



The Guide to Extension Kitz Installation.

“Build it faster, warmer, stronger and smarter”TM



sales@extensionkitz.co.uk



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www.extensionkitz.co.uk

PCL Building Products Ltd

1. General Information on Extension Kitz® SIP System

This manual covers the details commonly encountered with the structural insulated panel (SIP) system in residential and commercial construction applications. It is intended as a general guide only.

Be sure to follow the specific instructions shown for the Extension Kitz® System and manufacture drawings as well as the manufacturers specifications of any other building products that combine with the Extension Kitz® SIP System including all applicable building regulations.

This manual can be used in conjunction with training provided by Extension Kitz® Advisors, Sales Representatives and/or the Extension Kitz® Suppliers along with the architectural and engineering drawings and specifications.



2. Extension Kitz® SIP System

Structural Insulated Panels (SIPs) represent a cutting-edge, sustainable, and cost-effective solution for modern construction needs.

Extension Kitz® offers a streamlined approach to construction with panels that are pre-cut, pressed, and dressed for immediate installation, significantly reducing labour time and costs. Featuring pre-fabricated corner sections, pre-fitted DPC, membrane, external batten and optional enhancements like brick slip former boards, these kits ensure a hassle-free assembly process.

Known for their high thermal efficiency and impressive strength, SIP systems outperform traditional building methods.

Their superior thermal properties exceed regional building standards, boasting a 0.15 U-value, which enhances energy efficiency. Additionally, the reduced wall thickness of 180mm compared to traditional 370mm walls increases usable interior space.

With the capability to be erected and made watertight in just 3-4 days, these systems facilitate quicker project completion.

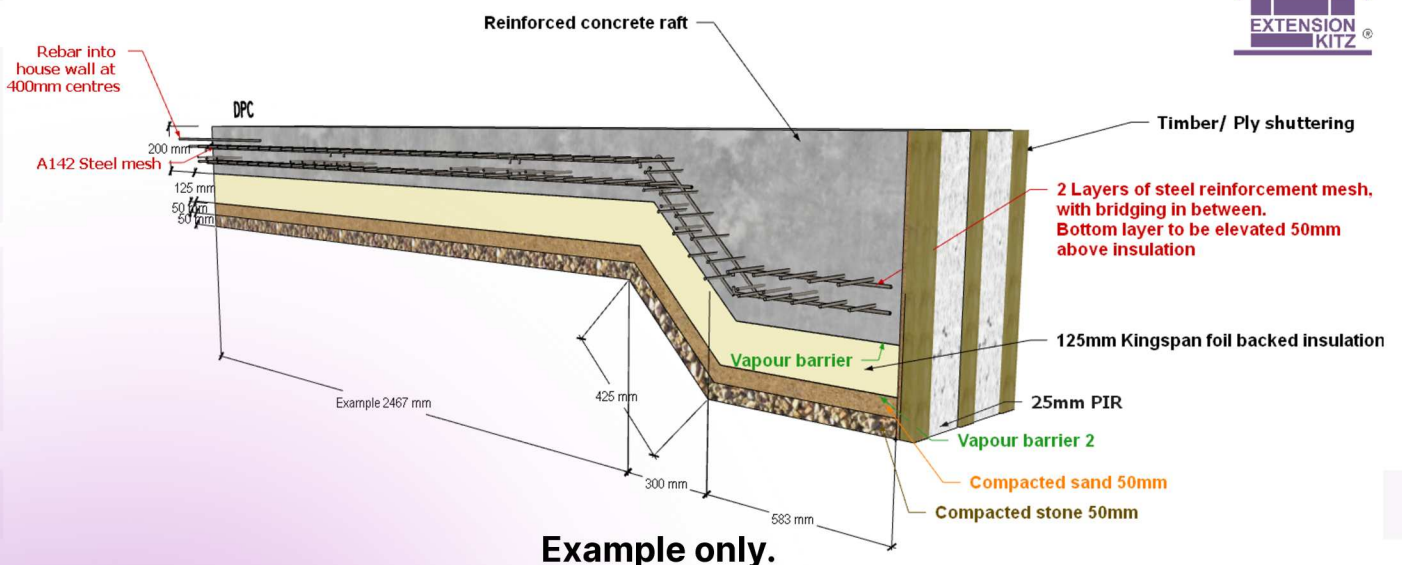
Eco-friendly by design, SIPs possess a zero-ozone depletion potential and are free from harmful chemicals.

Backed by precise engineering and nationwide delivery, Extension Kitz® presents a reliable, sustainable alternative for construction projects.

