

UniSIPS

Structural Insulated Panels

PIR Insulation

Walls & Roofs

High-performance, energy efficient, structural building system



Xtratherm[®]

More than insulation



Expect More

For over 30 years Xtratherm has led the way in developing innovative thermal solutions, through advancement in product performance and detailing, backed by a team that understands the technical issues and site practices in the UK & Ireland.

UniSIPS has been developed by UNILIN as a high performance Structural Insulated Panel System (SIPs) providing advanced thermal, acoustic and air tightness performances in a lightweight insulated panel. The UniSIPS solution for walls, floors and roofs provides low energy results for domestic, commercial and educational projects.

As part of the Unilin Group, Xtratherm has introduced UniSIPS to the UK and Irish construction industry. We provide a uniquely innovative product that offers many advantages for both the SIPs processors/OEMs and for the end-user. UniSIPS panels are manufactured under strict quality control procedures in one of the most advanced facilities in Europe. In-line fabrication ensures consistency and unrivalled quality of performance backed by extensive 3rd party certifications.

- Manufactured with PIR providing very efficient U-values
- Self-supporting and load bearing, quick and easy to assemble
- Available with Insulated lining for Passive Performance
- Excellent Thermal Bridging performance
- Offers design flexibility
- Wide dimension variability
- 'Just in time' procurement

Our Production Facilities

Xtratherm owns and operates two state-of-the-art production facilities in Ireland and the UK providing security of supply for a range of insulation products. We have the experience and expertise to deliver quality, whatever your market or size of project.



Xtratherm[®]
More than insulation

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Testimonials



“We have worked with Unilin over the last couple of years developing our SIP building system.

We carefully selected their products over several other manufacturers because of their quality and ability to meet our exacting requirements.

We hope that as our company expands in the UK we will be able to grow our relationship with Xtratherm to enable us to find new and innovative solutions to building and green construction projects.”

**Carl Dodd, Architectural Director
for Property Revolutions Limited**



“Having worked with Unilin for many years we strongly believe their products to be the best available in the current market place. The panels give a high thermal efficiency and greatly reduce air leakage; they are the perfect solution when trying to achieve higher levels of sustainability. “

**Ian Johnson, Director Tophaven Properties
Northampton Limited**



“The pair of semis was fully weatherproof within one working day, whereas a traditional room-in-the-roof house type would take approximately 3 weeks from roof plate to being fully covered. In total I would estimate that approximately 10 working days were saved by the Unilin method of construction.”

**Construction Director,
David Wilson Homes, UK**



“At an early stage in the design development, it was clear that the roof deck of the new Performing Arts Building at Parliament Hill School would need to be light in weight and with a degree of prefabrication. Site, time, and cost constraints demanded a simple and effective solution. Unilin offered a structural insulated roof panel to meet our demands while also providing a factory finish to the exposed spruce plywood soffit.”

**Construction Director,
David Wilson Homes, UK**



“We have been extremely fortunate to have worked with Unilin on our CarbonLight Homes project. They are a well-respected specialist within the construction industry and their support has been vital to the success of the project in ensuring that the homes achieve a high fabric efficiency and a recognised zero carbon status under the UK Government’s new definition. We are extremely proud of what we have achieved together.”

**Paul Hicks, Design and
Construction Coordinator for the
VELUX Model Home2020 project
in the UK**

Product Benefits

Xtratherm UniSIPS is the ideal product when considering structural insulation solutions for wall, floor and roof panels. Technically advanced and thermally efficient, the load bearing panels provide a lightweight and economical solution to facilitate modern methods of construction.

In Walls, UniSIPS can achieve U-values as low as 0.10W/m²K to suit bespoke dimensions, meet the highest tolerances and provide an airtight solution with excellent thermal bridging results when used with Xtratherm lining boards.

Roof Panels can be pre-finished or ready for decoration, with a special acoustic panel for improved interior sound absorption. There is an Xtratherm panel for every application. UniSIPS panels are suitable for any type of roof covering – eg, traditional tiles, slates, concrete tiles, zinc etc, and for roof pitches 0° up to 60°. This versatile system is suitable for both refurbishment and newbuild projects and has a full warranty. The panels comply with all European standards for quality control and thermal performance, meeting and exceeding Building Regulations requirements, and with BBA Certification (No. 02/3897).

Unilin have been producing SIPs in Europe for over 30 years, where over 90% of the Dutch market, 25% of the French and 15% of the Belgian market use Structural Insulated Roof Panels. They are rapidly being adopted by the UK and Irish Construction Industries.



Benefits for the client:

- The Xtratherm structural insulated panel is a high quality product that complies with all European standards – you can be assured it will be an asset to your project.
- Its simple uncomplicated design means it is durable, environmentally sound and cost effective. Its speed of construction means you move in quicker!
- By virtue of its structural nature and built in insulation you can create more roof space instantly.
- We have extensive technical knowledge and UK building partners, ensuring that our system solutions meet all relevant performance and Building Regulations requirements. You can have confidence that we will provide the “smart living” edge to bring distinction to your project.

Benefits for the specifier:

- Xtratherm is a large international manufacturer with the support and technical backup that you need to bring your project to life.
- It is technically a superior energy efficient product and complies with the most stringent UK building regulations. It is inherently airtight by design, not by complex details and unworkable specification clauses.
- Our range of products and solutions is suitable for virtually any project you can dream of. Contact us early in the design phase and we will help you produce cost-effective, fast track, buildable, environmentally sound projects that clients and builders want.

Benefits for the contractor:

- The Xtratherm way of building is a result of over 35 years of refining and developing highly insulated and innovative panels all over Europe and the UK.
- It is simple, practical, safe and fast to build with the correct planning and tools. That means it is cost effective, you don't need special trades, or tools that you don't already use.
- It is trouble free and watertight as soon as it's built – because it's a sealed roof/wall that avoids thermal bridging problems and condensation.
- You keep everybody happy by delivering on your promise to finish on time and on budget!

Product Detailing

UniSIPS advantages

- Can be used to create highly energy efficient buildings
- Can achieve air leakage values of 3 or better
- Controlled factory production of kits, for site assembly, minimises site wastage
- Reduced construction time on site, due to fast track panelised system
- Complete structural shell, built to airtight and weathertight stage, enables following trades to start sooner
- Defects are vastly reduced due to factory controlled manufacturing, design and engineering processes

Design considerations

The following are examples of external cladding options for UniSIPS external walls

- Lightweight render coating carried on proprietary boards, supported on a minimum 25mm treated timber batten
- Outer leaf brickwork or stonework, ensuring a minimum 50mm cavity, tied with conventional timber frame wall ties
- Vertical or horizontal timber or composite planks, on treated 25mm timber battens
- Brick slip systems, in conjunction with manufacturers installation instructions

Other wall cladding details can be used, for specific requirements, please contact our technical services department

The following are examples of external cladding for Roofs

- Tiles onto treated tiling battens
- Slates onto treated timber battens
- Profiled metal sheets onto treated battens
- Flat roof membranes strictly in accordance with manufacturers details

Other roof coverings can be used, for specific requirements please contact our technical services department.

Internal walls

Load bearing and non-load bearing walls are constructed by our approved contractor network, usually from 89mm Kiln dried timber. For walls constructed from UniSIPS that will require services installed, it will be necessary to create a batten cavity with 25mm battens and plasterboard, alternatively, two layers of plasterboard fixed directly to the UniSIPS, chasing out the first layer of plasterboard to carry the services.

Party and separating walls

Robust Standard detail E-WT-1/2 is normally used

Fire stops

Current building regulations/ standards should be considered with regard to requirements for the provision of fire stops

Fire performance

The UniSIPS system in the construction detailed below, when subjected to BRE Global Fire test to British standard EN1365-1 2012 achieved 90 minutes fire performance.

Loaded wall incorporating UniSIPS 174mm clad on exposed face with 2 layers of 15mm type f plasterboard and incorporating 2 electrical sockets.

The results were as follows:

- Load bearing capacity 90 minutes
- Integrity cotton pad 90 minutes
- Sustained flaming 90 minutes
- Gap gauge 90 minutes
- Insulation 90 minutes

Thermal bridging

UniSIPS achieve less repeated thermal bridging, due to the continuous nature of the insulation. There are some unavoidable thermal bridges, where Structural timbers or steels are necessary to support the building point loads.

Please contact our Technical department for design considerations.

Passivhaus

Passivhaus standards can be achieved by installing additional Xtratherm insulation boards, to the internal or external face of the UniSIPS

Please contact our technical department for guidance.

Thermal Performance

Xtratherm Roof Panels



| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.23 |
| 115mm | 12mm | 139mm | 0.19 |
| 150mm | 12mm | 174mm | 0.15 |
| 180mm | 12mm | 204mm | 0.13 |
| 205mm | 12mm | 229mm | 0.12 |

| Roof build up | Thickness |
|-------------------------------|-----------|
| Slate/tile | 10mm |
| Tiling batten | 38mm |
| Breathable membrane | - |
| Insulated roof panel | See above |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

| |
|--|
| Fixings 4 per m2 stainless steel cross sectional area 18mm2 |
| Correction - 1% Timber |

The above U-Value calculations should be used as guidance only

Thermal Performance

Xtratherm Wall Panels

Wall type 1 (Brick)

| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.23 |
| 115mm | 12mm | 139mm | 0.19 |
| 150mm | 12mm | 174mm | 0.15 |
| 180mm | 12mm | 204mm | 0.13 |
| 205mm | 12mm | 229mm | 0.12 |

| Wall build-up | Thickness |
|--------------------------------|-----------|
| Brick | 102.5mm |
| Cavity | 50mm |
| Breathable membrane (Standard) | - |
| Insulated wall panel | See above |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

The above U-Value calculations should be used as guidance only

Xtratherm Wall Panels

Wall type 2 (Brick & Foil membrane)

| PIR Thickness | PSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.21 |
| 115mm | 12mm | 139mm | 0.17 |
| 150mm | 12mm | 174mm | 0.14 |
| 180mm | 12mm | 204mm | 0.12 |
| 205mm | 12mm | 229mm | 0.11 |

| Wall build up | Thickness |
|---|-----------|
| Brick | 102.5mm |
| Cavity (Low E) R Value 0.65m ² W/k | 50mm |
| Breathable membrane (Reflective foil) | - |
| Insulated wall panel | See above |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

