

Product type: Adhesive mortar and filling mixture for fitting polystyrene plates – for thermal and sound-insulation of facades.

Short description POLI-FIX EPS is a mortar based on quartz sand, selected inert materials, Portland cement and specific additives

Areas of application: POLI-FIX EPS is used for the fitting and filing of expanded polystyrene plates, for creating the thermal and sound-insulation system for building facades.

Technical data:

Type	flexible
Adherence to the base layer	min. 1.2 N/mm <sup>2</sup>
Adherence to the base layer after frosting/defrosting	min. 0.6 N/mm <sup>2</sup>
Adherence to the base layer after immersion in water	min. 0.9 N/mm <sup>2</sup>
Adherence to the base layer after keeping in warming medium	min. 0.6 N/mm <sup>2</sup>
Adherence of concrete+adhesive+expanded polystyrene	0,1 N/mm <sup>2</sup>
Open time to 5 minutes	min. 1,4 N/mm <sup>2</sup>
Open time to 10 minutes	min. 1,2 N/mm <sup>2</sup>
Open time to 20 minutes	min. 0,8 N/mm <sup>2</sup>
Open time to 30 minutes	min. 0,7 N/mm <sup>2</sup>
Sliding	0,1 N/mm <sup>2</sup>
Capacity of dampness after 30 min	85%
Testing on polystyrene Adherence in standard conditions: System concrete slab+expanded polystyrene + POLIFIX EPS with glass fiber net	0,09 N/mm <sup>2</sup>
Resistance on impact of 2 J	no damage
Resistance of penetration	490 N
Permeability on liquid water	0,004 kg/m <sup>2</sup> h <sup>0,5</sup>
Temperature range for usage	+ 5°C – + 35°C
Average consumption for fixing plates	4.5 Kg/m <sup>2</sup>
Average consumption for filling (coating)	3.5 Kg/m <sup>2</sup>
Maximum adhesive thickness for fixing	10 mm
Quartz granularity	0.3 – 0.6 mm
Minimum filling thickness	2 mm/layer
Maximum filling thickness	4 mm/layer
Preparation	Only with cold water
Mixture water	6 l / 25kg

**Instructions** Application of product is carried out only by trained and skilled workers in mortar applications, in the for use: following stages:

### 1. Related necessary materials:

The product is used together with the following:

- Plates made from stress relieved expanded polystyrene for facades, having a minimum density of 15 Kg/m<sup>3</sup>;
- Glass fiber net with a specific weight of approx. 165 g/m<sup>2</sup>;
- Studs with plastic rosettes, specially made for polystyrene coverings on facades, having the necessary length for mechanically fixing the polystyrene plates;
- metal fixtures for the base, protection metal fixtures for corners and other protection and finishing fixtures.

### 2. Checking the base surface:

Checking the base layer is an important stage in the process of applying the product.

The surfaces on which the polystyrene plates are fixed with POLI-FIX EPS must have the following characteristics:

- a. They should be flat and smooth - uneven elements do not exceed 3 mm/m. Otherwise, the unevenness is levelled during a previous work stage.
- b. Adherence to cement-based mortars. For coatings made from cement-based mortar at least 28 days old.
- c. They should be clean, dust and salt free, they should not contain any non-adhesive substances (grease, bitumen, dust, gypsum, dye, old wall painting etc.), with a normal water absorption between 3% and 8%.
- d. They should be free of cracks, Capillary cracks are allowed; they occur due to hydraulic intake, drying and hardening of the cement coating-type base layer. Other cracks caused by incorrect application of layer (coating) and which are major (> 0.5 mm), moving and which worsen simultaneously with the process of hardening are not allowed.
- e. They should be resistant, compact and free of any brittle parts.
- f. They should be dry. The residual humidity, measured at about 2-3 cm inside the base layer on which the polystyrene plates are being fixed with POLI-FIX EPS, should not exceed 2%;
- g. Verticality. Prior to application, a plumb line shall be used in order to determine the verticality of the façade –meter by meter – thus, noticing the possible verticality deviations of the façade. If there is a verticality deviation bigger than 1 cm, this shall be remedied in a subsequent stage of the works.

If the base layer for which the product is used does not comply with the 7 minimum requirements mentioned above, it is considered to be unfit for carrying out the thermal insulation with this product.

### 3. Preparation:

The product is prepared by mechanically mixing a 25 kg powder sack with 6 l (240 ml/kg) of clean and cold water, only in clean and appropriate containers, until a homogeneous paste is obtained. The mixing is carried out for 2 minutes with a specialized rotating mechanical device (electrical or pneumatic), with low revolutions (maximum: 500 rev/min) and high power (minimum: 1,200 W), fitted with a mixing rod specially designed for mortars. The powder is poured into the water (and not the other way around) and they are mixed until a homogeneous agglomeration free paste. The resulted paste is left to rest for about 10 minutes and then it is mixed again and afterwards it can be used.

The paste obtained through the above mentioned procedure can be used up to 90 minutes after being mixed.

