



StoTherm Classic

Application guideline

Contents



System information

4 System components, system description

5 Substrates



Application of the system

6 Fixing variants according to substrate

- 6 Bonding
- 6 Bonding and dowelling
- 6 Track attachment

6 Fixing of insulating boards

- 6 Bonding
- 7 Bonding with Sto-Turbofix
- 9 Bonding and dowelling
- 11 Track attachment

13 Reinforcement

- 13 Preparatory work before reinforcing
- 13 Cement-free reinforcement

14 Top coat



Details of the installation process

15 Plinth

- 15 Connection with Sto Starter Track (uninsulated plinth with unheated cellar)
- 16 Connection in earth area and splash zone I (plinth level and perimeter insulation with heated cellar)
- 16 Connection in earth area and splash zone II (plinth with minimal incorporation into the ground, cellar not insulated)
- 16 Plinth insulation in splash zone

Details of the installation process

17 Outside wall/system junction

- 17 Area subject to impact
- 18 Creation of corner detail
- 18 Render finish

19 Outside wall/balcony

- 19 Creation of drip edge detail

20 Windows and doors

- 20 Lintel formation – fire partitioning
- 20 Sto Window Sills
- 22 Window connection

23 Roof

- 23 Roof connection

25 Scaffold plug

25 Structural expansion joints

- 26 Expansion joint profiles
- 27 Expansion joint tape

29 Installation elements

- 29 Light loads
- 31 Heavy loads

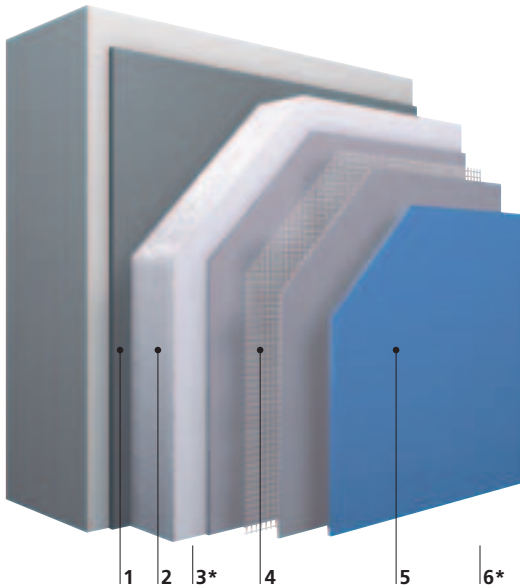
General information

All information and figures have been carefully checked by Sto AG and are in accordance with current technical standards and practices. They constitute general information and do not take into account the special aspects relating to specific buildings and applications. In particular, the information is provided without any guarantee as to its applicability to any actual application scenario. For information on a specific project, please contact your technical consultant at Sto.

Do not use any materials which do not belong to the system. The European technical approval applies only to the carefully coordinated system components from Sto. The respective valid technical data sheets are to be observed for all the stated products.

These guidelines will cease to apply upon publication of a new edition.

System components



1 Bonding: Sto-Turbofix

Bonding method based on PU foam (insulating boards as tongue and groove kit system in expanded polystyrene foam)

Alternative: **Sto-Dispersion Adhesive¹⁾**

Organic, ready-to-use adhesive compound, suitable for machine application.

Alternative: **Sto-ADH-B**

Mineral adhesive mortar, suitable for machine application.

2 Insulation: Sto EPS Board

Insulating board in expanded polystyrene foam in accordance with EN 13163. CFC-free, limited combustibility. Thermal conductivity group 035 and 040. Shrinkage-free.

3 Fixing *not shown

In accordance with the requirements of the competent authority.

4 Reinforcement:

Reinforcing plaster: **StoLevell Classic**

Organic, cement-free, ready-to-use reinforcing plaster, suitable for machine application.

Alternative: **StoArmat Classic**

Organic, ready-to-use reinforcing plaster

Reinforcing mesh: **Sto Glass Fibre Mesh**

Alternative: **Sto Shield Mesh AES**

5 Top coat: StoLotusan K/MP

Ready-to-use finishing plaster with **Lotus-Effect[®]**,

Alternative: **Stolit K/R/MP**

Organic, cement-free, ready-to-use finishing plaster

Alternative: **StoSilco K/R/MP**

Ready-to-use Silicone resin finishing plaster

6 Top paint coat *not shown

with **StoLotusan Color G** or **StoSilco Color G**

System description

StoTherm Classic

Organic external wall insulation system of limited combustibility with polystyrene insulation

Applications	<ul style="list-style-type: none"> Existing and new buildings up to high-rise level (max. 22 m) Wall structures: Masonry (concrete, sand-lime block, brick, porous concrete), fair-faced masonry, masonry constructions (three-layered panelling) and wood construction panel-type constructions (three-layered panelling) and wood construction On timber external walls Unevenness of up to 3 cm (on solid) Insulant thickness up to 400 mm
Properties	<ul style="list-style-type: none"> High resistance to microorganisms (algae, fungi), particularly in conjunction with a complementary paint system Very high crack resistance High mechanical resistance, up to 15 joule in standard system configuration Highly effective thermal insulant Highly weather-resistant Permeable to CO₂ and water vapour Of limited combustibility Also suitable for low-energy and passive houses Anti-electromog optional Lotus-Effect[®] optional
Appearance	<ul style="list-style-type: none"> Organic and silicone resin plasters Tintable according to the StoColor System Lightness values of < 20 % possible (on request) StoDeco Profiles StoDeco Rustications, Sto Rustication Boards Sto Natural Stone Tiles, ceramic tiles/slabs Sto Brick Slips, glazed brick slips
Installation	<ul style="list-style-type: none"> Cement-free, ready-to-use system components throughout Efficient installation through use of StoSilo technology Comprehensive solutions for points of detail No diagonal reinforcement, intermediate or equalisation coats necessary Unique Sto-Turbofix technology
Approvals	The relevant European and/or national approvals apply.

¹⁾ Bonding is always to be carried out with Sto Dispersion Adhesive when using StoTherm Classic on wood construction-type external walls.

Substrates

An external wall insulation system can only be installed correctly if the substrate meets certain criteria and its load-bearing capacity has been verified. Pre-treatment is always necessary for soiled, absorbent or uneven substrates. In the case of substrates of inadequate load-bearing capacity, the system is fitted by means of track attachment.

For further information on substrates, e.g. which adhesive compound is suitable for which substrate, please refer to the respective technical data sheets.

Substrates which are covered with algae, fungi or lichen always require special pre-treatment. This involves cleaning the wall and then treating it with StoPrim Fungal. These treatment agents must not be washed off.

Primers are always adapted to the substrate concerned by thinning. Primers must not be left in a glossy state after drying.

While substrate pre-treatment is not necessary when employing track attachment, the substrate must nevertheless be dry.

Preparations for installation of an external wall insulation system

Check the state of the substrate precisely and then select the appropriate fixing system for the external wall insulation system. The substrate must be pre-treated in the appropriate manner.

Observe the correct application temperature and the given building moisture. Interior plaster and screed must be dry and ready for application prior to beginning EWIS work. The lowest application temperature stands at 5 °C – with the exception of the Sto QS products.

Doors, windows, shutter boxes and horizontal covers (e.g. window sills) must be in place before beginning sealing work.

Substrates

Substrate	Substrate preparation	Primer
Smooth surface	Roughen	–
Efflorescence	Sweep, brush	–
Damp penetration	Eliminate cause, allow to dry	–
Organic plaster	Clean	–
Moss, algae, fungi	Clean, allow to dry. Apply primer, do not wash off.	StoPrim Fungal
Dusty, dirty	Sweep, brush, jet wash	–
Greasy, formwork oil residues	Hot jet wash using cleaning agents. Then wash with water	–
Coating, flaky	Remove with Sto Coatings Stripper and jet wash	–
Plaster chalking	Clean and prime	StoPlex W
Coating chalking	Brush, clean and prime	StoPlex W
Absorbent	Clean and prime	StoPlex W
Sanding surface	Clean and prime	StoPrim Micro
Mortar burrs	Knock off	–
Sinter skin	Remove by mechanical means	–
Plaster, friable, inadequate load-bearing capacity	Remove by mechanical means	–
Plaster with spalling	Knock off cavities and fill gaps with lime-cement mortar	–
Unevenness ¹⁾	Levelling plaster with lime-cement mortar (min. setting time of 14 days)	–

¹⁾ ≤ 1 cm for bonded systems
 ≤ 2 cm for bonded and dowelled systems
 ≤ 3 cm with track attachment

Fixing variants

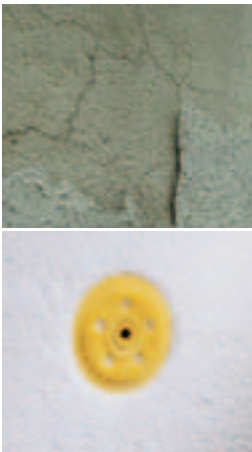
Bonding



Bonding

Substrate of adequate load-bearing capacity and suitable for bonding, with unevenness of up to 1 cm.

The insulating board is bonded in place on substrates of adequate load-bearing capacity ($> 0.08 \text{ N/mm}^2$) which are suitable for bonding. Uneven substrates with differences of up to approx. 1 cm/m. At least 40 % of the total surface area must be bonded.



Bonding and doweling

Substrate suitable for bonding but of inadequate load-bearing capacity and with unevenness of up to 2 cm.

