# STRUCTURAL INSULATED PANELS FOR ROOF AND WALL APPLICATIONS

DIVISION INSULATION

## Making the most of your living space


www.unilininsulation.com

UNILIN
FOR SMART LIVING

UNILIN was founded in 1960 when several families from south-west Flanders who were active in the flax industry began producing flax chipboards. Since then, UNILIN has grown and developed into a major player in the global construction industry. All of UNILIN's activities are consolidated into 3 distinct business units: division flooring , division insulation and division panels. Since October 2005, the UNILIN Group has been part of Mohawk Industries, the largest flooring group in the world in both residential and commercial markets.
UNILIN, division insulation produces about 10 million $m^2$ of insulated roof elements, prefabricated solutions and PIR insulation boards per annum. We are a European market leader in the field of structural insulated roof panels and the second largest player in the European PIR market.
In December 2015, UNILIN announced the acquisition of Xtratherm, a leading Irish insulation manufacturer.
UNILIN offers a solution for every situation, for pitched as well as flat roofs, for spandrels (party walls and gables), for refurbishment and new-build. There is a choice of insulation material (PIR, mineral wool and timber fibres), and a range of interior finishes.

Applications for these systems include:
- Private housing - Social housing - Public buildings
- Commercial and industrial buildings
- Schools and other educational buildings

All roof panels have the necessary certificates, technical approvals and are supplied with a lifetime expectancy.

PICTURE UNILIN DIVISION INSULATION HEAD OFFICE

UNILIN
FOR SMART LIVING

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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 UNILIN 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 SIPs 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 Sustainable Construction Limited*

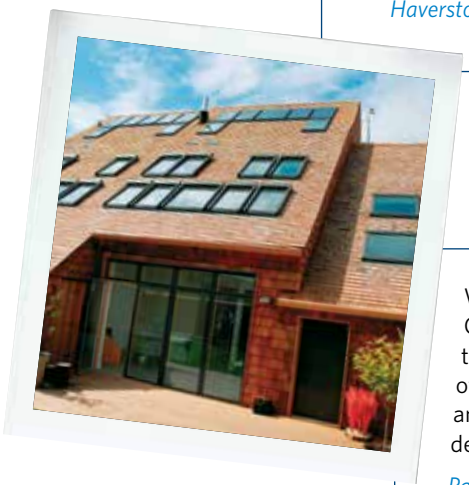
"The pair of semis was fully weatherproof within one working day, whereas a traditional room-in-the-roof house type would take approximately 3 weeks from roof plate to being fully covered. In total I would estimate that approximately 10 working days were saved by the UNILIN method of construction."

*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."

*Haverstock Associates LLP, Architects,Parliament Hill School*



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 Home 2020 project in the UK*

# High level benefits for clients, specifiers and contractors

UNILIN is the ideal insulated roof panel - strong and rigid, light and economical, sophisticated and versatile. Panels can be pre-finished or ready for decoration, with a special acoustic panel for improved interior sound absorption. There is a UNILIN panel for every application. UNILIN panels are suitable for any type of roof covering – eg, traditional tiles, slates, concrete tiles, zinc etc, and for roof pitches 0° to 60°.

This versatile system is suitable for both refurbishment and new build 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

## Benefits for THE CLIENT:

The UNILIN 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's 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.

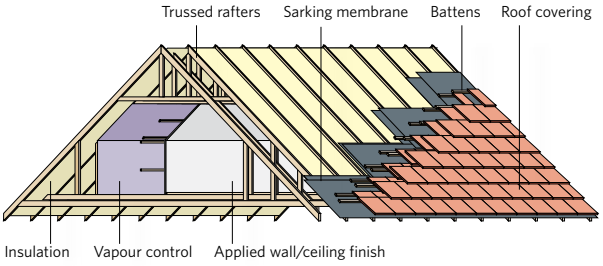
## Benefits for THE SPECIFIER:

- ✓ UNILIN 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, fasttrack, buildable, environmentally sound projects that clients and builders want.

## Benefits for THE CONTRACTOR:

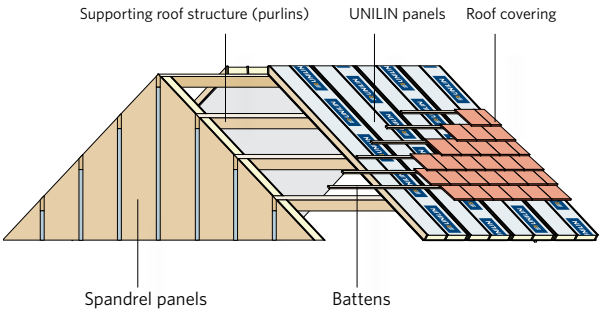
- ✓ The UNILIN way of building is a result of over 35 years of refining and developing highly insulated and innovative panels all over Europe and the UK.
- ✓ It is simple , practical, safe and fast to build with the correct planning and tools. That means it is cost effective, you don't need special trades, or use 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!

## Traditional Roof




UNILIN structural roof panel systems offer a weathertight roof system ready to receive the roof covering. The system incorporates thermal insulation, rafters and ceiling board and is suitable for pitched, flat roofs and also walls. The panels form an integral part of the roof structure and replace traditional rafters. They are supported by purlins (timber or steel), ridge, intermediate beams where used, and wall plates. Panels are also available for rapid construction of spandrel and party walls.

## UNILIN Roof



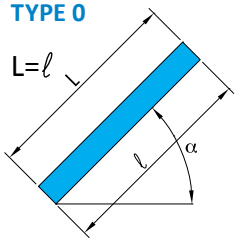

Traditional truss = wasted space and timber

# Cutting Service

## 1/ Angled cuts

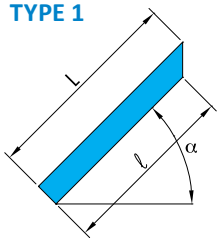
On request, UNILIN delivers the elements with bevelled edges at the gutter and ridge sides with the following possibilities:
Type 1 and 6, with bevelled edges only at the ridge
Type 2 and 4, with bevelled edges only at the gutter (no gutter board possible)
Type 3, 5, 7 and 8, with bevelled edges at the gutter and the ridge
Type 5, with bevelled edges at the gutter and the ridge (no gutter board possible)
With your order, you must provide the following information:
L = total length
$\ell$ = inside length
α = Angle of roof slope

### TYPE 0



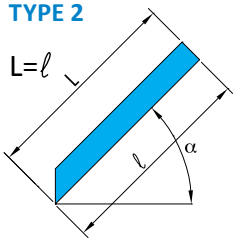

Without bevelled edges

### TYPE 1



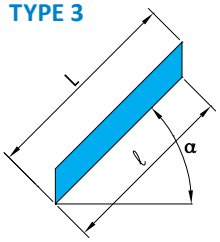

Vertical bevelling at ridge
Permitted slope 0° to 58°

### TYPE 2



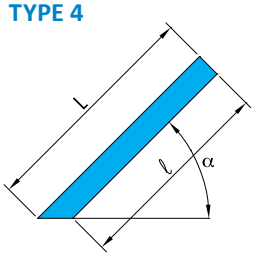

Vertical bevelling at gutter
Permitted slope 0° to 58°

### TYPE 3



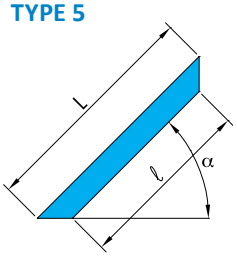

Vertical bevelling at gutter and ridge
Permitted slope 0° to 58°

### TYPE 4



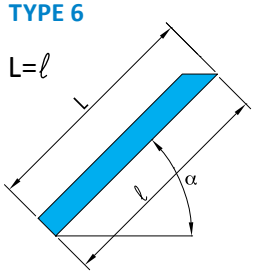

Horizontal bevelling at gutter
Permitted slope 32° to 90°

### TYPE 5



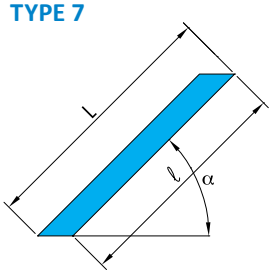

Horizontal bevelling at gutter
Vertical bevelling at ridge
Permitted slope 32° to 58°