The above U-Value calculations should be used as guidance only

Thermal Performance

Xtratherm Wall Panels

Wall type 3 (Block & Render)

| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.23 |
| 115mm | 12mm | 139mm | 0.19 |
| 150mm | 12mm | 174mm | 0.15 |
| 180mm | 12mm | 204mm | 0.13 |
| 205mm | 12mm | 229mm | 0.12 |

| Wall build-up | Thickness |
|--------------------------------|-----------|
| Render | 20mm |
| Concrete block | 100mm |
| Cavity | 50mm |
| Breathable membrane (Standard) | - |
| Insulated wall panel | See below |
| Timber battens | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

The above U-Value calculations should be used as guidance only

Xtratherm Wall Panels

Wall type 4 (Block & Render & Foil membrane)

| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.21 |
| 115mm | 12mm | 139mm | 0.17 |
| 150mm | 12mm | 174mm | 0.14 |
| 180mm | 12mm | 204mm | 0.12 |
| 205mm | 12mm | 229mm | 0.11 |

| Wall build-up | Thickness |
|---|-----------|
| Render | 20mm |
| Concrete block | 100mm |
| Cavity (Low E) R value 0.65m ² W/k | 50mm |
| Breathable membrane (Reflective foil) | - |
| Insulated wall panel | See below |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

The above U-Value calculations should be used as guidance only

Thermal Performance

Xtratherm Wall Panels

Wall type 5 (Cladding)

| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.24 |
| 115mm | 12mm | 139mm | 0.20 |
| 150mm | 12mm | 174mm | 0.16 |
| 180mm | 12mm | 204mm | 0.13 |
| 205mm | 12mm | 229mm | 0.12 |

| Wall build-up | Thickness |
|--|-----------|
| Cladding | 22mm |
| Air layer between battens (Ventilated) | 50mm |
| Breathable membrane (Ventilated) | - |
| Insulated wall panel | See below |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

The above U-Value calculations should be used as guidance only

Xtratherm Wall Panels

Wall type 6 (Cladding & Foil membrane)

| PIR Thickness | OSB Thickness | Overall Thickness | U-Value |
|---------------|---------------|-------------------|---------|
| 90mm | 12mm | 114mm | 0.23 |
| 115mm | 12mm | 139mm | 0.19 |
| 150mm | 12mm | 174mm | 0.15 |
| 180mm | 12mm | 204mm | 0.13 |
| 205mm | 12mm | 229mm | 0.12 |

| Wall build-up | Thickness |
|--|-----------|
| Cladding | 22mm |
| Air layer between battens (Ventilated) | 50mm |
| Breathable membrane (Reflective foil) | - |
| Insulated wall panel | See below |
| Timber battens (Service void) | 25mm |
| Plasterboard | 12.5mm |

Correction - 4% Timber

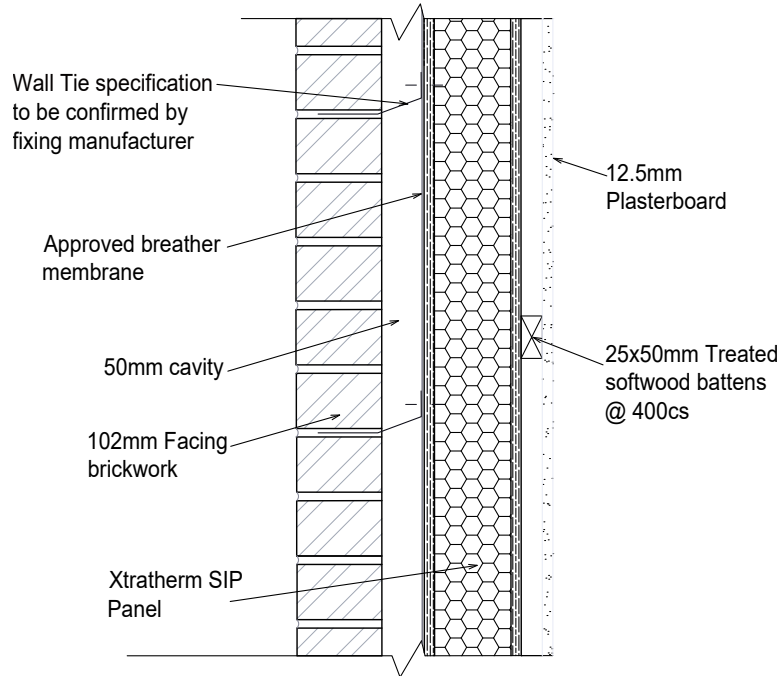
The above U-Value calculations should be used as guidance only

Passivhaus

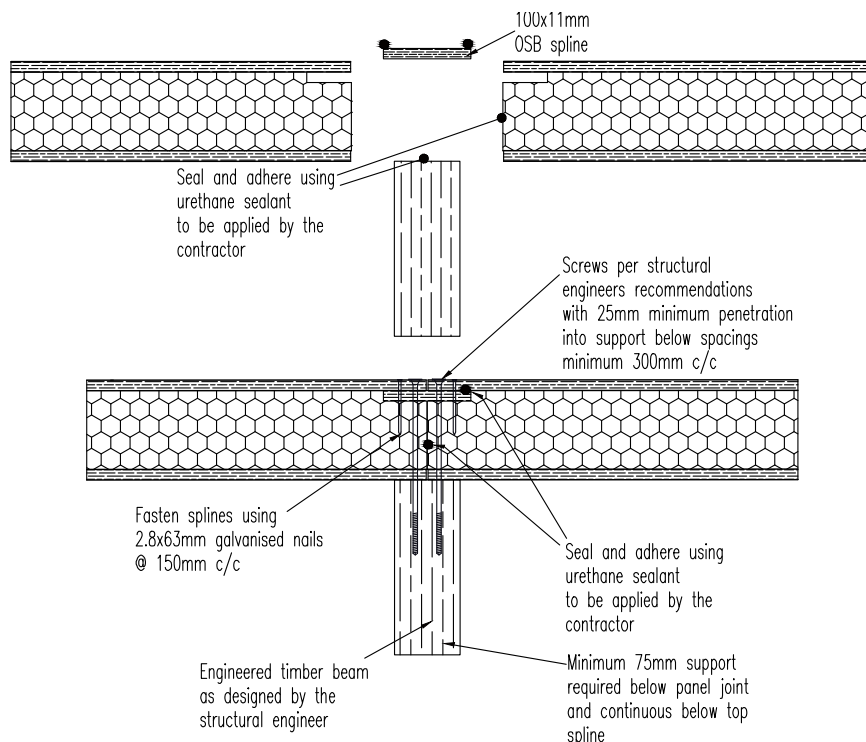
Passivhaus standards can be achieved by installing additional Xtratherm insulation boards, to the internal or external face of the UniSIPS

Please contact our Technical department for guidance

Xtratherm UniSIPS with Masonry brickwork

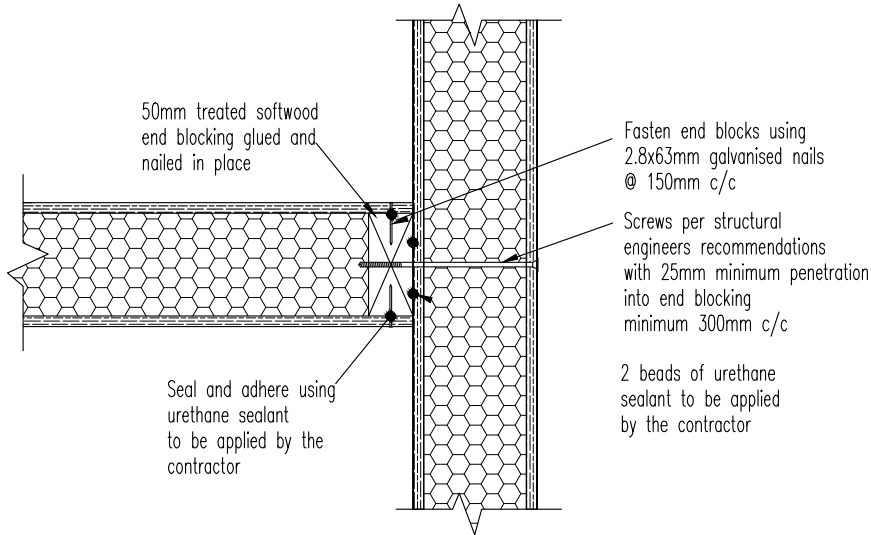
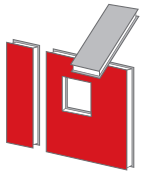


Typical Roof Spline with support

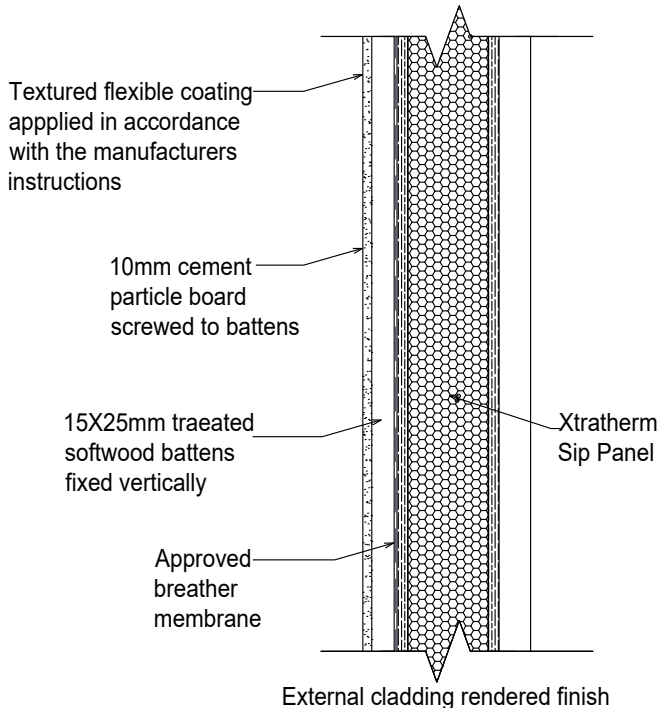


SIP Wall Details

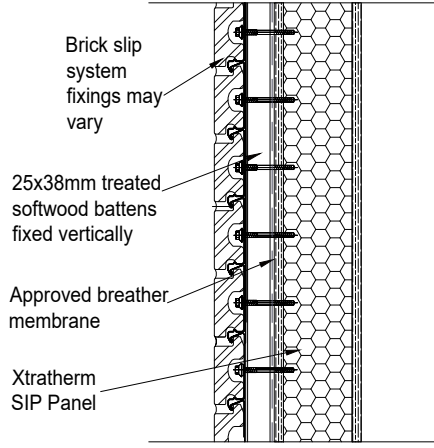
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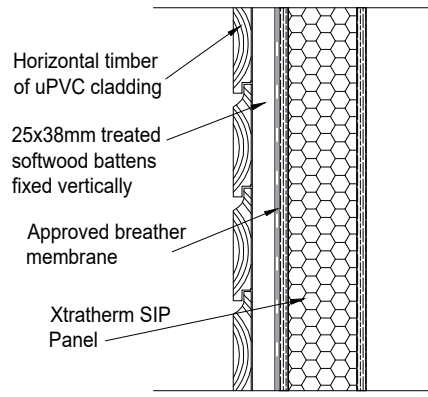
Xtratherm UniSIPS with External Finish



