Application of External Wall Insulation Systems

For Basic, Ecomin and supplementary systems
Introduction

This brochure is designed to assist in the quick, safe and successful application of alsecco systems.

We know only too well the demands made on the contractor are increasing all the time. We believe it is not only our job to manufacture products and systems for the façade but also to explain these products and systems to you.

At alsecco this starts with courses run at our Training and Technology Centre, where you can find out all you need to know about alsecco products and their application. However our support is not confined to the theory – we also provide support for you on site. alsecco’s technical advisors will assist through all construction phases of your project and be on hand to answer questions and help with problems as and when required.

We wish you every success in your projects – and remember our technical advisors are on hand to help at any time.

We are constantly developing our products and therefore reserve the right to make changes for technological reasons or due to building regulations. Please refer to our current technical data sheets.
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External wall insulation systems

BASIC

The Basic external wall insulation system is a real success. Both economical and versatile, it has proved successful for many decades and for millions of square metres, in a wide variety of uses. The system helps to save energy, to protect the environment and provide long-term protection for the building. At the same time the level of comfort inside the building is increased and a pleasant indoor climate is created. With its wide range of associated finishes such as plaster, ceramics or wood, the architect, designer and owner has almost unlimited scope for realising creative ideas.

System features

- External wall insulation with polystyrene insulation
- High level of economic efficiency
- Versatile in application up to the limit stipulated for high-rise buildings (varies between countries)
- Building material class B1 to DIN 4102, flame resistant
- Wide range of design options
- BBA approved
**BASIC PHENOLIC**

The Basic Phenolic systems use rigid phenolic board as the insulation core which provides increased levels of thermal performance from a thinner insulation board. These systems are ideal for refurbishment projects and have been used to help to save energy, preserve the environment and offer long term protection for the building. Basic Phenolic offers a wide range of associated finishes such as render, wood and acrylics offering the architect limitless design options.

**System features**

- External wall insulation with phenolic board insulation
- Increased thermal performance
- Water repellent
- Excellent weathering and durability
- Excellent for detailing
- Wide range of textures, colours and finishes
**ECOMIN**

The Ecomin external wall insulation system provides an ideal combination of thermal insulation and fire protection. It was the first mineral system on the market and since then has proved extremely successful. Wide experience with the system guarantees a high level of quality and functional reliability. The Ecomin system offers a high level of water vapour permeability, helps save energy and ensures long term maintenance of the fabric of the building. The system also ensures the full range of design possibilities.

**System features**

- External wall insulation system with mineral wool insulation
- Building materials class A to DIN 4102 non-flammable, can be used for high-rise buildings
- Allows a high level of water vapour permeability
- BBA approved
ALPROTECT CARBON

Alprotect Carbon is the first external wall insulation system to offer unique carbon fibre technology. Ensuring maximum resistance to mechanical stress (up to 60 joules) and improved thermal performance, Alprotect Carbon provides extreme durability and versatility to modern façade design. This slim-line patented system achieves enormous stability and unrivalled impact strength.

System features

- Carbon fibre technology
- Unrivalled impact strength for a thin coat system
- Up to 60 joules achievable
- Wide range of colours including dark and intensive hues
- 30% application time saving compared with conventional high impact solutions
- Enhanced protection against algae and fungal growth
- Maximum level of crack resistance
ALPROTECT QUATTRO

Alprotect Quattro is extremely resistant to mechanical stress, offers high thermal performance and provides the ultimate protection against soiling and algae and fungal growth. In addition, highly elastic organic components guarantee high impact resistance and reliable crack bridging properties.

**System features**

- Organic system – totally cement free
- High level of impact resistance
- Low material consumption
- Wide range of colours to a light reflectance value of 15
- Enhanced protection against algae and fungal growth
ALPROTECT NOVA

The first system to be classified with European Technical Approval Fire Protection Class A, Alprotect Nova combines unique patented carbon technology and nano-hybrid binders, resulting in a mineral wool external wall insulation system that sets new standards in terms of protection and durability. The system formulations can also be applied with light reflectance values as low as 5%, ensuring all shades of colour including dark ones and even black can be used successfully for the façade finish.

System features

- Maximum fire protection
- Patented carbon fibre technology
- Unrivalled impact strength from thin coat system
- Up to 60 joules achievable
- Highest level of dark colours permissible
- 30% application time saving compared with conventional high impact solutions
- Maximum level of crack resistance
- Enhanced protection from algae and fungal growth
The special requirements for fixing external wall insulation systems must be taken into account when planning the façade insulation. Every detail must be carefully and comprehensively planned, especially when renovating a building, the specifier must carry out a thorough assessment of the substrate. alsecco is always available to provide any help required with regard to such planning operations or testing of the substrate.