### TYPE 6



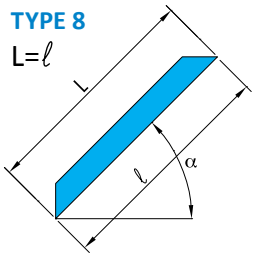

Horizontal bevelling at ridge
Permitted slope 32° to 90°

### TYPE 7



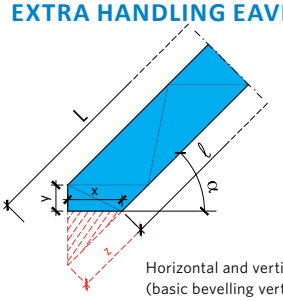

Horizontal bevelling at ridge
Vertical bevelling at gutter
Permitted slope 32° to 90°

### TYPE 8




Horizontal bevelling at ridge
Vertical bevelling at gutter
Permitted slope 32° to 58°

### EXTRA HANDLING EAVES (cfr.: type3)




Horizontal and vertical bevelling at gutter
(basic bevelling vertical - extension z)
Permitted slope 32° to 58°

## * Note

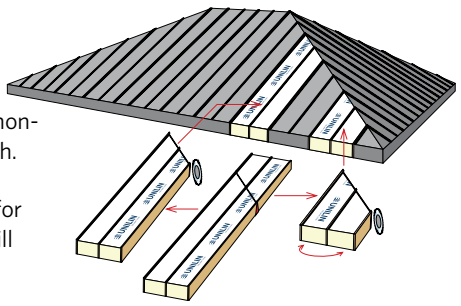
For UNIPUR: - rafter height as of 170 mm up to and including 194 mm type 2 to maximum 55°
- rafter height as of 195 mm type 2 to maximum 50°

## 2/ Non-standard widths

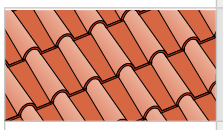
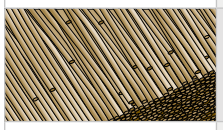
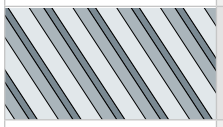
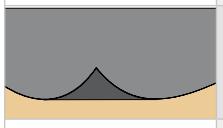
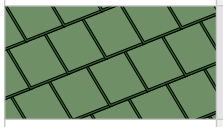
UNILIN panels can be produced in non-standard widths to fit the roof length. To allow UNILIN to create your infill panels, please consult the supplier for the design of the roof plan which will include all infill panels.

## 3/ Diagonal cuts

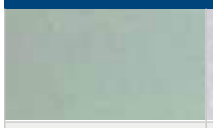
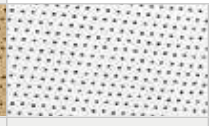
UNILIN panels can be produced in non-standard widths to fit the roof length. To allow UNILIN to create your infill panels, please consult the supplier for the design of the roof plan which will include all infill panels.



# Product selector

| | PITCHED ROOFS | | | | FLAT ROOFS | |
|---|---|---|---|---|---|---|
| |  | | | | | |
| | UNIPUR | UNIPUR PLUS | UNISPAN HPIR | UNISPAN MW | UNISPAN HPIR | UNISPAN MW |
|  | ✓ | ✓ | ✓ | ✓ | | |
| Tiles | Pages 10-17 | Pages 18-24 | Pages 26-32 | Pages 34-37 | | |
|  | ✓ | ✓ | ✓ | ✓ | | |
| Thatch | Pages 10-17 | Pages 18-24 | Pages 26-32 | Pages 34-37 | | |
|  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Metal | Pages 10-17 | Pages 18-24 | Pages 26-32 | Pages 34-37 | Pages 26-32 | Pages 34-37 |
|  | | | ✓ | ✓ | ✓ | ✓ |
| Single Ply - Built-up | | | Pages 26-32 | Pages 34-37 | Pages 26-32 | Pages 34-37 |
|  | | | ✓ | ✓ | ✓ | ✓ |
| Shringles | | | Pages 26-32 | Pages 34-37 | Pages 26-32 | Pages 34-37 |
|  | | | ✓ | ✓ | ✓ | ✓ |
| Green Roof | | | Pages 26-32 | Pages 34-37 | Pages 26-32 | Pages 34-37 |

Contact UNILIN for technical information and product feasibility.

| UNILIN Roof PANELS: INNER FACINGS | | | | |
|---|---|---|---|---|
|  |  |  |  | |
| PB (Plasterboard) | GFB (Gypsum Fibreboard) | CB (Chipboard) | WCB (White Painted Chipboard) | |
|  |  |  |  |  |
| PLY | IMPRESSE | OSB (Oriented Strand Board) | AB (Perforated Chipboard) | WAB (White Painted AB) |

UNILIN has created the ideal roof panel - strong and rigid, light and economical, sophisticated and versatile, pre-finished or ready for decoration, and with a special acoustic panel (AB) for improved interior sound absorption. There is a panel for every application.

# Contents product range

# UNIPUR


## Product benefits

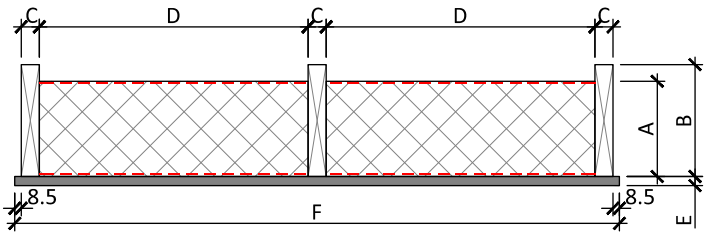
- Incorporating PIR foam is the key to the high performance of UNIPUR Panels.
- UNIPUR panels have the additional advantage of ıntegral rafters, allowing simple installation of roof lights and openings, with the added benefit of greater spans than a sandwich panel with PIR.
- The panels comprise 3 integral timber rafters fixed to and stabilised by a rigid facing board which also forms the ceiling finish.
- The panels are suitable for use with surface-mounted or suspended luminaires.

## Inner facing

- **UNIPUR** OSB
- **UNIPUR** PB
- **UNIPUR** GFB
- **UNIPUR** CB
- **UNIPUR** WCB
- **UNIPUR** IMPRESSE
- **UNIPUR** AB and WAB

# UNIPUR OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 12mm |
| Width of the board | F | 800mm |
| Length | - | 2000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/M^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| OSB board | –12– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 18.40 | 4100 |
| OSB board | –12– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 19.30 | 4100 |
| OSB board | –12– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 22.40 | 4850 |

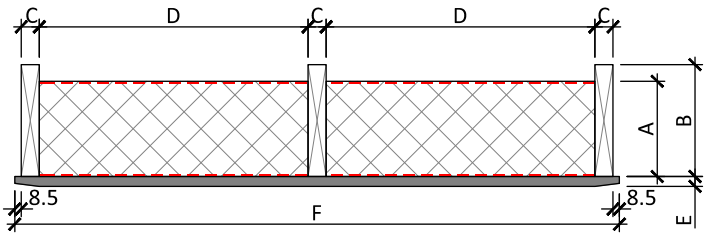
* The spans are based on a dead weight of $75kg/m^2$, snow load of $60kg/m^2$, in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water-resistant OSB board glued and nailed to timber rafters
- On request the edges of the OSB can be chamfered
- Horizontal joints are visible on underside of panel

# UNIPUR PB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 13mm |
| Width of the board | F | 800mm |
| Length | - | 2000-4800mm<br>Panels with a length greater than 4800mm are glued |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Plasterboard | –13– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 21.40 | 2880 |
| Plasterboard | –13– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 22.10 | 2880 |
| Plasterboard | –13– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 24.80 | 3270 |

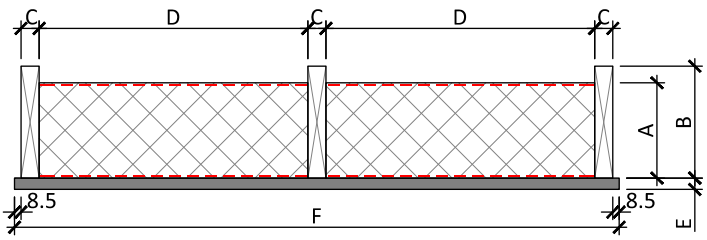
* The spans are based on a dead weight of $75kg/m^2$, snow load of $60kg/m^2$, in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 13mm water-resistant , tapered edge plasterboard, glued and screwed to timber rafters
- The plasterboard is non-combustible, class O to UK and Irish Building Regulations
- Horizontal joints are visible on underside of panel

# UNIPUR GFB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 12.5mm |
| Width of the board | F | 800mm |
| Length | - | 2000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Gypsum fibreboard | –12.5– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 24.90 | 2880 |
| Gypsum fibreboard | –12.5– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 25.50 | 2880 |
| Gypsum fibreboard | –12.5– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 28.30 | 3370 |