External Cladding Systems

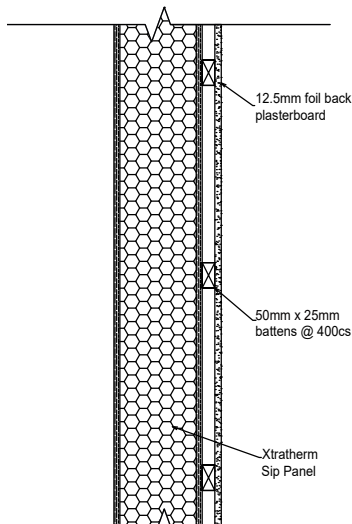


Brick Slip cladding detail

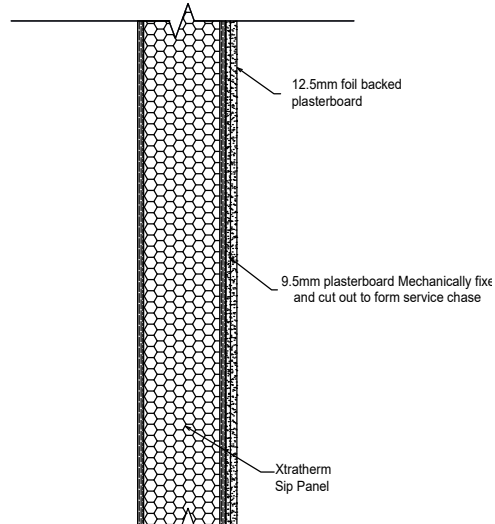


Timber cladding system

Internal Cladding Systems



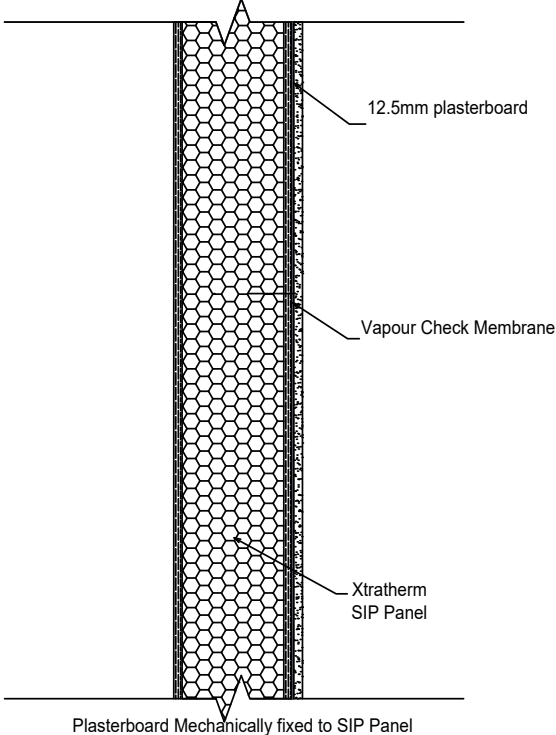
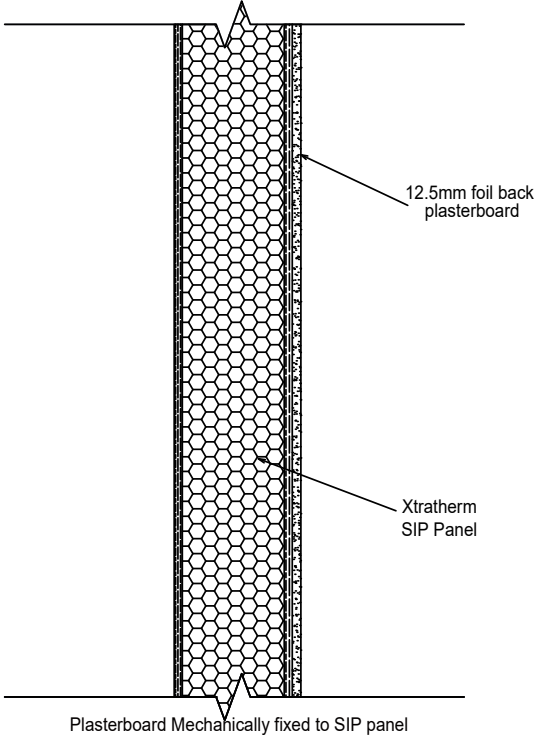
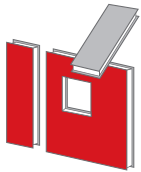
Plasterboard fixed using battens @400cs



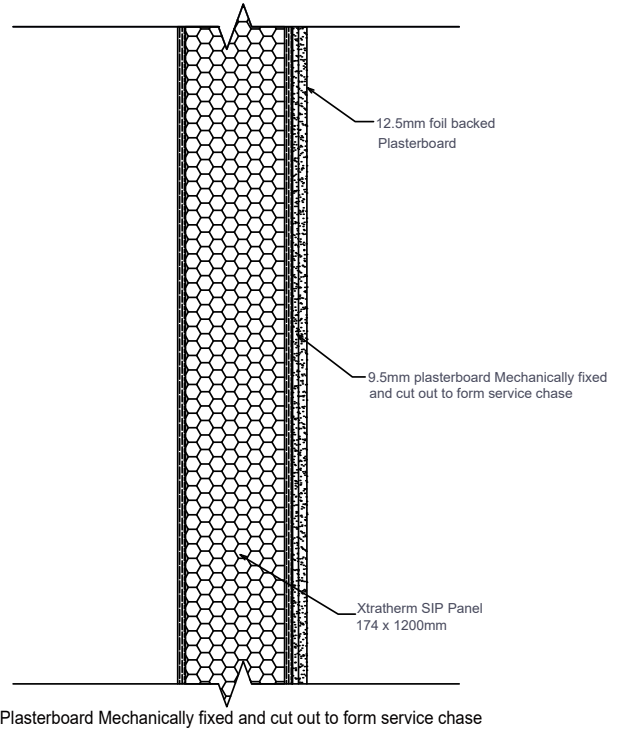
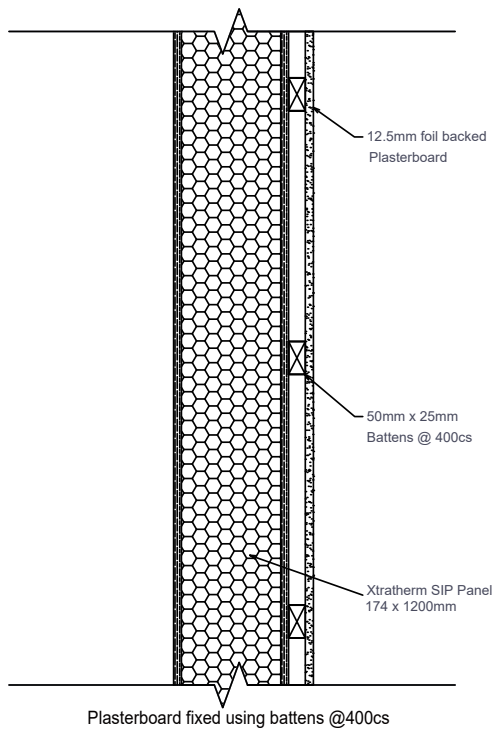
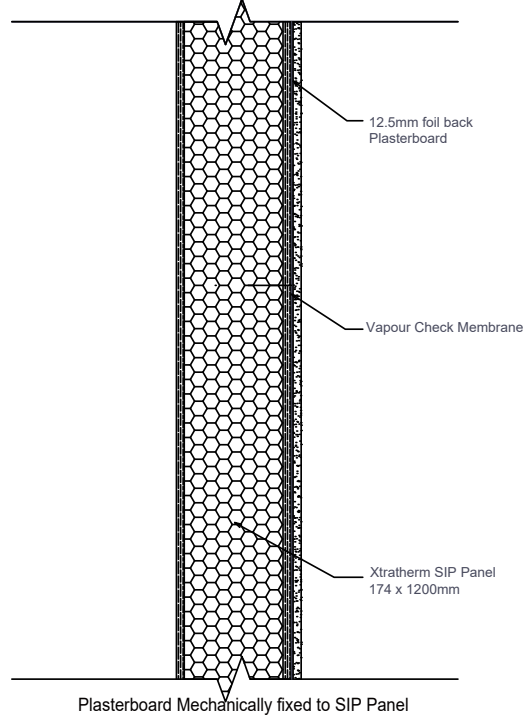
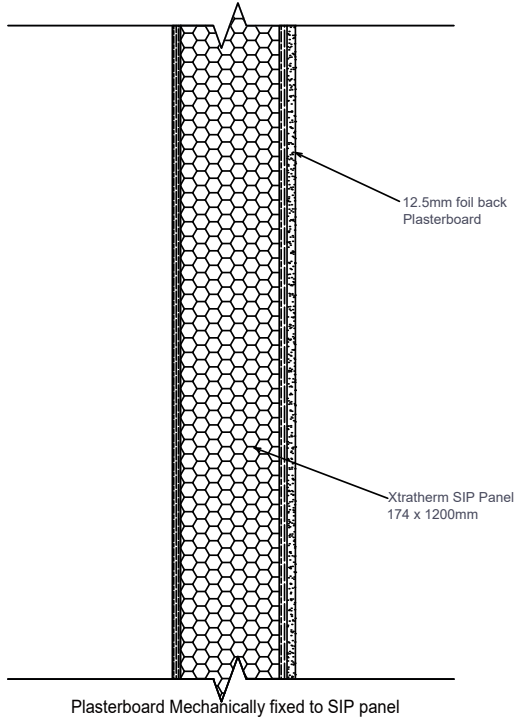
Plasterboard Mechanically fixed and cut out to form service chase