The substrate to be insulated must be even. Any irregularities in the substrate must not exceed 1cm for bonded systems, 2cm for bonded and mechanically-fixed systems and 3cm for rail fixed systems. The standards DIN 18202 and 18203, Tolerance in Building construction, must be complied with. Any irregularities beyond these limits must be levelled out by applying regulating plaster or using some other suitable measure.

Facade weatherproofing is of particular importance with regards long-term maintenance of the fabric of the building. Eaves, overhangs or flashings should be sufficient to avoid staining on the system.

Joints of the facade openings such as windows and doors, window sills, penetration in systems, roof edging, balconies, aluminium, structural glass and natural stone, must be carefully sealed so that no moisture can penetrate behind the external wall insulation system.

For the contractor, an important component of the general building supervision approval is the stipulation that all components of an external wall insulation system must be supplied by the same manufacturer. Only the rigorous application of compatible and tested system components can guarantee an optimum end result in the long term. This is particularly important as regards the warranty. A contractor can only rely on the manufacturer’s warranty if he has obtained all the products from the same manufacturer.

**Design requirements**

**General application requirements**

The specified minimum temperature must be complied with during application and drying of the system components. For mineral reinforcing mortars and finishing plasters this temperature is +3°C, for cement-free reinforcing mortars, synthetic resin and silicone resin plasters it is +5°C, and for silicate plasters it is +8°C.

Protection may have to be provided in the event of rain, wind and full sunlight to ensure that the system can be applied correctly.

For the application of synthetic-resin plasters, please refer to the recommendations of current building regulations.

When erecting scaffold, please ensure that it is sufficiently far from the building to allow room for the application.

A basic requirement for carrying out insulation work is that the structure of the building must be dried out properly. Interior plasterwork and screed floors should have dried out sufficiently. Problem-free application is better if the moisture of the walling material does not exceed twice the level of the equalising moisture of the building material before the start of the cold season and three times the level of the equalising moisture after the cold season. alsecco’s Ecomin and tec external wall insulation systems are particularly safe when the building moisture is critical.

The current product data sheets, safety data sheets and information printed on the packaging applies in each case. Please consult your alsecco technical advisor who will be pleased to provide the current information on request.
Application recommendations for external wall insulation systems

Substrate pre-treatment

Before fixing an external wall insulation system with adhesive (and fixings), it is generally advisable to check that the substrate is suitable for bonding. If necessary, the substrate should be pre-treated as indicated in the table below. Substrate pre-treatment is not necessary as a rule if systems are fixed mechanically (using the rail system).

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Dusty, dirty</td>
<td>Sweep, brush, steam-clean</td>
</tr>
<tr>
<td>Efflorescence</td>
<td>Eliminate the cause</td>
</tr>
<tr>
<td></td>
<td>Sweep, brush, steam-clean</td>
</tr>
<tr>
<td>Moss, algae, fungus</td>
<td>Remove</td>
</tr>
<tr>
<td>Mortar ridges</td>
<td>Knock off</td>
</tr>
<tr>
<td>Sinter skin</td>
<td>Remove mechanically</td>
</tr>
<tr>
<td></td>
<td>Alternatively use rail fixing</td>
</tr>
<tr>
<td>Greasy, forming oily residue</td>
<td>Steam-clean with added cleaning agent</td>
</tr>
<tr>
<td></td>
<td>Rinse off with water</td>
</tr>
<tr>
<td>Brittle, unsound plaster</td>
<td>Remove mechanically</td>
</tr>
<tr>
<td></td>
<td>Alternatively use rail fixing</td>
</tr>
<tr>
<td>Damaged plaster</td>
<td>Knock off blistering</td>
</tr>
<tr>
<td></td>
<td>Fill damaged areas with cement-lime mortar</td>
</tr>
<tr>
<td>Synthetic-resin plaster</td>
<td>Clean</td>
</tr>
<tr>
<td>Chalking coat of paint</td>
<td>Clean and prime</td>
</tr>
<tr>
<td>Flaking coat of paint</td>
<td>Remove</td>
</tr>
<tr>
<td></td>
<td>Alternatively use rail fixing</td>
</tr>
<tr>
<td>Absorbent</td>
<td>Clean and prime</td>
</tr>
<tr>
<td>Surface releases sand</td>
<td>Clean and prime</td>
</tr>
<tr>
<td>Uneven areas ≥ 1 cm</td>
<td>Use levelling plaster with cement-lime mortar</td>
</tr>
<tr>
<td></td>
<td>(min setting time 14 days)</td>
</tr>
<tr>
<td>Bitumen paint</td>
<td>Use Waterstop Cellarseal W as coupling agent, sand down</td>
</tr>
<tr>
<td>Thick bitumen coating</td>
<td>Remove</td>
</tr>
<tr>
<td>Check the adhesion</td>
<td>on substrates that have not been identified</td>
</tr>
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</table>
Installing the insulation

