



Sto-Rotofix Application Guide

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General information

It is to be noted that the details, illustrations, general technical information and drawings contained on the following pages only represent general suggestions and details which serve solely to outline the essential modes of functioning of the products concerned. No dimensional exact tolerances apply. The applicator/client is responsible for verifying the applicability and completeness of the system in the specific construction project concerned. Adjacent trades are shown in schematic form only. All specifications and details are to be adapted according to the on-site situation and do not constitute detailed or installation planning for the respective trades. The technical specifications and information on the products in the technical data sheets and in the system descriptions/approvals must be observed.

Introduction

General EWI installation advice

Check the state of the substrate precisely and then select the appropriate fixing system for the external wall insulation system (see page 5 for selector). The substrate must be pre-treated as appropriate to the system.

Measure the correct temperature and given building moisture before application. The lowest temperature allowed for the application of most Sto products is 5°C. Sto QS products are available for winter working to a minimum application temperature of 1°C.

Before work begins, doors, windows, shutter boxes and horizontal covers (e.g. window sills) must be in place and weather proofed.

- Before installation, the required materials must be organised according to all respective stages of the installation process
- Materials stored on site must be kept in dry conditions
- All on-site factors, including projections, connections, expansion joints and unevenness must be clarified in advance
- Information on the use, installation and storage of system components can be found in Sto technical data sheets and detailed drawings (available on request)
- The applicable standards and regulations are to be observed at all times, as well as the official approval for the system
- In accordance with the official approval, all system components must be sourced from Sto Ltd

If you have any queries regarding installation, please refer to your Sto Sales or technical representative.



Introduction

Sto-Rotofix Mini and Plus

For a uniquely strong, fast and flexible fixing system, turn to RotoFix

Sto-Rotofix is a unique helix spiral fixing system that's stronger, quicker to install and has better levelling capabilities with fewer components than any comparable system. Ideal for use when faced with uneven surfaces and irregularities, Rotofix creates seamless render facades whilst still providing a cavity for NHBC requirements.



- Rotofix enables facades to be installed securely with high wind load resistance
- Rotofix systems allow up to 19mm of deflection per floor – no need for unsightly expansion joints on the surface.
- Rotofix allows the easy formation of curved facades with none of the hassle experienced with rail systems.
- Rotofix allows for installation security as the number and position of fixings can be viewed during installation ensuring the correct number of fixings are used.

Product Selector

Rotofix Plus is the perfect fixing for ultimate wind load resistance and large cavities using mineral fibre or EPS insulation.

Rotofix Mini provides a great economical solution with good resistance to wind loads in thinner mineral fibre or EPS insulation

Concrete/uncoated dense masonry. Cement particle (CP) board 12mm thickness.

Insulation		Cavity range (mm)	Suitable Rotofix Fixing
EPS K90 square edge	60-120mm	20-30	Rotofix Mini 80T Yellow
EPS K90 tongue & groove	80-140mm	10-30	Rotofix Plus 120T Green
	80-200mm	10-70	Rotofix Plus 160T Black
Mineral Fibre Board MHD	60-100mm	20-30	Rotofix Mini 80T Yellow
	80-140mm	10-30	Rotofix Plus 120T Green
	80-200mm	10-70	Rotofix Plus 160T Black

Positioning tool requirement: Yellow (Mini) Grey (Plus)

Drill bit requirement: Masonry drill bit
HSS drill bit for steel
(Multi-construction drill bit included with Mini)

Anchorage length: 50mm into solid substrates.

Lightweight concrete block (aerated). Rendered dense masonry/concrete.

Insulation	Cavity range (mm)	Description and colour
EPS K90 T&G	10-30	Rotofix Plus E1 (green)
	10-70	Rotofix Plus E100 (black)
MFB	10-30	Rotofix Plus E1 (green)
	10-70	Rotofix Plus E100 (black)

Positioning tool requirement: Grey (Plus)

Drill bit requirement: Masonry drill bit 10mm
(without hammer action for aerated block)

Anchorage length: 70mm plus render thickness (max 30mm) if req'd.