SIP Wall Details

Internal Cladding Systems



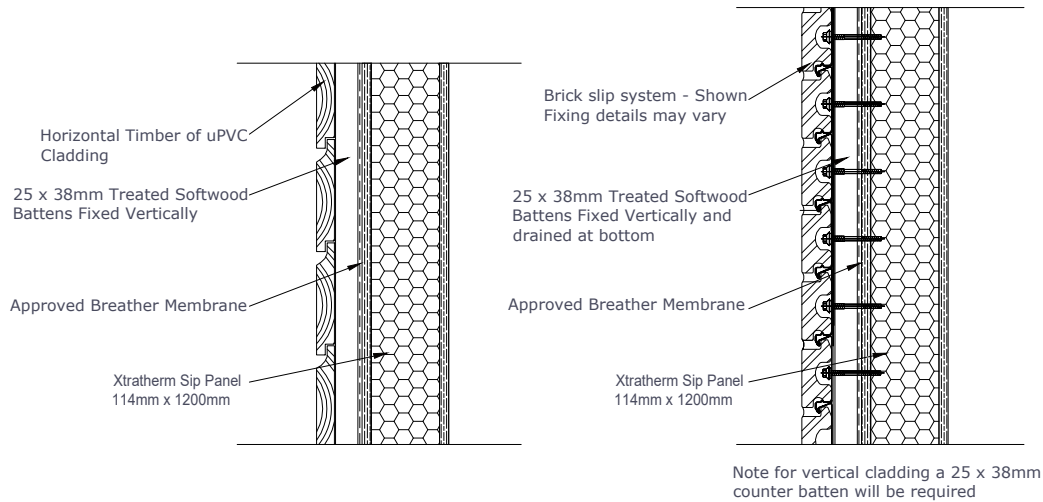
Xtratherm UniSIPS External Finishes UniSIP-D001



SIP Wall Details

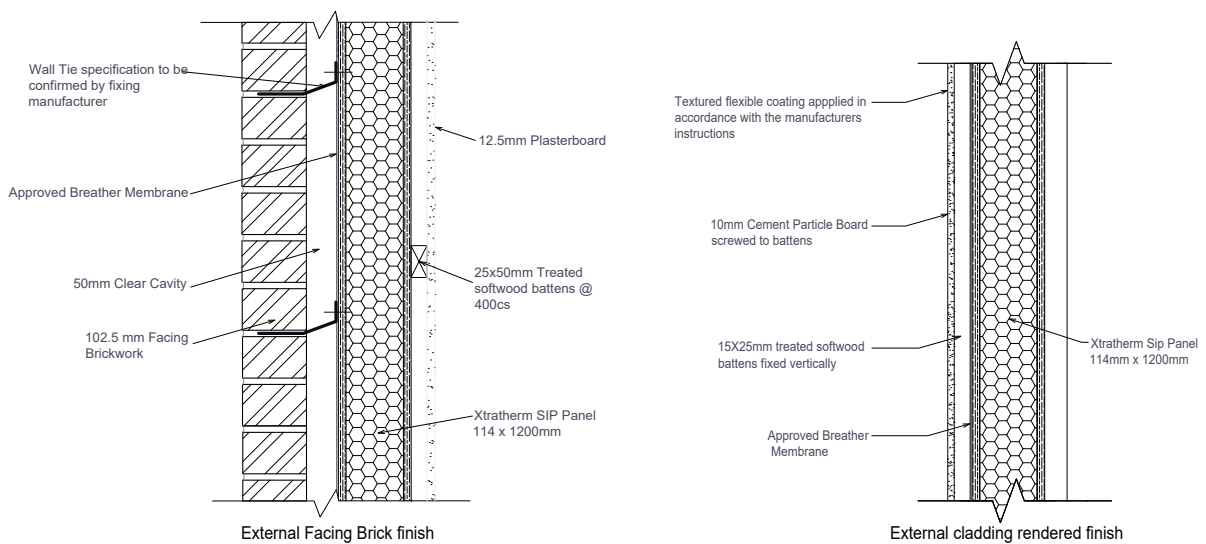
Xtratherm UniSIPS

External Finishes UniSIP-D002

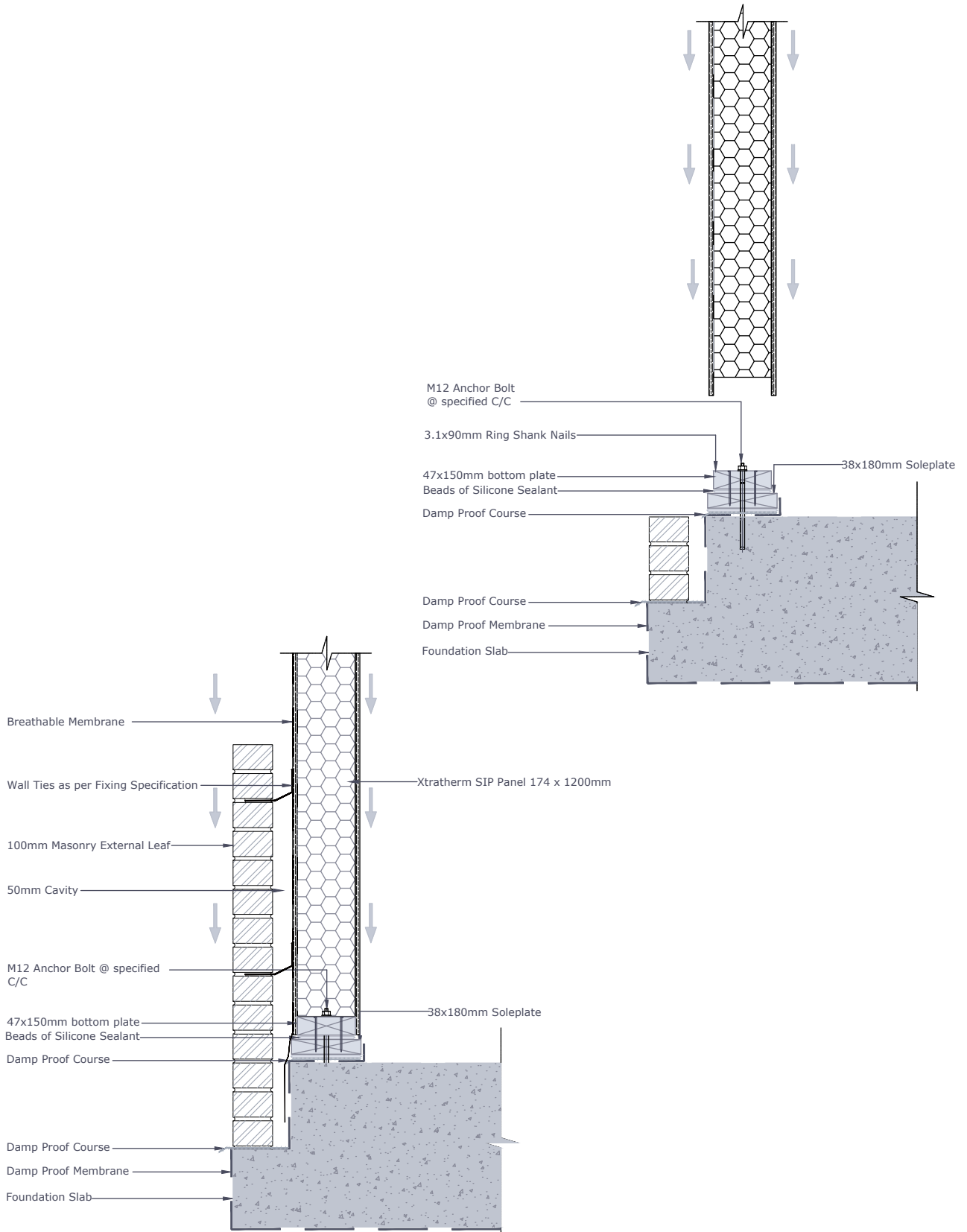


Xtratherm UniSIPS

External Finishes UniSIP-D003



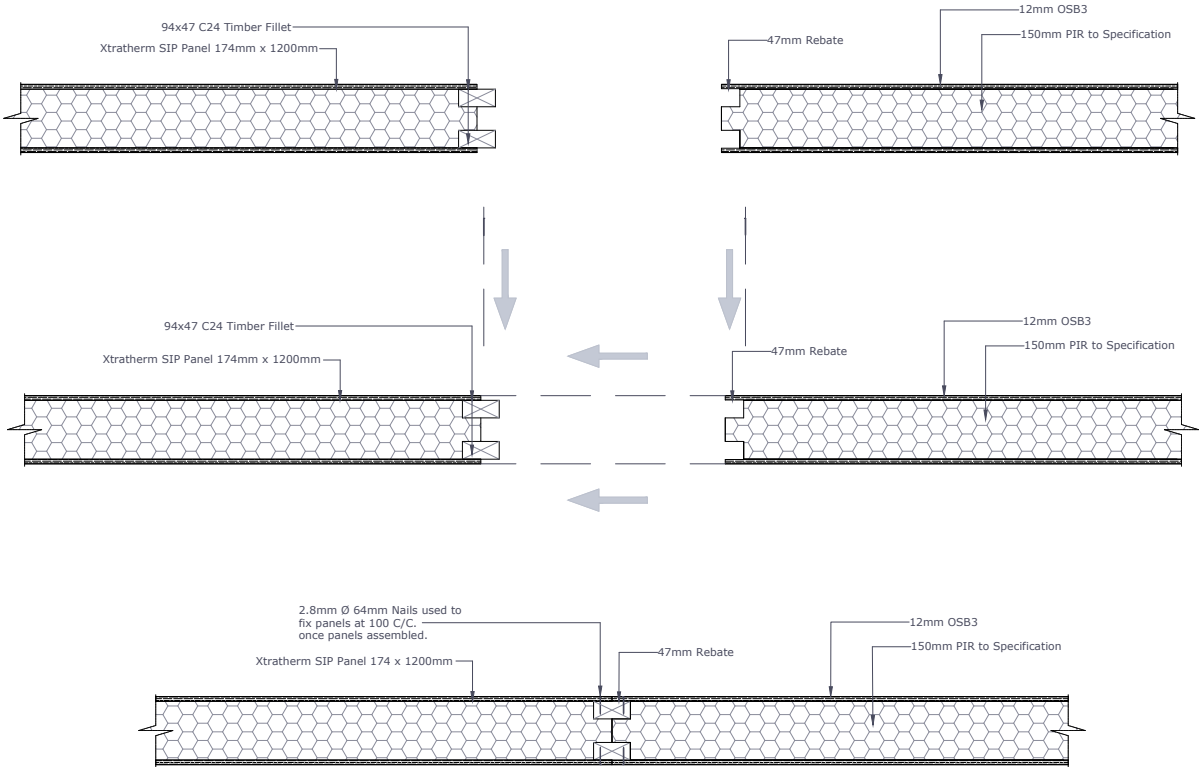
Xtratherm UniSIPS External Finishes UniSIP-D008