**BASIC – EPS**
- The boards can be attached solely with adhesive if the substrate is suitable. The boards may also be mechanically fixed as a back-up.
- Additional fixing – using mechanical fixings is required on substrates that are not suitable for the bonded method only.
- As an alternative, the insulation boards can also be fixed with the rail system.

**BASIC – PHENOLIC**
- On all substrates these boards must be bonded and fixed using alsecco approved fixings.

**ECOMIN – MINERAL WOOL**
- **Mineral-wool insulating boards HD**
  - On all substrates these boards must be bonded and fixed using alsecco approved fixings.
  - Alternatively, the boards can also be fixed with the rail system.
- **Laminated boards**
  - These boards can be attached by adhesive only on suitable substrates and at heights below 20m. At heights above 20m the boards must be mechanically fixed as well, using alsecco approved laminated fixings.
  - On substrates that are not suitable for bonded application only, the boards must be attached with alsecco approved laminate fixings at all heights.

Special instructions apply to ceramic (page 30) and Alwood finishes (pages 32-36).

For further information about board fixing and selecting the correct fixing, please contact the alsecco technical department.
Attaching plinth rails

1. The size of the plinth rails and the angle rails must be chosen to suit the selected thickness of insulation board and system construction. Alsifix N hammer fixings, spaced up to 50cm apart are used to fix the plinth rail in position so it is torsion-free as well as vertical and flush. Shims must be used to compensate for any differences in level and the rails must be interconnected by means of connectors.

2. The corner links are created with plinth corner profiles or with mitred plinth rails.

3. For thick-layered plaster a profile extension is hooked into the plinth rail. The hook-in profiles must be mitred at the corners.
Fixing insulation boards with adhesive

Any irregularities in the substrate must be levelled out by a suitable bonding method or different thicknesses of the insulation material, or, if appropriate, by applying a levelling render. The appropriate adhesive must be selected for the substrate (mineral or synthetic-resin based).

Mineral wool insulation boards must be coated with adhesive on the areas to be bonded before the boards are fixed in place.

APPLICATION OF ADHESIVE

1a The spot-and-bead method involves the application of a bead of adhesive around the outside of the insulation boards. Individual spots of adhesive are applied to the centre of the boards. Care must be taken to ensure that the edges of the boards are kept clean and that at least 40-50% of the board face is bonded to the substrate.

1b The notched-trowel method can be used if the substrate is very even. This involves applying the adhesive over the whole of the back of the board and then combing through with a notched trowel (minimum 10mm x 10mm notches). The edges of the boards must be kept clean.

1c The adhesive can be applied to the insulation boards mechanically. This involves applying a bead near the outside edge. Appropriate beads are applied to the centre of the board so that at least 40-50% of the board face is bonded to the substrate. Care must be taken to ensure that the edges of the boards are kept clean.
**Applying adhesive to the wall mechanically**

1d When using Speedwall laminate the adhesive can be applied directly to the wall. The surface is then smoothed over and combed through with a notched trowel. The boards must be positioned immediately after the adhesive has been applied to the wall.

**Placing the board in position**

2 The boards are positioned on the wall immediately after the adhesive has been applied. They are pushed tightly together and laid in pattern. To avoid any differences in level during the laying process, place a long float or similar across the butt joints and tap against the float.

**Fitting the boards around façade openings**

3 The butt joints of the insulation boards must not lay across the connection zones between different building units (eg ring beams, shutter boxes). The insulation board joints must not cross the corners of façade openings. The insulation boards have to be notched at such points eg around windows.

**Protection against transmission of fire**

4 For polystyrene systems where fire compartments are specified – a mineral wool laminate is utilised – refer to standards.
5 The façade insulation boards must be laid in pattern at corners and for jamb depths >25 cm (corner formation). For jambs <25 cm the façade insulation boards are laid to cover the main area with excess length/width and the insulation boards for insulating the jambs are fixed to them.

