ECAP **Prefinished thermal insulating board**

MANUAL OF USE AND APPLICATION lay on wall

INDEX

PREAMBLES

This Manual has been realised and is at the disposal of the operators with the aim to illustrate the right general procedures for the laying on site of the ECAP boards. Is therefore necessary to execute correctly the different phases as to the following layouts to obtain an optimal result and the system conformity (see test reports ITC).

Moreover, it will be also necessary to observe the prescriptions of the manufacturer in relation to glue' preparation and use, smoothing plasters and finishing and complementary products that have been used. The ECAP board is compatible with glues, smoothing plasters and finishing products only if they are in accordance with what prescribed by the European norms in force, in relation to the specific intended use (CE).

Works, anyway, can not prescind from observance of the traditional "*workmanlike*".

Consult the technical data sheets of the products and/or contact our Engineering Department if you want more close examinations and/or for what not preview in this manual.

Only if the application is executed according these prescriptions, Edilteco can guarantee the ECAP system, otherwise Edilteco will not hold responsible from any responsibility.

Realise a manual is not easy and many controls are necessary for its text, images and pictures. Experience suggests that, publishing a manual without mistakes, is practically impossible. We will be grateful with readers that, reading this Manual and finding possible mistakes, will indicate them to us. And so, what written in this Manual has to be purely intended in an indicative sense. Any guarantee can't be deduced from information or data that aren't connected directly to certifications and to the "workmanlike".

All the indications of this Manual are purely indicative and non-committal to legal purposes. In fact, these data are deduced from laboratory texts and so, in the practical applications on site, the final products characteristics can be subjected of important changes in a function of weather conditions and of work on site. The user must always check the suitability of the product to the aims of its specific use, holding every responsibility coming from the product utilization; over to keep to all the employment modalities and norms of use generally traceable back to the "workmanlike". Edilteco S.p.A reserves the right to change the content of this Manual, thank to its unappealable judgement and without notice. Spreading this Manual, with every possible method, substitutes and eliminates the validity of the other Manual or technical documentation previously published.

INTENDED USE

The prefinished thermal insulating ECAP boards are suitable to the laying on:

- External walls (external thermal insulating);
- Internal walls;
- Attics.

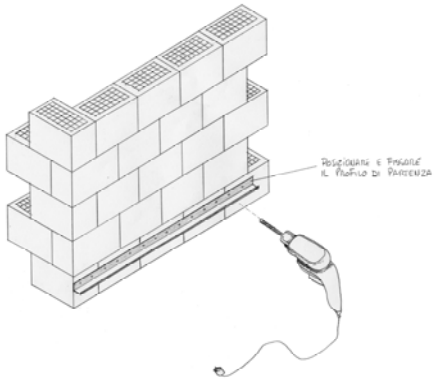
Maintaining the right methods of application and use.

Phase 1. cleaning of wall or laying surface

Remove dirty' traces, greases and possible incoherent parts. In case of irregular laying surfaces proceed with precautionary grouting and regularization.

Phase 2. starting profiles

Position and apply aluminium starting profiles with drop breaker, with thickness adequate to that of the boards which will be applied, using an instrument showing the planarity and fixative anchors.



Phase 3. boards cut

- Board thickness until to 6-8 cm:
  use a well-sharp cutter, proceeding to the cut on the board side without mesh-smoothing plaster and finish with a 2nd cut on the side with mesh-smoothing plaster.
- Board thickness over 6-8 cm:
  a. use an hot-cutter proceeding to the cut on the board side without mesh-smoothing plaster and finish making a cut with a well-sharp cutter on the side with mesh-smoothing plaster.
  b. Use an alternative electric hacksaw, supplied of a blade for wooden with length adequate to the board thickness.

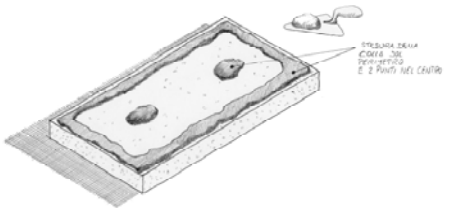
Phase 4. glue preparation

Use a product suitable for the specific intended use (it is recommended premixed glue in powder *Ecap ADP or Ecap APL*) and execute following the instructions supplied by the technical data sheet of the product.