Installation

Insertion of Sto-Rotofix Spirals into Insulation – Rotofix Mini

In order to aid quick and easy installation it is advised that you take the following steps which are applicable to either EPS or Mineral Fibre insulation;



Create a bench support, insulation packs are ideal for this.

A piece of timber or building board with EPS packers should be used on the top of the bench to ensure a cavity (of 20-30mm) behind fixing locations. This will allow quick, full and consistent insertion of the spiral units.



Predrill holes into insulation.

Using the Rotofix Mini Jolley tool, in a slow speed drill, predrill holes into the insulation board as per the Sto fixing pattern for Rotofix Mini (see page 15-17). An edge distance of at least 150mm should be maintained for each fixing into the insulation board. The standard fixing pattern equates to 6 fixings per 1200mm x 600mm board. Please note that some adjustment of dimensions within the fixing area (max 50mm) is allowed to enable installation around steel stud sections.



Insert the Rotofix Mini spiral.

Insert the yellow Rotofix Mini spiral onto end of the jolley tool and press firmly into the predrilled hole. The spiral blade edge should be in full contact with the insulation board face (slightly indenting the surface).



Drive the spiral into the insulation.

Using the drill on a slow speed setting, drive the spiral into the insulation until it hits the stop on the bench (giving the 20-30mm cavity behind the board). Repeat this operation for all spiral units in the board.

Note: It is important that excess insulation debris is cleared from the rear of the board before handing to wall installation team.

Installation

Insertion of Sto-Rotofix Spirals into Insulation – Rotofix Plus

Sto-Rotofix Plus spirals can be inserted into the insulation boards either using the bench support (as described for Rotofix Mini) or directly against a wall.



Create a recess in the insulation.

For EPS insulation over 100mm thickness, we recommend using a countersink milling tool to create a recess in the insulation.

For mineral fibre board (MFB), a recess is only recommended post-installation if the surface is damaged



Drilling a hole through the insulation.

Using the green jolley tool, drill a hole through the insulation board, this helps to reduce debris behind the cavity, which is especially important for MFB installation.



Screw Rotofix spiral plug into insulation.

Ensure the drill hole is free of debris, then screw the spiral plug through the insulation until it touches the substrate using a suitable slow speed drill. The Rotofix Plus must always be inserted at a 90° angle to the insulation board.

Installation

Drilling into substrate

The following instructions apply to Rotofix Mini and Rotofix Plus.



Drill hole into substrate.

Using the correct drill bit, drill a hole into the substrate through the hole in the Rotofix spiral plug. Use a drill stop to set anchorage depth.

While the drill bit is turning, ventilate the hole several times.



For cement particle board:

Using a suitable drill with a 10mm HSS drill bit (without hammer action), drill through CP board / steel.

For masonry:

Use a suitable drill with a 10mm hammer drill bit to suit length. Do not use the hammer drill function to hollow brick/block. See article list on page 15.

Embedment into masonry:

Allow for 50mm embedment.

For Rotofix Plus E1/E100 fixing into existing render: Allow 70mm into sound substrate + render thickness.

With Rotofix Mini a multi-construction drill bit is supplied.

Installation

Placing the screw dowel

The following instructions apply to Rotofix Mini and Rotofix Plus.



Insert screw dowel.

Insert the appropriate screw dowel fixing into the plug by hand. Ensure the fixing is correctly placed using the appropriate Rotofix positioning tool. It is important that the Rotofix screw dowel is located in the substrate hole before hitting the positioning tool with a hammer.

Positioning tools.

Grey positioning tool.

For Rotofix Plus 120T/160T fixing into cement particle board and unrendered masonry (50mm anchorage).

Yellow positioning tool.

For Rotofix Mini 80T fixing into cement particle board and unrendered masonry (50mm anchorage).

