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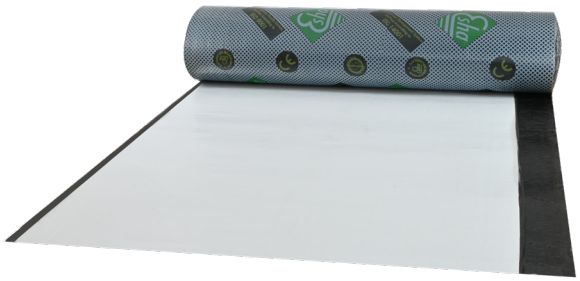
WATERPROOFING MEMBRANES
ELASTOMERIC BITUMINOUS MEMBRANES (SBS)

ESHADIEN GEO

Elastomeric Bituminous Waterproofing Membranes
(SBS -20°C)



GENERAL DESCRIPTION

Elastomeric waterproofing membranes **EshaDien Geo** are produced from special bitumen, modified with thermoplastic elastomeric materials (SBS). This modification results in a binding material with enhanced elasticity, even at extremely low temperatures (-20°C), and improved viscoelastic properties which are ideal for the production of superb quality bituminous waterproofing products.

EshaDien Geo membranes offer excellent protection in 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
- Absolute vapor barrier
- Combined vapor control & waterproofing function in one layer

SURFACE FINISH

EshaDien Geo possible finishes include:

- Film of polyethylene
- Quartz sand.
- High reflective aluminium foil.
- Top finish of polyester geotextile, fully bonded, weighing 190 g/m^2, which reinforces its mechanical strength and also acts as a protective layer for the membrane from subsequent waterproofing works, such as backfilling, protective concrete pouring, etc. Ideal for all basement waterproofing.

CHARACTERISTICS/ADVANTAGES

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

- Great elasticity (ability to stretch and recoil to it's initial dimensions) Elastic recovery value for the membrane's modified compound exceeds 90%.
- High flexibility at very low temperatures (-20°C) compared with other types of bituminous membranes.
- Consistent waterproofing properties on a long term basis.
- Wide temperature application window & operating range.
- High resistance to cracking, owing to its elastic properties.
- High puncture resistance and resistance to mechanical deformations.
- Advanced weldability to any substrate.
- Increased resistance to aging.

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REINFORCEMENT

Spunbond Polyester (SP) of great durability, which gives the membrane increased resistance to mechanical deformations (cracking, puncture, tearing etc.) and an extended stretching ability.

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 temperature >5°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.

APPLICATION PROCEDURE

Bituminous Membrane Application

A. HORIZONTAL SURFACES

Without bonding, with the geotextile on the upper side

EshaDien Geo is applied with its quartz sand or PE film, covered surface facing the soil or existing concrete substrate surfaces (e.g. in basement waterproofing). In this way the geotextile upper surface effectively protects the membrane from the subsequent constructional stages such as back-filling or during pouring of the protection concrete layer.

Partial bonding, with the geotextile on the underside

On horizontal surfaces of concrete elements (e.g. concrete decks, roof gardens, sport grounds):

EshaDien Geo is applied on primed smooth concrete surfaces (priming with **EshaLac 50-S**, bituminous varnish or **EshaToprimer** bituminous emulsion) with its geotextile surface facing the concrete surface, partially bonded with **oxidized bitumen R 85/25** (ASTM D-312 Type III), 30-40% of its entire surface.

The method of partial or spot bonding ensures a better stress distribution while an effective vapor circulation throughout the entire area is achieved, thus avoiding blistering on direct sun light exposure.

Geotextile finish function in this application is:

- To allow a means of control of the torch effected spot bonding since only torch heated concrete surfaces treated with oxidized bitumen adhere on the membrane. Rest of the concrete surface does not adhere on the geotextile even with mounting pressure.
- Allows through its capillary voids vapor circulation, avoiding vapor pressure built up that causes blistering.
- Protects the membrane from the irregularities of the concrete surface that might cause mechanical damage of the waterproofing membrane.

