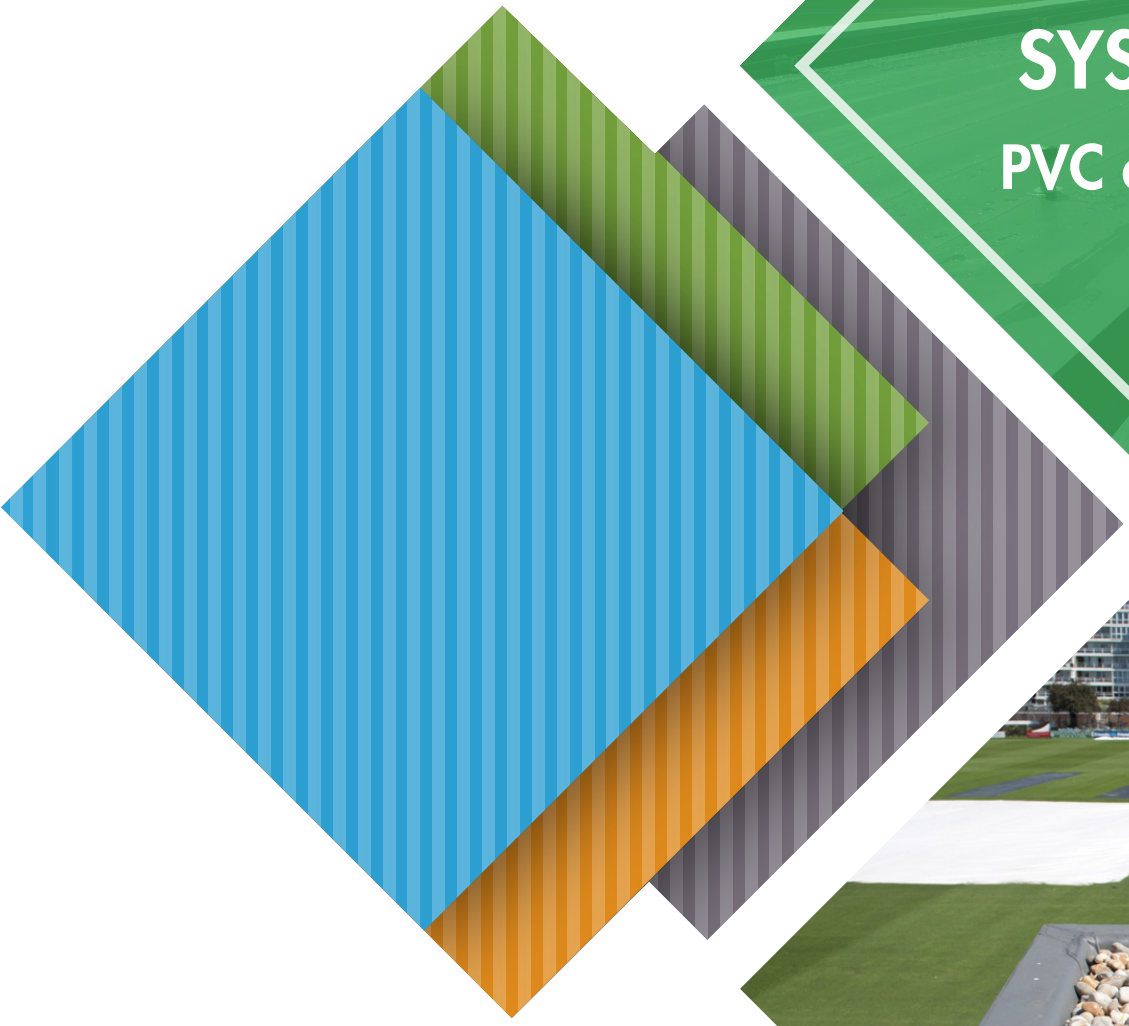
SINTEC

your waterproofing partner

ROOFING SYSTEMS

PVC and TPO



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PVC and TPO membranes have opened the way to all waterproofing sectors thanks to their many advantages, such as flexibility and strong tear resistance, combined with superior welding ability, low safety risks, ease of installation and excellent whole life costs.

The SINTEC range of waterproofing products have a long and successful history, produced under strict quality control standards. URDIN PVC and URTOP TPO synthetic waterproofing membranes have been specifically developed to achieve a fast, sustainable, durable, environmentally friendly and aesthetically pleasing waterproofing solution.