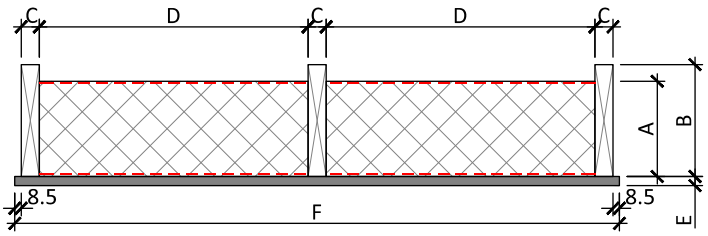
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12.5mm water-resistant , chamfered gypsum fibreboard fixed to three timber rafters
- The gypsum fibreboard is non-combustible, class O to UK and Irish Building Regulations
- Where boards are to be plastered, glue is required to edges
- Horizontal joints are visible on underside of panel

# UNIPUR CB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 12mm |
| Width of the board | F | 800mm |
| Length | - | 2000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Chipboard | –12– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 19.00 | 4050 |
| Chipboard | –12– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 19.70 | 4050 |
| Chipboard | –12– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 22.40 | 4700 |

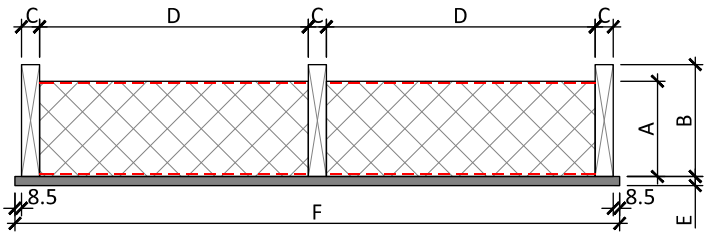
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water resistant grade chipboard glued and nailed to timber rafters
- Horizontal joints are visible on underside of panel

# UNIPUR WCB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175 mm |
| Height of rafters | B | 175-175-196 mm |
| Width of rafters | C | 24 mm (30mm when rafter height 196 mm) |
| Distance between rafters | D | 350/356 mm (in function of rafter width) |
| Thickness of the board | E | 12 mm |
| Width of the board | F | 800 mm |
| Length | - | 2000-6650 mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| )Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| White Chipboard | –12– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 19.10 | 4050 |
| White Chipboard | –12– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 19.70 | 4050 |
| White Chipboard | –12– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 22.40 | 4700 |

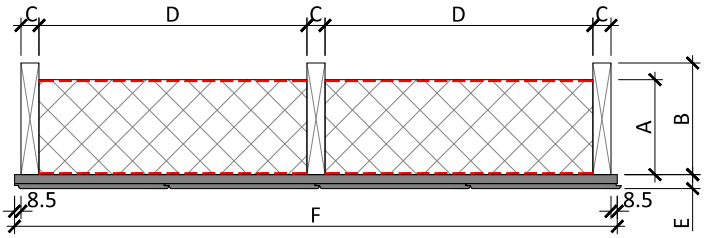
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water resistant grade white painted chipboard glued and nailed to timber rafters
- White PVC joint available to cover the underside of the joints of the elements in the longitudinal direction

# UNIPUR Impresse

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 12mm + 6mm |
| Width of the board | F | 800mm |
| Length | - | 2000-8000mm |

IMPRESSE White

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Impresse | –12 + 6– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 16.10 | 4050 |
| Impresse | –12 + 6– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 18.10 | 4050 |
| Impresse | –12 + 6– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 20.60 | 4700 |

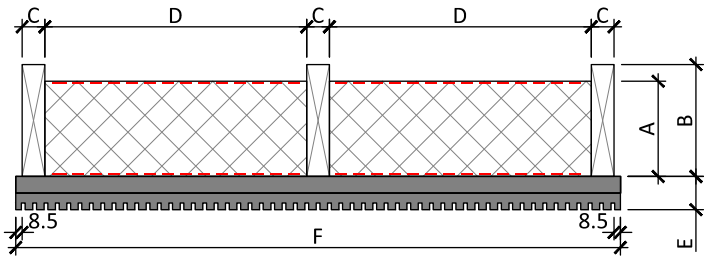
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- Solid timber boarding on 12mm chipboard with a decorative foil of 6mm glued and nailed to timber rafters
- Possible colors of Impresse are: white, brown, beige and grey

# UNIPUR (W)AB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 130-155-175mm |
| Height of rafters | B | 175-175-196mm |
| Width of rafters | C | 24mm (30mm when rafter height 196mm) |
| Distance between rafters | D | 350/356mm (in function of rafter width) |
| Thickness of the board | E | 19mm |
| Width of the board | F | 800mm |
| Length | - | 2000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| (white) Acoustic chipboard | –19– | 130/175 | 5.90 | 0.24 | 24x175 | 187 | 16.10 | 4050 |
| (white) Acoustic chipboard | –19– | 155/175 | 7.00 | 0.20 | 24x175 | 187 | 18.10 | 4050 |
| (white) Acoustic chipboard | –19– | 175/195 | 7.95 | 0.18 | 30x196 | 208 | 20.60 | 4700 |

* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 19mm water resistant , fire-retardant perforated chipboard glued and nailed to timber rafters. Can be supplied painted white (WAB). Visible horizontal joints should be carefully positioned
- Acoustic perforations are 5mm diameter and 8mm deep. The distance between each perforation is 15mm
- White PVC joint available to cover the underside of the joints of the elements in the longitudinal direction (in case of WAB cover)

# UNIPUR PLUS

## Product benefits

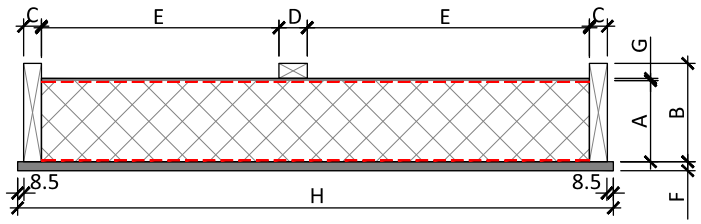
- Incorporating PIR foam is the key to the high performance of UNIPUR PLUS Panels.
- The panel is available with U values as low as 0.15 W/mK, with insulation no more than 192mm thick. As a result we can offer a roof panel with high thermal performance.
- The panels comprise 2 integral timber rafters in the longitudinal direction fixed to and stabilized by a rigid facing board which also forms the ceiling finish. These outer rafters are set back so that they can easily be combined at locations of the roof hips and valleys.
- The top layer consists of a 3mm water-resistant chipboard (density: ca. 700 kg/m³) on which a spruce counter batten is glued. The 3mm chipboard of the top board is glued on the PIR-Foam. These 'all-in-one' panels are easy and very quick to install and ready to receive the roof covering.

## Inner facing

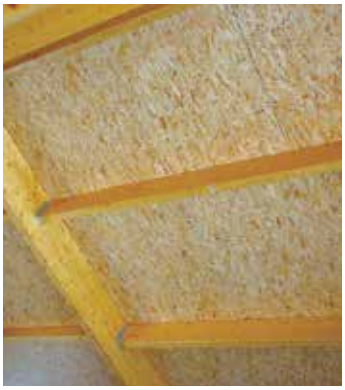
- **UNIPUR PLUS** OSB
- **UNIPUR PLUS** PB
- **UNIPUR PLUS** CB
- **UNIPUR PLUS** WCB
- **UNIPUR PLUS** PLY
- **UNIPUR PLUS** IMPRESSE
- **UNIPUR** AB and WAB

# UNIPUR PLUS OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 12mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-8000mm |



## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| OSB board | –12/3– | 127/150 | 5.75 | 0.22 | 24x150 | 162 | 20 | 3150 |
| OSB board | –12/3– | 152/175 | 6.90 | 0.19 | 24x175 | 187 | 22 | 2600 |
| OSB board | –12/3– | 172/195 | 7.80 | 0.17 | 30x195 | 207 | 24 | 4100 |
| OSB board | –12/3– | 192/215 | 8.70 | 0.15 | 30x215 | 227 | 25 | 4450 |

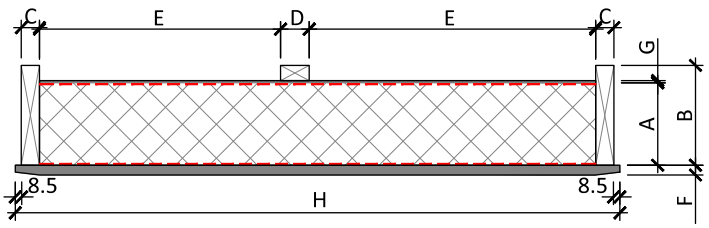
* The spans are bases on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water -resistant OSB inner facing glued and nailed on two timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam
- On request, the edges of the OSB can be chamfered