#### 4. Product application:

None of the operations described below shall be performed under direct sunlight, under powerful air currents (wind) or at air or base layer temperatures lower than 5°C or exceeding 35°C.

##### a. Fitting the polystyrene plates:

The polystyrene plates are fitting in horizontal rows. To prevent vertical slip, a U-shaped metal profile support shall be fitted at the base in order to sustain the first row of plates.

Before fitting, the prepared mortar (according to point 20 is applied on each polystyrene plate, on the edges and in the centre under 5-8 disk-shaped spots with a diameter of about 100 mm and height of about 1 cm – depending on the differences in evenness. The disks will be evenly placed so as to cover the corners and the centre of the polystyrene plate. The surface covered by the prepared mortar applied in a disk-shaped manner must represent 60% of the total surface. Immediately after applying the mortar on the polystyrene

Plate, this is fitted on the support by slightly pressing it with the hand. Evenness is achieved by using the bubble level (minimum 1.5 m long) and by gently moving the plates applied by simultaneous (strong) press.

Correcting the unevenness can be carried out only for 5 minutes after applying the plate.

The polystyrene plates will be thus fitted so that each even row (second, forth etc.) is shifted from the previous row by half a plate.

After the plates are fitted, mechanical resistance is increased by mechanically fixing the plates into place with studs with plastic rosettes that have the necessary length, depending on the thickness of the polystyrene plate; the studs should be at least 80 mm longer than the thickness of the plate.

The number of securing studs is of 3 - 5 pieces/m<sup>2</sup>; they are applied preferably in the central parts of the plates and in their jointing areas.

Studs are fitted by making a hole into a plate and the base layer, having the same length as the stud, using the percussive rotary machine or the drilling machine (depending on the type of the base layer) with the corresponding drill.

##### b. Filling:

This is the stage when the POLI-FIX EPS mortar prepared according to point 2 is applied on the plates fitted according to point 4a. Filling is carried out at least 2 days and maximum 7 days after the polystyrene plates are fitted.

If the interval between the fitting of the polystyrene plates and their filling is more than 7 days long, and the plates have been exposed to UV radiation, their surface will be finished and cleaned of dust before filling.

POLI-FIX EPS mortar prepared according to point 2 is gradually applied on the surface made from the fitted polystyrene using an indented hawk (mason's float, grouter) with tooth size: 3-8 mm.

While the mortar is spread on wet surfaces, the glass fiber net is applied on top of it from bottom to top, by pressing it with the hand and with the hawk so that the net penetrates approx. 50% inside the filling mixture. The net will be overlapping at least 10 cm at the joints between the straps.

After the net is applied, the filling mixture is finished with the hawk to also incorporate the net; therefore, a flat and smooth surface shall result (in its middle area the glass fiber net is incorporated).

The total time needed for applying the mortar, inserting the net and finishing it (by filing) shall under no circumstances exceed 10 minutes.

The final layer obtained should not be less than 2 mm thick and no more than 4 – 5 mm thick, while the glass fiber net should not be visible.

Attention shall be paid so that the filling process should result in a smooth, levelled and flat surface.

#### 5. Final recommendations:

- a. the layer of filling mixture obtained by observing the provisions under 4b shall be left (to dry) for at least 7 days before any other further processing (finishing) procedure.
- b. before any further finishing (plastering or/and coating, applying structural coating etc), after the minimum period of 7 days, the surface undergoing filling is checked for unevenness or/and cracks.
- c. the unevenness can be corrected by finishing/applying putty, being careful not to damage the reinforcing net.
- a. the product is prepared only with clean and cold water and only in clean and appropriate containers.
- e. the product shall not be applied at air or base layer temperatures lower than + 5°C or exceeding + 35°C

**Packaging:** The product is packaged in sacks weighing 25 kg; 60 sacks per pallet covered in foil.

**Storage:** The product is stored for maximum 12 months in a dry place, in its original undamaged package, placed on the pallet.

**Marking:** Each sack is marked by being stamped, on the bottom, with the following information: date of production – five groups of figures symbolizing:  
the day, the month, the year ending, production line number, production batch number.

**Warranty:** The product has a 12 month warranty beginning on the date of production marked on the package; this warranty applies only for the storage conditions mentioned above.

- WARNING!**
- The prepared product is alkaline.
  - During handling and transport, goggles, gloves and anti-dust masks should be worn.
  - In case the product gets accidentally into your eyes, wash immediately with lots of clean water and then quickly contact a doctor!
  - Products with damaged packaging should not be used.
  - The unused items should not be discarded into the sewerage system

**Note 1:** The present data sheet accompanies each invoice or waybill which refers to the product presented in the sheet.

**Note 2:** It is forbidden to reproduce parts or fragments from the present data sheet.

**Note 3:** The present data sheet has been drawn up to properly inform the user about the presented product. The use of this sheet for other purpose than informing you about the product and preparing the technological specifications regarding application is strictly forbidden without the written consent of ITAL-KOL.

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