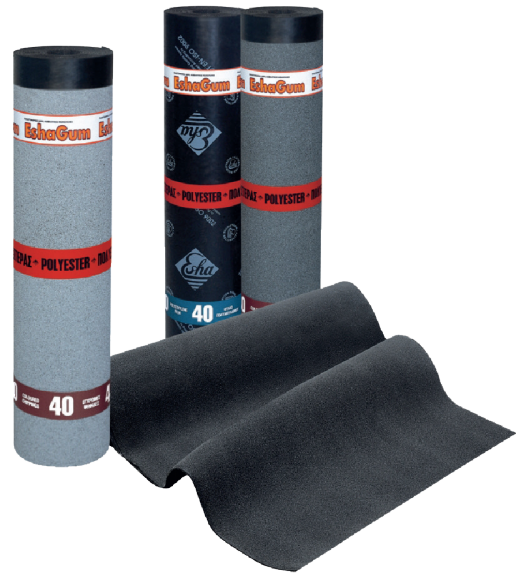
As a result of their high quality **ESHAGUM** membranes offer the following advantages:

- Excellent resistance to ultraviolet radiation
- Increased resistance to ageing
- Increased resistance to high temperatures
- Flexibility at low temperatures
- Wide temperature application window & operating range
- Very good behavior in a corrosive environment (acids, inorganic salts, air pollutants, ozone etc.)

### SURFACE FINISH

**ESHAGUM** possible finishes include:

- Mineral chipping in various colors (green, white, red-brown), when exposed to sunlight.
- A thin film of polyethylene for cases where the waterproofing layer is protected by other materials (tiles, concrete, etc.).
- Quartz sand
- Paintable woven polypropylene fabric



### REINFORCEMENT

**ESHAGUM** possible reinforcements are:

- Spunbond Polyester (SP) of great durability, which gives the membrane increased resistance to mechanical deformations (cracking, puncture, tearing etc.) and an extended stretching ability.
- High stability composite polyester fabric with embedded glass yarns in order to maximize torching membrane's stability & eliminate "banana" effects.
- Composite polyester glass mat giving the membrane isotropic mechanical strength properties.
- High quality glass fleece which gives the membrane dimensional stability.

### NORMS/CERTIFICATION

Esha Bituminous membranes comply with EN 13707, EN 13969 and are certified with CE No. 1020-CPD-010021423. Application to roofs/decks according to EN 13707 and underground structures according to EN 13969 and for Bridge Decks according to EN 14695.

*For all available certificates and certifications please contact Esha Sales Department.*



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### APPLICATION PROCEDURE

#### Surface preparation

- Before application of the membrane it is necessary to prepare properly the substrate surface. The substrate surface must be thoroughly cleaned, remove all dust, loose matter and remaining oils in order to be smooth and dry.
- Recommended surface slope: 1.5% minimum.
- Recommended substrate relative moisture  $\leq 6\%$ .
- The surface must be primed with Eco friendly (VOCs free), elastomeric, waterproofing, bituminous primer with new generation technology **ESHATOPRIMER** at a consumption  $\sim 0,3\text{Lt}/\text{m}^2$ .
- Alternatively the surface can be primed with **ESHALAC 50S** at a consumption  $\sim 0,3\text{ Kg}/\text{m}^2$ .
- As soon as the surface is tack-free, the bituminous membrane can be torch applied.

#### Application of the bituminous membrane

- Membrane application starts from the lowest point of slopes in order to secure unobstructed water flow, when membranes are torched one in parallel to the other.
- The membrane is then rolled and positioned parallel to its adjacent one. It is then rerolled half-way without shifting.
- The bottom surface of the re-rolled part is heated with a propane torch until bitumen becomes fluid and the membrane is unrolled again to apply evenly on the substrate.
- Longitudinal overlaps must be at least 8 cm while transversal ones must be kept to a minimum of 15 cm.

- Overlapping joints are treated with a metallic lap-joint cylinder in order to apply the optimal pressure in these demanding areas.
- In multiple layer waterproofing, application of the successive layers follows the same procedure and is done in the same direction as the previous ones. Care is taken so that overlaps do not coincide with those of the previous layer.
- In a ballasted roofing, a well calculated ballast should be placed on an adequate membrane protection layer to avoid damage.

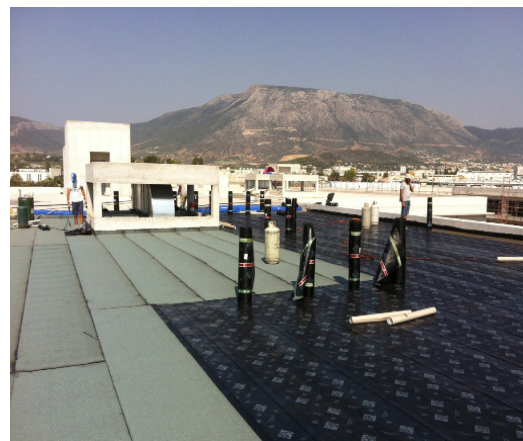
#### Application notes

- Application temperature should be higher than  $5\text{ }^\circ\text{C}$ .
- Waterproofing should be carried out by technicians, properly trained and certified in the bituminous membranes application.