Substrates suitable for bonding but of inadequate load-bearing capacity ($< 0.08 \text{ N/mm}^2$) require fixing with approved dowels on the surface area and in the edge zone.



Track attachment

Substrates unsuitable for bonding and with unevenness of up to 3 cm.

A track attachment system is required for substrates which are not suitable for bonding.

Fixing of insulating boards

Insulant



Insulant bonding with Sto-Turbofix

Sto EPS Boards as groove and tongue system.

Using insulating boards as a groove and tongue system minimises the required scope of finishing work on the installed surfaces (e.g. grinding notches on insulating boards).



Insulant Bonding/ Bonding and doweling

Sto EPS Boards boards are cut to precise angles, straight-edged, dimensionally accurate and shrinkage-free. Available as straight- or stepped-edge variants and as groove and tongue kits.

Tip

Protect expanded polystyrene foam boards from UV radiation and damp. Do not use wet boards.

Bonding of insulating boards

The insulating boards are to be pressed onto the adhesive mortar bed, manoeuvred into position and pressed firm within 10 minutes of applying the adhesive mortar. If the adhesive mortar is left exposed for too long on the insulating board or the wall a skin will form, possibly leading to adhesion problems.

The insulating boards are to be bonded in place in perfectly fitting bonds, leaving no open joints between the insulating boards. Unavoidable gaps must be closed with insulants of the same quality. To avoid thermal bridges, no adhesive mortar is to enter into or between joints. No damaged insulating boards are to be fitted, as the necessary stability will then no longer be guaranteed.

Fixing of insulating boards

Bonding with Sto-Turbofix

Required Sto-Turbofix accessories

- Sto-Turbofix cylinder (pressurized container) filled with PU bonding foam
- Hose, foam gun (always clean after use if no new Sto-Turbofix cylinder is fitted)
- 3 fork spanners
- Sto PU gun cleaner, gun and hose adapter
- Safety goggles, gloves

Safety information

Always carry the Sto-Turbofix cylinder by the handles provided. Do not lift the cylinder by the hose. Use a hose holder or similar to secure the Sto-Turbofix cylinder on the scaffolding, so as to prevent it from toppling over or falling from the scaffolding.

Tip

Sto-Turbofix should be shaken again 20 to 30 times before use at regular intervals and after prolonged interruptions in use.



1a Screw Sto-Turbofix cylinder and accessories into place



Screw hose and foam gun to the cylinder.

Fixing of insulating boards



Open Sto-Turbofix cylinder

Open the cock (valve) on the top of the Sto-Turbofix cylinder slowly, checking the entire cylinder for leaks. If no leaks are established, the Sto-Turbofix is ready for use.



Shake Sto-Turbofix

Before using Sto-Turbofix, shake the cylinder vigorously at least 20 times, in order to mix the PU bonding foam thoroughly, thus ensuring a perfect quality of foam.



Application of PU bonding foam to the insulating boards

Apply a bead of bonding foam all around the edge of the boards, enclosing additional foam in the shape of a W or M.

- Bonded proportion of board (contact surface area) = 40 %.



Lay insulating boards from the bottom upwards with tight joints, offset at the corners of the building. Note: The insulating boards must not be knocked against the wall.



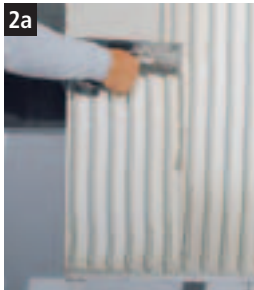
After pressing the insulating board into position, adhesive must cover at least 40 % of the surface area, measured on both the substrate and the insulating board.

Fixing of insulating boards

Bonding

Tip

To avoid thermal bridges: Remove any adhesive which oozes out from under the boards immediately.



Full-surface Bonding

When working with even substrates, apply Sto-ADH-B over the entire surface of the insulating board. Do not hold the toothed trowel at too flat an angle. Use a supporting board to fix the insulating board in position.

- Bonded proportion of board (contact surface area) > 40 %



After pressing the insulating board into position, adhesive must cover at least 40 % of the surface area, measured on both the substrate and the insulating board.



Spot/edge bonding

On substrates with an unevenness of up to +1 cm, apply a bead of adhesive all around the edge of the board and six dots of adhesive to the surface of the board.

- Bonded proportion of board (contact surface area) > 40 %

Fixing of insulating boards



After pressing the insulating board into position, adhesive must cover at least 40 % of the surface area, measured on both the substrate and the insulating board.



Machine application of adhesive to the insulating boards

Apply a bead of bonding foam all around the edge of the boards, enclosing additional foam in the shape of a W or M.

- Bonded proportion of board (contact surface area) > 40 %



After pressing the insulating board into position, adhesive must cover at least 40 % of the surface area, measured on both the substrate and the insulating board.

Fixing of insulating boards

Bonding



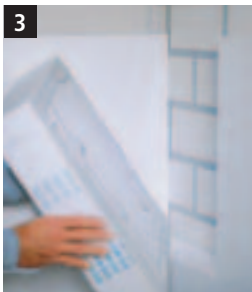
Machine application of adhesive to substrate

Apply the adhesive mortar to the wall in a bead-like pattern.

- Bonded proportion of board (contact surface area) > 60 %.



After pressing the insulating board into position, adhesive must cover at least 60 % of the surface area, measured on both the substrate and the insulating board.



Laying

Lay insulating boards from the bottom upwards with tight joints, setting them back at the corners of the building. Press the boards firmly onto the wall. Remove any adhesive which oozes out, to avoid thermal bridges.

When bonding with Sto-Turbofix, the installed insulating boards must be pressed firmly into position after a maximum of 10 minutes and adjusted as necessary, using a long spirit level.

Fixing of insulating boards

Bonding and doweling

Substrate:

Additional doweling is possible on substrates of adequate load-bearing capacity. In case of inadequate load-bearing capacity, dowels with European technical approval must be used.

Anchorage depth:

The dowels must be anchored to the necessary depth in solid wall materials, as specified in the of official licence for the dowel. Tiles and old plaster do not constitute suitable substrates for anchoring.

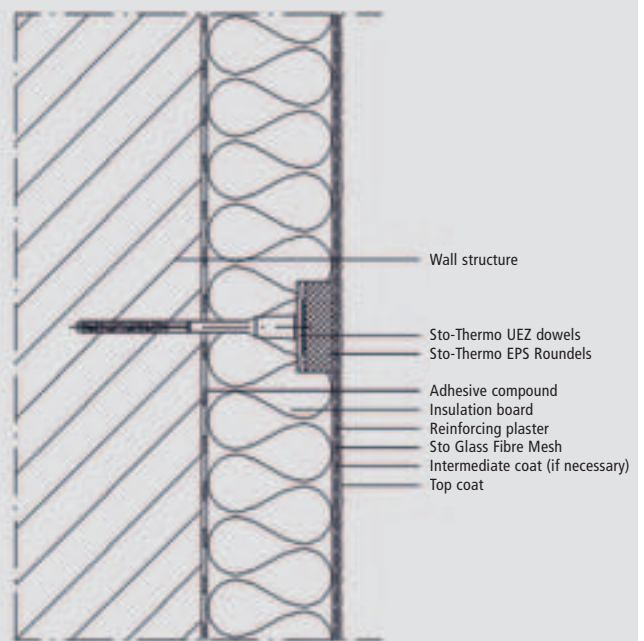
Pull-out test:

In case of doubtful substrates, the pull-out strength must be determined by means of measurement on the building.

Dowel specifications:

Length and diameter of the dowels are dependent on the given wall structure and insulating materials. The number of dowels is dependent on the height and position (main surface area, edge). Doweling is carried out under the reinforcing coat/reinforcing mesh. Ensure a uniform doweling pattern.

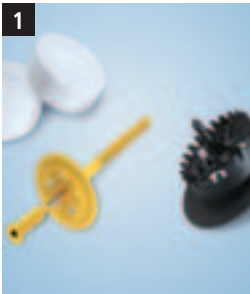
Facade insulation system, bonded and dowelled



Fixing of insulating boards

Bonding and doweling

Variant I



Sto Thermo Dowelling System: System to prevent dowel pattern staining

Reduces dowel-related thermal bridges and prevents dowel pattern staining when dowelling with countersunk and insulated dowel heads. Comprising insulating board fixers, Sto Thermo Countersink Mill and Sto-Thermo Roundels EPS.



Thermo dowelling

Push through the insulation with the countersink drill and drill on contact with the substrate.



Applying Sto Hammer Dowels

Apply the approved Sto Hammer Dowel and seal with Sto Thermo Roundels EPS.



Rasp Sto Thermo EPS Roundels level. The dowels do not leave any marks on the plastered surface and minimise thermal bridging.

Fixing of insulating boards

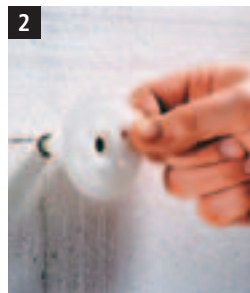
Bonding and doweling

Variant II



Sto-Thermo Dowel/fixing method

First drill the hole for the dowel in the customary manner.



Insert the dowel – Sto Thermo Dowel UEZ 8/60.



The thermally isolated Sto Thermo Dowel is then countersunk into the insulant by means of a machine. The application tool (Sto Thermo Dowel MT) determines the exact and uniform drilling depth. No problems with cutting dust, as the insulant is compressed.