At SINTEC we endeavour to provide market leading waterproofing systems, tailored to meet the needs of the client. With customer service and quality at the forefront of our minds, we can assist with conception through to completion of projects. By assisting with specifications, technical detailing, design and using an approved installer network, we are in a stronger position to offer specifiers the peace of mind that they will be provided with a bespoke roofing solution to meet their specific requirements.

We pride ourselves in staying at the leading edge of waterproofing technology and given the prestigious developments that have been completed using URDIN / URTOP waterproofing systems throughout the World, the URDIN / URTOP name is synonymous with high quality single ply waterproofing solutions.

This brochure is designed to give an overview of the installation, technical/design details of the system, whilst evidencing a few projects that have been completed using SINTEC Waterproofing systems.

Introduction

For more than 30 years, PVC membranes have opened their way to all waterproofing sectors thanks to their many advantages, such as flexibility and strong tear resistance, combined with superior welding ability, low safety risks, ease of installation and excellent whole life costs.

The URDIN / URTOP range of waterproofing products have a long and successful history, produced under strict quality control standards. URDIN / URTOP and synthetic waterproofing membranes have been specifically developed to achieve a fast, sustainable, durable, environmentally friendly and aesthetically pleasing waterproofing
solution.

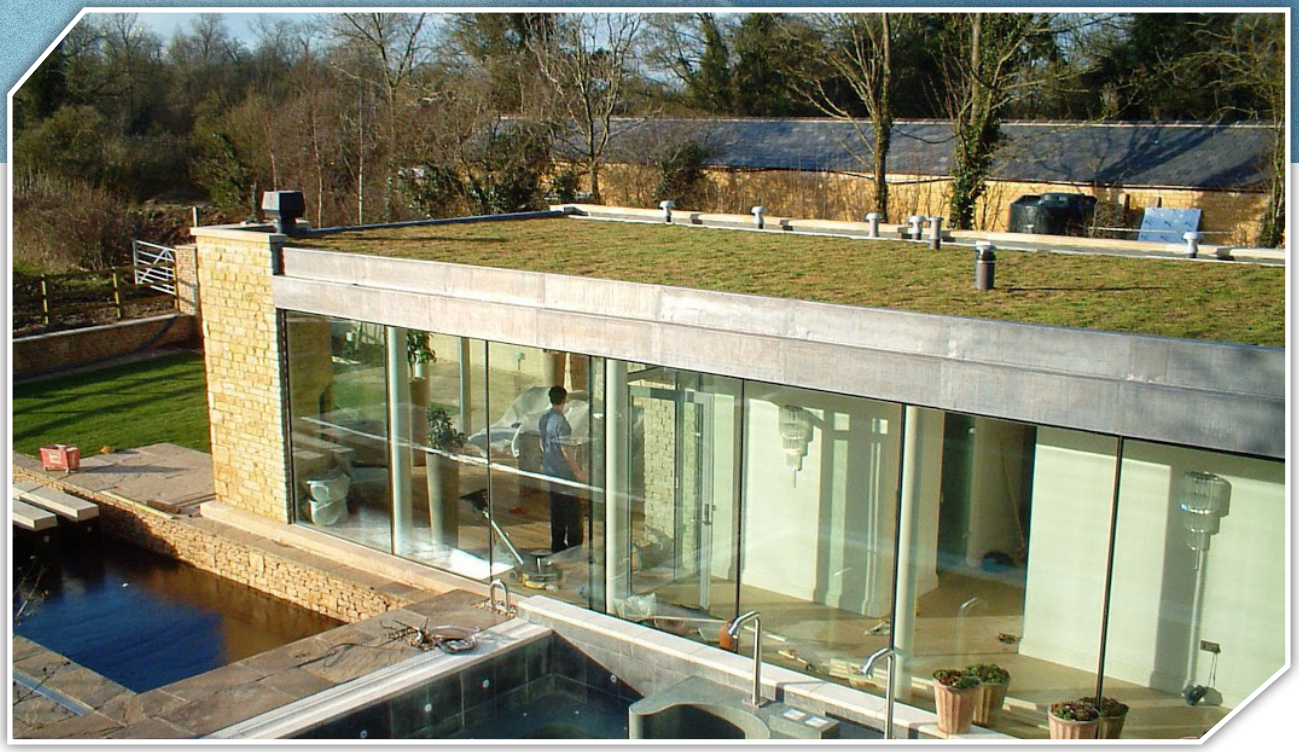
This brochure has been prepared to assist Specifiers and Contractors in selecting the most appropriate products from the range available. If required, a trained technical advisor can be consulted.

