Aqua Tech
waterproofing solutions

CE
EN 13969
EN 13707

TECHNICALDATA SHEET 11/04/2023

AquaThene®4000TS

Bituminous, self-adhesive waterproof membrane for vertical and horizontal sealing of underground structures, ceilings, balasted roofs terraces, balconies

- to seal vertical and horizontal underground structures
- as inter-floor, balasted roofs, balconies insulation
- seal immediately after arrangement
- perfect adhesive properties
- flexible
- cold-gluing
- easy application
- solvent-free product.
- crack bridging ability up to 5 mm
- barrier to radon

Product description

AquaThene 4000TS is a 1,5 mm thick self-adhesive waterproofing membrane with a band width of 1000 mm. It is made of polymer-modified bituminous mass, based on HDPE film. The adhesive surface is protected with a protective foil as standard. The membrane is non-toxic, non-flammable, solvent-free and does not contaminate groundwater.
Standard for use at temperatures from +5°C to +35°C. It is not resistant to long-term exposure to UV radiation.

System complementing

The membrane is complemented by:
- grounding preparation **AquaThene PRIMER**
- double-sided tape **AquaThene BITAPE**
- tape with a layer of aluminum foil **AquaThene ALU TAPE**
- tape with a layer of interlining **AquaThene BAND**
- corner tape **AquaThene CORNER TAPE**
- bitumen trowelling compound **AquaThene MASTIC**
- liquid polymer-bitumen membrane **Sealatex PLUS**

Intended use

The **AquaThene 4000TS** membrane is designed to seal vertical and horizontal underground structures in heavy water and ground conditions. It can be used as horizontal insulation of ceilings, ballast roofs, green roofs (with the use of anti-root foil), terraces and balconies.
AquaThene 4000TS can be installed on many types of mineral substrates such as:a concrete, aerated concrete, mineral plasters, brick walls or concrete blocks.
AquaThene 4000TS should be protected with a protective layer (e.g. dimpled foil, fleece) or covered with a layer of thermal insulation.
For more information on other possible applications of the membrane, please contact our technical advisor.

Requirements

The product meets the requirements of the standards:
EN 13969
EN 13707

Preparation of the substrate

The base must be strong, stable, even, without open scratches and protruding elements. Sharp edges and corners should be chamfered or curved. Fill in gaps and cracks.
In order to avoid blisters on very porous or uneven surfaces, where the contact surface is less than 80%, a layer of lean concrete should be poured or a leveling layer should be made. The surface of the substrate should be free of ice, oil stains, tar, mortar residues, dust and dirt.
Lay the membrane on dry surfaces with a humidity not exceeding 8%. During installation, do not allow any water to remain between the substrate and the membrane.

Mineral surfaces should be primed with **AquaThene PRIMER**. Installation of membranes can begin after the primer layer has dried.

Application

Installation of the insulation should begin with securing the corners, quion and edges with properly cut membrane pieces or with the **AquaThene CORNER TAPE**.
Insulation of vertical surfaces should be started from the top by laying the membrane strips vertically.
Unwind the **AquaThene 4000TS** roll so that the protective foil is on the bottom, cut it into strips of the required length and roll it up again. Remove the protective layer of the foil from the membrane immediately before laying it, slowly and evenly removing fragments approx. 30 cm long. Place the membrane on the substrate with the adhesive side and press it down using e.g. a hard brush or a cloth. Then peel off another 30 cm of the protective film. Pressing should be started from the inside and towards the outside in order to eliminate the formation of folds and kinks in the membrane.
Lay the next strip with an overlap of at least 8 cm (for longitudinal and cross overlaps). In no case may the overlap be less than 8 cm.
The places of the joints should be pressed particularly carefully. Seal the ends of the membrane by applying a layer of **AquaThene MASTIC** on the edge or by applying one of the tapes: **AquaThene ALU TAPE**, **AquaThene BAND**.
The thermal insulation or protective layer can be installed immediately after the membrane has been laid, using the **AquaThene BITAPE** double-sided bitumen tape or **AquaThene MASTIC** or **Sealatex PLUS** bituminous mass.