Installing SIP (Structural Insulated Panels) for extensions can significantly enhance the energy efficiency and structural integrity of a building. Here is a concise guide to help you with the installation process:

- 1. Planning and Permits:** Before starting, ensure you have all necessary building permits and that your project plans comply with local building codes. Consider consulting with a structural engineer to verify your design. Where necessary check you have full risk assessments, method statements, utilisation of suitable and appropriate lifting equipment to ensure a safe installation.
- 2. Foundation Preparation:** Ensure the foundation is level and properly cured. SIP panels require a solid, flat base to install correctly. Any unevenness can cause alignment issues later on.
- 3. Panel Preparation:** Inspect the SIP panels for any damage before installation. Familiarise yourself with the layout plans, ensuring you know the correct order and orientation of each panel.
- 4. Electrical and Plumbing Considerations:** Plan and pre-cut channels for any electrical wiring or plumbing that needs to pass through the panels. This is typically done before the panels are fully secured.
- 5. Inspection and Approval:** After installation, have the work inspected to ensure compliance with safety and quality standards. Make any necessary adjustments as recommended by the inspector.

By following these steps, you can achieve a robust and energy-efficient SIP panel extension. Always refer to the manufacturer's guidelines for specific instructions and safety practices during installation.



Before We Start...



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Tools required

Essential tools required for an Extension Kitz® installation.

Installing a Structural Insulated Panel (SIP) extension requires a variety of tools to ensure precision and safety. Essential tools required include a hand saw for trimming timbers and panels if required, a cordless drill with drill bits and driver bits for assembling panels and securing them in place. A screw gun can be used to fasten the panels to the structure efficiently. A level and a measuring tape are crucial for ensuring accuracy in alignment and dimensions, whilst a pencil or chalk line helps mark straight lines for cuts and alignment.

Additionally, a pneumatic or electric foam gun is needed for applying expanding foam to seal joints between panels, ensuring airtightness and insulation.

Personal protective equipment, such as safety goggles, gloves, and hard hats, is also necessary to maintain safety standards during installation.

1.



Hand Saw

2.



Soft Mallet

3.



Drills

4.



Staple gun & 10mm staples

5.



Spirit Level

6.



Tape Measure

7.



Utility knife

8.



PU Foam Gun

9.



Pencil

PPE



Walls

The building design and materials have been calculated and tested. It is the responsibility of the project manager and installer to ensure correct methods are followed for construction. Bracing should be used until walls are joined completely. Props should be used when constructing a roof. Panels should be screwed and glued with appropriate adhesive for strength and airtightness as per guidelines. Check the fitting of each panel before gluing and fixing into its final position.

Step 1.

A conservatory replacement will require the removal of its roof, frames & dwarf walls down to the base. Ensure that the base area is flat and free from debris.

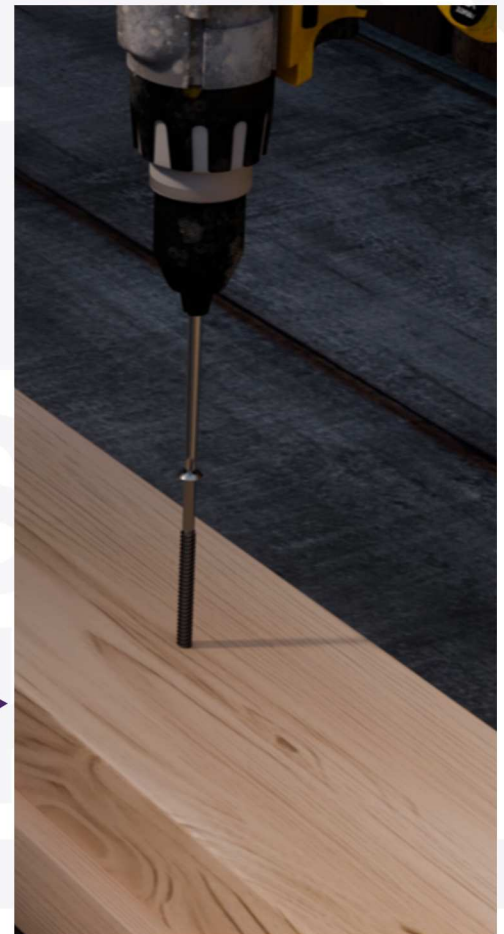
Any foundations, concrete float or Screw Piles, should be level and substantial enough for the intended use of the building on it and built to advised specifications. Extension Kitz® do not supply materials for foundations or screw piles, they would need to be obtained externally if required.

