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The ideal option for simply and effectively complying with the regulations on energy efficiency and noise pollution. The system includes an insulation panel made of EPS with low dynamic stiffness graphite, featuring a special grooved pattern, designed to give the optimal balance between thermal and acoustic insulation properties combined with maximum ease of installation and excellent reaction to fire. This option is also characterised by high resistance to impacts (20 joules). Sound insulation certificate

#### TERMOK8® FONOSTOP EPS COMPONENTS

##### ADHESIVE

Klebocem Grosso

##### INSULATION

Fonostop EPS G -  $\lambda$  0,031 W/(m·K)

##### SKIM COAT

Klebocem Grosso

##### MESH

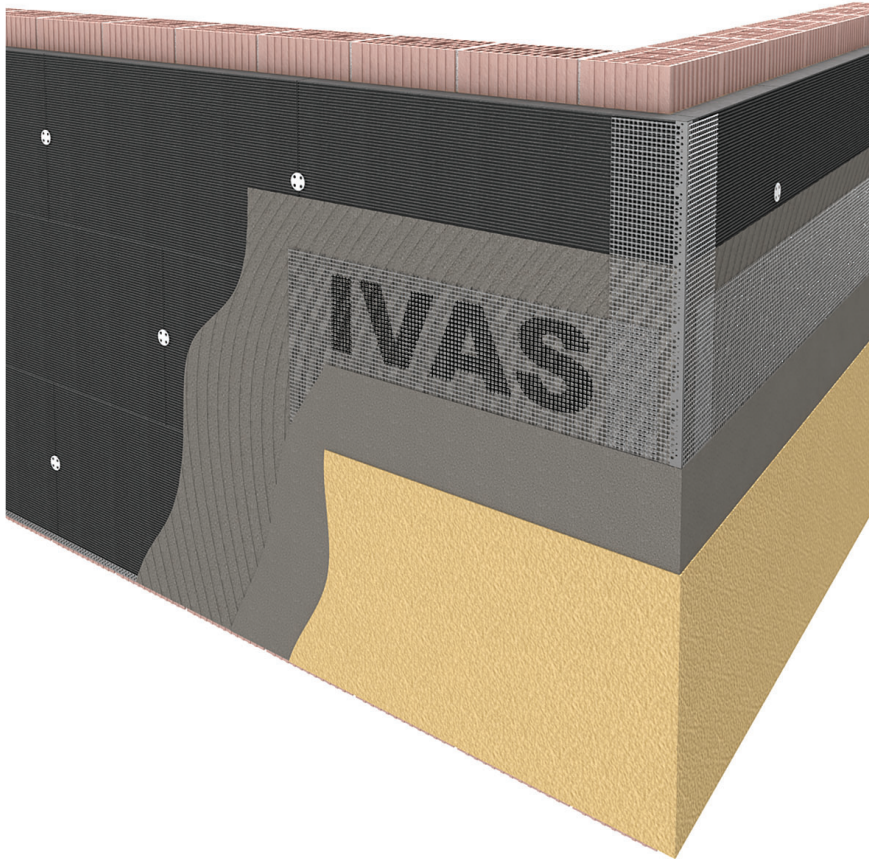
Armatex C1

##### FINISHING COAT

Rivatone Plus - Rivatone TRV Plus - Rivatone Idrosiliconico Plus - Rivatone Reflect Plus - Texture Design decorative finishes.

##### ACCESSORIES

Depending on the type, structural configuration of the surfaces to be clad and the project



In collaborazione con



#### SPECIFICATIONS

After any specific and appropriate preparation of the substrate, to be evaluated on a case-by-case basis according to the condition and type of surface, all external surfaces of the façade are to be clad on site using the Termok8 FONOSTOP EPS process, with European Technical Assessment (ETA) no. 10/0231 issued on 28/11/2019. During the entire application, drying, and hardening phase, the ambient, substrate, and material temperatures must be between +5°C and +35°C, and wind or direct sunlight can change the application characteristics. In such cases, it is necessary to take additional precautions such as shading with meshes.