### STORAGE

Membrane rolls should be stored in their original package, in vertical position, protected from direct sunlight, rain, snow and ice. In cold weather it is recommended that the rolls should be kept at a minimum temperature  $>5\text{ }^\circ\text{C}$  for at least 10 hours before installation.

Avoid strong and sudden roll impact, as well as fast unrolling during installation, transportation and storage, at low temperature conditions.



# WATERPROOFING MEMBRANES

## PLASTOMERIC BITUMINOUS MEMBRANES (APP)



### PLASTOMERIC BITUMINOUS WATERPROOFING MEMBRANES (APP -10 °C)

#### TECHNICAL CHARACTERISTICS

| Characteristics                        | Standard               | T     | Nominal values            |                           |   |                           |                             | Unit              |
|--|------------------------|-------|---------------------------|---------------------------|---|---------------------------|-----------------------------|-------------------|
|  |                        |       | Glass Fleece              | Non woven polyester       | Polyester combined with reinforcing glass yarns | Spun Bond Polyester (SP)  | Spun Bond Polyester (SP250) |                   |
| Length                                 | EN 1848-1              |       | 10                        | 10                        | 10  | 10                        | 10                          | m                 |
| Width                                  | EN 1848-1              |       | 1                         | 1                         | 1   | 1                         | 1                           | m                 |
| Upper surface covering                 | -                      |       | PE film/ mineral granules | PE film/ mineral granules | PE film/ mineral granules                       | PE film/ mineral granules | PE film/ mineral granules   | ---               |
| Bottom surface covering                | -                      |       | PE film/ Quartz sand      | PE film/ Quartz sand      | PE film/ Quartz sand                            | PE film/ Quartz sand      | PE film/ Quartz sand        | ---               |
| Thickness                              | EN 1849-1              | ±0,2  | 2.5-5                     | 2.5-5                     | 2.5-5   | 2.5-5                     | 2.5-5                       | mm                |
| Weight                                 | EN 1849-1              | ±10%  | 3-6                       | 3-6                       | 3-6   | 3-6                       | 3-6                         | kg/m <sup>2</sup> |
| Type                                   | -                      |       | Plastomeric (APP)         | Plastomeric (APP)         | Plastomeric (APP)                               | Plastomeric (APP)         | Plastomeric (APP)           | ---               |
| Softening Point                        | EN 1427                | ≥     | 148                       | 148                       | 148   | 148                       | 148                         | °C                |
| Penetration at 25 °C                   | EN 1426                | ± 5   | 25                        | 25                        | 25  | 25                        | 25                          | dmm               |
| Antiroot Agent                         |                        |       | -                         | -                         | -   | -                         | -                           |                   |
| Tensile strength L/T                   | EN 12311-1             | ± 20% | 300/200                   | 450/300                   | 550/420   | 900/650                   | 1100/900                    | N/50mm            |
| Elongation L/T                         | EN 12311-1             | ± 15% | 2/2                       | 30/50                     | 40/55   | 50/60                     | 50/60                       | %                 |
| Tear resistance L/T                    | ASTM D4073-94          | ± 15% | 100/200                   | 200/350                   | 300/400   | 350/450                   | 600/700                     | N                 |
| Static puncture resistance (concrete)  | EN 12730/ UEAtc MOAT27 |       | I2 (7-15)                 | I3 (15-25)                | I3 (15-25)                                      | I3 (15-25)                | I4 (>25)                    | kg                |
| Dynamic puncture resistance (concrete) | EN 12691/ UEAtc MOAT27 |       | I3 (Φ10)                  | I3 (Φ8)                   | I3 (Φ8)   | I3 (Φ8)                   | I3 (Φ8)                     | mm                |
| Flexibility to low temperatures        | EN 1109                | ± 3   | -10                       | -10                       | -10   | -10                       | -10                         | °C                |
| Water tightness (72h, 2 bar)           | UEAtc/EN 1928          |       | Successfully Passed       |                           |   |                           |                             |                   |
| Vapor permeability coefficient         | EN 1931                | ≥     | 20000                     | 20000                     | 20000   | 20000                     | 20000                       | ---               |
| Heat resistance                        | EN 1110                | ≤     | 130                       | 130                       | 130   | 130                       | 130                         | °C                |
| Reaction to fire                       | EN 13501-1             |       | F                         | F                         | F   | F                         | F                           | ---               |
| Dimensional stability L/T              | EN 1107-1              | ≤     | -0.1/+0.1                 | -0.15/+0.1                | -0.15/+0.1                                      | -0.4/+0.3                 | -0.4/+0.3                   | %                 |
| Thermal conductivity                   |                        |       | 0.2                       | 0.2                       | 0.2   | 0.2                       | 0.2                         | W/mK              |

Tolerances in the nominal values are in accordance with respective standards. Producer reserves the right to modify the properties of his products.

The information contained in this leaflet is, to the best of our knowledge, true and reliable and is supported by the present state of our knowledge. According to the care taken and the method of application, upon which we have no influence, the values are subject to divergence. Therefore for best results, prior to use, an application test should be made by the user under his own processing conditions.

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