Step 2.

Sole plates.

Set the sole plates as per location plans provided and set to base edge as per specification and finish. Fix the pilot drilled Sole plates onto the base and into position using supplied 100mm concrete fixing screws. Where Screw piles and subframes may be used 70mm - 100mm wing tipped self cutting screws can be supplied. Please contact sales@extensionkitz.co.uk for more information on bases for your project.

Note: DPC is pre-fitted to the sole plates as standard.

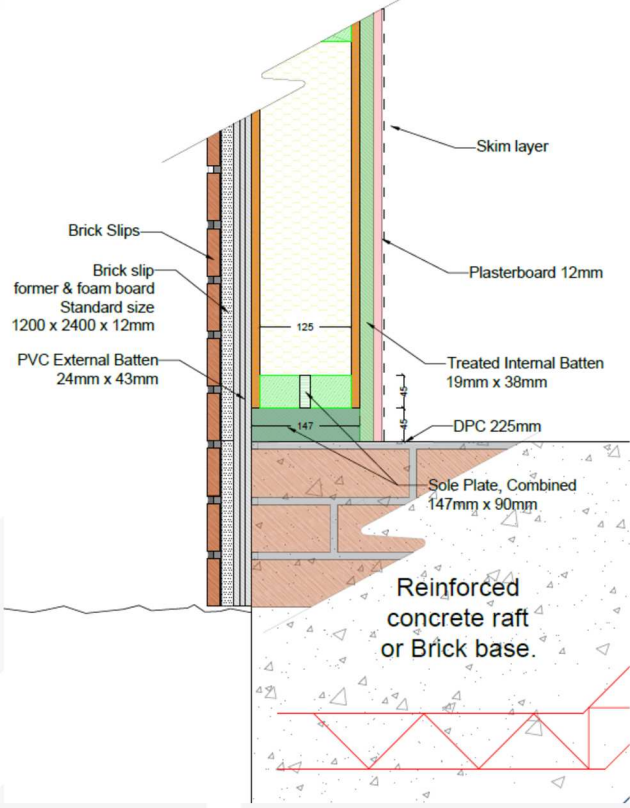


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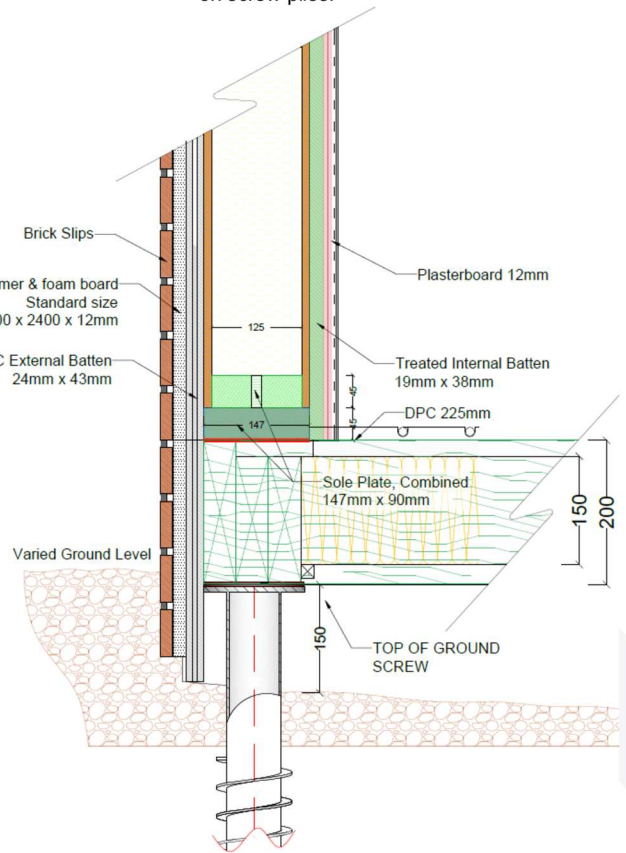
Sole plate placement specifications

Installation ...