#### STARTING ZONES / BUILDING PLINTH AREA

If the operation allows it, the setting-out and retention of the insulation system is to be achieved by mechanical application of an aluminium alloy section (base profile) along the ground floor perimeter of the building, to suit the thickness of the insulation to be protected, fixed by means of expansion anchors. For other starting options, please refer to the Termok8 Technical Manual or contact the IVAS Technical Department. For building plinths, areas exposed to accidental impacts, areas in contact with the ground, as well as areas that require low water absorption, it is recommended to use the special insulation panel with increased density and low water absorption, EPS P 200, made of sintered expanded polystyrene (EPS), with CE marking in accordance with UNI EN 13163:2017, ETICS certified in compliance with ETAG 004:2013 guidelines and standard UNI EN 13499:2005.

#### INSULATING LAYER

The thermal insulation will consist of FONOSTOP EPS G special elastic panels made of sintered expanded polystyrene (EPS) with the addition of

graphite, CE marked in accordance with UNI EN 13163:2017, ETICS certified in compliance with ETAG 004:2013 guidelines and standard UNI EN 13499:2005, with thickness depending on design calculation. The panel has a special 6mm deep grooved pattern on the external surface: this feature makes it possible to apply at least 10 kg/m<sup>2</sup> of skim coat and topcoat, which are essential for the functioning of the system, without requiring several steps on the part of the installer. The unique grooved pattern not only ensures the creation of a certain thickness of skim coat, but also increases the specific contact surface area between the panel and the reinforced skim coat, forming continuous horizontal "V section beams" and ensuring a more resistant system. Thanks to the production process of controlled elasticisation, the panels acquire elastic properties suitable to reduce the propagation of solid vibrations, a property that is measured by means of a particular physical parameter called dynamic stiffness  $s'$ . The lower the dynamic stiffness value, the more the panel reduces the passage of vibrations and therefore limits the passage of acoustic energy from one area to another one, i.e. from outdoors to indoors. The principle on which the acoustic insulation of the system is based is the MASS - SPRING - MASS principle: the mass of the reinforced render of the ETICS system (approx. 10 kg/m<sup>2</sup>) and of the supporting masonry which alternates with the layer of insulation with a "spring" effect. Insulation panels must be applied at the connection point between vertical elements (entrances, reception area, common rooms, etc.) with which the insulation panel would come into contact, and at the connection point of horizontal structures such as gutters or cantilevered stringcourses,

by inserting an elastic separating element to compensate for the expansion and contraction, e.g. Self-expanding Sealant Tape (BG1). This joint, in which the tape is inserted, will then be sealed with Sigil Pol elastic polyurethane sealant after the application of the reinforced skim coat; it can then be finished with a topcoat. The panels are to be fastened to the surface of the façade by spreading Klebocem Grosso synthetic resin-based adhesive mortar in ribbons along the perimeter of the panel and in dabs in the centre with an adhesion surface  $\geq 40\%$  of the surface of the panel, ensuring that the insulation panel is perfectly flat. If the substrate is particularly flat, use a serrated spatula to apply the adhesive over the entire surface. The insulation panels are to be applied to the substrate in horizontal bands starting from the bottom and with the vertical joints staggered by at least 30 cm and perfectly aligned; the joints must not be visible. Fill any openings greater than 2 mm with some dry insulation of the same type or using Termok8 Foam polyurethane sealant. At the openings, the joints between the panels must not be aligned with the stiles, lintels, or edges of the openings themselves. Therefore, the insulation panels must be cut in an "L" shape in order to surround and contain the stresses caused by the movement of different materials. At all edges, the heads of the insulation panels must be alternated in order to ensure the proper distribution of stresses.

## MECHANICAL FIXING

About 48 hours after gluing the panels and, in any case, after the adhesive has dried, secure them with suitable percussion anchors or screw anchors depending on the type of substrate and the type of building, with EAD Certification 330196-01-0604, using at least 6 per square metre following a "T" pattern: one anchor is placed at the centre of each panel and another at each intersection of the joints. The anchors can be installed either "flush" or "recessed"; in the latter case, a cap made of suitable insulation material must be applied afterwards. Depending on the environmental conditions, position, orientation and shape of the building, condition of the substrate, and height of the building, it might be necessary to consider a reinforced anchoring system on all the insulated surfaces and especially in the perimeter areas of the building (area between a minimum of 1 metre and a maximum of 2 metres from the corner).

The length of the anchor must be sized according to the thickness of the insulation panel, the layering of the wall, and the depth of the anchor (see the anchor's technical data sheet).