6 Any existing open joints up to a width of 1 cm can be sealed with joint filling foam in the case of polystyrene insulation. Insulating strips must be used to close open joints between mineral wool insulation boards or joints >1 cm.

7 In the case of polystyrene insulation boards, any raised areas must be smoothed away and all the dust removed.

The insulation boards must not be fixed until the adhesive has dried out and not less than 20 hours after application of the adhesive.

Insulation boards should not be exposed to weathering for any extended period.
Fixing insulation boards with mechanical fixings

For fixing approval, mechanical fixings have to be anchored to the required depth in the solid wall. Tiles, old plaster coatings and similar materials are not suitable anchoring substrates.

If in doubt about the suitability of the substrate, the pull-out strength of the plugs has to be determined by measurements taken on site.

1a Polystyrene insulation boards fixed with adhesive can be secured with hammer fixings as an additional safety measure. This procedure involves using suitable drills to prepare a hole for the fixings, inserting the fixings and driving them in.

1b Crusher fixings can be used in addition to fix the boards in position on suitable substrates. The fixing is punched through the insulation board with a special tool and anchored in the substrate by means of a propellant so that it is flush with the insulation board. It is important that the substrate strength, the fixing length and the propellant charge are matched.

1c Fixing insulation boards with building-authority approved screwed plugs involves using a suitable drill to prepare a hole for the fixing. The fixing is inserted and screwed tight with a suitable slow-speed screw-driver attachment.
Fixing insulation boards mechanically

Substrates that are classified as not being suitable for the application of adhesive can be insulated mechanically, using a rail support system. This is advisable particularly if the substrate pre-treatment would be very time consuming eg if the existing plaster has to be removed. HD-M mineral wool insulation boards and PS 15-M polystyrene insulation boards have grooves on the outside and have an offset cut. The insulation boards are mechanically attached to the substrate by mean of rails and connecting profiles.

1 A bead of adhesive is applied in addition to the first row of boards to prevent air penetrating behind the insulation level.

2 The rails (metal for mineral wool and plastic for polystyrene) are anchored in the sound substrate horizontally and with a maximum gap of 30cm between the building-authority approved fixings. Any differences in the level of the substrate are compensated by means of shims.

3 Before the rails are attached, one or more spots of adhesive must be applied to the centre of the boards, depending on the weight per unit area and the height.
Connecting T-profiles

4 Connecting T-profiles are fixed onto the vertical joint of the insulation boards. The insulation boards must be fixed in pattern with continuous butt joints.

Connections

5 The insulation boards in the connecting areas for roofs, balconies, window sills and other projecting units must be fixed by means of vertically fitted rails. Insulating boards in jamb areas must be bonded and, if necessary, mechanically fixed. Pieces cut to fit must be finished with grooving planes.
Application of connections, edges and joints

CONNECTIONS

External wall insulation systems must be protected against ingress of water. Connections with other building units such as windows, doors, roof and place where the building units break through, as well as connections with building units made of glass, metal and wood must be sealed in keeping with the system.

Depending on the area, the sealing zone must be made rainproof by using render beads, joint sealing strips of the appropriate size or alsecco sealant.

PLASTER GROUNDS

1. Cut the render bead to the required height and cut back the tab for the protective film in the corner area. In keeping with the required application thickness in the jamb, apply the render bead to the clean window or door frames and push firmly into place.

2. Apply the protective film for the windows to the self-adhesive tabs on the render bead.

3. The mesh attached to the render bead is embedded in the reinforcing layer. There must be a 10cm overlap where the mesh joins the other glass fibre mesh. A cut must be made on the tabs of the render bead and the tabs removed once the surface structure has been completed.
Application recommendations for external wall insulation systems

4a Jointing tape

The jointed tape is fitted in other connecting areas to suit the size of the joint.

4b Insulating jointing compound

alsecco sealant is injected into the prepared joint with a hand-operated gun and smoothed over with a brush and water. Only as much sealant should be injected as can be smoothed over before it forms a skin.

EDGES OF BUILDINGS

The appropriate corner beads are fully embedded in the reinforcing layer to create vertical and impact-resistant edges on buildings.

1a Mesh beads

Fully embed the mesh beads on the insulation boards in the reinforcing layer. Overlap the mesh approx 10cm at the joints by cutting out the inner reinforcement. The reinforcing mesh for the main area is subsequently applied onto the mesh of the corner bead with at least 10cm overlap.
1b  Corner beads are fully embedded in the reinforcing compound on the insulation board. The mesh must have a 10cm overlap at the joints. The reinforcing mesh for the main area is subsequently applied onto the mesh of the corner beads with about 10cm overlap.