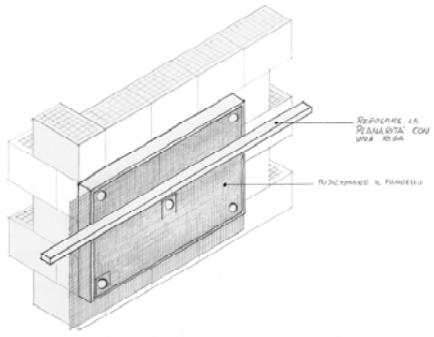
1. Proceed to the suitable gluing (type *Ecap ADP or Ecap APL*) on the intrados of ECAP board following one of the two following procedures:

option a. **"Full surface" gluing:** the glue will be spread on the whole board surface in an homogeneous thickness, excluding a perimeter edge for about 2 cm. This space without glue will be necessary for the board' settling at the underlying surface, avoiding that the glue deposit it self on the vertical border, and the formation of thermal bridges too. Glue's indicative consumption: 4-6 kg/m².

option b. **"Four points" gluing:** this method is suggested especially when the underlying surface is not planar. Make a "crown seam" with the glue, having a width of about 50-60 mm, to the board intrados and leaving a space of about 20-30 mm from the external perimeter of the board. The adhesive will be also applied in the internal of the crown making 2 circular parts having a diameter of approximately 20 mm. Glue's indicative consumption: 3-4 kg/ m².



2. Start the application of ECAP boards on the laying surface. In case of vertical walls proceed for horizontal and complete lines, maintaining the long side of the board which is parallel to earth, from the left to the right, from the bottom to the top. Horizontal lines must be stagged between each other in the middle of the length of the long side of ECAP board.
ECAP boards will be applied maintaining the overlaps net constant always on the short side to left and the longer one to the bottom. That is indispensable to obtain a right overlaps of the net and the covering of the anchors which will be positioned. Using an aluminium staff to correct possible differences in level between boards and make a surface completely planar for a perfect "workman like" result.



Important: the ECAP board has a perimeter

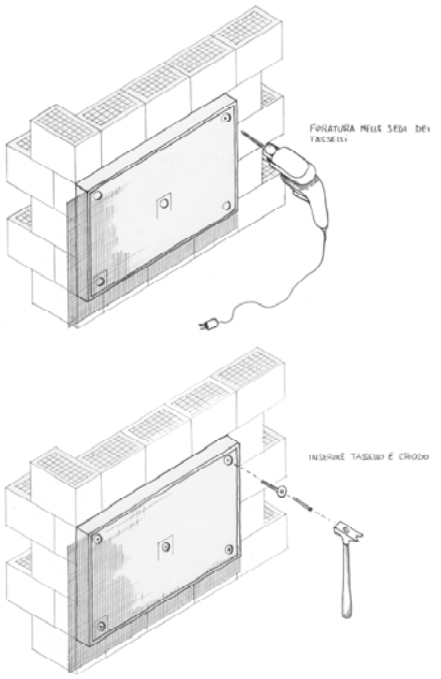
edge without smoothing plaster (about 2 cm). This characteristic consent the right execution of the next grouting between boards (in case of aesthetic finishing made with coloured finishing in paste) or of the whole smoothing plaster (in case of aesthetic finishing made with roller-paintbrush paint). Moreover, the edge avoids the formation of cracks generated by settlements with subsequent tensions between "stiff" layers that are in contact between them.

Warnings:

- *The boards must be perfectly placed side by side, without spaces within a board and the other on the junction points.*
- *The boards should create a continuous surface and totally cover the laying surface to avoid thermal bridges.*
- *In presence of openings or protrusions, it's necessary to seal them adequately to avoid that the external weather conditions (rain, snow, etc.) percolate between boards and laying surfaces.*
- *In presence of pipelines and external plants design in general or other elements that cross the boards, seal fugues and interstices with idoneous plastic sealing materials.*

Phase 6. Boards anchorage to the laying surface

After about **15-30 minutes** from the boards glueing, proceed with the application of mechanical fixing (anchors). The anchors should be of the type and dimensions suitable to the support characteristic and to the Ecap board thickness used (see technical data sheets) . After have realised an hole with the drill, apply the anchor in correspondence to the placement of the anchors on the ECAP board, using an hammer and taking care to make joining the intrados della testa a fungo to the uncovered board surface. It is indispensable to not force the anchor head in the ECAP board side constituted by polystyrene. In fact the head anchors will be anyway drowned in the mortar thickness that rounds predispositions. What said above it essential for the aim to avoid excessive mechanical stresses to the boards which can create displacement and differences in level.