Finally, the polystyrene rondelle is inserted in the dowel recess. The result is a closed, even insulation layer, with no subsequent marking of the facade by the dowels.

Fixing of insulating boards

Bonding and doweling

Variant III



Dowelling

Install dowels level with the insulant surface if neither variant I or II is applied.

Tip

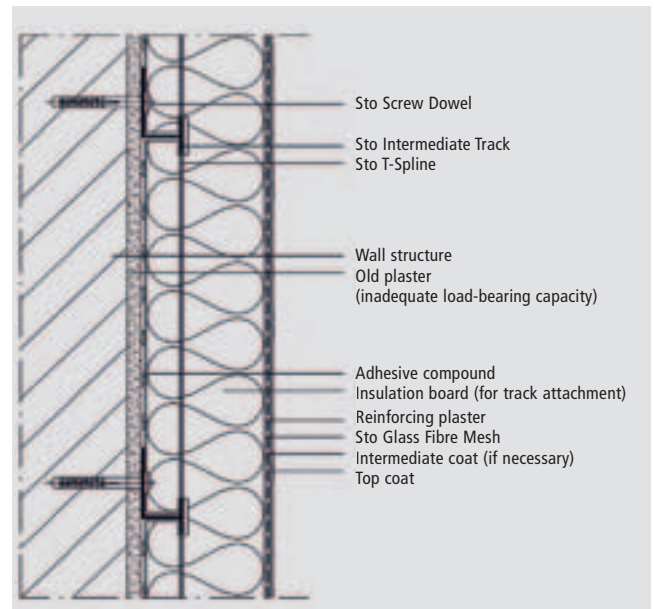
Fitting with approved dowels: If dowelling is not carried out with the Sto Thermo UEZ Dowel, other dowels with European technical approval must be used. Insert the dowels flush with the surface of the insulating boards.

Fixing of insulating boards

Track attachment

Substrate:

Insulation can be fitted on substrates which are not suitable for bonding by mechanical means, employing a track system. This is particularly expedient when the substrate requires very extensive pre-treatment (removal of old plaster).



Track attachment

The insulating boards are fitted with the aid of plinth and starter tracks, intermediate tracks, T-splines and dowels with technical approval (spaced at 30 cm).



Insulation

Use type M boards with grooves and rebates. Otherwise produce grooves and rebates with the Sto Grooving Tool.

Fixing of insulating boards

Track attachment



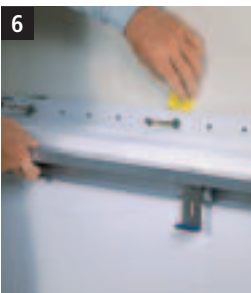
3 Bonding of insulating boards
Fix with adhering dots (20 % of board surface area) and, according to height, additionally fix with dowels in accordance with national specifications.



4 T-splines
The boards must be stabilised with vertical T-splines.



5 Board rebates
The intermediate tracks and T-splines help to stabilise the insulating boards and produce an even surface.



6 Doweling the intermediate track
After installing a row of boards, press the intermediate track into the top groove and fix with dowels. Level out any unevenness with packing shims. Dowel edges of insulating boards in accordance with dowelling pattern.

Fixing of insulating boards



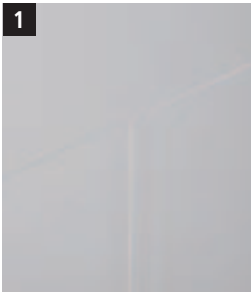
7 Forming a groove
When cutting boards to size, cut a groove for the intermediate track or T-spline using a grooving tool.

Tip
Track attachment is particularly expedient when removing old plaster is too laborious.

Reinforcement

Preparatory work before reinforcing

After insulation, the applicator has a final opportunity to carry out a careful check so as to ensure a perfect system. Cracks and marks on joints resulting from thermal bridges can be avoided in this way.



1 **Checking the insulating board**
Before applying the reinforcement, ensure that the insulating boards have been jointed and rasped level. Do not apply the reinforcement until the adhesive has hardened – after 24 hours at the earliest.



2 **Closing joints**
Close open joints with filling foam or strips of insulation material. This will prevent marks on the top coat, cracks, etc.



3 **Rasping insulating boards**
Rasp any notches on the jointed insulating boards. Remove the grinding dust from the facade.



Product tip
Machine grinding of insulating boards
Rasp high spots at insulation boards with Inoplan.

Reinforcement

Reinforcing



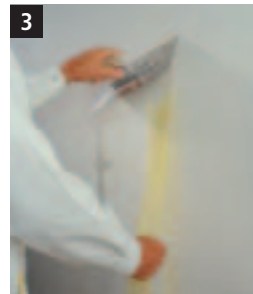
Info
Diagonal reinforcement:
When StoLevel Classic is used, its exceptional elasticity means that additional diagonal reinforcement at openings in buildings may not be necessary, provided that the procedure outlined below is observed. Diagonal reinforcement requires to be installed when lightness values of less than 20 % apply.



1 **Reinforcing plaster**
Apply the reinforcing plaster by trowel or by machine application. Apply the reinforcing plaster over a width of 110 to 120 cm, covering this area in full.



2 **Reinforcing mesh**
Sto Glass Fibre Mesh is flexible and easy to install. The mesh format in a width of 1.10 m corresponds precisely to half a scaffold height when embedded horizontally.



3 **Embedding the mesh**
Embed the mesh in the damp reinforcing plaster. The mesh strips must overlap by 10 cm.



4 **Silo and machinery technology**
Materials in paste-form are delivered, ready-to-use, in a silo. This eliminates the need for daily cleaning of hoses and machinery. The attachment enables simple refilling of the StoSilo Comb system.

Top coat

Finishing plasters

Apply the top coat after the reinforcement has dried thoroughly. Plaster wet in wet and coat the surfaces without leaving any seams. Do not apply finishing plasters in heavy winds or direct sunshine, as seams and hairline cracks may result.



Finishing plaster with Lotus-Effect®: StoLotusan
StoLotusan reduces the adhesion of dirt particles substantially and is highly hydrophobic.
Textures: Stippled (K) and free-style (MP) structural plaster.

Organic finishing plaster: Stolit
Stolit is paste-like and suitable for machine application. It offers a high level of elasticity, crack-resistance, weather resistance and water vapour permeability.
Alternative with QS Technology: **Stolit QS**.
Textures: Stippled (K), rilled (R) and free-style (MP) structural plaster.

Silicone resin finishing plaster: StoSilco
StoSilco is paste-like and suitable for machine application. It offers high water vapour and CO² permeability and good weather resistance. Alternative with QS Technology: **StoSilco QS**.
Textures: Stippled (K), rilled (R) and free-style (MP) structural plaster.

Product tip

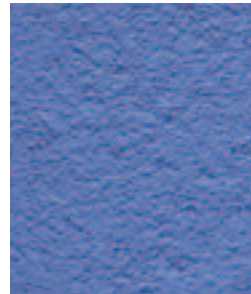
QS Technology:

Fast-drying variant for the critical weather range involving an ambient and substrate temperature between +1 °C and +10 °C and relative air humidity of up to 95 %.

Top coat

Finishing plasters

Plaster textures



Stippled texture

A stippled structural plaster is applied in the appropriate grain size and textured with a suitable tool.



Rilled plaster texture

After application, rilled plasters can be provided with a variety of textures (horizontal, vertical and round).



Free-style structured plaster

Fine-grained plasters are applied and modelled with a brush, spatula, trowel or sponge.



Tip

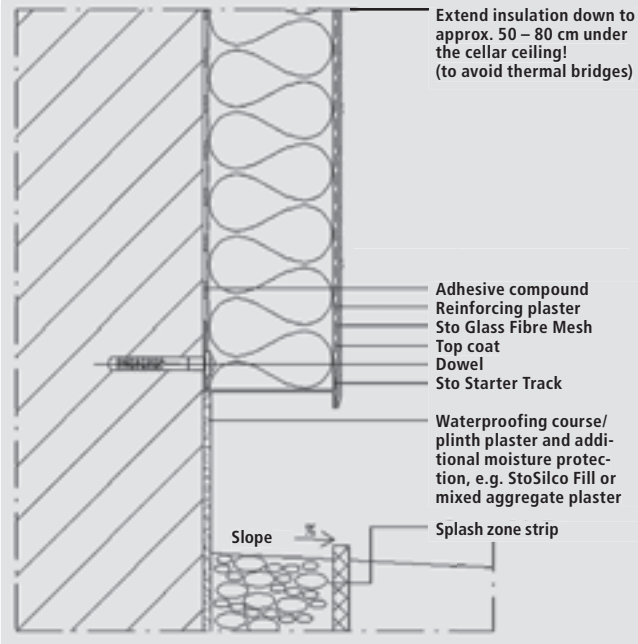
Lightness value

Only colours with a lightness value higher than 20 % are permissible for facade insulation systems. Lightness values of less than 20 % may be approved in individual cases after due assessment. The lightness value defines the percentage quantity of light which is reflected by a surface (100 % = white, 0 % = black).

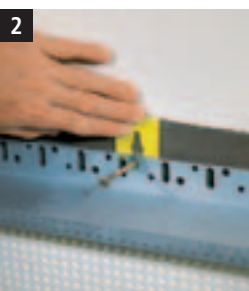
Plinth

Connection with Sto Starter Track

Uninsulated plinth with unheated cellar area



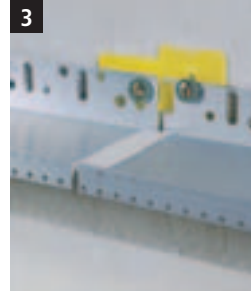
1 Before beginning installation work, decide on the height of the plinth and mark with a plumb line. Ensure that you mount the Sto Starter Tracks horizontally and that the tracks fit snug against the substrate. Level out any unevenness on the wall with Sto Packing Shims.