1c  The corner beads are fully embedded in the reinforcing layer. The plastic coating of the lower rail is pushed approx 5cm over the upper rail at the joint. The reinforcing mesh for the main area is brought right up to the edge of the corner bead. In the case of thick-layered scraped-finish systems, the corner protection rail is placed onto the reinforcing layer and covered with a scraped finish.

1d  Fully embed the stainless steel bead in the reinforcing compound. The reinforcing mesh for the main area is brought right up to the edge of the building. The rail joint must be covered with an additional layer of mesh. The stainless steel bead can then be plastered over.
CONSTRUCTION JOINT FINISHING

Construction joint finishing or settlement joints must also be incorporated in the alsecco external wall insulation systems. This procedure essentially involves using the associated expansion joint profiles, which must be selected in accordance with the expected movement joint.

1. The reinforcing layer is applied to insulation boards on both sides of the joint before the mesh strip of the expansion joint profile is worked into the reinforcing layer. There must be 10cm overlap at butt joints. To ensure an even joint width and avoid contamination, a protective strip as wide as the joint should be placed in the profile before the reinforcing layer and finishing coat are applied, working sideways towards this protective strip. The coating should then be separated by means of a trowel, cut and the protective strip removed.

2. The expansion joint profile for a thick-layered system is fully embedded in the reinforcing layer. The plastic cover is pushed about 5cm above the upper rail at butt joints. The mesh is brought right up to the plastic edge of the expansion joint profile.
Application of reinforcing layer

The reinforcing layer is made with the system’s associated render compounds, which are applied with the appropriate minimum thickness (see product data sheets). The reinforcing layer must not be applied until after the adhesive has hardened ie not less than 24 hours afterwards.

1. An addition diagonal reinforcement must be applied around the façade openings. This invokes embedding diagonal strips in the reinforcing mesh.

2. Apply the reinforcing layer to the insulation boards to the width of the mesh. The reinforcing mesh must be pressed in to the reinforcing layer with a 10cm overlap. The mesh should always be embedded in such a way that in the case of thin-layered reinforcement, the mesh is in the middle of the reinforcing layer and in the case of thick-layered reinforcement it is in the upper third of the reinforcing layer. The mesh can be laid either vertically or horizontally.
Application recommendations for external wall insulation systems

MAKING THE REINFORCEMENT LAYER IMPACT RESISTANT

1. The alsecco external wall insulation systems can be made impact resistant by applying alsecco plaster baseboard. In this area the insulation is applied 1cm thinner than in the rest of the system. The plaster baseboard is adhered to the insulation board using the notch-trowel method and attached with the appropriate alsecco screwed fixings. The adhesive is then applied to the plaster baseboard.

2. The appropriate cutter head is used on the boards to produce flush countersinking of the fixing discs.

3. alsecco cover strips are applied to the joints between the plaster baseboards immediately before the reinforcement. Double reinforcement must be applied at the transition from plaster baseboard to insulation board by inserting a mesh strip.

   Alternatively, areas that are subject to impact can also be prepared with panzer mesh. This panzer mesh must be laid with a butt joint and must not be moulded around corners. Areas reinforced with panzer mesh must be covered over in addition with the appropriate glass fibre mesh for the system.

4. alsecco also manufacture a range of impact resistant basecoats. Specifying Alprotect Carbon, Alprotect Nova or Alprotect Quattro ensures outstanding durability of the façade for the long-term. These basecoats have been tested to high quality standards and offer impact resistance up to 60 joules.
Surface Finishing

PLASTER FINISHES

The final coating and the textured layer of mineral plasters are applied after the reinforcement or basecoat and any primer have dried out fully. It is vital that the weather-dependent conditions are complied with.

At high temperatures and wind loading suitable measures must be taken to protect mineral plasters against drying out too quickly.

The final coat must be selected and applied in keeping with the system.

When selecting the required shades, care must be taken to ensure that in the case of large, adjacent surfaces, the value of luminance of the shade selected for the final coat or the plaster is not less than 20. Darker shades may be applied, but please contact alsecco for advice.

To avoid visible joints the coating must be applied to any connected surfaces wet in wet in a single operation. Depending on the size of the area therefore, sufficient works must be made available to apply the final coats and plasters.

If the substrates do not have the same moisture content or if the weather conditions are not favourable, mineral plasters will show some patchiness when dry. This is not a product defect. We recommend application of a levelling coat once coloured mineral plasters have dried out. This does not apply to scraped finishes.