Applications

> Mechanically fixed systems

> Fully adhered Inverted

> Ballasted roof system



Reasons to select URDIN and URTOP

1 UV RESISTANCE

URDIN and URTOP membranes are integrated with UV resistors at source during the manufacturing process. Exposed membranes therefore provide superior UV degradation resistance.

2 FIRE RESISTANCE. URDIN / URTOP

URDIN and URTOP membranes are fire resistant and self-extinguishing. In addition, they cannot be ignited by flying sparks. URDIN and URTOP membranes have passed some of the most stringent European regulations. The use of URDIN and URTOP membranes is therefore unrestricted under the current building regulations.

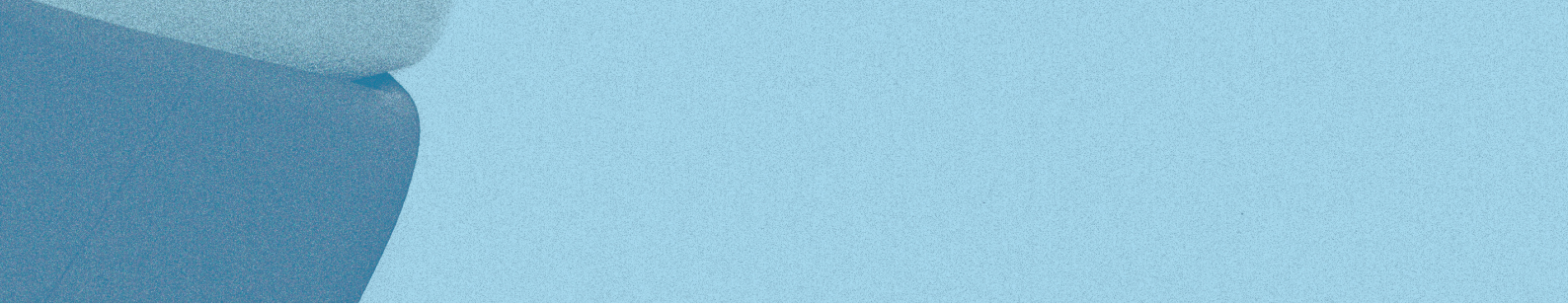
3 WATERTIGHT

URDIN and URTOP membranes, when correctly heat welded, homogenise together to become one at molecular level. Therefore, the join is at least as strong as the membrane itself with no weak points.

The membrane has been rigorously tested for moisture resistance, behaviour under hydrostatic pressure and impact strength, and classed as leakproof. Under the European standard peel test, the URDIN and URTOP membrane broke outside of the seam without any sign of weld failure.

4 FLEXIBILITY

URDIN and URTOP membranes have all been produced to comply with the needs of today's buildings with regard to structural and building movement. They are dimensionally stable and will repeatedly accommodate normal structural movement without fatigue. Low temperature flexibility has been tested down to -35 degrees C.



5 SUSTAINABILITY

URDIN and URTOP membranes have been rigorously tested by many European testing establishments and have a proven history of success in providing long term waterproofing to a variety of building designs. The product life expectancy is documented as 'in excess of 25 years' and laboratory accelerated weathering tests have shown this to be even greater. URDIN and URTOP materials are installed worldwide in a variety of climatic extremes and show superior performance and durability - a crucial element in environmental sustainability.

6 GUARANTEE

Extensive roof assured warranty schemes are available that a client can rely on for up to 10 years. For most projects, this covers materials, workmanship, design, product liability and consequential loss, complete with independent insurance backing.

7 QUALITY

URDIN and URTOP membranes are produced strictly in accordance with quality standards. The extrusion process is computerised to ensure consistent quality and all raw materials randomly tested prior to integration and development.

8 ENVIRONMENTALLY FRIENDLY

URDIN and URTOP synthetic membranes are produced in line with the ISO14001 environmental management system. This policy covers development, raw materials, production, distribution, installation, service and recycling. The product provides a healthy long life expectancy and can be recycled at the end of its useful roofing life. Assembly and seam welding is rapid with low energy output and the membranes lightweight construction minimises transport energy. URDIN and URTOP products therefore have minimal environmental impact, from conception to completion.