2 **Fixing**
Fix Sto Starter Tracks in place along the entire elevation with dowels at a spacing of approx. 33 cm. Insert the dowels carefully to avoid twisting the tracks.

Plinth

Connection with Sto Starter Track



3 Track junction

Wherever possible, always fix the Sto Starter Tracks at the end holes in the track. Fit Sto Starter Track connectors to facilitate the alignment of the track and to ensure an expansion joint.



4 Corner piece

Sto Starter Track Corner Profile with dowels.



5 Corner of building

Use Sto Starter Track Corner Profiles at corners of buildings. These profiles adapt to the angle of the corner. The Sto Flexicurve Starter Track is used for convex and concave curves on buildings.



Product tip

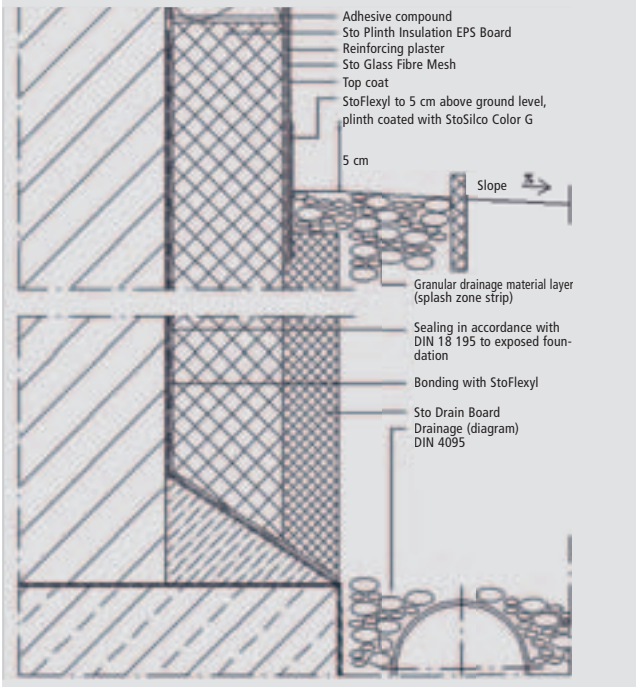
The use of a plinth system without thermal bridging is recommendable for low-energy and passive houses (and in general for buildings with a heated and insulated basement storey). A distinction is made between two installation variants:

- 1.) Plinth insulation in front of facade insulation: Insert Sto plinth profile PH between plinth insulation and facade insulation and embed in reinforcing plaster.
- 2.) Facade insulation in front of plinth insulation: Fix Sto Start Profile PH-AL in place with dowels, then fit insulating boards to Start Profile. Fix Sto plinth profile PH-A to edge of insulating board using the integrated self-adhesive tape and embed in the reinforcing plaster.
Use Sto plinth profile connector L to connect the profiles.

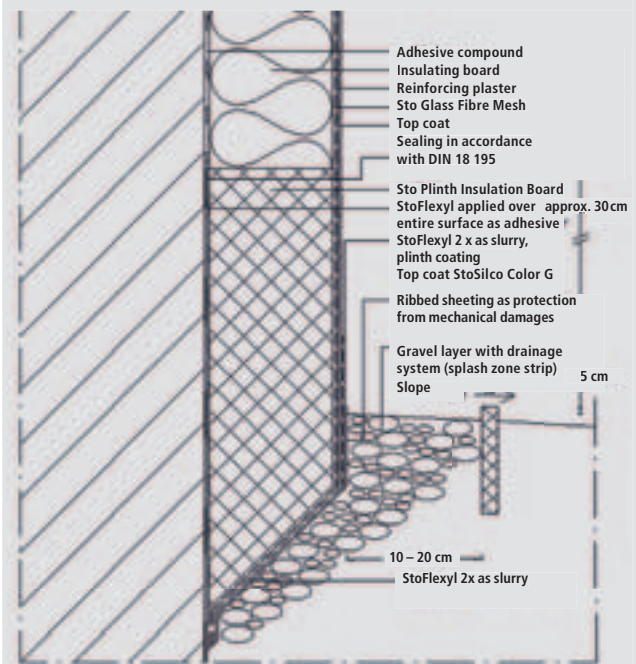
Plinth

Connection in earth area and splash zone I + II

Plinth level and perimeter insulation with heated basement



Plinth insulation with minimal incorporation into the ground, cellar not insulated



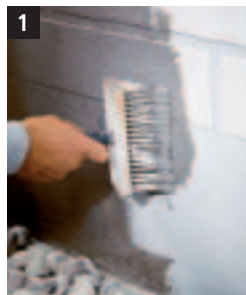
Plinth

Plinth insulation in splash zone

For the purposes of plinth insulation in the splash zone it is assumed that the building is already provided with water-proofing.

Info

The Sto-Turbofix bonding method is not suitable for plinth insulation.



1 Substrate preparation

Pre-coat plinth area with 10 % water-diluted StoFlexyl up to approx. 30 to 50 cm over ground level (mix StoFlexyl with cement, mixing ratio 1:1). Observe drying time.



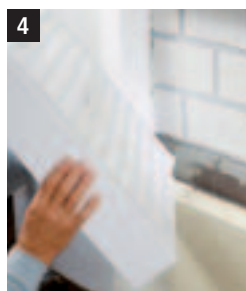
2 Applying adhesive with trowel and pull to create a stippled effect

After drying, apply StoFlexyl (1:1 with cement) undiluted as a bonding agent and pull to create a stippled effect.



3 Laying plinth boarding

Apply adhesive over entire surface area of Sto Plinth Insulation Board and install with tight butted joints.

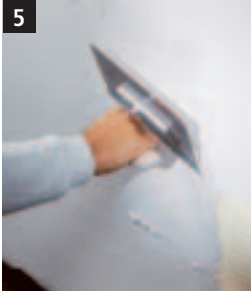


4 Adjoining insulating boards

The adjoining insulating boards extending to 30 to 50 cm over the ground are to be installed either with full-surface bonding (toothed trowel) or spot/edge bonding (adhesive gun or trowel).

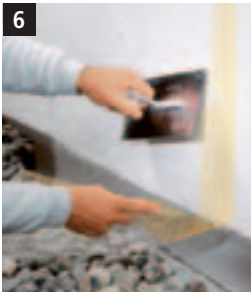
Plinth

Plinth insulation in splash zone



Reinforcement

The reinforcement continues beyond the Sto Plinth Insulation Board, ending approx. 10 to 12 cm below ground level. Apply the reinforcing plaster over the entire surface area. Finished layer thickness from 1.5 to 3.5 mm.



Reinforcing mesh

Embed the Sto Glass Fibre Mesh in the damp reinforcing plaster. The mesh strips must overlap by 10 cm. The reinforcing layer (reinforcing plaster and mesh) extends up to the building waterproofing on the outer wall of the cellar.



Top coat

A top coat of StoLotusan, Stolit or StoSilco finishing plaster does away with the need for any subsequent coating.



Additional coating with StoFlexyl is carried out only in the area adjoining the ground, from the outer wall of the cellar to ground level.



Gravel layer with drainage

A splash zone strip/gravel bed with drainage is essential for this plinth area. A gravel course of 20 to 30 cm in width should be laid to enable the water to trickle away. Ribbed sheeting provides additional protection for the insulation system.

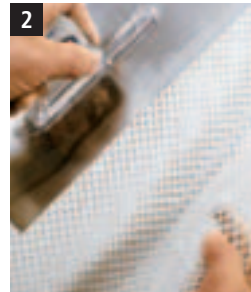
Outside wall/system junction

Area subject to a risk of impact



Sto Armour Mesh

Areas subject to a risk of impact are additionally reinforced with Sto Armour Mesh to afford additional protection.



Installation

Press the Sto Armour Mesh into the reinforcement. Butt joint the mesh without overlapping. Install under the standard reinforcement.

Product tip

Sto Armour Mesh is a reinforced glass fibre mesh for added compressive strength in critical areas. It is embedded in the reinforcing plaster.

Outside wall/system junction

Creation of corner detail



Product tip

For corners, use Sto PVC Mesh Angle Bead, Sto Armour Angle and Sto Corner Angle Roll. The Sto PVC Mesh Angle Bead is an angled strip of mesh reinforced with a plastic rail. The Sto PVC Mesh Angle Bead is an angled (90°) strip of mesh reinforced with a plastic rail. Alternative: The Sto Corner Angle Roll is an edge profile offering variable angles with integrated glass fibre mesh. It comes in a practical package which can be hung from the scaffolding.



The Sto Corner Angle Roll is cut directly from the roll to cover the entire length of the corner of the building. This avoids overlapping joints.



1

Applying the corner angles

Use a corner trowel to press the corner angle (Sto PVC Mesh Angle Bead or Sto Corner Angle Roll) into the reinforcing plaster.



2

Reinforcement

Install the reinforcing mesh up to the corners and overlap the angle reinforcement.