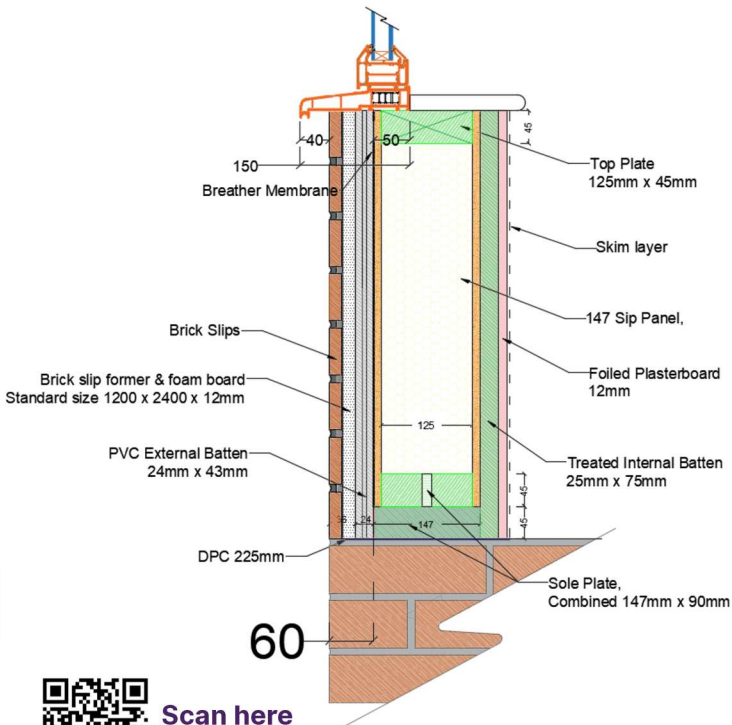
147 SIP Panel, Brick slips on concrete raft or brick base



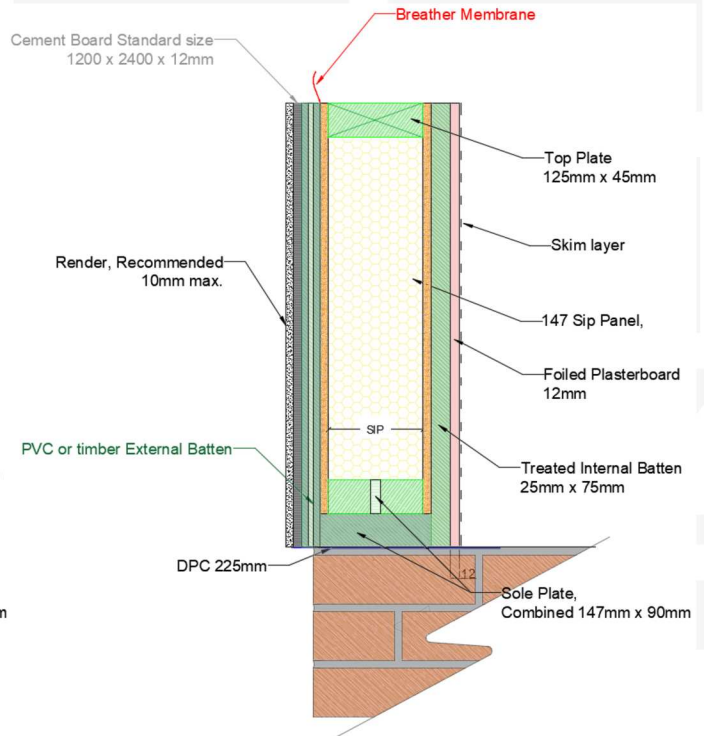
147 SIP Panel, Brick slips on screw piles.



147mm Sip Panel, Brick slips Flush with External Base bricks. Sole plate set back 60mm from Base edge.



147mm SIP panel and Render board. Sole plate flush with base edge



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Walls

Step 3.

Wall Plate timbers.

When installing wall plates, it's essential to position them correctly on top of the sole plate, ensuring they sit flush against the house wall. The wall plate must be plumb on both axes. If the house wall is out of plumb timber fillets may be required. This ensures structural integrity and reduces the risk of misalignment. Pilot drilling for screws at a maximum of 400mm centres for securing the wall plate, use the supplied 100mm concrete fixing screws to fix the Wall plate into position.

Note, the Wall plates come with pre-fitted Damp Proof Course (DPC) as standard. This feature is critical in preventing moisture from rising into the structure.



Installation ...