Installation

Fixing Rotofix Mini and Plus



Screw fixing.

Screw and secure the fixing into the substrate using a suitable power screwdriver/drill with the appropriate Rotofix jolley tool.

Warning!

Do not secure the fixing if the wall temperature is below 0°C.



When fixing into CP board the screw dowel must be fully expanded behind the CP board.

Installation

Adjusting Rotofix Mini and Plus



Align the insulation.

Align the insulation as required for the project using string lines.

Please refer to the Product Selector on page 5 for maximum cavity sizes and insulation requirements.

Once insulation thickness exceeds 140mm the Rotofix Plus black spiral should be used.

Installation

Finishing



Fill the recess.

For recessed holes fill the gap using a Sto-Thermocap EPS/MFB pushed into place.

For MFB or EPS with a thickness of 60-90mm, do not recess. Use PU foam or MFB offcuts to rectify minor holes, generated by fixing/placement of Rotofix fixing.

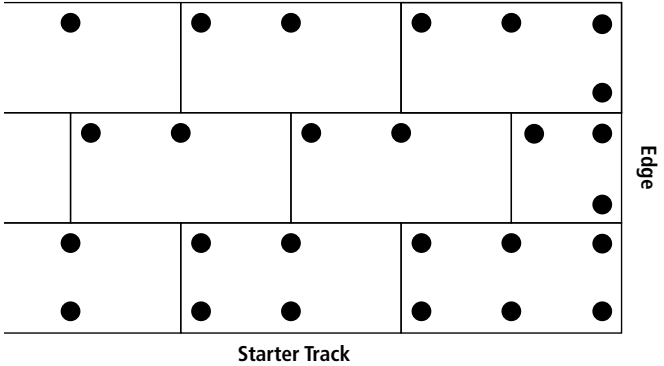


Foam the joints and rasp as required.

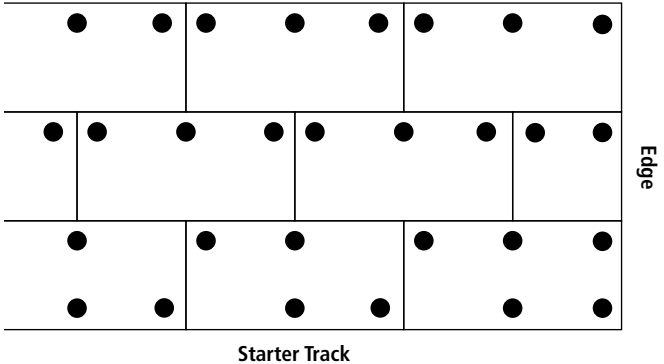
For EPS systems, apply PU foam to all joints, allow to cure and finish with a rasp as required to achieve a smooth, uniform surface.

Fixing Pattern (EPS) Rotofix

EPS (4 fixings / m²)*



EPS (6 fixings / m²)*



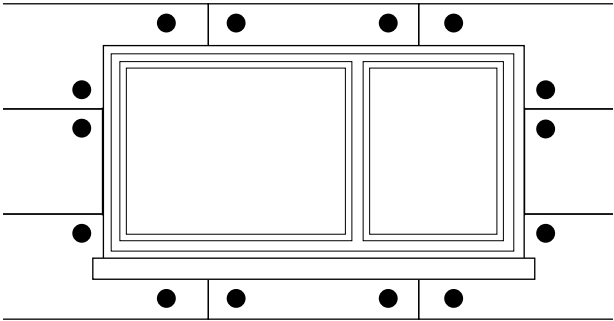
Fixing pattern for K90 T&G EPS

Grade	K90
Size	1000 x 500mm
Thickness	80-200mm (standard)