CERTIFICATION

Esha Bituminous membranes comply with **EN 13707, EN 13969** and are certified with **CE No.1020-CPR-010021423**.
Application to roofs according to **EN 13707** and underground structures according to **EN 13969.**

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

ECO PLATFORM EPD VERIFIED

EPD certification is an independent assessment of a product's environmental impact throughout its entire life cycle, from initial production to disposal or recycling at the end of its life cycle. It contributes points to some of the leading green building programs, such as LEED certified building projects.

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In the case that a drainage layer is required in contact with the waterproofing layer before back filling, the drainage system **NOPHADRAIN 4+1** or **NOPHADRAIN 5+1** is recommended.

Full bonding, with the geotextile on the upper side

EshaDien Geo is applied on smooth primed reinforced concrete surfaces (priming as b1) with its quartz sand or PE film surface facing the concrete surface, fully bonded with hot oxidized bitumen or cold applied **EshaRoofcoat No 10** super elastomeric coating. In the latter case the membrane is torch bonded to the substrate after the evaporation of the solvent co tent of **EshaRoofcoat No 10** is entirely ventilated. Function of the geotextile on the upper surface of the waterproofing membrane is to protect the membrane from the subsequent constructional stages providing at the same time a thin drainage layer.

B. VERTICAL SURFACES

The substrate must be firm and even and its surface free from voids, gaping cracks and ridges. Expansion joints are sealed with polysulphide mastic joint sealant **EshaThioseal (A+B)**.

The prepared substrate is primed with bituminous primer **EshaToprimer**. Oxidized bitumen is hot applied on the primed surface with a consumption of 1,5 kg/m². **EshaRoofcoat No 10** is torch applied with its quartz sand or PE film surface facing the substrate.

APPLICATION NOTES

- Application temperature should be higher than 5°C.
- Waterproofing should be carried out by technicians, properly trained and certified in the bituminous membranes application.

For a more detailed description of bituminous waterproofing membranes' application please contact Esha Sales Department.

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TECHNICAL CHARACTERISTICS

Characteristics	Standards	T	Nominal Values	Unit
Reinforcement	-	--	Non woven polyester	---
Weight	EN 1849-1	± 0.2	4,5/5,5	kg/m²
Length	EN 1849-1	--	10	m
Width	EN 1849-1	--	1	m
Upper surface covering	-	--	Polyester non wooven geotextile of 190 gr/m²	---
Bottom surface covering	-	--	PE Film / quartz sand	---
Type of bituminous binder	-	--	Elastomeric (SBS)	---
Softening Point	EN 1427	± 10	130	°C
Penetration at 25°C	EN 1426	± 5	35	dmm
Elastic recovery (25°C)	EN 13398	>	90	%
Elastic recovery (25°C) after the oxidative ageing, EN 12607-1	EN 13398	>	80	%
Elongation of bituminous binder	EN 12311-1	>	1000	%
Tensile strength L/T	EN 12311-1	± 20%	900/650	N/mm
Elongation L/T	EN 12311-1	± 15%	45/55	%
Tear Resistance L/T	ASTM D4073-94	± 15%	360/550	N
Static puncture resistance (concrete)	EN 12730/ UEAtc MOAT27	--	L3 (15-25)	kg
Dynamic puncture resistance (concrete)	EN 12691/ UEAtc MOAT27	--	I3 (Φ 8)	mm
Flexibility at low temperatures	EN 1109	± 5	-20	°C
Water tightness (72 h)	UEAtc/EN 1928	--	2	bar
Vapor Permeability Coeficient	EN 1931	≥	20.000	---
Heat resistance	EN 1110	≤	110	°C
Dimensiolnal Stability L/T	EN 1107-1	≤	-0,15/+0,15	%
Reaction to fire	EN 13501-1	--	F	---

Fluctuations in nominal values are in accordance with the relevant standards. The manufacturer reserves the right to modify the properties of its products. Esha provides information and, in particular, recommendations regarding the application and end use of its products based on its current knowledge and experience, when the products are stored, used, and applied under normal conditions. In practice, there are variations in substrates and local application conditions, so Esha cannot guarantee the success of the application of any material. It is recommended that the user test the application of the material under the local application conditions.