Outside wall/system junction

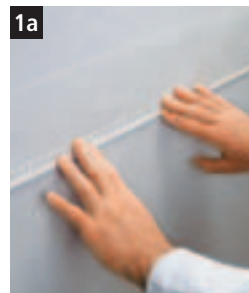
Render finish



Product tip

Sto Render Stop Profile

It is recommended to use render stop profiles to produce neat render finishes. The Sto Render Stop Profile consists of a profile with stop and integrated glass fibre mesh.



1a

Fitting the Render Stop Profile

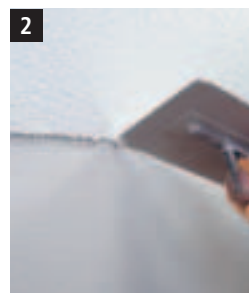
Decide on the height of the render stop before beginning installation. Place the Sto Render Stop Profile in position, press into the reinforcement and align with a spirit level.



1b

Reinforcement

Embed the Render Stop Profile in the reinforcing plaster, scraping off excess material and spreading it smoothly over the mesh of the profile.



2

Top coat

Apply the top coat (finishing plaster). Carefully remove excess material along the length of the Render Stop Profile.

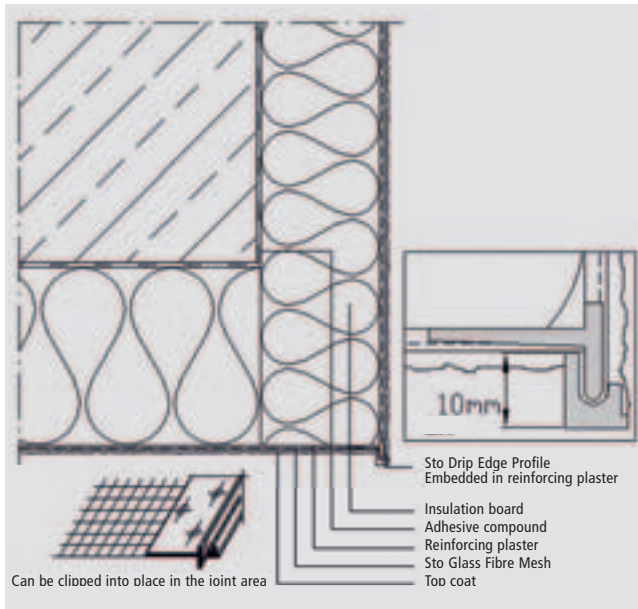


3

Apply the top coat (photograph shows StoSuperlit natural stone plaster) up to the Sto Render Stop Profile from below.

Outside wall/balcony

Creation of drip edge detail with Sto Drip Edge Profile



Product tip

Sto Drip Edge Profile

Special Drip Edge Profiles are a worthwhile option where there is a risk of dripping water, offering substantial protection for the undersides of balconies, window lintels shutter boxes.

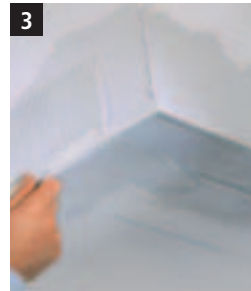


1 Apply reinforcing plaster to the edges of the unit concerned.



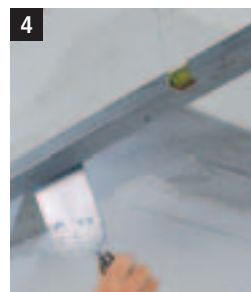
2 **Drip Edge Profile corner piece**
Fitting the Sto Drip Edge Profile corner piece.

Outside wall/balcony



3 Embedding the Drip Edge Profile

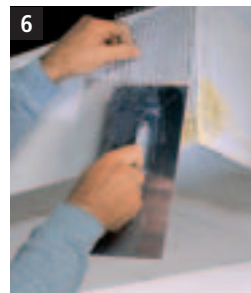
Place the Sto Drip Edge Profile in position, clip onto the Sto Drip Edge Profile corner piece and embed in the reinforcing plaster.



4 Aligning the Sto Drip Edge Profile.



5 The Sto Drip Edge Profiles and corner pieces have been embedded in the reinforcing plaster.



6 Reinforcing mesh

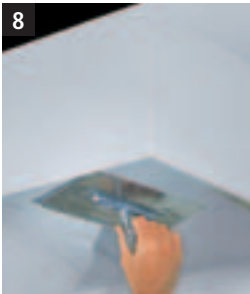
Reinforcement of the Sto Glass Fibre Mesh over the entire front surface, including corner reinforcement. Alternative corner reinforcement: Sto PVC Mesh Angle Bead.



7 Further full-surface reinforcement of the Sto Glass Fibre Mesh on front sides.

Outside wall/balcony

Creation of drip edge



8 Apply reinforcing layer of Sto Glass Fibre Mesh to the entire underside of the unit.



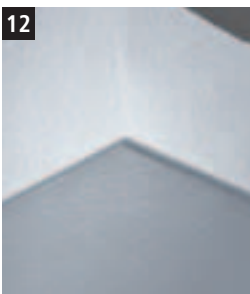
9 Fully reinforced unit.



10 **Top coat**
When the reinforcement is completely dry, apply the top coat (finishing plaster) to the faces.



11 Scrape protruding finishing plaster from the edges.



12 Fully treated unit.

Windows and doors

Sto Window Sills

Watertight:

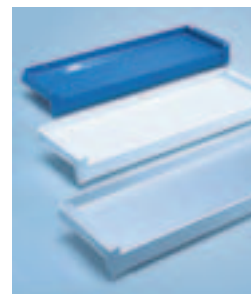
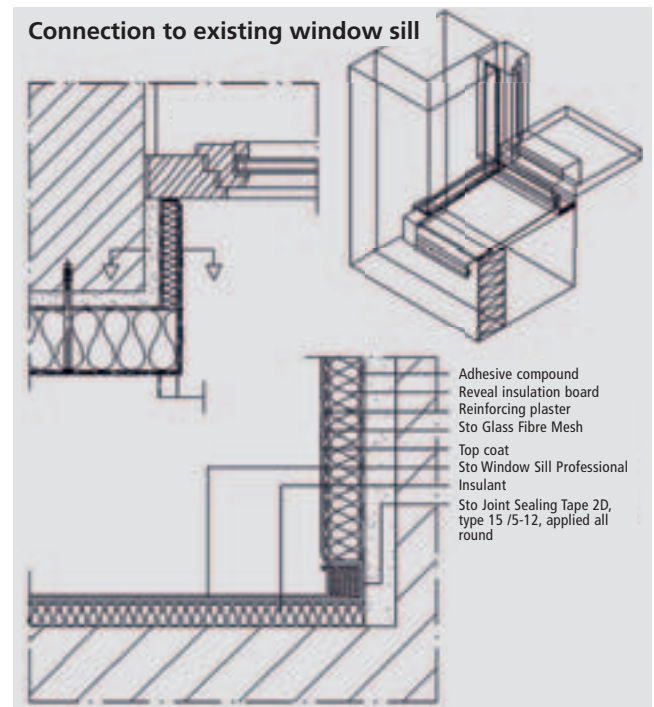
With all-round waterproof edge profiles. The bottom of the edge profile is welded to the window sill along its entire length.

Tension-free:

The patented lateral edge profiles feature an expansion strip. This elastic connection compensates thermally induced variations in length.

System connections:

Connections to other parts of the building must be produced using joint sealing tape.



The Sto Window Sill Profi consists of window sill and edge profiles. The edge profile support incorporates an expansion strip which compensates thermally induced variations in length. Further variants and project-specific made-to-order items round off the Sto Window Sill Profi range.

Windows and doors

Sto Window Sills



1 **Window frame connection**
Cover screw plate with Sto Window Sill Tape (red) to close the joint.



2a **Fixing of window sill**
Place Sto Window Sill in position and fix to window frame with special window sill screws.



3 **Cavity sealant**
Seal cavities on the edge profile and under the window sill with filling foam.



4 **Insulation joints**
To seal the joints, apply Sto Joint Sealing Tape 2D, type 15/5-12 around the edge profile flush with the insulating board joint and the window sill.

Windows and doors



5 **Sealing tape**
Do not apply Sto Joint Sealing Tape around the edge profiles under tension, as it must be able to expand further after fitting the cut-to-size insulating board.



6 **Insulation**
Measure up the insulating board against the window sill edge profile. The subsequent surface of the window reveal must be flush with the inside of the edge profile.

Tip

Compress the Sto Joint Sealing Tape 2D, otherwise no stretching.



Wrong:
The sealing tape is not compressed – no stretching is possible.

Right:
The sealing tape is compressed – stretching is possible.

Windows and doors

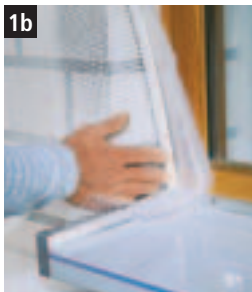
Window connection



Product tip

Sto Stop Bead Profi

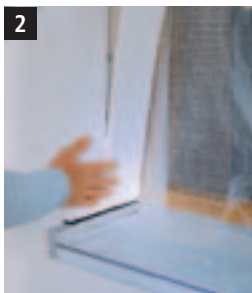
Sto Stop beads are used to seal connection joints in the area of door and window reveals.



Fitting the stop bead

Cut the Sto Stop Bead Profi to size. After applying the Sto sealing tape to the edge profile of the Sto Window Sill, remove the protective film from the adhesive tape on the bead and place the end of the bead down onto the sealing tape. Stick Sto Stop Bead Profi firmly to the window frame.