# UNIPUR PLUS PB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 13mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-4800mm<br>Panels with a length larger than 4800mm are glued |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Plasterboard | –13/3– | 127/150 | 5.75 | 0.22 | 24x150 | 163 | 23 | 2100 |
| Plasterboard | –13/3– | 152/175 | 6.90 | 0.19 | 24x175 | 188 | 25 | 2400 |
| Plasterboard | –13/3– | 172/195 | 7.80 | 0.17 | 30x195 | 208 | 27 | 2800 |
| Plasterboard | –13/3– | 192/215 | 8.70 | 0.15 | 30x215 | 228 | 28 | 3050 |

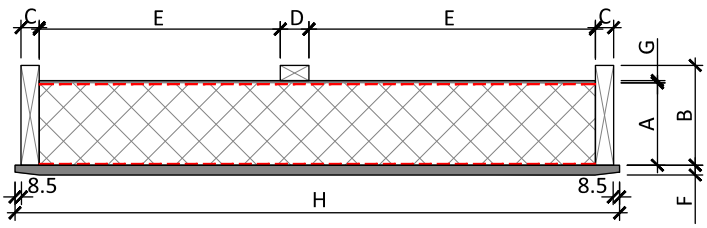
* The spans are bases on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

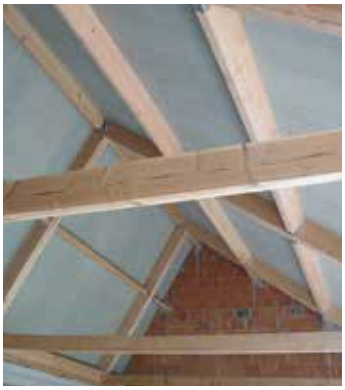
- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 13mm water-resistant , tapered edge plasterboard inner facing, glued and screwed to two timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam
- The plasterboard is noncombustible, class 'O' to UK and Irish Building Regulations.

# UNIPUR PLUS CB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 12mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-8000mm |



## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Chipboard | –12/3– | 127/150 | 5.75 | 0.22 | 24x150 | 162 | 20 | 3000 |
| Chipboard | –12/3– | 152/175 | 6.90 | 0.19 | 24x175 | 187 | 22 | 3450 |
| Chipboard | –12/3– | 172/195 | 7.80 | 0.17 | 30x195 | 207 | 24 | 3950 |
| Chipboard | –12/3– | 192/215 | 8.70 | 0.15 | 30x215 | 227 | 25 | 4300 |

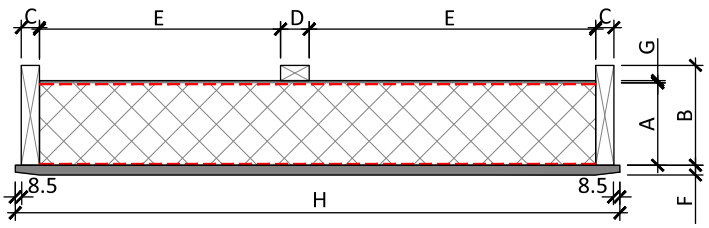
* The spans are based on a dead weight of $75kg/m^2$, snow load of $60kg/m^2$, in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water-resistant grade chipboard, glued and screwed to timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam

# UNIPUR PLUS WCB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 12mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-6650mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| White chipboard | –12/3– | 127/150 | 5.75 | 0.22 | 24x150 | 162 | 20 | 300 |
| White chipboard | –12/3– | 152/175 | 6.90 | 0.19 | 24x175 | 187 | 22 | 3450 |
| White chipboard | –12/3– | 172/195 | 7.80 | 0.17 | 30x195 | 207 | 24 | 3950 |
| White chipboard | –12/3– | 192/215 | 8.70 | 0.15 | 30x215 | 227 | 25 | 4300 |

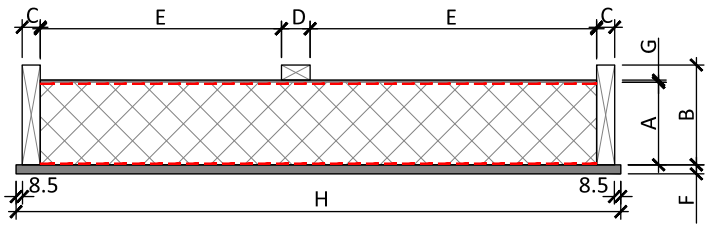
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm white painted chipboard, glued and screwed to timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam
- White PVC joint available to cover the underside of the joints of the elements in the longitudinal direction

# UNIPUR PLUS PLY

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 12mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Ply board | –12/3– | 127/150 | 5.75 | 0.22 | 24x150 | 162 | 20 | 3200 |
| Ply board | –12/3– | 152/175 | 6.90 | 0.19 | 24x175 | 187 | 22 | 3600 |
| Ply board | –12/3– | 172/195 | 7.80 | 0.17 | 30x195 | 207 | 24 | 4050 |
| Ply board | –12/3– | 192/215 | 8.70 | 0.15 | 30x215 | 227 | 25 | 4350 |

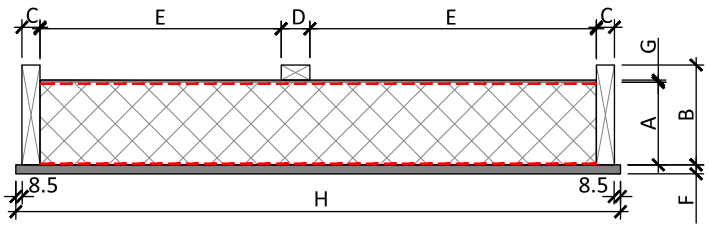
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- 12mm water-resistant aesthetic ply inner facing , glued and nailed to timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam

# UNIPUR PLUS IMPRESSE

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 127-152-172-192mm |
| Height of rafters | B | 150-175-195-215mm |
| Width of rafters | C | 24 or 30mm |
| Counterbatten | D | 38mm |
| Distance between rafters | E | 319-378mm / 315-374mm |
| Thickness of the board | F<br>G | 12+6mm<br>3mm |
| Width of the board | H | 800mm |
| Length | - | 2000-8000mm |

IMPRESSE White

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | | |
|---|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing/ upperboard (mm) | Inuslation thickness / height of the rafter (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Measurements rafters (mm) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Impresse | –12+6/3– | 127/150 | 5.75 | 0.22 | 24x150 | 168 | 22.7 | 3000 |
| Impresse | –12+6/3– | 152/175 | 6.90 | 0.19 | 24x175 | 193 | 24.7 | 3450 |
| Impresse | –12+6/3– | 172/195 | 7.80 | 0.17 | 30x195 | 223 | 26.7 | 3950 |
| Impresse | –12+6/3– | 192/215 | 8.70 | 0.15 | 30x215 | 233 | 27.7 | 4300 |

* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- Rafter depth depends on insulation thickness
- The treated rafters are glued and fixed with 6 galvanized nails per metre
- Solid timber boarding on 12mm chipboard with a decorative foil of 6mm glued and nailed to timber rafters
- The top layer consists of a 3mm chipboard glued on the PIR foam
- Possible colors of Impresse are: white, brown, beige and grey

# UNISPAN HPIR

## Product benefits

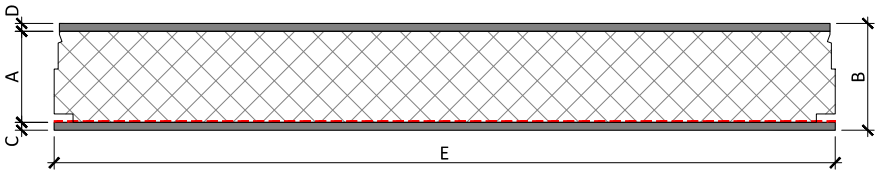
- Incorporating PIR foam is the key to the high performance of UNISPAN HPIR panels.
- A sandwich panel with vapour barrier for eliminating cold bridging resulting in improved thermal performance.
- Thanks to an Easy Airtight system , the roof is built 100% airtight without a minimum use of foils.
- They can be installed to follow the slope of the roof (on purlins), or alternatively horizontal to the roof slope on rafters or structural trusses – timber or steel frame.
- The insulation is glued between a ceiling board (= inner facing) and a moisture resistant upper board.
- The HPIR panels can be finished with ends cut to an angle at ridges and/or eaves level.
- On flat roofs, UNISPAN HPIR can be finished externally with a range of different roof coverings including bitumen, standing seam, EPDM, PVC, etc.
- The thickness of the upper board must comply with the roof covering supplier's fixing requirements and with the relevant Building Regulations. Where the roof is subjected to high humidity (Climate Class IV and in swimming pools) please contact UNILIN for product feasibility.
- The panel can be used in roofs and walls from pitches of 0 to 90 degrees.