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Walls

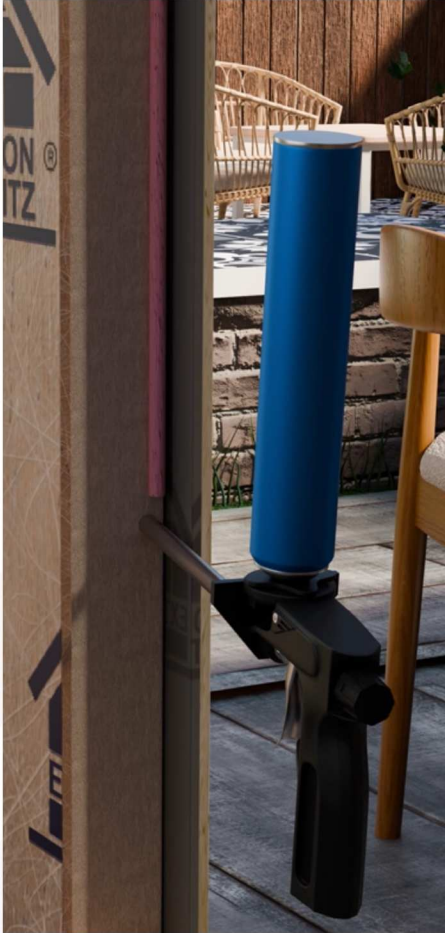
Step 4.

First SIP panel.

Using the Location plan for reference. Apply adhesive foam (Foam gun supplied) into and along the rebated house wall facing edges of the SIP panel and along the top of the sole plate.

Fit the SIP panel over the sole plate and tight up to the wall plate. Tap tight into the rebate using a rubber mallet.

Fix in place using the supplied 50mm screws at 300mm centres, horizontally, vertically, internally and externally .



Step 5.

SIP Splines.

Splines fit into the rebate to join panels together vertically and horizontally where no openings are required.

Where possible depending on structure these will be pre-fitted. If they are not pre-fitted, before fitting the Spline, apply adhesive foam to both receiving SIP panels and on top of the sole plate. Tap Spline tight into the rebate using a rubber mallet.

Fix panels to the splines using supplied 50mm screws, vertically at 300mm centres.

Note: Timber Splines when required are not pre-fitted. Installation is the same process as a SIP spline.



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Walls

Step 6.

Create the SIP wall

Referring to the Location plan for placement. Begin by taking the next SIP panel and applying adhesive foam thoroughly along the rebated inward side edges, as well as along the top surface of the sole plate. Next, position the SIP panel over the sole plate, ensuring it aligns tightly against and over the spline. Use a rubber mallet to gently tap the panel into place, ensuring it covers the spline and fits snugly against the adjacent panel. Once the panel is securely positioned, fix using 50mm screws at 300 centres, horizontally, internally and externally. Repeat the process described in Steps 5 and 6 to continue building the SIP wall.



Installation ...

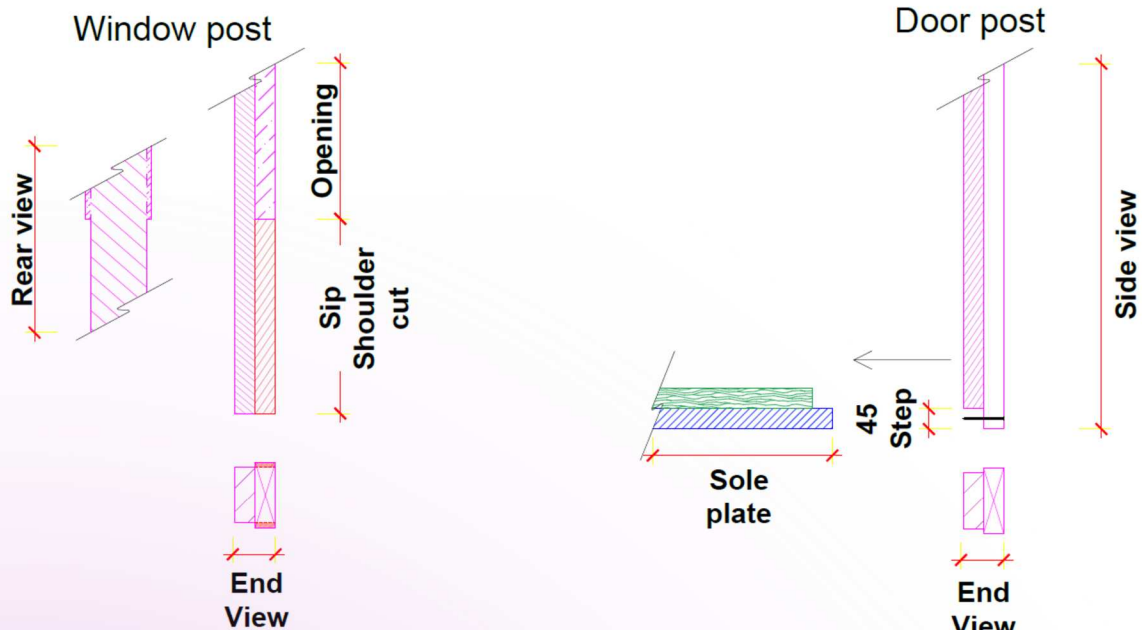
Step 7.