The movement joints of the building (expansion joints) must be considered and protected with suitable joint cover profiles; for their implementation, please refer to the Termok8 Technical Manual or contact the IVAS Technical Department. Before skimming the insulation panels, it is essential to fit corner guards on all the corners to protect the whole system and any other profile fittings by spreading adhesive on the panels (galvanised or painted iron profiles are not acceptable). Diagonal reinforcement meshes (20x40 cm) must be applied to all corners of doors and windows; it must be applied in the base plaster before the application of the reinforced skim coat and secured so that the edges of the strips lie directly on the corner at an angle of about 45°. Particular care is recommended when installing the insulation layer so as to minimise as far as possible any sanding of surfaces to correct minor irregularities.

## BASE PLASTER

Cover the panels on site with Klebocem Grosso skimming mortar, applied vertically (perpendicular to the grooves in the EPS) using a 10 mm serrated spatula at an inclined angle, in order to obtain a thickness of at least 5 mm, so that the grooves in the insulation are completely filled. When the layer is completely dry (at least one day), apply a second coat of Klebocem Grosso, in which the sized, anti-alkaline, unravel-proof Armatex C1 glass fibre mesh is to be embedded while

the mortar is still fresh. The mesh will be laid from top to bottom with an overlap of at least 10 cm in both directions, avoiding the formation of blisters and creases, and an overlap of 15 cm near corners if they are protected by corner profiles with no mesh embedded. The reinforced layer is to be completed with a further skim coat once the first two coats are completely dry. The glass fibre mesh must be covered with at least a 1mm layer of mortar and at least a 0.5 mm layer in the overlapping area of the mesh. The overall thickness of the resulting reinforced skim coat should not be less than 7 mm. The reinforcement mesh will be located in the outer third of the base plaster.

Seal with suitable overpaintable polyurethane sealant (Sigil Pol) to cover resilient packing previously fitted to compensate for expansion and contraction of the system.

## FINISHING PLASTER

Depending on the needs of the worksite, the working season, the colour chosen, and the particle size used, application of a coat of Fondo K Plus, a non film-forming fixative based on special acrylic resins and polysiloxanes dispersed in water, with extremely fine particles, specific for external thermal insulation systems, to be used on well-cured skim coats to ensure the best possible coverage of the subsequent topcoat. When the reinforced layer has completely cured, use a trowel to apply, and then smooth, a single continuous layer of a granular coating (in the particle size available) with broad spectrum action against the darkening caused by algae and fungi Rivatone Plus, based on acrylic resins, Rivatone Plus TRV, based on acrylic-siloxane resins, or Rivatone Idrosiliconico Plus, based on siloxane resins, which are specifically formulated for external thermal insulation systems (see the specifications on the technical data sheet). The continuous coating layer produces an algae-, fungi-, and mould-resistant film, using an innovative formulation based on broad-spectrum additives, effective even under the most critical weather and environmental conditions, certified by the Fraunhofer-Institut für Bauphysik in Munich. A finish colour with a light reflection index greater than 20% is recommended. In the case of dark colours, i.e. those colours with a light reflection index lower than this value, it is necessary to use a coating formulated with reflective pigments (Total Solar Reflectance) Rivatone Plus Reflect. Termok8 FONOSTOP EPS is a system suitable for the creation of decorative finishes from the "Texture Design" collection, textured surfaces and coatings of high aesthetic value for façade architecture. In this case, ensure an overall thickness of reinforced leveling not less than 6 mm. In order to improve the system's impact performance, the Armatex C1 M, an anti-alkaline and anti-derailing glass fiber mesh, should be chosen to replace the Armatex C1 reinforcement mesh, where the chosen system does not already provide it. This reinforcement mesh must be found in the external third of the base plaster. For more information, refer to the Termok8 Design documentation or contact the IVAS Technical Support Department. Depending on the size of the backgrounds to be handled and the workforce available, horizontal and vertical gaps may be provided, in order not to highlight defects resulting from interrupting and resuming application. During application, the ambient temperature must be between +5°C and +35°C with relative humidity below 80%.

## ACCESSORIES

Any other functional and/or decorative components depend on the complexity of the design.

*N.B. Drafting of the Specification requires particular attention to the condition of the substrate and resolution of the various "critical issues" of the building, so it must be customised for each individual project.*