## Inner facing

- **UNISPAN HPIR** OSB/OSB
- **UNISPAN HPIR** GFB/OSB
- **UNISPAN HPIR** CB/OSB
- **UNISPAN HPIR** WCB/OSB
- **UNISPAN HPIR** PLY/OSB
- **UNISPAN HPIR** IMPRESSE/OSB

# UNISPAN HPIR OSB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 114-139-174-204-229mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| OSB board | –12/12– | 90 | 4.05 | 0.25 | 114 | 19.60 | 1300 |
| OSB board | –12/12– | 115 | 5.20 | 0.19 | 139 | 20.40 | 1800 |
| OSB board | –12/12– | 150 | 6.80 | 0.15 | 174 | 21.40 | 2250 |
| OSB board | –12/12– | 180 | 8.15 | 0.13 | 204 | 22.30 | 2600 |
| OSB board | –12/12– | 205 | 9.30 | 0.11 | 229 | 23.10 | 2850 |

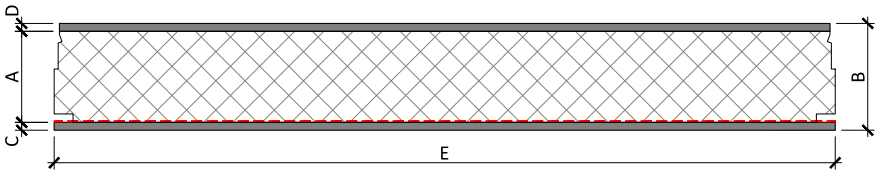
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and bottom for increased spans
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN HPIR GFB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 114.5 - 139.5 - 174.5 - 204.5 - 229.5mm |
| Thickness of the board | C<br>D | 12.5mm<br>12mm |
| Width of the board | E | 800mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Gypsum fibreboard | –12.5/12– | 90 | 4.05 | 0.25 | 114 | 19.60 | 1550 |
| Gypsum fibreboard | –12.5/12– | 115 | 5.20 | 0.19 | 139 | 20.40 | 1850 |
| Gypsum fibreboard | –12.5/12– | 150 | 6.80 | 0.15 | 174 | 21.40 | 2100 |
| Gypsum fibreboard | –12.5/12– | 180 | 8.15 | 0.13 | 204 | 22.30 | 2250 |
| Gypsum fibreboard | –12.5/12– | 205 | 9.30 | 0.11 | 229 | 23.10 | 2400 |

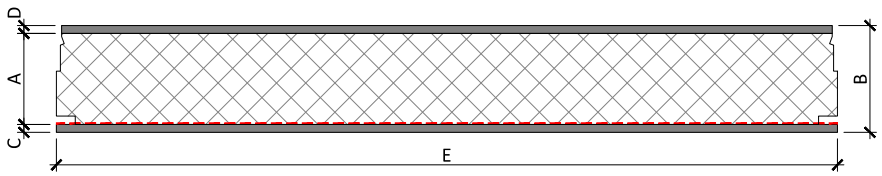
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and a 12.5mm water resistant chamfered gypsum fibreboard
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN HPIR CB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 114-139-174-204-229mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Chipboard | –12/12– | 90 | 4.05 | 0.25 | 114 | 19.60 | 1450 |
| Chipboard | –12/12– | 115 | 5.20 | 0.19 | 139 | 20.40 | 1750 |
| Chipboard | –12/12– | 150 | 6.80 | 0.15 | 174 | 21.40 | 2100 |
| Chipboard | –12/12– | 180 | 8.15 | 0.13 | 204 | 22.30 | 2400 |
| Chipboard | –12/12– | 205 | 9.30 | 0.11 | 229 | 23.10 | 2650 |

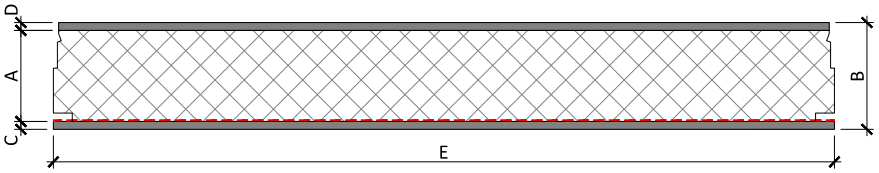
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and a 12mm water resistant chipboard as inner facing
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN HPIR WCB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 114-139-174-204-229mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-6630mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| White Chipboard | –12/12– | 90 | 4.05 | 0.25 | 114 | 19.60 | 1450 |
| White Chipboard | –12/12– | 115 | 5.20 | 0.19 | 139 | 20.40 | 1750 |
| White Chipboard | –12/12– | 150 | 6.80 | 0.15 | 174 | 21.40 | 2100 |
| White Chipboard | –12/12– | 180 | 8.15 | 0.13 | 204 | 22.30 | 2400 |
| White Chipboard | –12/12– | 205 | 9.30 | 0.11 | 229 | 23.10 | 2650 |

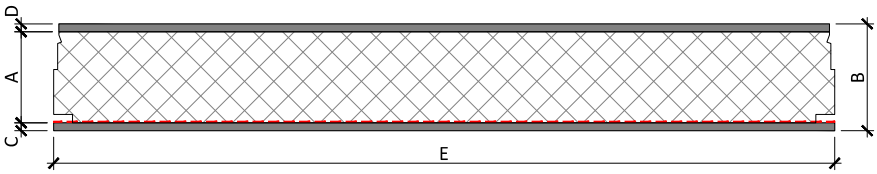
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and a 12mm white painted water resistant chipboard as inner facing
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN HPIR PLY/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 114-139-174-204-229mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Ply board | 12/12– | 90 | 4.05 | 0.25 | 114 | 19.60 | 1600 |
| Ply board | 12/12– | 115 | 5.20 | 0.19 | 139 | 20.40 | 1900 |
| Ply board | 12/12– | 150 | 6.80 | 0.15 | 174 | 21.40 | 2350 |
| Ply board | 12/12– | 180 | 8.15 | 0.13 | 204 | 22.30 | 2700 |
| Ply board | 12/12– | 205 | 9.30 | 0.11 | 229 | 23.10 | 3000 |

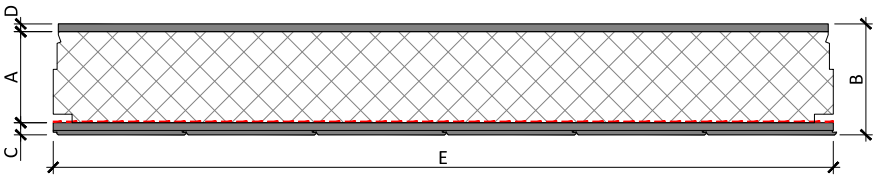
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and a 12mm water resistant aesthetic ply inner facing
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN HPIR IMPRESSE/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 90-115-150-180-205mm |
| Total thickness | B | 120-145-180-210-279mm |
| Thickness of the board | C<br>D | 12+6mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

IMPRESSE White

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\,ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Impresse | –12+6/12– | 90 | 4.05 | 0.25 | 120 | 19.60 | 1450 |
| Impresse | –12+6/12– | 115 | 5.20 | 0.19 | 145 | 20.40 | 1750 |
| Impresse | –12+6/12– | 150 | 6.80 | 0.15 | 180 | 21.40 | 2100 |
| Impresse | –12+6/12– | 180 | 8.15 | 0.13 | 210 | 22.30 | 2400 |
| Impresse | –12+6/12– | 205 | 9.30 | 0.11 | 279 | 23.10 | 2650 |

* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- The space between the rafters is filled with PIR foam
- The sandwich panel has a vapour barrier for eliminating cold bridging and an Easy Airtight system for an 100% airtight result
- 12mm OSB board top and a 12mm chipboard with a decorative foil of 6mm
- The panel can be used in roofs and walls from pitches of 0 to 90 degrees
- Possible colors of Impresse are: white, brown, beige and grey
- Do not forget to order the accessories which are necessary for a complete roof airtightness: unifoil and PVC foamtape. The airtight timber fillet is an integral part of the roof panel