Stop beads must not be butt-jointed.



Applying insulant

Apply insulant liberally, to incorporate the Sto Stop Bead Profi.



Covering windows

The film with self-adhesive tape on the Sto Stop Bead Profi facilitates effective covering of the window.

Windows and doors



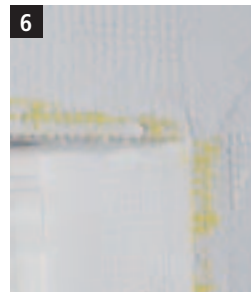
Mesh overlap

Apply the Sto reinforcing mesh of the Sto Stop Bead Profi up to the corner bead and work into the reinforcing plaster. Calculate for an overlap of at least 10 cm.



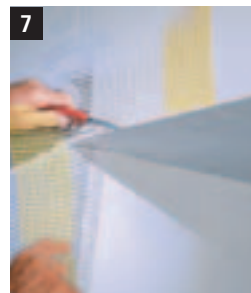
Reinforcing internal reveal corners

Internal reveal corners are reinforced with Sto Glass Fibre Mesh, with the reinforcing mesh overlapping by at least 10 cm.



External reveal corners

External reveal corners are produced using the standard Sto PVC Mesh Angle Bead. Place the Mesh Angle Bead in position and embed the entire surface of the bead in the reinforcing plaster.



Reinforcement

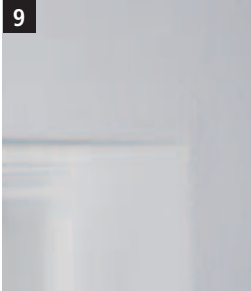
Attach surface reinforcement at the corner and work into the reinforcing plaster.



Use a sharp knife to cut the reinforcing mesh at an angle of 45° along the edge of the reveal.

Windows and doors

Window connection



9 Then apply reinforcing plaster over the entire surface area.



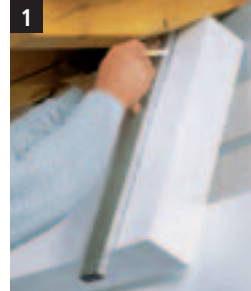
Product tip

Lintel Corner Angle

Using angle pieces (Sto Lintel Corner Angles) to produce internal corners and reveals cuts labour costs by eliminating the need to reinforce internal reveal corners with the reinforcing mesh.

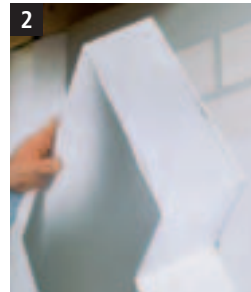
Roof

Roof connection



Measuring up

1 Measure up the insulating boards between the roof rafters.



2 Coat the top edge of the insulating boards which is connected to the roof sheathing with adhesive compound (e.g. for protection against insects).



Sealing tape

3 Mark out the position of the sealing tape on the roof rafters.



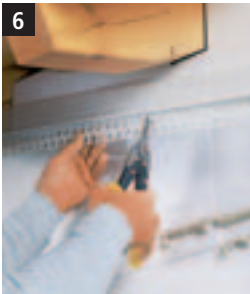
4 Apply the sealing tape around the roof rafters at the markings.



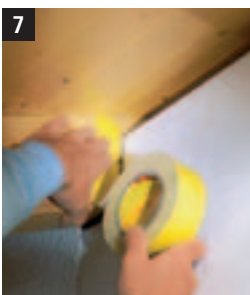
Laying the insulating boards

5 Apply adhesive over entire surface of the insulating boards, place in position and install with abutting joints. Shorten the insulating board slightly to facilitate fitting between the roof rafters. Fill the gap with an appropriate insulating board wedge.

Roof connection



6 Measuring up the roof vent profile
Measure up the Sto Roof Vent Profile. Fill the open wedge joints with foam.



7 Taping up the roof rafters
Apply tape around the roof rafters.



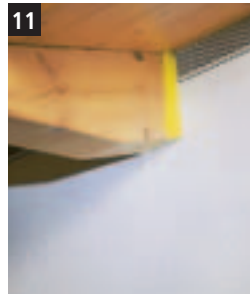
8 Apply reinforcing plaster between the roof rafters.



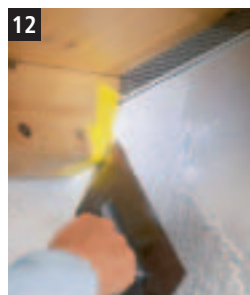
9 Roof Vent Profile
Embed the Sto Roof Vent Profile in the reinforcing plaster.



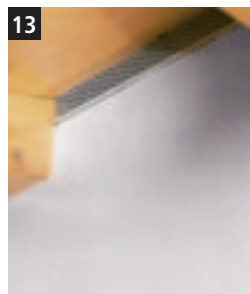
10 Reinforcement
Reinforce the entire surface and work the Sto Glass Fibre Mesh into the reinforcing plaster.



11 Fully reinforced surface.



12 Top coat
When the reinforcement is completely dry, apply the top coat (finish coating). Separate the finish coating from the building unit by means of a trowelled groove line.



13 Optimum roof connection
Finished roof vent profile system.

Scaffold plug



Sto Scaffold Plug

Scaffold anchors leave holes in the insulated and plastered wall. The Sto Scaffold Plug made of impregnated flexible foam is used to seal these scaffold anchor holes.

Sto Scaffold Plug

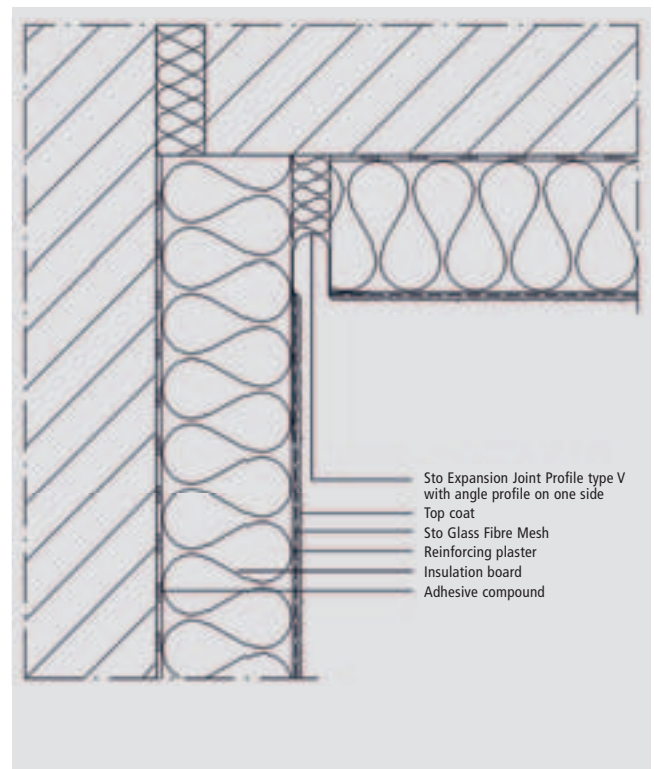
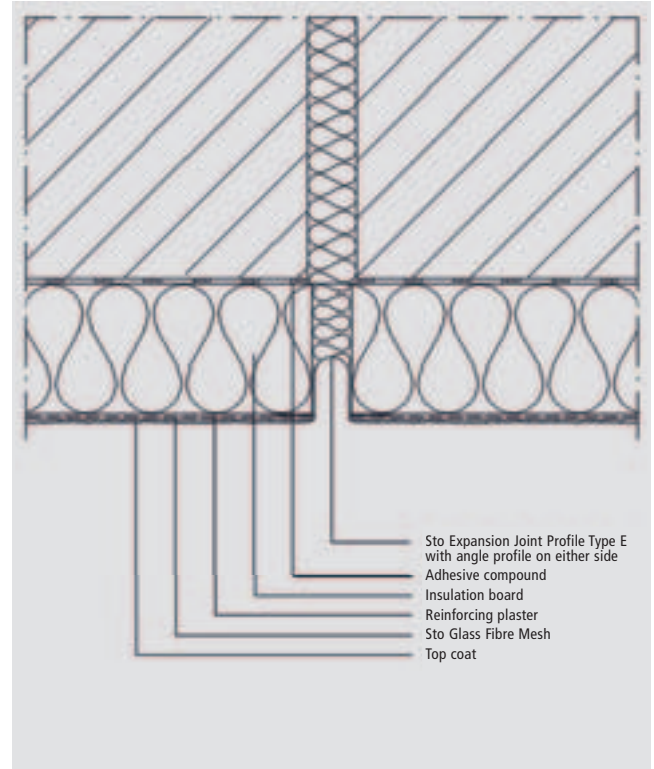
The flexible foam is compressed by rolling between the palms of the hands.

Insert the compressed scaffold plug in the scaffold anchor hole.

After applying the finish coating, the now watertight hole is no longer discernible.

Structural expansion joints

Expansion joint profiles



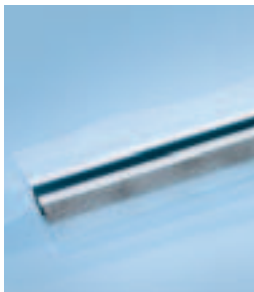
Structural expansion joints

Expansion joint profiles

Any expansion joints which exist on the building structure must also be incorporated into the facade insulation system. Both expansion joint tapes and loop profiles are used for these purposes. These do not affect behaviour in fire.

Expansion joints in the form described here are only permissible when there is no firewall.