Phase 7. staff-angles application

Position on the corners cupboard and on the openings borders (windows, French windows, doors, etc.). it is recommended the use of PVC staff-angels supplied by net .

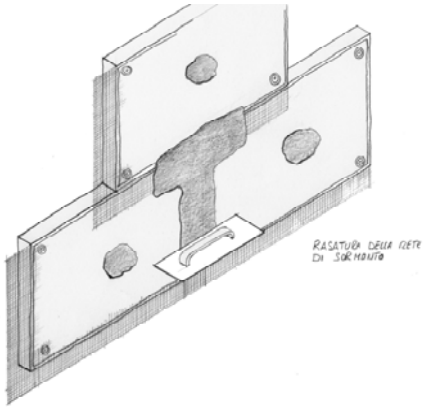
Important: envisage a reinforcement in correspondence of openings (doors, windows, etc.). Envisage reinforcement realized with pieces of sized glass fibre net positioned in an oblique way on the angles-edges and then smoothed.

Phase 8. grouting – smoothing of boards (several options)

option 1. **In case of subsequent coloured finishing to thickness:**

- *Finishing with grain-size ≥ 2 mm:*

Proceed, with a suitable spatula, to spread a smoothing plaster (type *Ecap ADP or Ecap APL*) in correspondence of the junctions within the boards, until to the overlap net is completely covered. In this phase is really important to avoid the formation of folds into the overlap net and also the formation of bubble in the smoothing plaster thickness. If you want, you can also proceed as to finishing with grain-size < 2 mm.



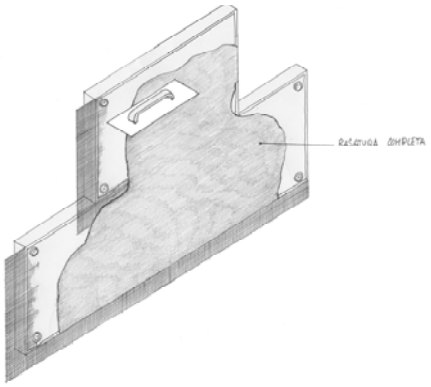
- *Finishing with grain-size < 2 mm:*

After the grouting is dry, how mentioned before, smooth completely the boards with suitable product (type *Ecap ADP or Ecap APL*). 2 mm of smoothing thickness can however guarantees the perfect planarity and final regularity.

option 2. **In case of subsequent painting with roll or paintbrush:**

a. Proceed, with a suitable spatule, to spread a suitable smoothing plaster

(type E*cap ADP or Ecap APL*) in correspondence of the junctions between boards and anchors head, until to the overlap net is completely covered. In this phase is really important to avoid the formation of folds into the overlap net and also the formation of bubble in the smoothing plaster thickness.



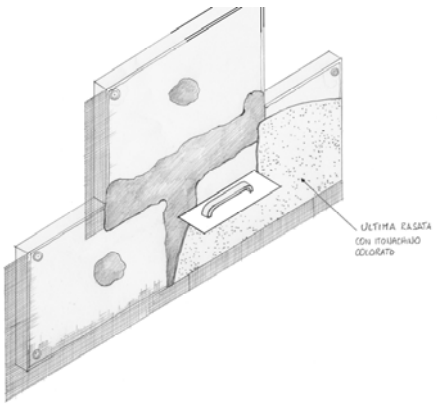
b. After the grouting is dry, how mentioned before, smooth completely the boards with suitable product (type *Ecap ADP or Ecap APL*). 2 mm of smoothing thickness can guarantee the perfect planarity and final regularity.

c. After the smoothing plaster is dry, like at point b., smooth completely the boards with suitable product (type *Ecap MC or Isolteco Rasatura Monocap*) in the favourite grain size. The new smoothing plaster will be applied to trowel. The minimum smoothing plaster thickness is 1 mm and it however guarantees the perfect planarity and final regularity.

Phase 9. finishing (several options)

option 1.