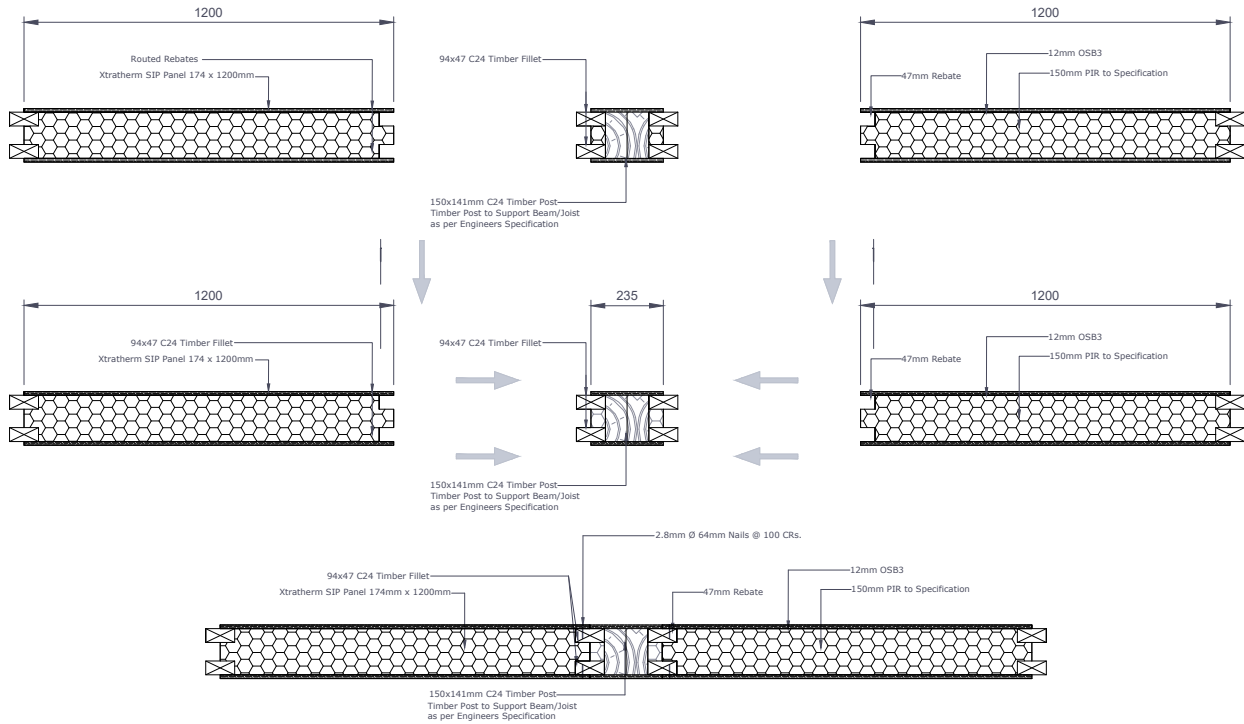
SIP Wall Details

Xtratherm UniSIPS

External Finishes UniSIP-D009



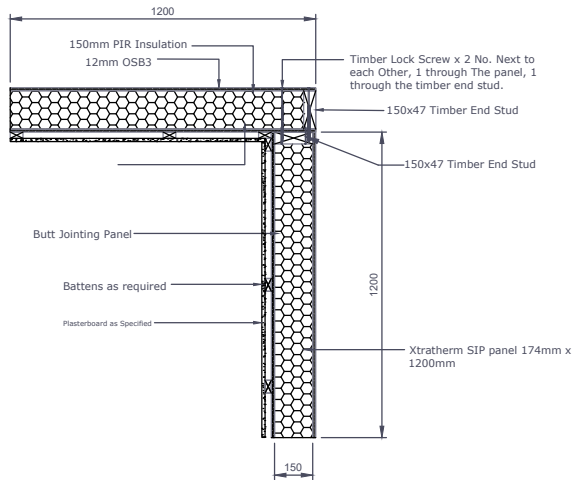
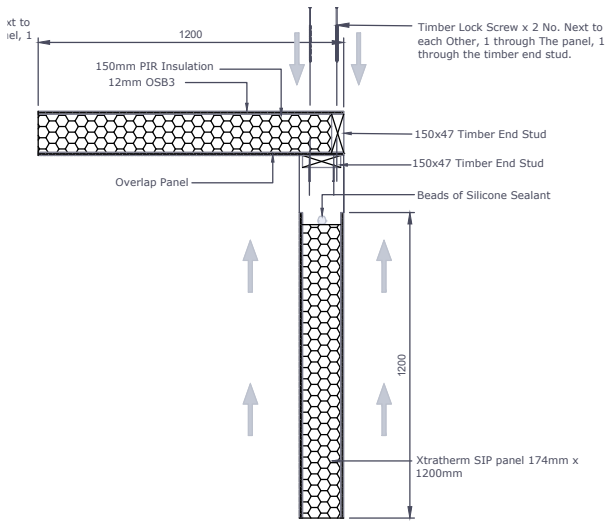
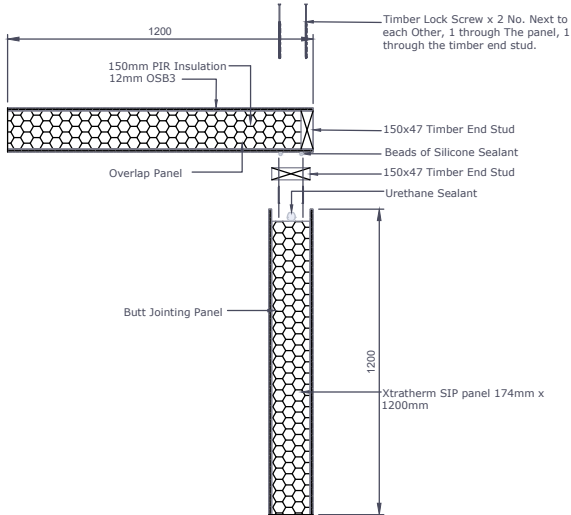
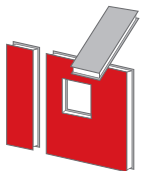
Xtratherm UniSIPS External Finishes UniSIP-D010