9 SAFETY

URDIN and URTOP membranes are fast and easy to install and offer significant reductions in relation to risk with many alternative roofing systems. To compliment the membrane, all specifications are safety conscious with the integration of polyurethane glues (CFC & HCFC free) and even self-adhesive vapour barriers to avoid the use of hot bitumen boilers. This provides peace of mind to building owners and installers and achieved preferred system status with some leading building insurance underwriters.

10 AESTHETICS

SINTEC roofing membranes come in standard light grey. However, alternative colours are available in white, blue, green, beige, lead grey and red. All colours are tested for colourfastness under UV and sunlight accelerated procedures to ensure long term aesthetic performance.

11 TECHNICAL SUPPORT

SINTEC can offer everything a specifier or building owner will need. From initial advice and technical support to full roof surveys, detailed drawings, specifications, thermal, acoustic and wind uplift calculations. Our team are available throughout the project to ensure complete client satisfaction.

Mechanically fixing

Presentation

Thickness	Width	Weight /mt²	Roll lengt
1,2	1,05 - 2,10 - 1,60	1,56	20 lm
1,5	1,05 - 2,10 - 1,60	1,56	20 lm
1,8	1,05 - 2,10 - 1,60	1,56	20 lm
2,0	1,05 - 2,10 - 1,60	1,56	20 lm

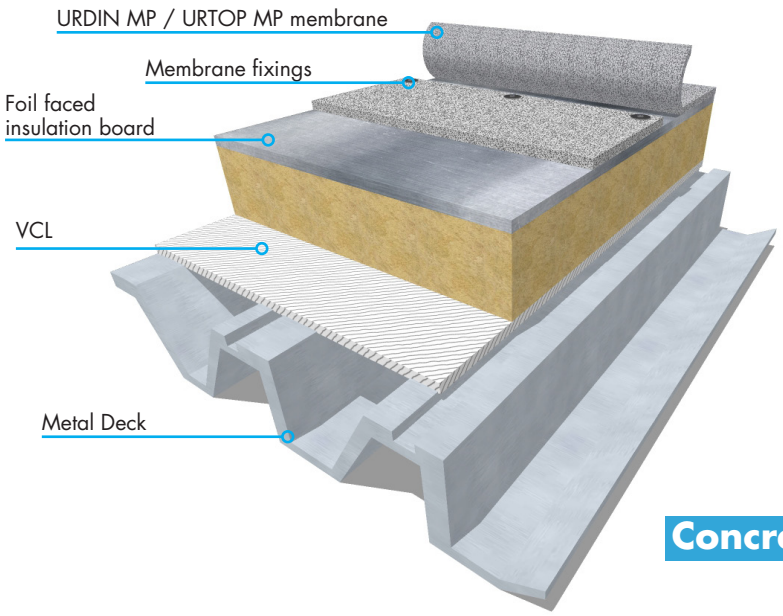
Storage

Store dry. Rolls to be parallel and in original packing where possible. Do not stack in cross form or under pressure.

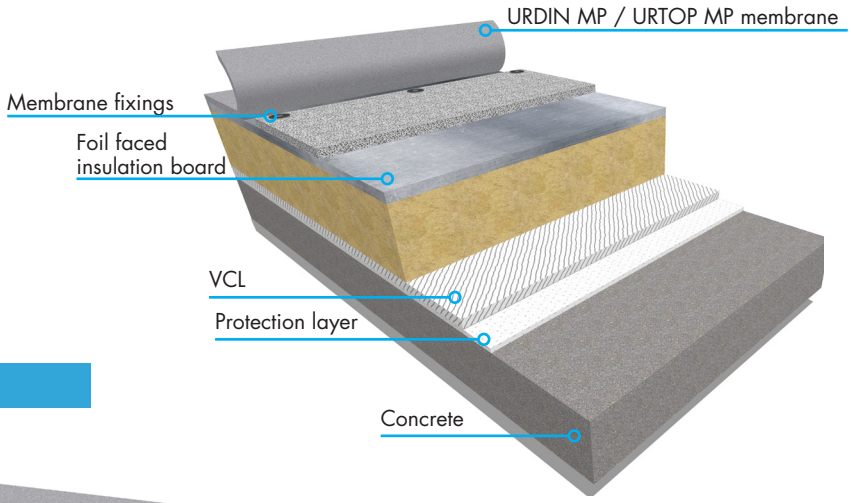
Installation

Check out our application guidelines for URDIN MP and URTOP MP membranes, mechanically fixed into metal deck, wood or concrete. If you need any specification for other substrates, please contact us.