- Maximum permissible joint width 50 mm.
- For all technically approved bonded or bonded and dowelled facade insulation systems with EPS foam up to an insulation layer thickness of 300 mm on mineral substrates.



Expansion joint profiles

Sto Expansion Joint Profile type E for level wall surfaces, type V for offset wall surfaces (inner corners). Joint width 5 – 30 mm.



Alternative expansion joint profile GO (closed surface)

Sto Expansion Joint Profile GO is a closed expansion joint profile for joints between level (type E) or offset (type V) wall surfaces.

Fire protection

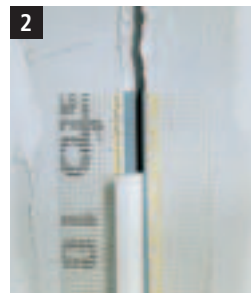
When insulation layers of over 100 mm in thickness apply, the cavities between the structural expansion joints are to be back-filled with mineral wool.

Structural expansion joints

Expansion joint profiles



Coat the sides of the joint and approx. 20 cm of the adjoining surfaces with reinforcing plaster.



Reinforcing the expansion joint profile

Position and embed in the reinforcing plaster. For a uniform joint, use a strip of polystyrene to facilitate fixing and alignment.

The thickness of the polystyrene strip determines the width of the expansion joint.



Overlap from above

The expansion joint profiles are fitted with an overlap of approx. 2 cm from above.



Trowelled grooveline

The installation aid is separated from the expansion joint profile by a grooveline produced with a trowel.



Separated joint.

Structural expansion joints

Expansion joint profiles



6
Reinforcement
Reinforce the adjoining surfaces and work the Sto Glass Fibre Mesh into the reinforcing plaster over the entire surface area.



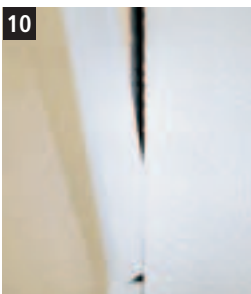
7
Trowelled grooveline
The installation aid is to be separated from the surface reinforcement by a trowelled grooveline.



8
Top coat
When the reinforcement is completely dry, apply the top coat (finishing plaster).



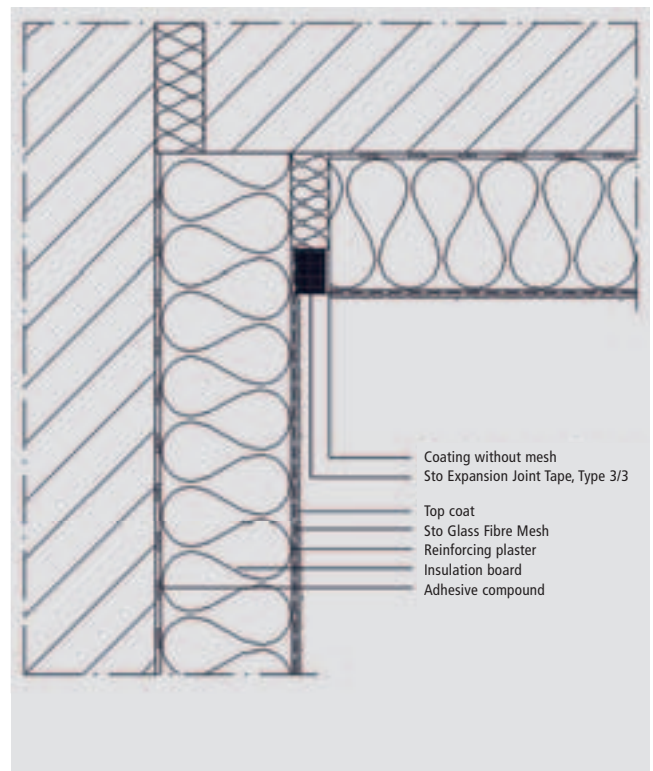
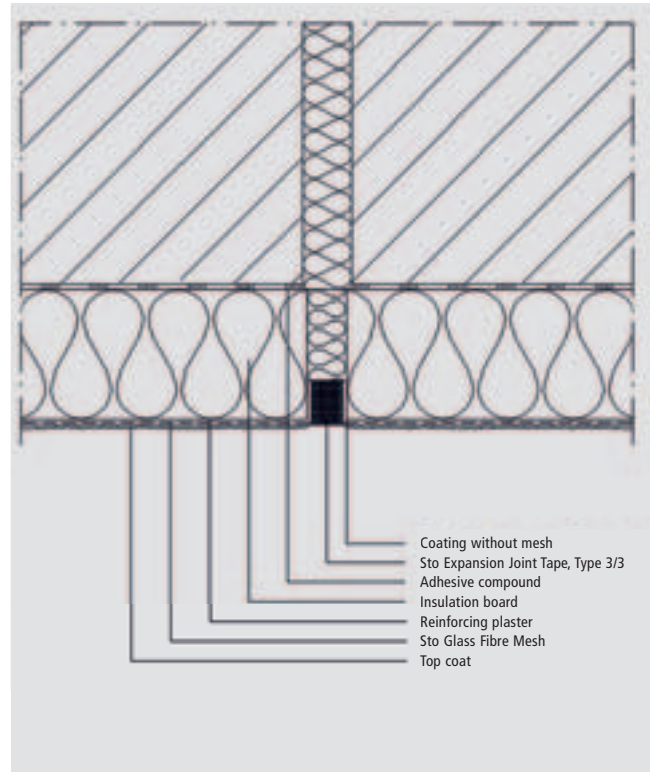
9
Trowelled grooveline
The installation aid is to be separated from the top coat by a trowelled grooveline.



10
Pull polystyrene strip out of the expansion joint. Remove any finishing plaster protruding from the edges of the expansion joint profile.

Structural expansion joints

Alternative with expansion joint tape

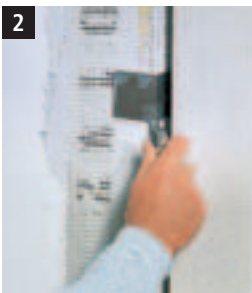


Structural expansion joints

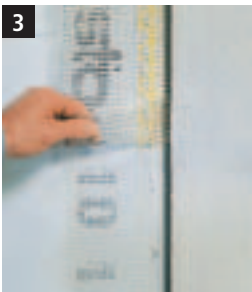
Alternative with expansion joint



1 Coat the sides of the joint and approx. 20 cm of the adjoining surfaces with reinforcing plaster.



2 **Reinforcing the mesh angle bead Place**
Sto PVC Mesh Angle Bead in position and embed in the reinforcing plaster. The inner sides of the joint are also to be reinforced.



3 **Overlap from above**
The mesh angle beads are to be fitted from above with an overlap.



4 **Reinforcement**
Reinforce the adjoining surfaces.

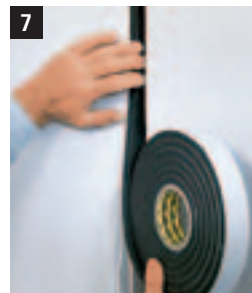


5 Embed the full surface area of the reinforcing mesh in the reinforcing plaster.

Structural expansion joints



6 **Formation of joint corners**
Joint corners are formed using a corner trowel.



7 **Expansion joint tape**
The Sto Expansion Joint Tape is to be fitted flush with the reinforcing coat.



8 **Masking**
Mask the Sto Expansion Joint Tape before applying the top coat (finish coating).



9 **Top coat**
When the reinforcement is completely dry, apply the top coat (finishing plaster).

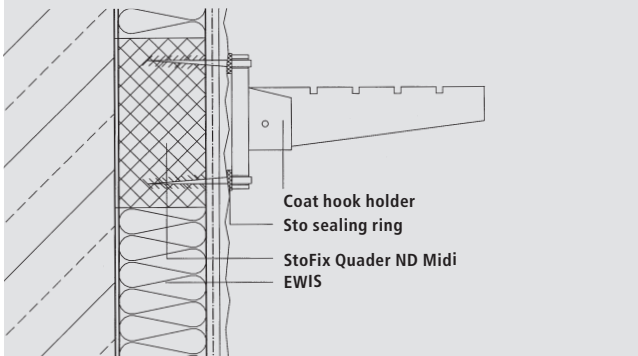


10 Then remove the adhesive tape.

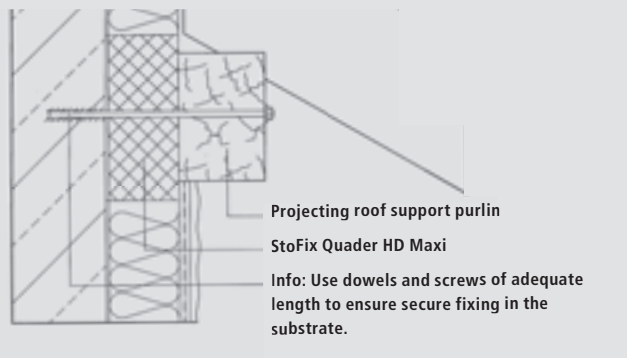
Installation elements

Installation elements for fixing building units on EWIS

StoFix Quader ND Midi for coat hook holders and other elements



StoFix Quader HD Maxi as compression underlay for projecting roof support purlins and other elements



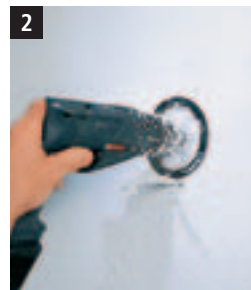
Installation elements

Light loads StoFix Roundels



StoFix Roundels

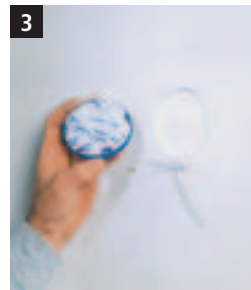
The StoFix Roundel is a 10 mm thick fitting disc made of plastic with a diameter of 90 mm. The roundel is suitable for all thicknesses of insulating board and serves to fix light loads such as shutter guide rails, house numbers, outside sensors and similar. A countersinking tool is required to install the roundels.