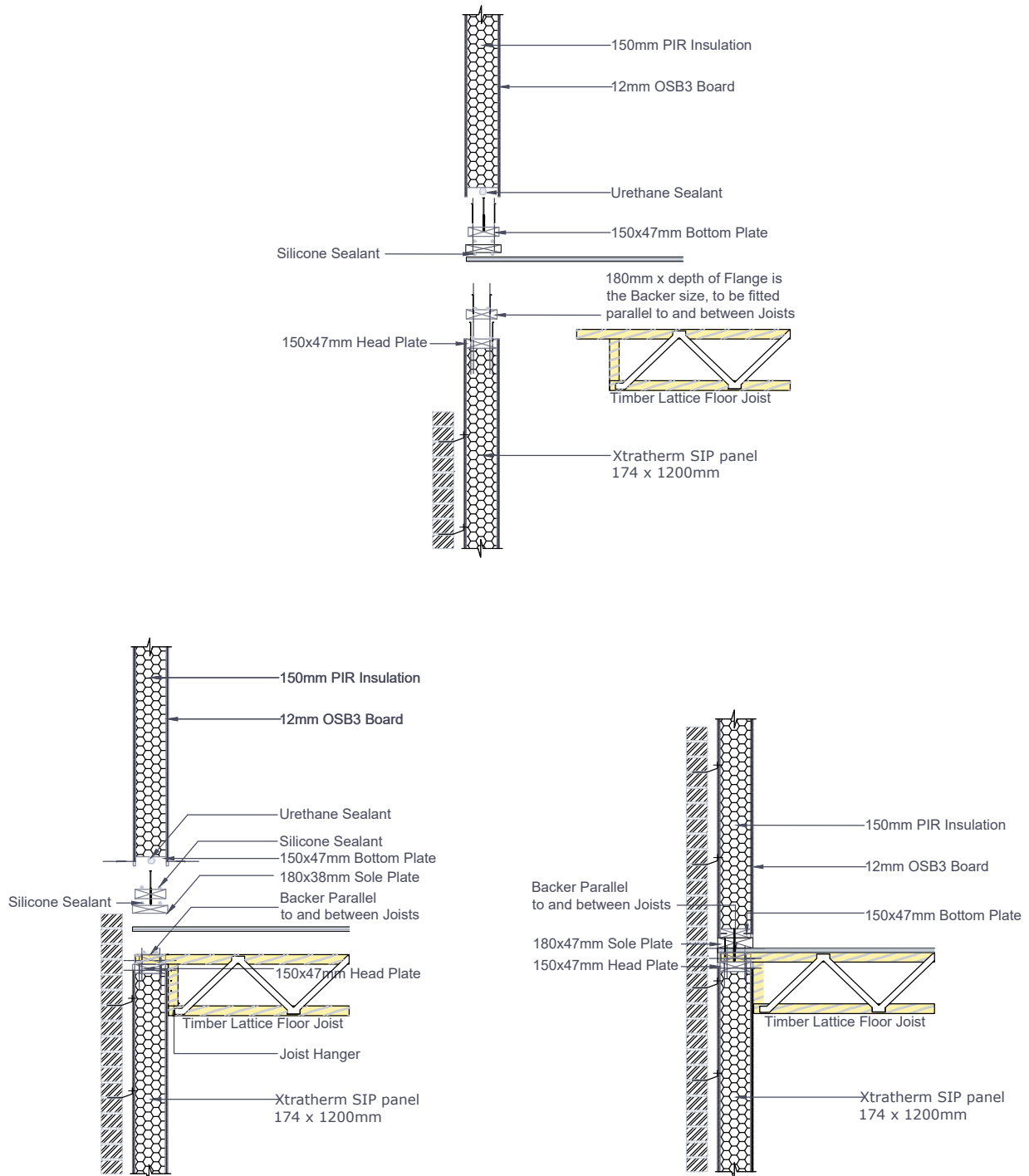
SIP Wall Details

Xtratherm UniSIPS

External Finishes UniSIP-D011

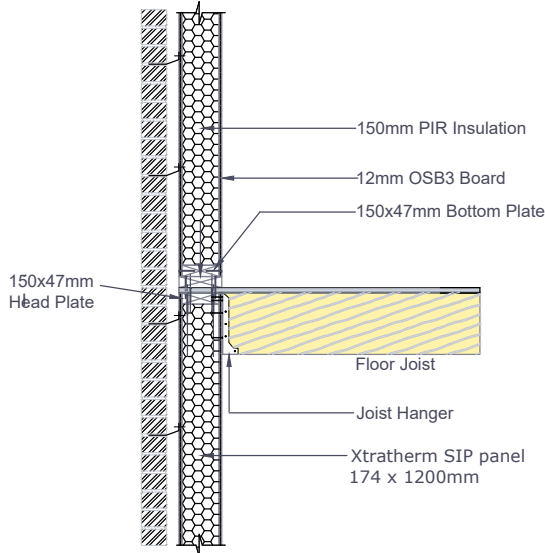
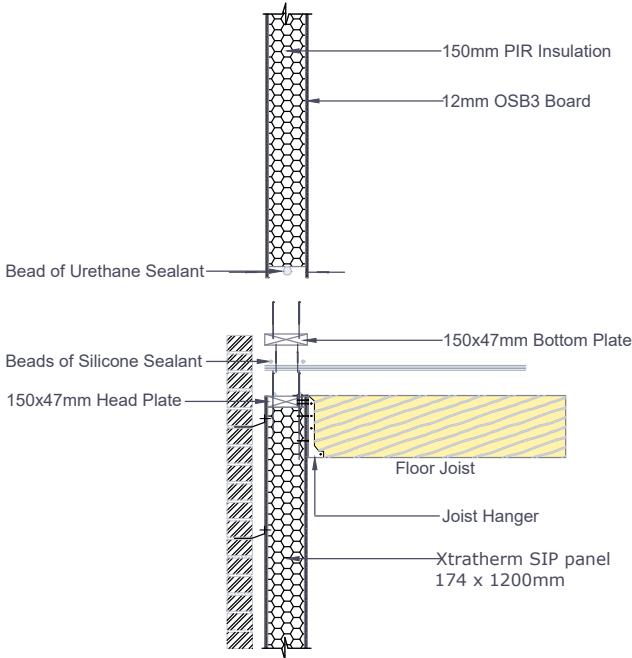
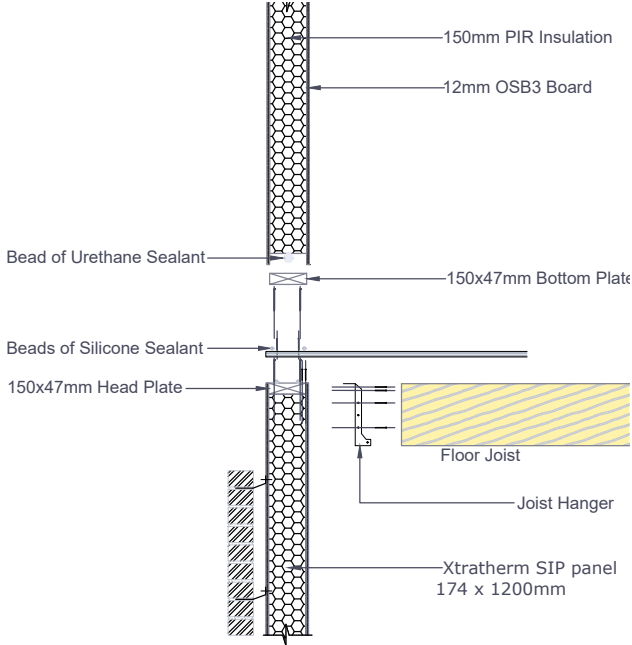
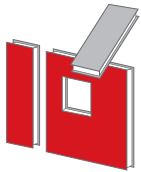


Xtratherm UniSIPS External Finishes UniSIP-D012

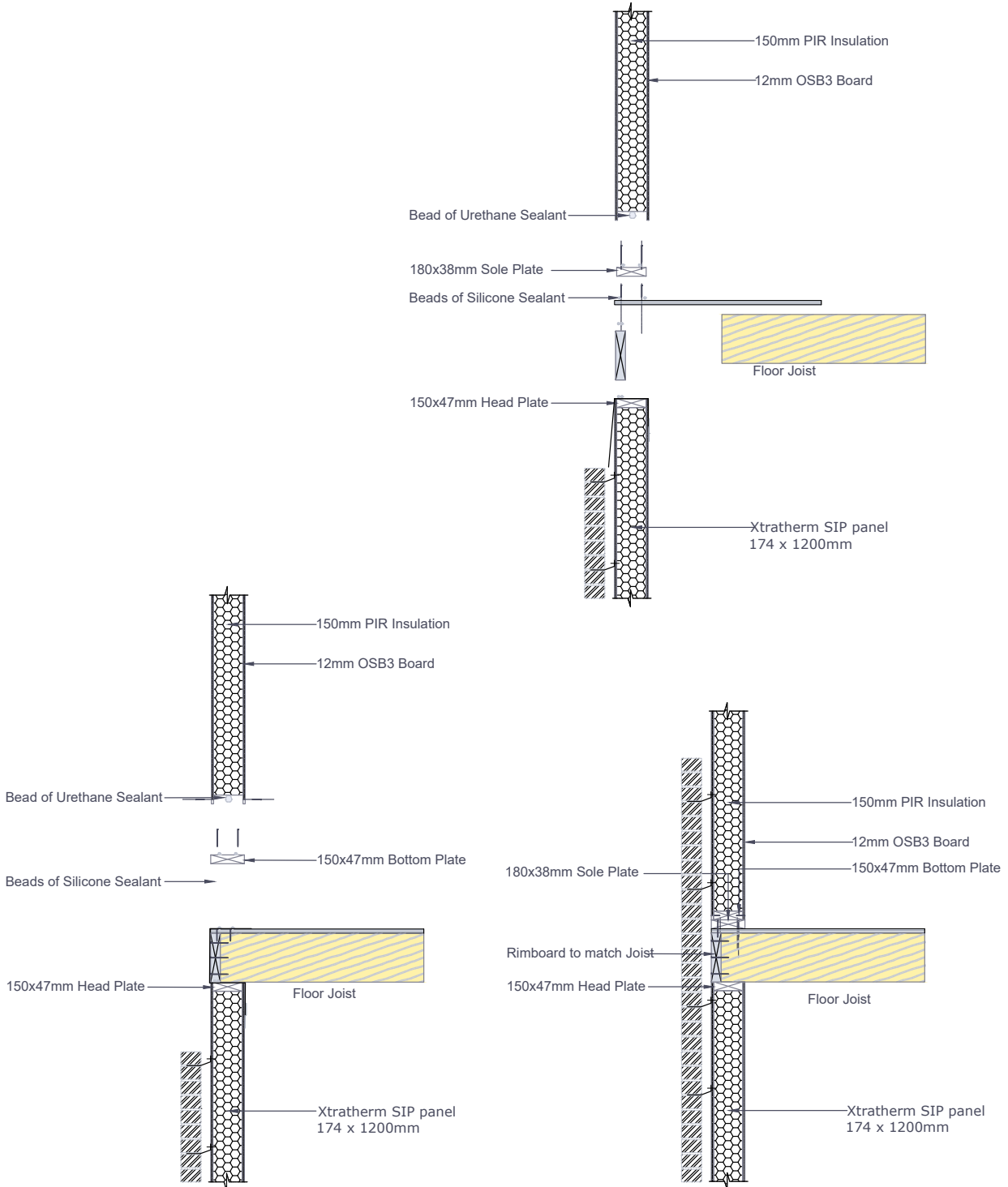


SIP Wall Details

Xtratherm UniSIPS External Finishes UniSIP-D013



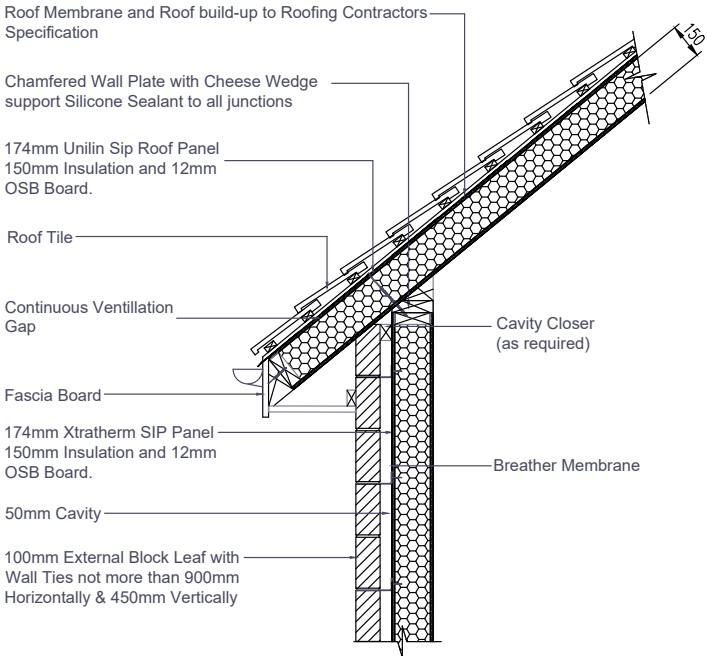
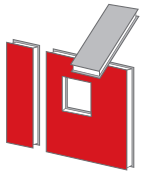
Xtratherm UniSIPS External Finishes UniSIP-D014