# UNISPAN MW

## Product benefits

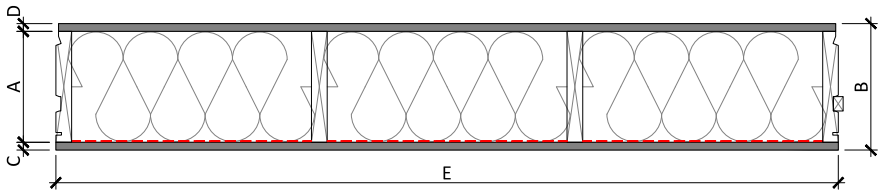
- A sandwich panel incorporating mineral wool insulation (minimum 35kg/m3) suitable for pitched or flat roofs.
- Panels are rigid and meet stringent requirements for sound insulation, fire ratings and large spans (BBA certificate applied for) and are ideal for all buildings from domestic to large public buildings.
- The ecological benefits of the panels can be further enhanced by the inclusion of timber insulation (density 40kg/m$^3$) made from natural timber fibres. The panels can be installed either horizontally or following the slope of the roof onto structural wall, structural timber trusses/purlins or steel purlins.
- Sandwich panels can be supplied with ends cut to an angle at ridges and/or eaves level. Infill panels on request.
- On flat roofs, UNISPAN MW can be finished externally with a range of different roof coverings including bitumen, standing seam, EPDM, PVC, etc.
- The thickness of the upper board must comply with the roof covering supplier's fixing requirements and with the relevant Building Regulations. Where the roof is subjected to high humidity (Climate Class IV and in swimming pools) please contact UNILIN for product feasibility.

## Inner facing

- **UNISPAN MW** OSB/OSB
- **UNISPAN MW** GFB/OSB
- **UNISPAN MW** PLY/OSB

# UNISPAN MW OSB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 172-196-220mm |
| Total thickness | B | 196-220-244mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| OSB board | –12/12– | 172 | 4.60 | 0.24 | 196 | 19.60 | 4500 |
| OSB board | –12/12– | 196 | 5.25 | 0.23 | 220 | 20.40 | 5350 |
| OSB board | –12/12– | 220 | 5.90 | 0.20 | 224 | 21.40 | 5850 |

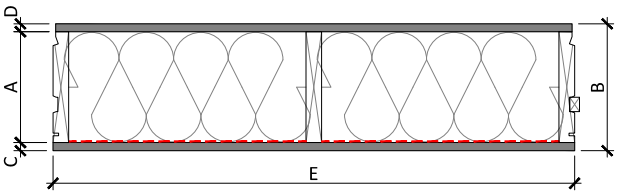
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- A structural sandwich panel with OSB inner lining. Standard upper board of 12mm OSB and 12mm water-resistant OSB as inner facing
- Standard panels are available with vapour barrier at inner facing of insulation
- Other options for areas of severe humidity are available on request
- Panels can be supplied with ends cut to an angle at ridge and eaves

# UNISPAN MW GFB/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 172-196-220mm |
| Total thickness | B | 196.5-220.5-244.5mm |
| Thickness of the board | C<br>D | 12.5mm<br>12mm |
| Width of the board | E | 800mm |
| Length | - | 24000-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Gypsum fibreboard | –12.5/12– | 172 | 4.60 | 0.24 | 196 | 19.60 | 3100 |
| Gypsum fibreboard | –12.5/12– | 196 | 5.25 | 0.23 | 220 | 20.40 | 3600 |
| Gypsum fibreboard | –12.5/12– | 220 | 5.90 | 0.20 | 224 | 21.40 | 3900 |

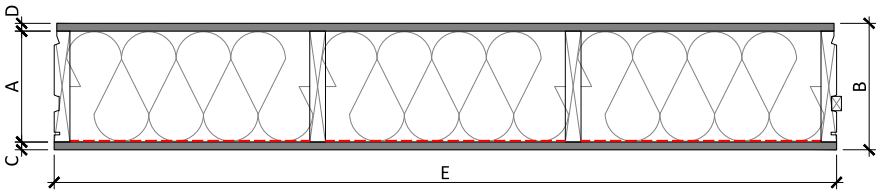
* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- A structural sandwich panel with OSB inner lining. Standard upper board of 12mm OSB and 12,5mm water-resistant gypsum fibreboard as inner facing
- Standard panels are available with vapour barrier at inner facing of insulation
- Other options for areas of severe humidity are available on request
- Panels can be supplied with ends cut to an angle at ridge and eaves

# UNISPAN MW PLY/OSB

## Section




| | | |
|---|---|---|
| Insulation thickness | A | 172-196-220mm |
| Total thickness | B | 196-220-244mm |
| Thickness of the board | C<br>D | 12mm<br>12mm |
| Width of the board | E | 1200mm |
| Length | - | 2400-8000mm |

## Product specifications

| DESCRIPTION | | | TECHNICAL INFO | | | | |
|---|---|---|---|---|---|---|---|
| Specification inner facing | Thickness inner facing (mm) | Inuslation thickness (mm) | $R_{D\ ISOL}$-value ($m^2K/W$) | U-value ($W/m^2K$) | Tota height (mm) | Weight ($kg/m^2$) | Maximum single sapn at 45°* (mm) |
| Ply board | –12/12– | 172 | 4.60 | 0.24 | 196 | 19.60 | 4500 |
| Ply board | –12/12– | 196 | 5.25 | 0.23 | 220 | 20.40 | 5350 |
| Ply board | –12/12– | 220 | 5.90 | 0.20 | 224 | 21.40 | 5850 |

* The spans are based on a dead weight of 75kg/m², snow load of 60kg/m², in wind zone A at 45° pitch

## Composition

- A structural sandwich panel with OSB inner lining. Standard upper board of 12mm OSB and 12mm water-resistant Ply board as inner facing
- Standard panels are available with vapour barrier at inner facing of insulation
- Other options for areas of severe humidity are available on request
- Panels can be supplied with ends cut to an angle at ridge and eaves

# Structural insulated panels (SIPs) for walls

**UNILIN structural insulated panels (SIPs) are already established as market leaders in Western Europe, especially for pitched roof applications**

However, in recognition of challenges present in the UK market, UNILIN has now developed a complete package for the structural exterior building envelope suitable for all types of foundations constructions found in the UK-market.

Allowing rapid construction of the entire building structure in hours rather than days and producing a prefabricated structure, out-performing standards set in building regulations for thermal performance and airtightness, UNILIN SIPs can be used for residential, commercial schools and public buildings. The panels provide an ecologically friendly and energy efficient building envelope.

The panels are complete with socket positions for purlins and joints to attach each panel together. Purlins are then added and UNILIN's unique insulated roof panels are secured. The system dramatically reduces on-site time, improves airtightness and consequently improves the effectiveness of the insulation, which can exceed building regulations.

UNILIN panels resolve one of the major issues when using SIPs in the gable, securely and speedily building up gable and party walls. With the added benefit of improved health and safety due to the nature of modular construction, the robust panels virtually eliminate the risk of falling through the roof.

# SIP Major Benefits

✓ **Excellent Thermal Performance**
UNILIN structural insulated panels provide superior thermal performance that will last for the lifespan of the building. This is due to the solid core of PIR insulation throughout the structure ensuring the building is heated evenly. Remaining free from cold spots, UNILIN SIPs deliver exceptional thermal performance, the PIR core and OSB3 facings achieving U-values as low as 0.11W/m2K, leading to significant savings on annual heating costs.

✓ **Habitable Space**
UNILIN SIPs do not require roof trusses and therefore can provide an additional habitable room in the roof. The panels also create more internal ground floor surface when compared to masonry construction, as they deliver equivalent insulation in a smaller wall section.

✓ **Low Wastage**
Structural insulated panels are pre-engineered in a factory environment which eliminates defects and wastage throughout the manufacturing and construction processes.

✓ **Fast Construction**
By using UNILIN SIPs, on-site construction time can drastically be reduced by a third.

✓ **Airtightness**
Poor airtightness is a major cause of heat loss, a SIP construction eliminates this loss and provides a controllable indoor environment due to superior airtightness.

✓ **Limited Cold Bridging**
UNILIN SIPs are joined in a manner where there is a continuous PIR core throughout the walls and roof of a building. This greatly improves thermal efficiency when compared to both traditional built and timber frame.

✓ **Solid Panels Provide a Rigid Surface for Fixings**
In most cases, no additional timber noggins are required to facilitate the hanging of radiators and kitchen units, as is the case with timber frame construction.