Tools and auxiliary materials

- measure tape
- knife with retractable blade
- plasterers feather edge
- hard brush

Recommendations

During installation, the membrane should be protected against solar radiation, high temperature and moisture.
The membrane should be covered within 14 days of its installation.
Repair eventual damage by sticking a patch made of a fragment of the membrane, without priming.
The edges of the **AquaThene 4000TS** membrane, passages through the through-holes, pipe penetrations, band-iron, and anchorages should be protected with **AquaThene MASTIC** or **Sealatex PLUS**.

Consumption

About 1,1 m^2 of the membrane per each m^2 of the insulated surface.

Package

Roll of 1m x 20 m; 20 m^2

Shelf life and storage

12 months in the original packaging. Store in a horizontal position. Protect against UV rays, frost, heat and moisture. Do not expose to direct sunlight. Pallets with membrane rolls must not be stacked.

Industrial safety

Wear appropriate protective clothing when laying. Wash hands with warm water immediately after finishing work.

PROPERTIES ACCORDING TO EN 13969 STANDARD	STANDARD NO.	AquaThene 4000TS
watertightness	EN 1928	60 kPa
resistance to impact	EN 12691 (method A or B)	≥ 400 mm
joint (connection) strength	EN 12317-1	200±100 N/50 mm
flexibility at low temperature	EN 1109	≤ -15°C
tensile properties: maximum tensile force	EN 12311-1	200±100 N/50mm
tensile properties: elongation at break	EN 12311-1	350±100 %
tensile properties: elongation at maximum tensile force	EN 12311-1	45±15 %
resistance to static loading	EN 12730 (method A)	≥ 5 kg
resistance to tearing (nail)	EN 12310-1	180±50 N
watertightness after artificial ageing	EN 1296 / EN 1928	60 kPa
watertightness after exposure to chemicals	EN 1847 / EN 1928	60 kPa
reaction to fire	EN 13501-1	class F
PROPERTIES ACCORDING TO EN 13707 STANDARD		
watertightness	EN 1928	60 kPa
tensile properties: maximum tensile force	EN 12311-1	200±100 N/50mm
tensile properties: elongation at break	EN 12311-1	350±100 %
tensile properties: elongation at maximum tensile force	EN 12311-1	45±15 %
resistance to static loading	EN 12730 (method A)	≥ 5 kg
resistance to impact	EN 12691 (method A or B)	≥ 400 mm
resistance to tearing (nail)	EN 12310-1	180±50 N
joint (connection) strength	EN 12317-1	200±100 N/50 mm
flexibility at low temperature	EN 1109	≤ -15°C
reaction to fire	EN 13501-1	class F
OTHER PROPERTIES		
visible defects	EN 1850-1	none
straightness	EN 1848-1	pass
length	EN 1848-1	20 m
width	EN 1848-1	1 m
nominal thickness	EN 1849-1	1,5 mm
flow resistance at elevated temperature	EN 1110	≥ +70°C
flow resistance after artificial ageing	EN 1296 / EN 1110	≥ +70°C
crack bridging ability	EN 14224	10000 cycles; crack up to 5 mm
peel resistance of joints	EN 12316-1	≥ 100 N/50 mm
resistance to aggressive environment (exposure class XA3)	EN 13529	pass
resistance to hydrostatic pressure	ASTM D5385	≥ 7 bar
radon diffusion coefficient	K124/02/9	membrane (1,2±0,1) · 10^{-11} m^2/s joint (1,0±0,1) · 10^{-11} m^2/s
consumption		about 1,1 m^2 of the membrane per each m^2 of the insulated surface

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Aqua Tech - Leja, Lietz Spółka jawna
Ul. Kineskopowa 1 bud. A lok. 26
05-500 Piaseczno
Tel. (22) 847 06 52
www.aqua-tech.com.pl
kontakt@aqua-tech.com.pl