Mill recess

A corresponding recess is cut in the insulating board using a countersinking tool.

(The countersinking tool required for this purpose is supplied with each box of 100 roundels).



Fix roundel in place

The StoFix Roundel is fixed in the insulating board with StoFix adhesive (alternatively Sto Dispersion Adhesive).



Reinforcement

Apply reinforcing plaster.



Work the Sto Glass Fibre Mesh into the reinforcing plaster.

Installation elements

Light loads

StoFix Roundels



Top coat

When the reinforcement is completely dry, apply the top coat (finishing plaster).



Fitting the light load

Fitting the lamp.

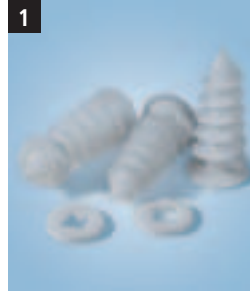


The lamp is fixed firmly to the insulation without any problem what so ever.

Installation elements

Light loads

StoFix Spirale



StoFix Spirale

The StoFix Spirale is a spiral dowel with sealing ring. The sealing rings are fitted onto the spiral dowel before screwing into place. StoFix Spirale ID 60 for insulating board thicknesses of 6 cm and over. The spiral serves to fix light loads such as bells, signs, small flower boxes and similar.

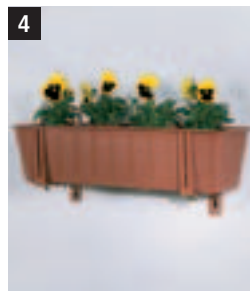


Inserting the StoFix Spirale

On rendered facades, a hole must be produced in the finish coating and reinforcing coat before inserting the StoFix Spirale. The spiral is then screwed into the facade using a screwdriver for recessed-head screws or an open-jawed or ring spanner, according to the insulant thickness.



The mounting can then be screwed into place in the customary manner.



Light load fixed in place.

The StoFix Spirale has a load-bearing capacity of 10 kg.

Installation elements

Heavy loads

StoFix Quader HD Maxi



Product tip

StoFix Quader ND Mini and Midi
The StoFix Quaders ND Mini (98 x 98 mm) and Midi (98 x 138 mm) are mounting plates made of EPS rigid foam with a thermal conductivity of 0.040 W/m.K. They serve to fix supports for blinds, pipe clips, folding shutter pistons, coat hook holders and similar. They are not suitable for use as compression underlays for heavy load fixtures.



StoFix Quader HD Maxi

The StoFix Quader HD Maxi in rigid polyurethane foam with a thermal conductivity of under 0.040 W/m.K can be used as a compression underlay for heavy load fixtures. With a compressive strength of 2.3 N/mm² it is suitable for awnings, railings, projecting roofs and similar.



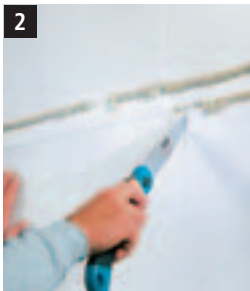
1

Installation elements Heavy loads

StoFix Quaders serve as compression underlays for heavy installation elements, such as awnings.

Marking

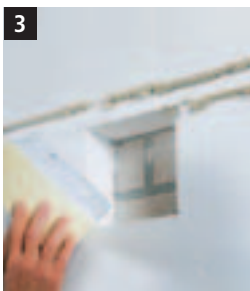
Mark the appropriate position with a pencil.



2

Cut out

Cut out the bonded insulating board with a keyhole saw.

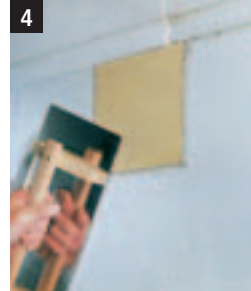


3

Bonding

Apply adhesive to the StoFix Quader and press into the opening.

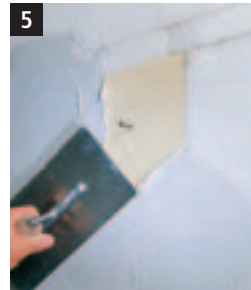
Installation elements



4

Closing joints

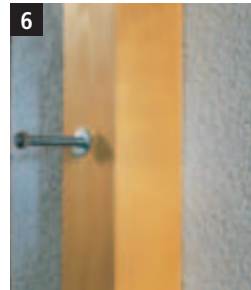
Close the joints with filling foam. Cut off any excess foam and rasp level after drying.



5

Marking

Be sure to mark the appropriate point with a screw before applying the reinforcement and the top coat.



6

Fixing

Use an appropriately sized bit to drill a hole through the ashlar and into the substrate, insert dowel and screw in the screw.

Head office**Sto AG**

Ehrenbachstrasse 1
D-79780 Stuehlingen
Phone +49 7744 57-0
Fax +49 7744 57-2178
infoservice@sto.eu.com
www.sto.com



Quality management system
Sto AG, DIN EN ISO 9001, reg.-no. 3651
Environmental management system
Sto AG, DIN EN ISO 14001, reg.-no. 3651
Plants in Stürlingen, Donaueschingen,
Tollwitz, Russelsheim

Subsidiaries abroad

Austria
Sto Ges.m.b.H.
A-9500 Villach
Phone +43 4242 33133-0
info@sto.at
www.sto.at

Belgium
Sto nv
B-1730 Asse
Phone +32 2 4530110
info.be@sto.eu.com
www.sto.be

China
Shanghai Sto Ltd.
201201 Shanghai
P.R. CHINA
Phone +86 2158 972295
www.sto.com.cn

Czech Republic
Sto s.r.o.
CZ-25170 Dobřejovice
Telefon +420 225 996311
info.cz@sto.eu.com
www.sto.cz

Denmark
Sto Danmark
DK-2650 Hvidovre
Phone +45 702 70143
kundekontakt.dk@sto.eu.com
www.stodanmark.dk

Estonia
Sto Finexter Oy
EE-11216 Tallin
Phone +372 675 0001
info@sto.ee
www.sto.ee

Finland
Sto Finexter Oy
FI-01730 Vantaa
Phone +358 207 659191
asiakaspalvelu@sto.eu.com
www.stofi.fi

France
Sto S.A.S.
F-95870 Bezons
Phone +33 1 34345700
sto.fr@sto.eu.com
www.sto.fr

Hungary
Sto Építőanyag Kft.
HU-2330 Dunaharaszti
Phone +36 24 510210
info.hu@sto.eu.com
www.sto.hu

Ireland
Sto Ltd.
IR-Dublin 12
Phone +353 1460 2305
info.uk@sto.eu.com
www.sto.ie

Italy
Sto Italia srl
I-50053 Empoli (FI)
Phone +39 0571 94701
info.it@sto.eu.com
www.stoitalia.it

Malaysia
Sto SEA Sdn. Bhd.
MY-81750 Masai
Kawasan MIEL Bandar
Phone +607 388 1737
www.sto-sea.com

Netherlands
Sto Isoned bv
NL-4004 KD Tiel
Phone +31 344 620666
info.nl@sto.eu.com
www.sto.nl

Norway
Sto Norge AS
NO-0664 Oslo
Phone +47 2207 2900
info.no@sto.eu.com
www.stonorge.no

Poland
Sto - ispo Sp. z o.o.
PL-03-872 Warszawa
Phone +48 22 5116-102
info.pl@sto.eu.com
www.sto.pl

Russia
Sto Russia
RUS-119180 Moskva
Phone +7 495 9741584

Singapore
Sto SEA Pte Ltd
SG-Singapore 575625
Phone +65 64 533080
enquiry@sto-asia.com
www.sto-sea.com

Slovak Republic
Sto s.r.o. organizačná zložka
SK-83104 Bratislava
Telefon +421 2 44648142
o.hollos@sto.eu.com

Slovenia
Sto Ges.m.b.H.
Podružnica Ljubljana
SI-1000 Ljubljana
Phone +386 1 4303525
m.jeric@sto.eu.com
www.sto.com/si

Spain
Sto Ibérica S.L.
E-08302 Mataró (Barcelona)
Phone +34 93 7415972
info.es@sto.eu.com
www.sto-iberica.es

Sweden
Sto Scandinavia AB
SE-58277 Linköping
Phone +46 13 377100
kundkontakt.se@sto.eu.com
www.sto.se

Switzerland
Sto AG
CH-8172 Niederglatt/ZH
Phone +41 44 8515353
sto.ch@sto.eu.com
www.stoag.ch

United Kingdom
Sto Ltd.
GB-Glasgow G52 4TG
Telefon +44 141 404 9000
info.uk@sto.eu.com
www.sto.co.uk

USA
Sto Corp.
Atlanta, GA 30331
Phone +1 404 3463666
sales@stocorp.com
www.stocorp.com

Information on international
distribution partners can be
obtained by calling us on:
Phone +49 7744 57-1131