The application of final coats and plasters is subject to the British Standards / Codes of Practice.
**Paint base**

1. The application of a product-specific primer is recommended, since it makes the subsequent final coat easier to apply. A primer is particularly advisable for decorative plasters with a grooved texture to prevent the reinforcing layer from shining through. The primer is applied after the reinforcing layer has dried out.

**Primer**

2. The textured plaster (stippling) is applied with a stainless steel trowel. For sand=float finishes at grain thickness, for felted or moulded textures in thicker layers. Scraped finishes are applied at about three times the grain thickness and smoothed over with a long float.

**Creating grooved or sand=float finishes**

3a/3b Float finishes can have different appearances depending on the scoring (horizontal, vertical, circular) used. Trowelling plasters are always scored with a circular motion.

A coat of levelling paint may have to be applied after the plaster has fully dried out.
Creating felted textures

3c Felt plasters are rubbed down with a suitable float once the plaster has started to set, so that a smooth surface can be produced.

If necessary, a coat of levelling paint must be applied when the plaster has dried out fully.

Texturing a scraped finish

3d Scraped finishes are achieved by rubbing down the hardened plaster (the time required for hardening depends on the weather conditions) with a spike float. Care must be taken to ensure that the texture is not scratched through to the reinforcing layer. Loose particles on the surface are then swept off.

Application of a spar dash finish

3e Apply Spar Dash DLX basecoat approx 5mm. Notch with a 10mm toothed trowel and float specified reinforcing mesh ensuring 100mm horizontal and vertical overlap. Ensure stress patches applied at corners at openings with 250 x 250 mesh strips. Immediately apply 1-2mm of basecoat render finish, smooth and leave to dry.

3f Apply Spar Dash receiver to minimum 4mm (dependent on Spar Dash chipping size) and trowel level to receive Dash. Immediately apply dash chippings in the open fresh mortar layer.
SURFACE FINISHING WITH CERAMIC TILES AND BRICK SLIPS

The alsecco external wall insulation systems can be finished with ceramic tiles or brick slips. Please note the special fixing instructions.

1. Ceramic tiles or brick slips must be attached to the hardened reinforcing compound using Bedding Mortar A and the buttering-floating method. This involves applying the adhesive to the tile and the substrate, then gently sliding the tile into position.

2. After waiting for at least 4 days, the ceramic tiles are grouted with Grout AS. Brick slips are grouted with Grout A (using a jointing iron) or Grout AS (slush grouting).

Flexible joints must be incorporated in the laying pattern of ceramic tiles. These joints, running in both a vertical and horizontal direction, must be kept free from joint mortar and closed with a flexible jointing material. A similar procedure applies at the corners of buildings.

Connecting joints must be created by cutting into the render (base coat) with a trowel, filling the gap with non-absorbent round cord and sealing it with a flexible jointing material.
SURFACE FINISHING WITH FLAT FACING BRICKS

A brick slips appearance can also be achieved applying flat facing bricks to the alsecco basic external wall insulating system.

1. Use a notched trowel to apply Klebespatchel AF to the hardened reinforcing layer made of Armatop MP with a glass fibre mesh 32. Only ever apply as much Klebespatchel AF as can be covered with flat facing bricks before a skin is formed. The time available is dependent on the weather conditions. Lay the flat facing bricks in a pattern and press them firmly into position by gently sliding them into the Klebespatchel AF.

2. Immediately after the flat facing bricks have been applied, a flat brick must be drawn along the joints and the flanks of the flat facing bricks smoothed over.

Alternatively, a smooth finish option is possible using appropriate joint mortar.
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Application recommendations for external wall insulation systems

Surface Finishing

SURFACE FINISHING WITH ALWOOD

Alwood is a surface finishing option for the Ecomin and Basic system and is made of solid wood. This allows wood as a material to be integrated in an ideal way within a mixed façade surface – all connections in the system having been solved. Please note that the reinforcement in the transition areas between the surfaces to be panelled with Alwood and the window jambs must be evenly drawn out to 25cm. No additional plugging of the insulation boards is required in the areas to be panelled, as the plugging is effected via the strapping.

Floor-to-batten boarding

1. The laying pattern must be worked out before the finishing surface. UK Profiles HL must be aligned horizontally and anchored in the substrate with the appropriate Alsifix fixings at 50cm intervals. The number of plugs required depends on the thickness of the insulation material and the wall. The plug head must be protected against corrosion with a spot of Alsifix Protect paint.

