

SOLTHERM UB

Universal Base Coat and Adhesive for embedding mesh and installation of insulation boards

PRODUCT DESCRIPTION:

- excellent adhesion to mineral surface and EPS
- water vapour permeable
- formulated for the insulation of passive houses and energy efficient buildings and for EPS boards thickness up to 50 cm
- element of the retrofit and repair of external walls insulation, including "insulation over insulation" subject to the ITB Technical Recommendation
- suitable for EPS, graphite-enhanced EPS and XPS boards

USE:

SOLTHERM UB is a base coat formulated to embed glass fibre mesh in EWI insulation systems and to bond polystyrene insulation boards to typical mineral surfaces (such as concrete, masonry walls, cement and lime-cement plasters, etc.) as well as to re-insulate walls or install insulation over existing one. It is also used to level minor irregularities /up to 5 mm/ of mineral substrates and smooth out mineral substrates prior to paint and thin-coat render application.

SUBSTRATE PREPARATION:

Prior to insulation board installation:

The surface must be structurally sound, even, surface contaminants that may affect adhesion such as dust, grease, bitumen and other barrier materials. Remove any friable surfaces such as peeling or flaking paint or plaster, loose or crumbling material from the existing wall. Prime absorptive substrate (particularly aerated concrete) with the primer SOLTHERM SP. Prime smooth and non-absorbent surfaces with SOLTHERM CS. For concrete substrates formed in shutterboards (including floors, walls):

- brush off with a stiff brush,
- remove any dust, brittle, loose, crumbling or friable particles from the surface,
- prime with SOLTHERM CS

Level larger gaps and irregularities with the mortar SOLTHERM LRC.

Prior to installation of insulation boards to weak, porous substrates or of unknown condition, carry out an adhesion test. To test, attach a few samples of EPS boards (size 50x100x100 mm) to exterior wall in various spots and pull them off by hand after minimum 3 days. The substrate is sufficiently sound if the failure is in the polystyrene. Otherwise, sand, remove friable or crumbling material or prime to prepare the surface and do the adhesion test again. Prior to insulation of large-panel buildings, it is recommended to assess the fastening of the outer textured layer in the sandwich panel structures. The substrate is sufficiently sound and stable if the failure is in the polystyrene. If not, chip off any weak, friable or crumbling material, prime the surface and repeat the adhesion test.

Prior to base coat application:

Attach the insulation boards with mechanical fixings (alternatively, according to the insulation design) and sand with coarse sandpaper or an abrasive rasp and remove the sanding dust. Apply a basecoat over the washer plates of mechanical fixings. Install corner trims or beads, window profiles, movement beads, diagonal mesh strips at the corners of door and window openings using the adhesive SOLTHERM UB and allow to dry. The surface of the bonded insulation boards must be even and continuous. For EPS or XPS boards, the interstices or gaps may be filled with the low-pressure installation foam SOLTHERM PM-L or SOLTHERM ZP.

NOTICE:

If a powdery deposit appears on the surface of insulation boards or the boards are exposed to sunlight for more than 7 days, they need to be sanded and cleaned of the dust.

Preparation of XPS boards:

Rasp smooth XPS boards on both faces and remove dust. Corrugated boards do not require such preparation.

PRODUCT PREPARATION:

Measure the clean water (5.0 ÷ 5.5 litre) into a suitable vessel/bucket and slowly add the adhesive while mixing using a low-speed drill until a homogeneous consistency is achieved. After 5 minutes and another stirring, the mixture is ready to use. Add the same amount of tap water for each packaging. Do not admix, except for water.

APPLICATION:

Insulation board installation:

- dab and ribbon method

Apply the adhesive to the insulation board in strips and dabs i.e. 30-60 mm wide strips around the perimeter of the board with at least three additional dabs of adhesive distributed uniformly over the remaining surface. As soon as the adhesive is applied, place the board on the wall and press firmly with a trowel until it is flush with the previously installed board surface. After pressing to the surface, the well-applied adhesive should cover at least 40% of the surface, and the coat thickness should not exceed 10 mm.

- Notched trowel method

For even and smooth surfaces, Insulation boards can be attached using the tooth bed method (10-12 mm notch size). As soon as the adhesive is applied, place the board on the wall and press firmly with a trowel until it is flush with the previously installed board surface.

Apply insulation boards in a running bond pattern.

Base coat application:

Use a notched trowel (8-10 mm notch size) to apply a continuous layer of the slurry over the insulation boards to a uniform thickness of approx. 3-4 mm and immediately embed the fibreglass mesh into the adhesive so that it is evenly stretched and fully embedded in the base coat. Adjacent mesh strips should overlapped not less than 100 mm at mesh seams. The base coat surface should be even and smooth with no reinforcing mesh fabric visible. If not, apply a second thin coat (approx. 1 mm thick) of the adhesive to smooth and even the surface, once the first coat has dried. Base coat thickness should be between 3 – 5 mm. The areas, which are susceptible to mechanical damage (especially plinth and ground area) should have double mesh reinforcement embedded in the base coat, placed in opposite directions towards each other. Alternatively, the armour mesh strips SOLTHERM HD 335/P can be applied in the first layer, which must butt joint and not overlap. The armour mesh cannot be lapped over corners. The next mesh layer should be applied after initial drying of the first layer. Reinforced base coat thickness for this solution should be between 4 – 6 mm.