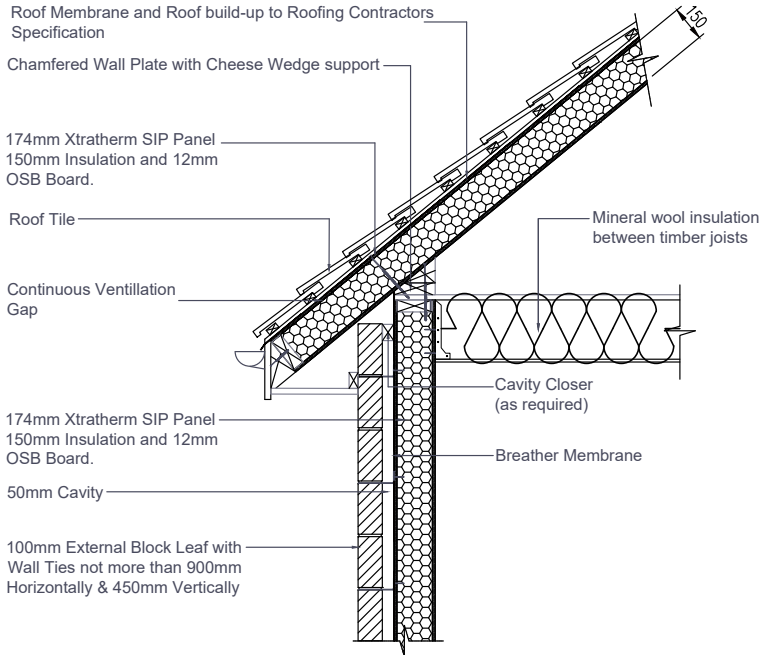
SIP Wall Details

Xtratherm UniSIPS

External Finishes UniSIP-D015

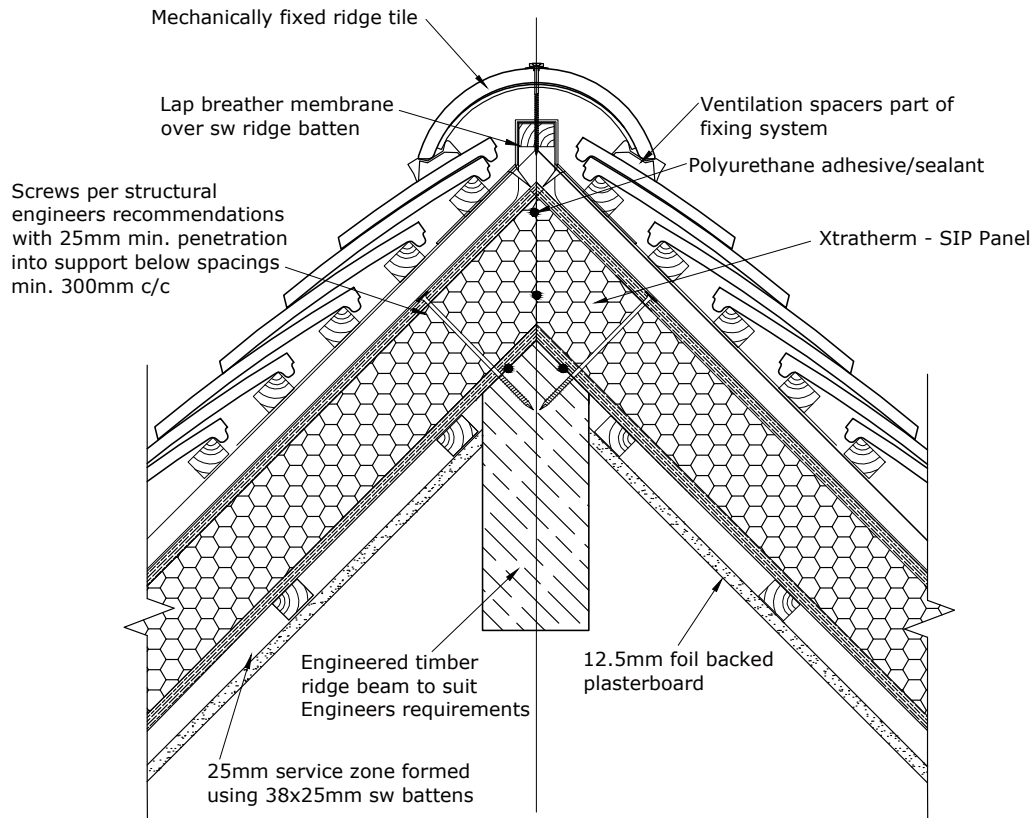
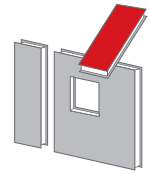


Roof Type; Vaulted Ceiling



Roof Type; Attic Space

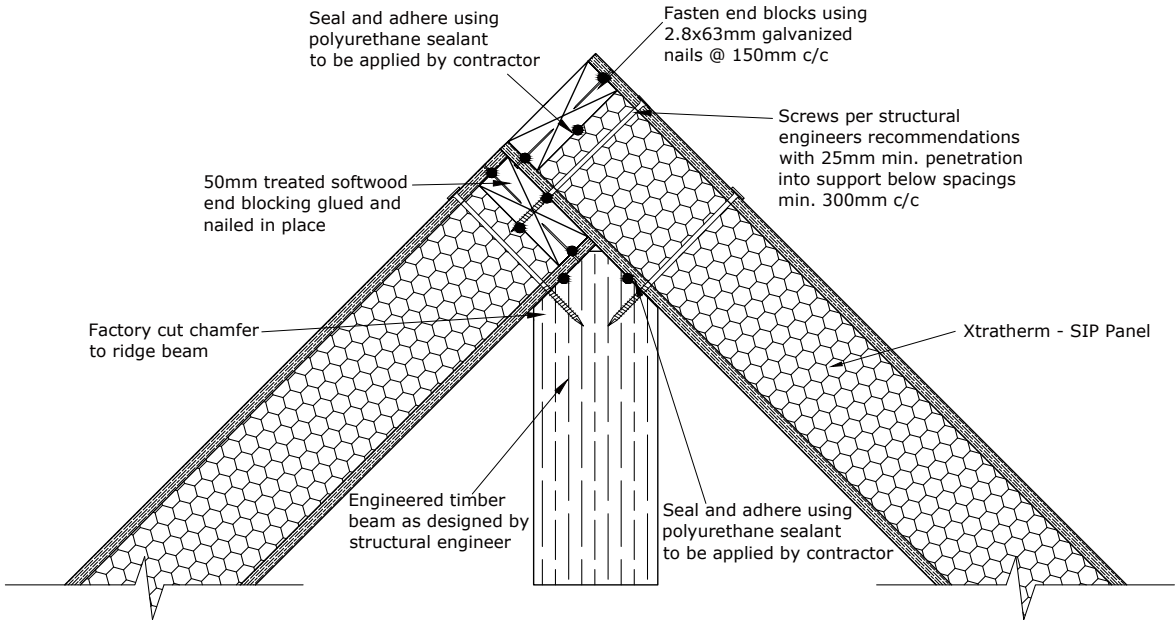
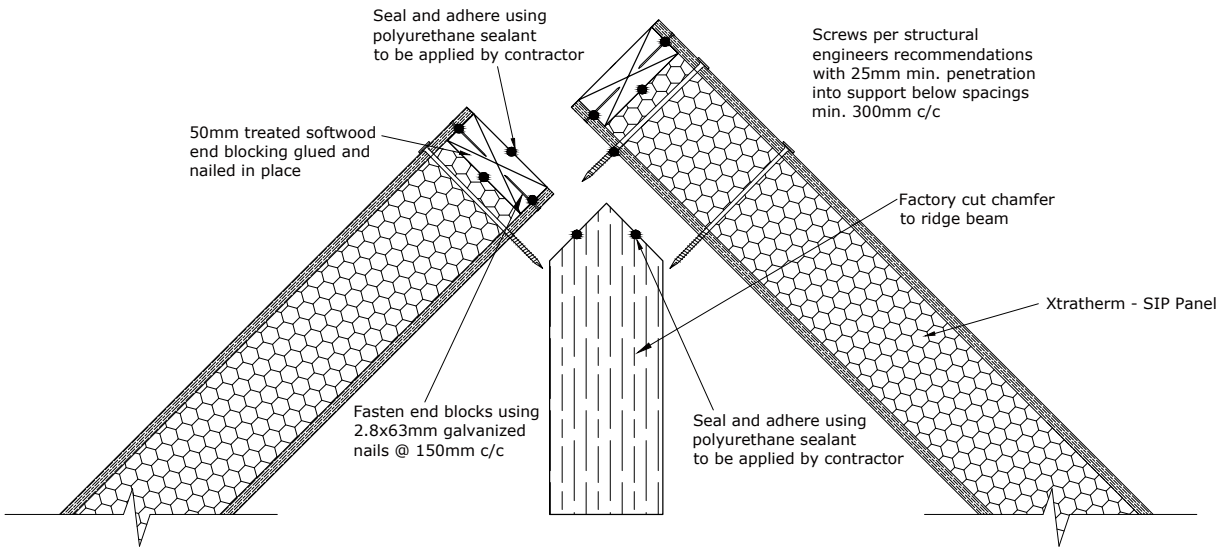
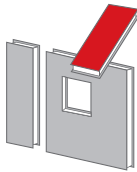
Xtratherm UniSIPS External Finishes UniSIP-D016