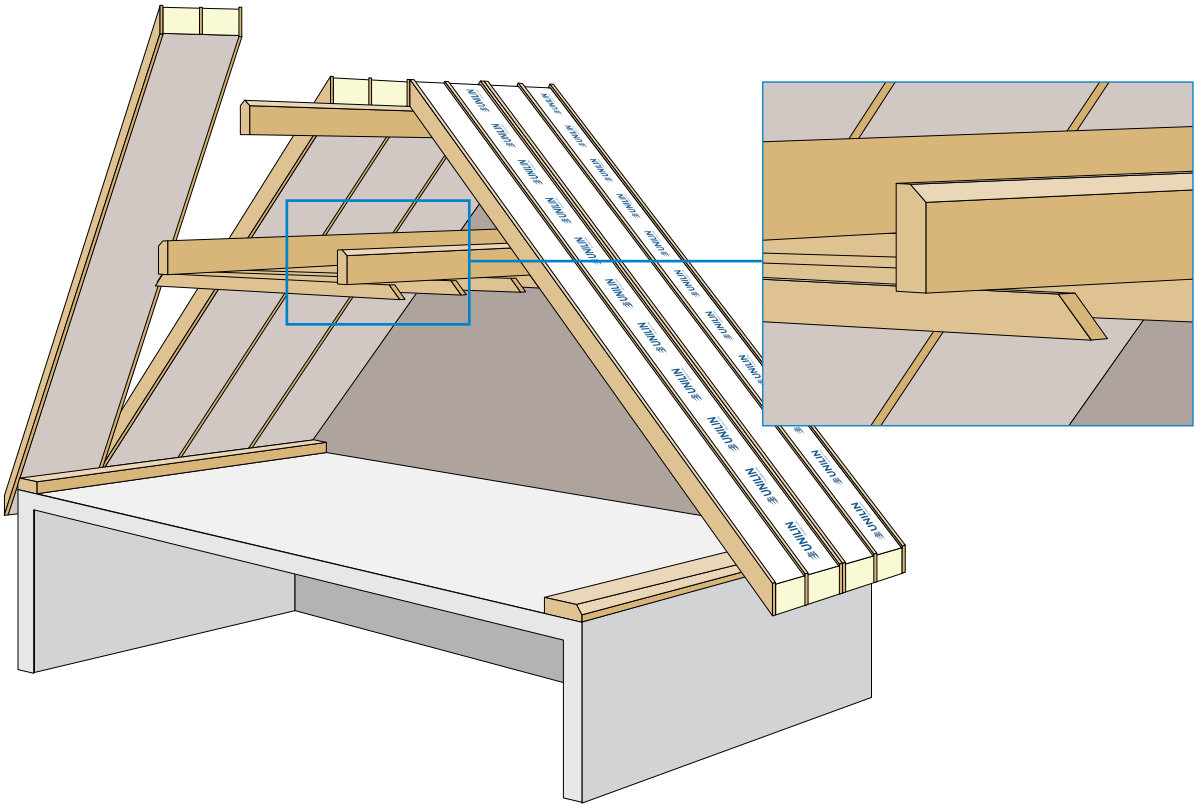
# Installation of UNILIN panels

## Design and planning phase - generaly

The most successful projects are accomplished because the resources are planned and organised in advance, and all the risks are understood beforehand. This is especially true when considering an advanced building method. UnIIIn structural insulated panels are designed specifically for your project. When the build process is well planned the panels will be installed much faster and more safely than a conventional build.

**Here are some key points to remember when planning for and installing your UNILIN roof, spandrel or wall.**

- Make sure your design team is able to specify and detail "SIP" roofs. The detailing and sealing of the roof and walls is crucial to their performance. The structural elements of the roof need to be optimised to be economically viable, and comply with design codes. If your design team needsadvice, or you want our technical team to check things out beforehand, then just contact us – the sooner the better!
- The panels are normally cut in our factory facility in Belgium. This is one of the most advanced panel manufacturing factories in Europe. You are benefiting from large scale manufacturing speed, volume and accuracy. It is therefore absolutely vital to the success of your project that you measure and double check every dimension and angle needed to produce the panel. Ultimately it is your responsibility to sign off the production schedules and design – we can assist you of course. BUT remember once a panel is in production it is virtually impossible to alter.
- The delivery of your panels should be considered very carefully. Your project management team needs to identify the access requirements, the offloading area, whether the sequence of the panel installation affects the position of men and machines and the nature of the lifting machinery. It's important to understand whether a crane is needed or whether you have access to an hydraulic lifting clamp. A well-trained team versed in "SIPS" can work at an amazing pace – with the right equipment and forward planning. This is also when health and safety becomes paramount to your project. You need to make sure that your risk assessments and method statements reflect the type of "fast-track" construction issues involved.
- When installing the panels remember that the correct fixing details and tools are going to make life easier, and of course more cost-effective in the long run. If you are not totally familiar with "SIP" techniques and particularly roof panels – don't wing it... get advice ! Let us help you – we have years of experience and UK partners who can show you best practice and how to be more efficient.



# Installation and fixing of roof panels

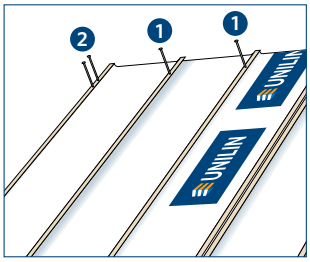
## UNIPUR and UNIPUR PLUS

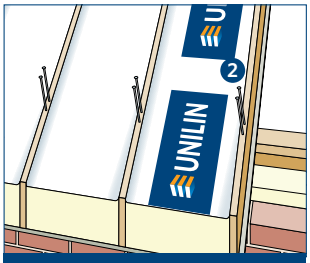
UNIPUR panels are fixed in the timber structure using woodscrews.

The woodscrews can be directly fixed through the rafters in the timber structure without pre-drilling.

Number of fixings:
- 1 fixing per crossing panel rafter/timber structure
- Double fixings at gables and wall plates

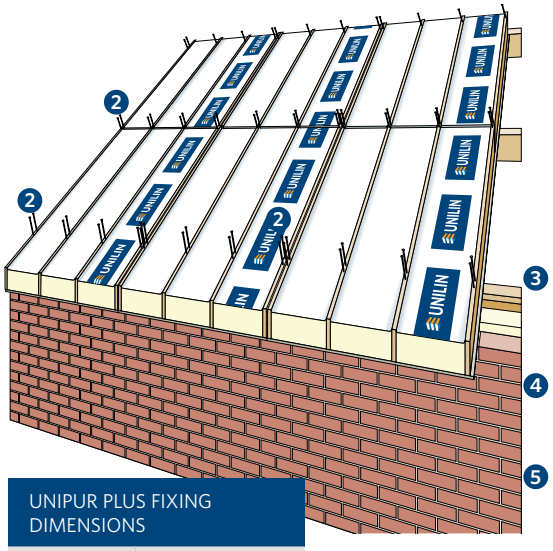
1. Woodscrews
2. Double fixings at gables & wall plate
3. Ridge purlin
4. Purlin
5. Wall plate





UNIPUR FIXING DIMENSIONS

| Rafter height | Woodscrew 6mm diameter |
|---|---|
| 175 | 260 |
| 195 | 280 |



UNIPUR PLUS FIXING DIMENSIONS

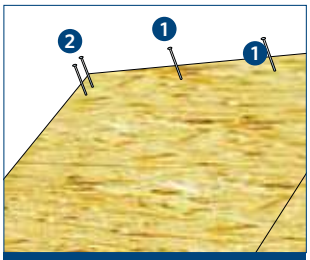
| Rafter height | Woodscrew 6mm diameter |
|---|---|
| 150 | 240 |
| 175 | 260 |
| 195 | 280 |
| 215 | 300 |

## UNISPAN HPIR

UNISPAN HPIR panels are directly fixed with woodscrews through the panels

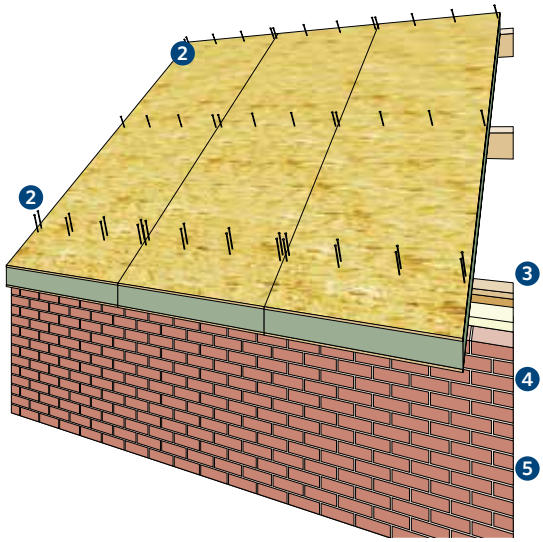
Number of fixings:
- 4 fixings per crossing panel/timber structure
- Double fixings at gables and wall plates

1. Screw nail with optional washer
2. Double fixings at gables & wall plate
3. Ridge purlin
4. Purlin
5. Wall plate



UNISPAN HPIR FIXING DIMENSIONS

| Insulation height | Woodscrew 6mm diameter |
|---|---|
| 90 | 180 |
| 115 | 220 |
| 150 | 240 |
| 180 | 280 |
| 205 | 300 |

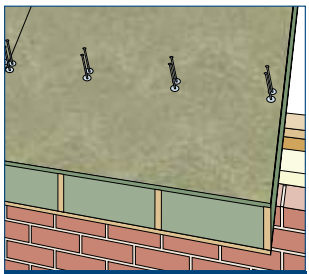


## UNISPAN MW

UNISPAN MW panels are fixed with woodscrews through the rafters in the timber structure.