Spreading across entire surface:

Apply with a stainless steel plastering trowel. Coat thickness should be between 2 – 5 mm.

SOLTHERM UB

Universal Base Coat and Adhesive for embedding mesh and installation of insulation boards

LIMITATIONS AND RECOMMENDATIONS:

- Not suitable for areas not damp-proofed against capillary action.
- Before application, protect or mask surfaces such as windows, doors, window sills, etc.
- Allow fresh cement and lime-cement renders to cure for minimum 28 days.
- Plan the surface area to be insulated taking into consideration weather conditions, surface type and workforce.
- Prior to insulation application identify all installations on the building façade or around it to prevent their damaging during mechanical fixing of the insulation (drilling).
- Protect from direct sunlight exposure, precipitation and wind during application operation and drying. Use scaffolding meshes.
- When exposed to sunlight, the graphite-enhanced polystyrene heats up quickly, what may result in deformations of the insulation boards. Therefore, it is recommended to apply the BOLIX PTE compound to graphite-enhanced EPS, which will reduce heat absorption by the EPS and in consequence reduce its thermal deformation.
- It is not advisable to attach the glass fibre mesh without spreading the adhesive over insulation boards first.
- Do not reduce the base coat thickness, since it can substantially reduce the strength of the coat.
- Avoid extremely thin layer of adhesive as you may experience difficulty with levelling minor irregularities. It may also result in installers exercising too much force on the board surface by excessive bending or striking of the boards to make them flush.
- Applying the adhesive SOLTHERM UB across the surface, weaker than the adhesive, may lead to cracking and delamination of the coating from the surface.
- Low temperature, increased humidity and improper air circulation extend the drying and setting time of the adhesive.
- Clean tools and hands with running water immediately after use. After drying difficulties with cleaning may be experienced.
- Wipe new splashes off soiled surfaces with damp cloth. Once hardened, the material can only be removed mechanically.

PRECAUTIONS:

Due to alkyd reaction of the product, avoid contact with skin and eyes. In case of eye contact, flush eyes with plenty of water and seek medical advice.

TOOLS:

- Agitator or low-speed mixing drill (400+500 rpm) with hoop paddle.
- Stainless steel big and small plastering trowel or float
- Stainless steel scraper and trowel
- Bucket
- Hand sander (coarse sanding paper) / abrasive rasp for polystyrene

TECHNICAL DATA:

The following technical data are for the temperature of +23 (±2)°C and relative air humidity of 50 (±5)%. Under other conditions the technical data may vary.

Ambient and surface temperature at application and setting:
from +5°C to +25°C

Relative humidity at application and setting:
up to 80%

Bulk density:
approx. 1.62 g/cm³ (±10%)

Colour:

grey

Workability:

≤ 1.5

Coefficient of heat conductivity λ:

≤ 0.78 W/(m*K)

Diffusion resistance factor μ:

≤ 25

Water absorption after 24h immersion according to ETAG 004:

< 400 g/m²

Drying and setting time of the adhesive after board installation / base coat application:

min. 48h

Packaging:

25 kg bag

No. of containers per pallet and net weight:

48 / approx. 1200 kg

Shelf life:

12 months from the date of production provided on the packaging

NOMINAL COVERAGE:

Insulation board fixing ≥ 4.0 kg/m²

Base coat application

Single mesh ≥ 4.0 kg/m²

Double reinforcement ≥ 6.5 kg/m²

including a combination of standard and armour mesh

For insulation board installation the coverage will vary with the surface levelling and condition as well as the percentage of the insulation board face covering with the adhesive.

For base coat application, coverage will vary with the number of reinforcement layers and base coat thickness.

To determine precise coverage, perform a patch test on the surface.

Usage is typical usage and may vary between installers. Coverage rates quoted for products will not be guaranteed under any circumstances. The rates quoted are based on site experience but may vary due to site conditions, operator skills etc. No claim will be allowed relating to coverage of materials.

STORAGE:

Store in intact containers in temp. between +5°C and +25°C. Protect from damp. Store away from the reach of children.

COMPOSITION:

It is a mixture of hydraulic binders, polymers, fine mineral fillers and modifiers.

SOLTHERM guarantees product quality but has no control over its application and use. SOLTHERM takes no responsibility for contractors' and distributors' performance. The information supplied herein is given in good faith based on our current knowledge and latest application methods. The information provided cannot replace designer's and contractor's expertise and does not dismiss anyone from observing good practice and the OHS regulations. Should you have any further queries, carry out necessary tests or contact SOLTHERM Customer Technical Support. The publication of this Technical Data Sheet renders older editions invalid.