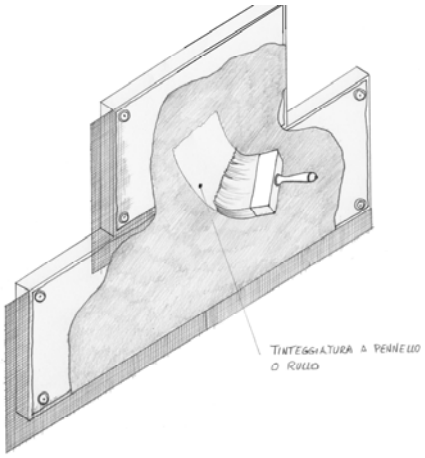
Coloured finishing to thickness:
Once that grouting and/or the smoothing plaster (see point 8. – option 1.) have reached the perfect drying (time is variable depending to weather conditions), it will be possible to apply an idoneous fixative and homogeniser of absorption (type *Ecap F*) and subsequently a coloured finishing with thickness in paste (suggested) or in powder and of idoneous type and in the grain size not less than to 2 mm. Between several typologies of finishing to thickness indicated, we mention:



- *Ecap AC* acryilic;
- *Ecap GC* acrylic “shining paintings”
- *Ecap STC* with potassium silicates;
- *Ecap SC* sylossanic;
- *Ecap SCL* mineral „self-cleaning“;
- *Ecap MC* mineral in powder.

The lay will be executed following the technical data sheet and the producer instructions of the selected finishing.

option 2. **Roller or paintbrush painting:**
Once that smoothing plaster has reached the perfect drying (time is variable depending to weather conditions), it will be possible to apply an idoneous fixative and homogeniser of absorption (type *Ecap F)* and subsequently an idoneous paint. Between several typologies of paints indicated, we mention:



- *Ecap AC* acryilic;
- *Ecap GP* acrylic "shining paintings"
- *Ecap STP* with potassium silicates;
- *Ecap SP* sylossanic;
- *Ecap SCLP* mineral "self-cleaning";
- *Ecap EP* elastomeric.

The lay will be executed following the technical data sheet and the producer instructions of the selected paint.

Warnings: during the choice of the paint it's important to remember that finishing plasters and wall paints with a value of widespread reflexion inferior to 25 are not idoneous for an external thermal insulation systems.

Products appendix

Ecap L prefinished thermal insulating board made with synterized EPS – dimensions 600x1200 mm - thicknesses available from 30 to 200 mm – characteristics: see technical data sheet.

Ecap GT prefinished thermal insulating board made with synterized EPS mixed with **additive with graphite** – dimensions 600x1200 mm – thicknesses available from 30 to 200 mm – characteristics: see technical data sheet.

Gluing – smoothing plaster

Ecap ADP ready-to-use smoothing glue in powder, for EPS boards.

Ecap APL ready-to-use fixative and regulator of the laying surface's absorption. For coloured finishing.

Fixatives

Ecap F ready-to-use, fixative and absorption regulator of the laying surface.

Coloured finishing to thickness

Ecap AC, thin-bed acrylic finishing in paste, ready-to-use. Several grain-sizes. Colours come from colours folder (over 200 colours).

Ecap GC thin-bed coloured finishing "shining colours" in paste with an acrylic base, ready-to-use. Several grain-sizes. Colours come from colours folder.

Ecap STC thin-bed coloured finishing in paste with silicon base, ready-to-use. Several grain-sizes. Colours come from colours folder (over 200 colours).

Ecap SC thin-bed coloured finishing with a base of potassium silicates, ready-to-use. Several grain-sizes. Colours come from colours folder (over 200 colours).

Ecap SCL thin-bed mineral finishing in paste, ready-to-use, with **low tendency to deposit dirty**. Several grain-sizes. Colours come from colours folder.

Ecap MC thin-bed mineral finishing in powder, for indoor and outdoor applications. Several grain-sizes. Colours come from colours folder.

Paintings

Ecap AP ready-to-use, acrylic paint. Colours come from colours folder (over 200 colours).

Ecap GP "shining colours" paint with acrylic base, ready-to-use. Colours come from colours folder.

Ecap STP silicon paint, ready for use. Colours come from colours folder (over 200 colours).

Ecap SP ready-to-use paint based of potassium silicates. Colours come from colours folder (over 200 colours).

Ecap SCLP ready-to-use, mineral paint, with **low tendency to deposit dirty**. Colours come from colours folder.

Ecap EP ready-to-use, elastomeric paint. Colours come from colours folder (over 200 colours).

Anchors made with polyethylene mixed with additive with "standard" head with nail, white colour – several lengths.

Starting profiles made with aluminium, with dripstone. Several thicknesses.

Staff-angles made with aluminium or PVC. With or without mesh.

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