2. Any irregularities in the substrate must be levelled out with Alwood spacers (3mm). If necessary, the 16mm spacers can be used to create additional links between the UK Profiles HL.

3. The lower connections of the strapping are finished off by fitting the Alwood UK End Profile HL with a vent. These profiles are fitted approx 5-10cm above the lower end of the visible wood panelling.
4 The upper ends of the strapping are formed by fitting the appropriate Alwood Vented Profiles to the top most UK Profile.

5 Fitting the weatherboarding

First the floor profiles are applied to the whole area. At the same time the Alwood Natural Profiles are fixed to the strapping with one Alwood façade screw at each crossing point. Since the screw remains visible, it is advisable to mark the screw height with a stretched cord.

6 The gaps created between the floor profiles are then sealed at the upper and lower UK Profiles with Alwood sealing tape to prevent the façade from being attacked by small animals and insects.

7 The cover profiles (covers or strips) are fixed above the gaps between the floor panels (please note: minimum overlap on both sides is 20mm). For this the Alwood Natural Profiles SK are fixed at each crossing point to the UK profiles, irrespective of the width of the panels, with 1 or 2 Alwood façade screws. The screws must not be inserted through the floor and the cover at the same time. In the case of expansion joints or similar, the joint cover strips are fixed in position with only a single screw.
Connections between end-grain wood and wood or other materials have a board-root joint of 5mm.

We recommend initially cutting the Alwood Natural Profiles SK only roughly to the right length. These are then cut to correct length with a hand-held circular saw and guiding rail after the profiles have been fixed to the façade. The Alwood Natural Profiles SK must have an under-cut of at least 15° (throating).

All cut edges must be treated twice with Alwood Wood Paint.

Finally the textured areas are finished with the selected alsecco plaster. The plasters are drawn up to the lower, upper and/or lateral connections of the wood panelling or strapping, as applicable. A trowel must be used to separate the plaster and the wood in the connection areas.
BEVEL SIDING

Fitting the strapping

1 Prepare laying pattern before starting the actual work. Align the UK Profiles vertically at intervals of 50cm and anchor them to the substrate with approved fixings. The number of fixings required is dependent on the thickness of the insulating material and the wall. Any irregularities in the substrate must be levelled out with Alwood spacers. The fixing heads must be protected against corrosion with paint.

Fitting the weather boarding

2 An Alwood edging strip is fitted to the lower end of the bevel siding. Always work from the bottom to the top when applying bevel siding. The Alwood Natural Profiles ST fit together on account of their integrated groove. Ensure that there is sufficient overlap (at least 18mm). Screw the wood profiles on the UK Profiles into position with 1 Alwood façade screw at each crossing point (at least 10mm from the edge). For visible screws use Alwood Façade screws that are 60mm in length, for concealed screws use Alwood Façade Screws that are 45mm in length.

3 Close off the lower or visible upper ends by fitting an Alwood Venting Profile ALU. The upper ends of the strapping are finished by fitting Alwood Venting Profiles KU or AW behind the topmost Alwood Natural Profile ST.

4 The cut edges are treated twice with Alwood Wood Paint.
Fixing the side edging strips

The side are finished off with Alwood edging strips. Create a board-root joint of at least 5-10mm. Connections of end-grain wood and wood or other materials must have a broad-root joint of 5mm.
Decorative Profiles

alsecco decorative profiles can be used to structure façades in many different ways. The substrates to which they are applied must be level and any irregularities must be levelled out with profile adhesive if necessary. If used in external wall insulation systems, the decorative profiles must always be applied to a finished and suitable reinforcing layer. The profiles to be fixed to the façade must be measured according to the laying plan and their position marked. Ensure that window sill profiles are centrally aligned.

1. The profiles are cut to size with a hacksaw and a carbide blade, using a mitre block.

2. Apply profiles adhesive with a notched trowel to the substrate and the rear and cut faces of the profiles (buttering-floating method). Attached the profiles according to the laying plan, press them firmly into place with a straight edge and secure them against slipping, if necessary.

3. For corners, use a mitre-cut on the profiles and attached them with profile adhesive. Alternatively factory-cut (mitred) profiles are available.
4 Frames and window sill profiles are joined tight with adhesive at the butt joint. The joints are filled and a brush is used to smooth over the excess profile adhesive. Care must be taken to ensure that the joints are completely sealed.

5 Profiles running around the outside of the building e.g. cornices, are not pushed tightly together, but fixed in position with a 1cm gap in between using the buttering-floating method. Care must be taken to ensure an even spacing of joints.