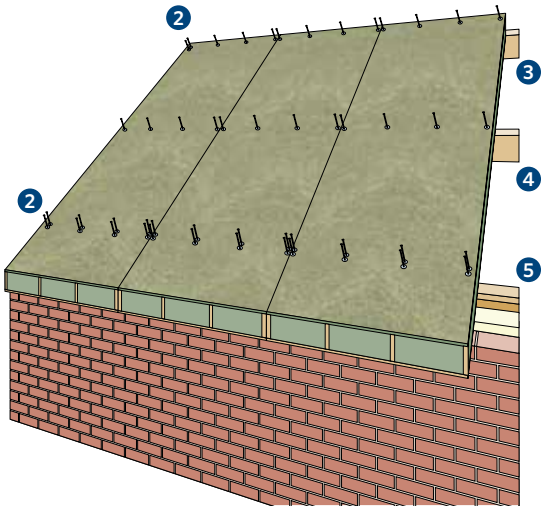
Number of fixings:
- 4 fixings per crossing panel/timber structure
- Double fixings at gables and wall plates

1. Screw nail with optional washer
2. Double fixings at gables & wall plate
3. Ridge purlin
4. Purlin
5. Wall plate



UNISPAN MW FIXING DIMENSIONS

| Rafter height | Woodscrew 6mm diameter |
|---|---|
| 172 | 260 |
| 196 | 280 |
| 220 | 300 |



# Points to consider

**Cross junctions – for long roof slopes and valleys**
At cross junctions, where two roof panels are joined, the end of the UnIIIn panels must always be fixed on a purlin. The bearing should be minimum 30mm per roof panel. A gap should be left between the panels to allow for the spray can nozzle (Ø=5mm). These junctions must be carefully sealed to keep water out, firstly by injecting insulation foam, and then applying a breathable membrane from the ridge covering the junction.

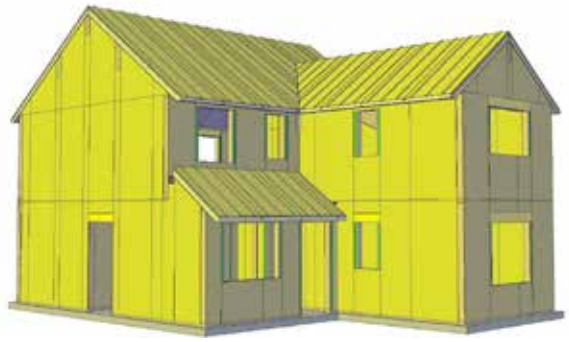
**Longitudinal junctions**
To maintain good thermal insulation, and to create a watertight and airtight structure, the longitudinal junctions must be sealed by spraying insulation foam into the joint (see photo 1). Important considerations water, wind and air leakage Carefully seal all junctions between panels, and between panels and other elements (chimney stack, gutter, walls, abutting buildings, etc).

**Vermin and ventilation**
Always provide ventilation in accordance with Building Regulations requirements. Appropriate measures should be taken to avoid ingress of insects, etc.

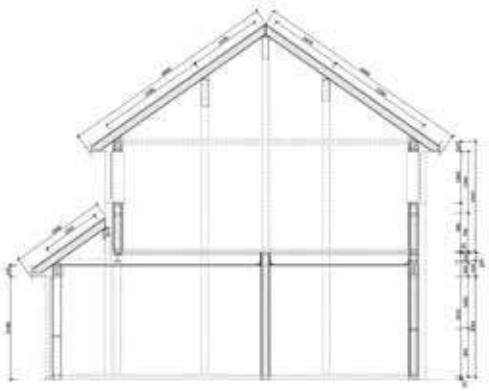
**Mould formation**
To avoid mould formation on wood facing, it is advisable to keep the building well ventilated and/or to apply the finishing promptly.

# SIP details

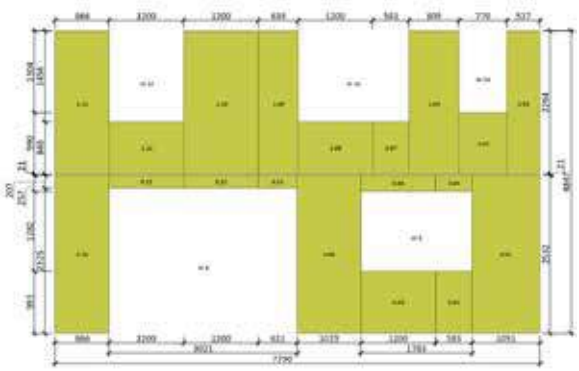
1. UNILIN is dedicated to aid the customer by providing all necessary lay-out plans.

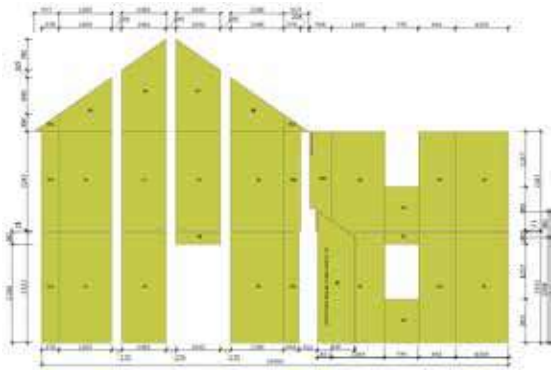


2. The dimensions are marked and the structural components clearly shown.



3. The different structural panels are numbered floor by floor to avoid mistakes on site and to maximize construction speed.





# Project gallery

*Residential project, Ringstead*
*Panel: SWHPUR (sandwich panels, PIR insulation, OSB)*
*Architect Martin Benke*

*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*

*Reydahel house >> gaat eruit en wordt vervangen door*
*Residential house, Ringstead*
*panel-type: UNISPAN HPIR (sandwich panel, HPIR insulation, OSB)*
*Constructor: Tophaven*

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

# Sustainability and UNILIN

Sustainability is a vital concept for all future buildings in the UK. The term can be used to describe many aspects of the procurement process, from initial design right though to how materials are disposed of at the building's end of life.

As a large international company we have a responsibility not only to our shareholders but to our people and the environment. We take this seriously and you are more than welcome to read our environmental policies pertaining to our products and our company in general. The company is committed to reducing its carbon footprint in all its operations and is striving to become a great example in the construction materials industry of how to be profitable and environmentally sound. We all have our part to play if we want to prosper in this industry and meet the needs of not only our times, but those uncertain times in the future that our children and grandchildren will inherit from us.

Our products are designed to be of the highest quality, including the processes by which they are made. The issue of embodied carbon and carbon emissions is becoming a driver for new legislation coming into force over the next few years. We have no doubt that the use of Whole life Cycle Costings and other environmental metrics will become more important than they currently are. Simply choosing the cheapest, minimum solution will not work anymore. New assessments such as SAP calculations and BREEAM already take energy efficiency into account, but they also stress the need to reduce carbon emissions by setting ever increasing targets. The aim for carbon neutral buildings and zero emission through Europe in the next decade will usher in a permanent change in the UK. This is the challenge we all face. UNILIN will be the supply partner of choice for those construction companies and clients who are ready to change now.

The "smart living" slogan means just that - UNILIN products are the way to achieve compliance with all UK building codes and help the UK move to a smarter way of life. We aim to exceed all minimum energy efficiency and buildability requirements, and set the standard for insulation and timber engineered solutions in the UK. Our drive for excellence means that you can be assured that by using our products sustainability will be built in to all your projects for years to come.

# Notes

# Notes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