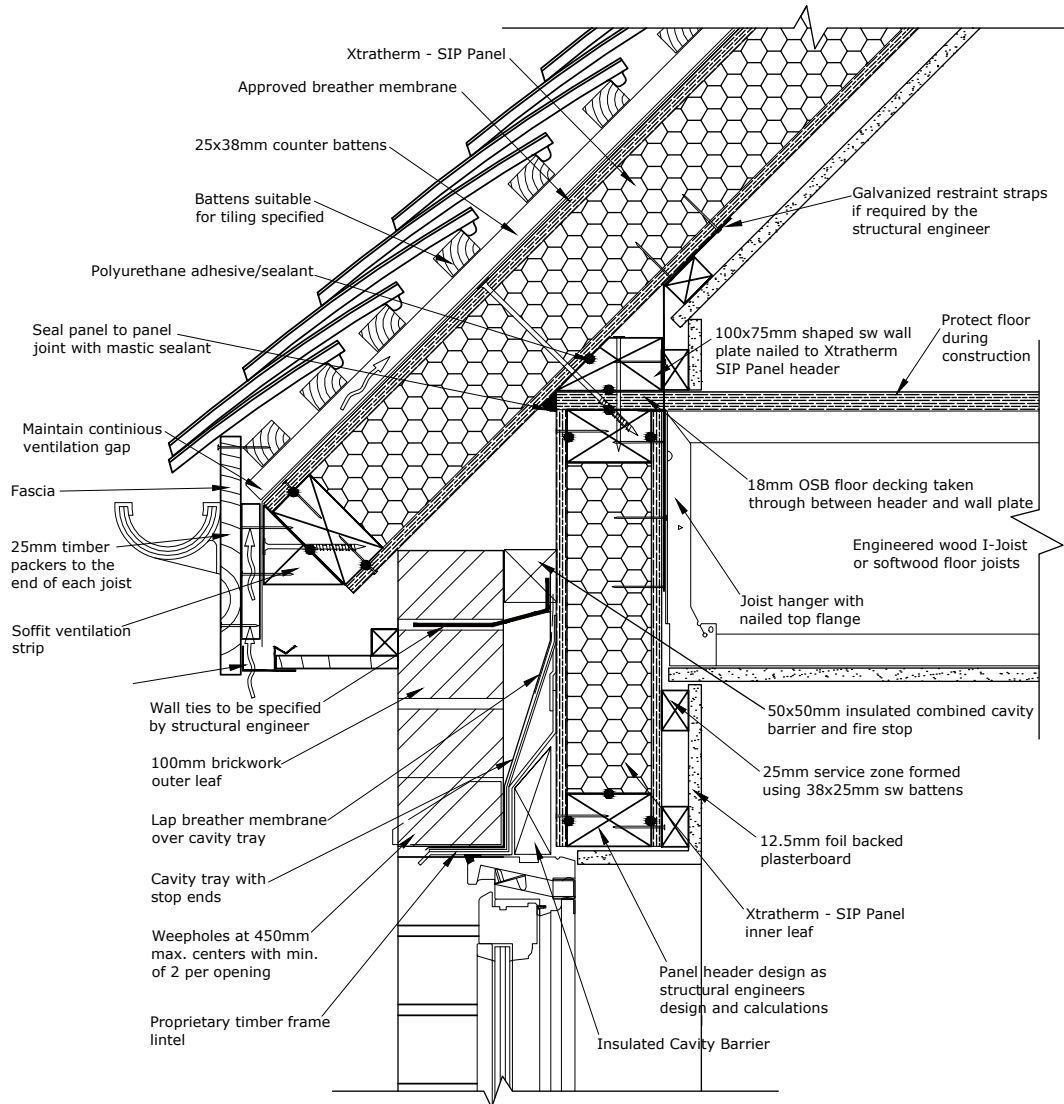
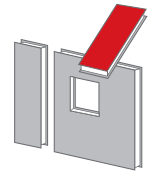
SIP Roof Details

Xtratherm UniSIPS

External Finishes UniSIP-D017



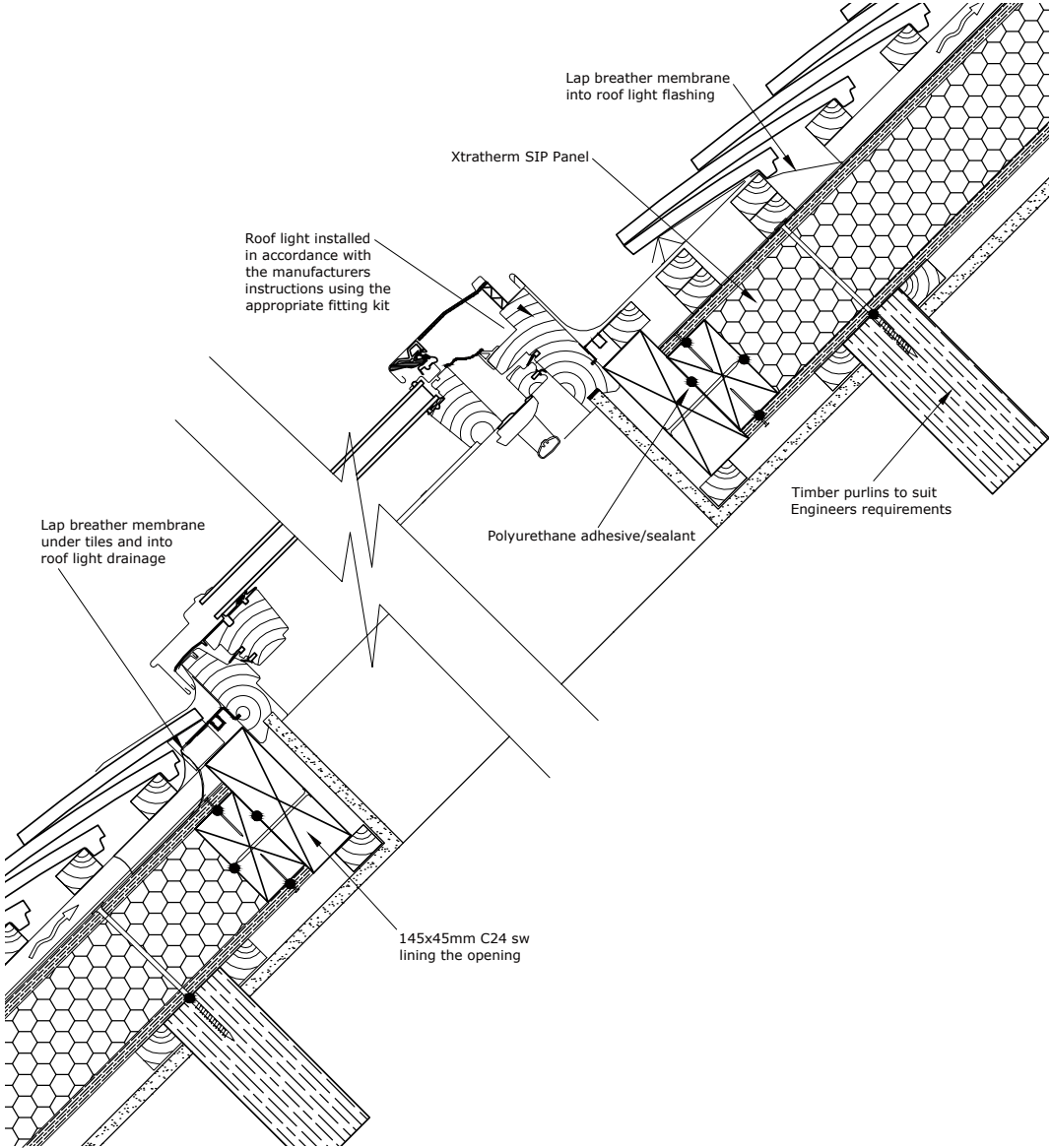
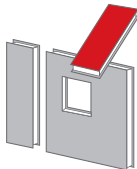
Xtratherm UniSIPS External Finishes UniSIP-D018



SIP Roof Details

Xtratherm UniSIPS

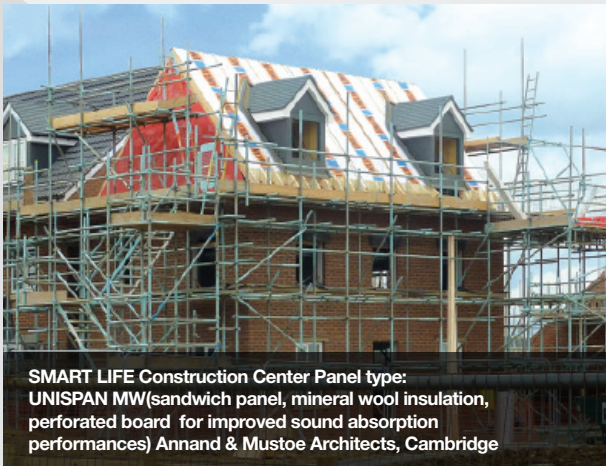
External Finishes UniSIP-D019



Project Gallery



Residential project, Essex
Panel type: UNIPUR (Open element, PIR insulation, GFB)
Robert Ward-Booth, Conservation & Design



SMART LIFE Construction Center Panel type:
UNISPAN MW(sandwich panel, mineral wool insulation,
perforated board for improved sound absorption
performances) Annand & Mustoe Architects, Cambridge



Zero Carbon House, Lurgashall, West Sussex
Panel type: UNIPUR-OSB (Unipur panel, PIR insulation/OSB)
Architects: Mitchell Evans & Partners, Guildford



Ryedale house type , Barratt Homes, Farndon Fields,
Market Harborough Panel type: UNIPUR (Open element, PIR
insulation, PB) Barratt Architect



Velux, CarbonLight Homes, Kettering
Panel type UNISPAN HPIR (sandwich panel,
HPIR insulation, OSB) HTA Architects

Working towards a sustainable future

Operating within the construction industry and as a leading investor within the insulation sector, Xtratherm remains at the forefront of energy efficiency and sustainable construction.

Specifying Xtratherm is a real commitment to minimising energy consumption, harmful CO2 emissions and their impact on the environment. Using our products is one of the most effective ways to reduce energy consumption – in fact, after just eight months the energy they save far outweighs the energy used in their production.



Xtratherm[®]

More than insulation

We are committed to developing insulation solutions that not only meet but exceed the most stringent industry standards.

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ISO 9001 | Quality Management Systems

ISO 14001 | Environmental Management Systems



Good workmanship and appropriate site procedures are necessary to achieve expected thermal and airtightness performance. Installation should be undertaken by professional tradespersons. The example calculations are indicative only, for specific U-value calculations contact Xtratherm Technical Support. Xtratherm technical literature, Agrément certifications and Declarations of Performance are available for download on the Xtratherm website. The information contained in this publication is, to the best of our knowledge, true and accurate at the time of publication but any recommendations or suggestions which may be made are without guarantee since the conditions of use are beyond our control. Updated resources may be available on our website. All images and content within this publication remain the property of Xtratherm.

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