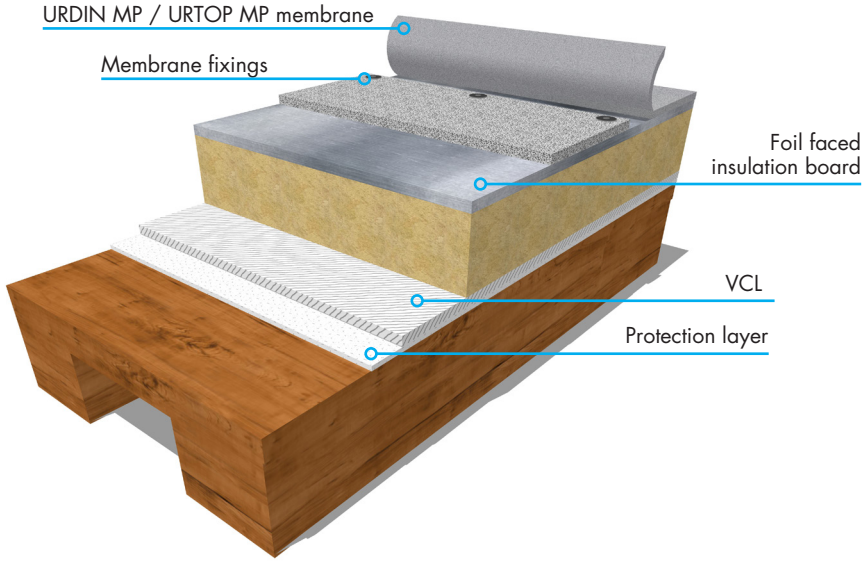
Metal deck (warm roof)



Concrete (warm roof)



Timber (warm roof)



Mechically fixing

Preparation

Before applying the roofing membrane, the structure must be free of irregularities, water or ice and any debris such as screws, metal off-cuts should be removed.

Substrates

Metal deck

The minimum thickness for metal deck to be used with mechanical fasteners is 0.7 mm.

Concrete

The surface of the concrete must be smooth and free from irregularities. The quality of the concrete must comply with national standards.

Timber

The minimum thickness of the supporting structure is:

> Wood: 25 mm (tongued and grooved)

> Plywood (exterior quality): 19 mm (preferably 22 mm)

Special care must be taken with any treatment used as it has to be compatible with thedifferent components and the fastening method of both insulation and membrane.

The aim of all supporting elements is to achieve a closed deck surface where all vertical movement is excluded. Height or thickness tolerances between panels must not exceed 3 mm. The installation of the supporting timber structure must comply with local building regulations.

Protection layer

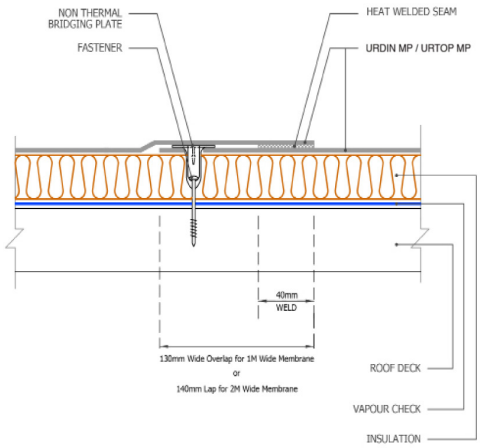
On rough surfaces or wooden structures, a geotextile protective layer is used to ensure that damage does not occur to the roofing membrane or the vapour control layer. Protective layers are loosely laid with a 50 mm overlap.

Vapour control layer

Although the membrane has a high level of vapour permeability, if, due to special characteristics of the building and the environment, a higher humidity is expected, a vapour control layer may be required.