SIP Wall Door and Window Posts.

Timber Posts are fabricated for use where openings are required.

To fit a door post begin by ensuring that the bottom of the door post is stepped properly to rest on top of the sole plate. Apply adhesive foam along the internal recess of both the SIP panel and the sole plate to secure the connection. Position the post so that its stepped section aligns correctly with the sole plate, ensuring a snug fit. Use a rubber mallet to gently tap the post into place. Once the post is firmly seated, use the supplied 50mm to secure it in position internally and externally at 300mm centres vertically through the SIP into the the post. Use 90mm Universal screws (supplied) to fix through to connecting timbers where required.

Window Posts will have a shoulder cut to take the next SIP panel as per location plan but have no step at the base. Fix using the same process and fixings as the door post.



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Walls

Step 8.



Corner Section.

These prefabricated units are created to fit as outlined in the location plan to aid in reducing construction time.

To install a corner section, adhesive foam should be applied to the sole plate, ensuring a secure fit when the section is placed.

Fix into position at the base of the section internally and externally by using 50mm screws at 300mm centres or less.

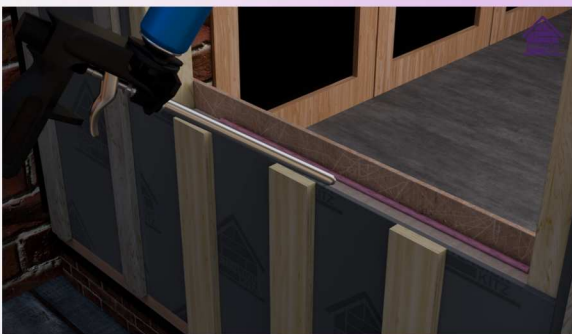
Please note that some corner sections are heavier and may require a two-person lift to ensure safe and efficient handling. Always refer to the manufacturer's guidelines and safety protocols during installation.

Step 9.

Lintels

Prefabricated lintels are structural components designed to bridge large openings, such as those above doors and windows.

For installation, first apply adhesive foam to both sides of the opening, covering the area on top of the already installed door or window posts. This adhesive foam should also be applied into the internal recesses of the Structural Insulated Panels (SIP). The lintel itself is fabricated to fit precisely on top of these posts and slide seamlessly into the SIP panel recess. Once positioned correctly, secure the lintel using 50mm screws.



Step 10.

Top studs.

Top studs fit into the top of a SIP panel for a window opening and depending on the roof system into the top of the SIP panel wall.

Apply a continuous bead of adhesive foam along the internal recess at the top of the SIP panel where the top stud will sit. Carefully position the top stud into the recess, ensuring it aligns properly. Use a rubber mallet to gently tap the stud into place. Once in position, fix the stud securely with 50mm screws spaced evenly at a maximum of 300mm centres internally and externally. For extra strength use 90mm screws to fix diagonally into the adjoining timbers.



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Walls

Step 11.

Eaves Beam

When installing a flat roof extension using Structural Insulated Panels (SIP), the eaves beam plays a crucial role in providing structural support and completing the roof assembly.

The eaves beam is designed to fit snugly into a recess at the top of the SIP walls, ensuring a seamless connection. To achieve this, adhesive foam should be applied along the top recess of the SIP walls and any necessary lintels to secure the beam in place. Once the adhesive is applied, the eaves beam is fixed using 50mm screws, at 300mm centres or less both internally and externally from through the SIP panel and into the eave. Use 150mm universal screws (supplied) to fix through to adjoining eave timber.

The eaves beam will be fabricated ready to take the rafters at preset positions.

Fit the roof as per the Extension Kitz® Orangery installation guide.



External Finish.

Extension Kitz® if required, currently can pre-fit brick slip foam-backed former boards only and provides comprehensive support for the installation of Structural Insulated Panels (SIP) kits.

While this guide does not cover the external finish options such as brick slips or claddings, these materials are typically available directly from their respective suppliers, who can offer detailed guidance on their installation.

If you need further assistance in obtaining these products or advice on their application, our office team is ready to help.

We recommend fitting the brick slip foam-backed boards, render boards and claddings on-site to minimize any risk of damage during transportation, ensuring a smooth and successful installation process.



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