*Use fixing calculator tool to determine average fixing rates per m²

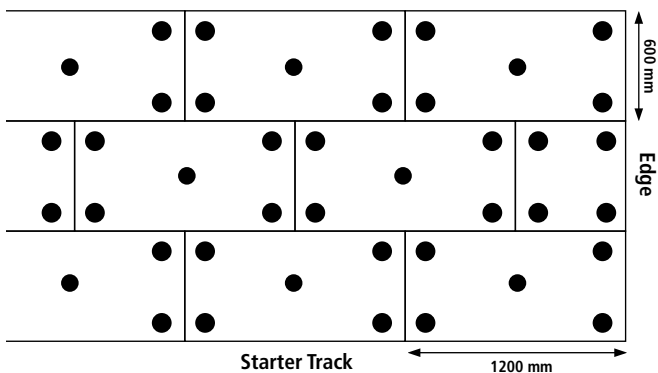
Fixing Pattern (EPS)

Window/door fixing pattern (EPS/T&G Boards)



Fixing Pattern (MFB) Rotofix

RotoFix Plus MFB MHD 80 – 140mm*



Fixing pattern for MFB Square Edged board

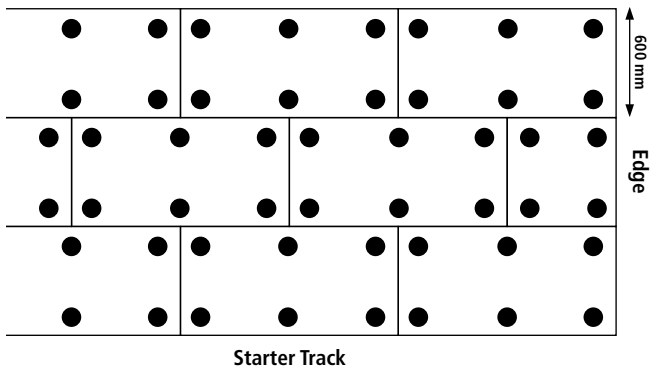
Size 1200 x 600mm

Thickness 80-140mm

*Use fixing calculator tool to determine average fixing rates per m²

Fixing Pattern (MFB) Rotofix and Rotofix Mini

Rotofix Mini MFB MHD 60 – 100mm
Rotofix Plus MFB MHD 140 – 200mm

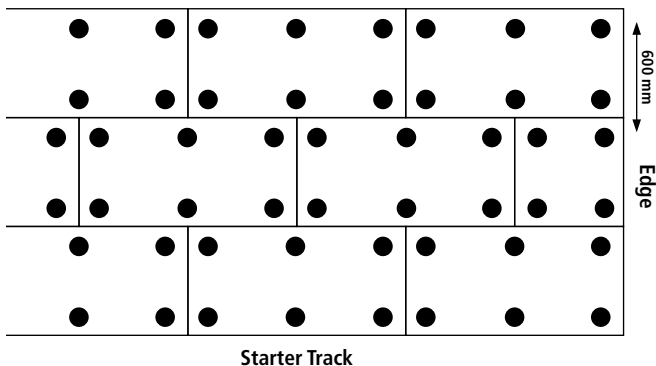


Fixing pattern for MFB

Size 1200 x 600mm
Thickness 60-100mm (Mini)
140-200mm (Plus)