6 Fill the butt joints with alsecco foam filler, more than 24 hours after attaching the profiles.

7 Once the foam filler has hardened, the joints are scraped out about 1cm deep and filled with alsecco sealant.
8 Use alsecco plaster and apply a minimum layer thickness to smooth over window jambs. Once the plaster has begun to set, use a float to smooth the surface. Accurate corners are produced if the decorative profile is positioned about 3mm above the window jamb towards the centre of the window. The projecting profile edge allows a sharp trowel application to the jamb.

9 When installing decorative window sill profiles, the horizontal window sill jamb has to be insulated and reinforced. Care must be taken to ensure that the slope of the jamb matches that of the window sill profile.

10 The connection to the window frame must be sealed with alsecco sealant.

alsecco weather skin must be applied in two operations to provide protection against damp. Embed reinforcing fleece if appropriate.

For added colour, the profiles are coated twice with the desired shade of alsecco face paint M or with alsecco levelling paint.

In addition alsecco weather skin must be applied in two operations to provide protection against damp. Embed reinforcing fleece if appropriate.

For added colour/resilience, the profiles are coated twice with the desired shade of alsecco exterior façade paint.
Ashlars may be applied as decorative profiles to structure the façades (application as described above). As an alternative, the ashlars can also be cut into the insulation boards.

1. After a guide rail has been attached, holes are sunk into the insulation boards at marked intervals with a milling cutter and the appropriate milling head. The dust is then carefully removed from the cut grooves.

2. The ashlar joints are reinforced with a fine glass fibre mesh and Armatop Basecoat material. The mesh must be applied so that there is at least a 10cm overlap with the reinforcing mesh of the larger area.

3. For reinforcing the larger area, the mesh should be drawn right up to the edge of the ashlar joint. Any finishing plaster can be applied later to the reinforced surface.
Plinth and perimeter insulation

Special insulation boards of polystyrene PS30 SE or extruded polystyrene are used for the external wall insulation system near and below ground level.

The plinth can be offset or flush with the façade. The minimum plinth height is 30cm.

As substrate pre-treatment, a single coat of Waterstop Kellerdicht W is applied to the existing water-proofing of the building and sprinkled with silica sand (0.3-0.7mm) to act as a bonding agent.

Please contact alsecco for advice if the wall has already been waterproofed with sealing sheet or thick layers of bitumen.

Offset plinths

1 The insulation boards are applied with Armatop MP, using the spot-and-bead or notched-trowel method, and pushed tightly together in pattern. At least 40-50% of the surface of the boards must be bonded to the substrate. The insulation boards chosen must be about 20mm thinner than the façade insulation.

2 Joint sealing tape is applied between the plinth rail and the plinth insulation boards to provide damp-proofing.
3 For reinforcing the larger area, the mesh should be drawn right up to the edge of the quoin joint. Any finishing plaster can be applied later to the reinforced surface.

4 Once the reinforcing layer has hardened, apply a second layer of Armatop WG and rub down with a float once it has begun to set.

5 Apply three coats of Waterstop Kellerdicht W onto the dried reinforcing layer to provide damp-proofing near and below ground level.

6 Façade paint M can be used to paint felted plinth surfaces. This paint can be applied in two coats once the top dried damp-proofing layer of Waterstop Kellerdicht W has dried.

   Alternatively – finish the surface with Multistone

   To apply a layer of Multistone plaster in the plinth areas, quartz sand (0.3-0.7mm) must be sprinkled onto the damp-proofing consisting of Waterstop Kellerdicht W for the third layer. Once this has dried out, a layer of Primer P is applied in the same shade as the Multistone Plaster. The desired shade of Multistone is then applied with a steel trowel and smoothed over.
Flush plinth formation

1 The insulation boards are applied with Armatop MP, using either spot-and-bead or the notched-trowel method, and pushing the insulation bards close together in pattern. At least 40% of the board area must be bonded to the substrate. The insulation boards must have the same thickness as the façade insulation.

2 At the transition between the plinth insulation and the façade insulation, a glass fibre strip approx. 30cm wide is embedded in Armatop Basecoat material.

3 The associated reinforcing layer made of Armatop Basecoat material is applied down to ground level. If different reinforcing compounds are used on façade and the plinth insulation, then the layers are limited by means of a plinth rail. Three coats of Waterstop Kellerdicht W are applied as damp proofing to the dried reinforcing layer near and below ground level.

4 The textured plaster of the external wall insulation systems is then applied.

Suitable plaster can be applied up to the level of the gravel filling.