Fixing Pattern (EPS) Rotofix and Rotofix Mini

Rotofix Mini EPS K90 60 – 120mm



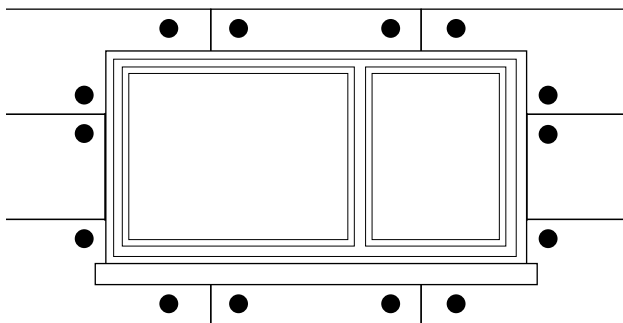
Fixing pattern for K90 EPS Square Edge

Size 1200 x 600mm

Thickness 60-120mm

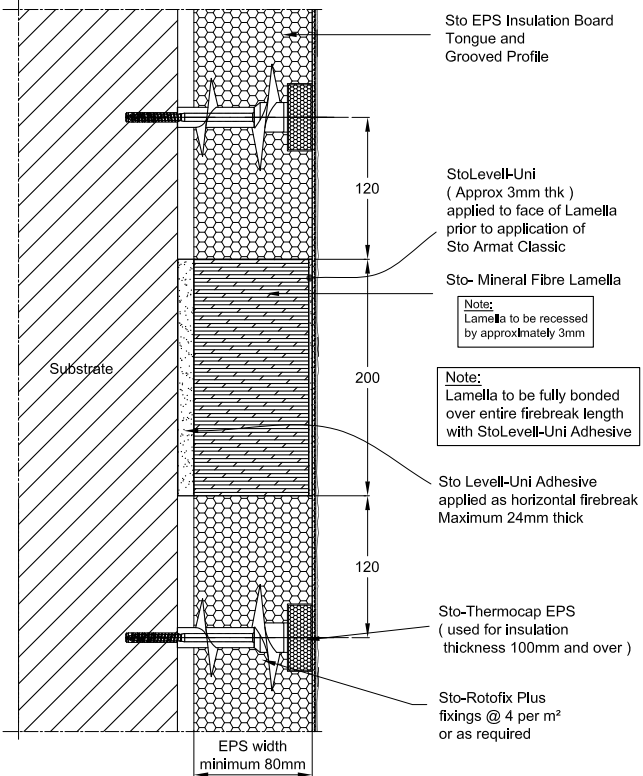
Edge Distance 150mm

Window/door fixing pattern (EPS and MFB square edge boards)



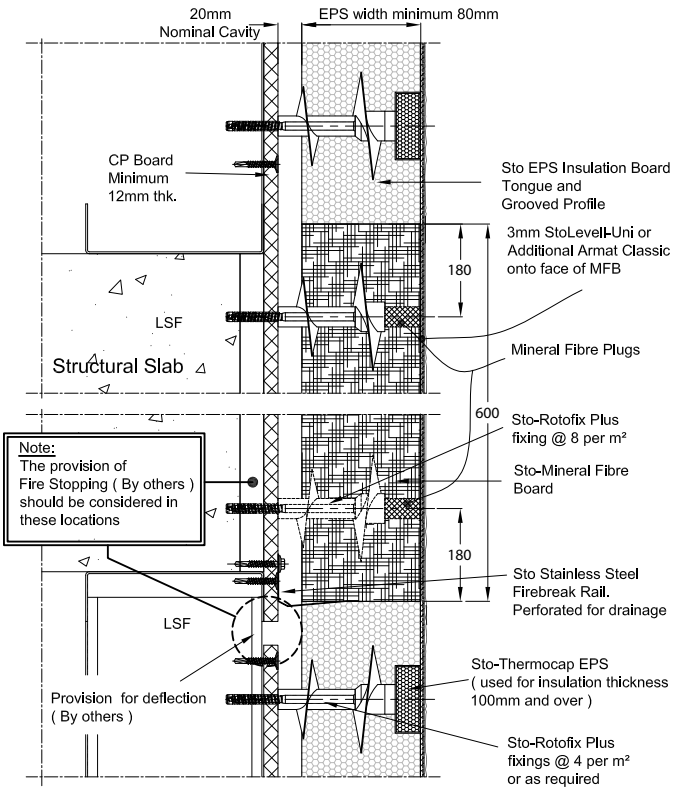
Fixing Pattern (Firebreaks)

Typical detail for adhesive firebreak (Rotofix Plus shown)



Fixing Pattern (Firebreaks)

Typical detail for cavity firebreak (Rotofix Plus shown)





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