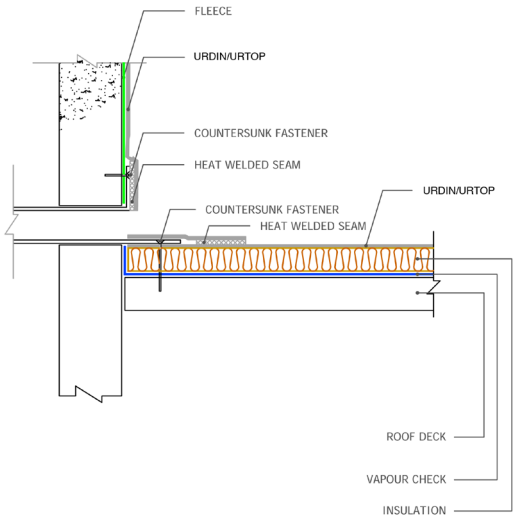
Insulation

Insulation boards must be approved by the respective manufacturer for use PVC roofing membranes. The insulation is installed following the manufacturers' guidelines. The compressive strength must be adequate for mechanical fastening. On metal decks, the dimensions and thickness of the insulation boards must suit the dimensions of the metal deck profile.

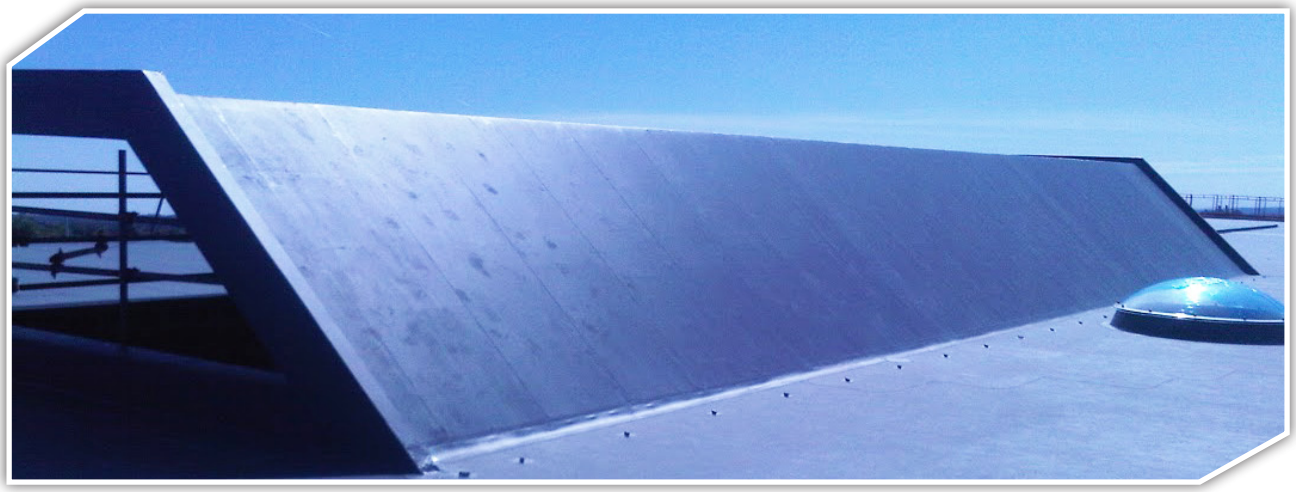


Geotextiles

When URDIN MP is to be in contact with a incompatible material such as polystyrene, polyurethane or bitumen, a geotextile must be used as a separation layer. The separation layers are loose laid with a 50 mm overlap. When using an insulation board with a facing of aluminium foil, the separation layer is not required. In case there is any doubt, please contact us.



Material	Geotextile
PUR/PIR	150 gr/mt^2
Bitumen or rough surfaces	250-300 gr/mt^2

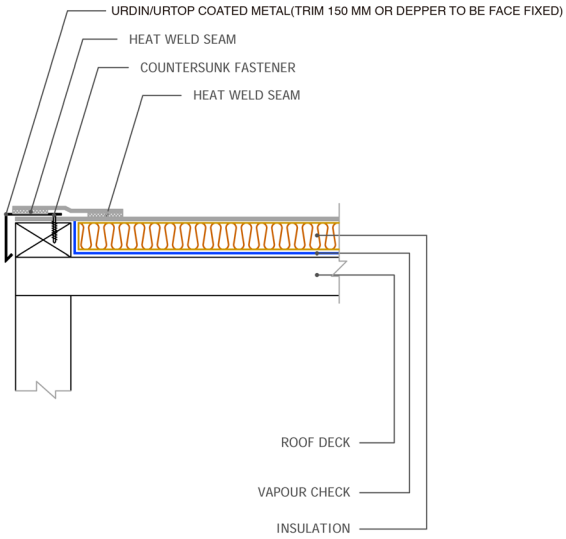


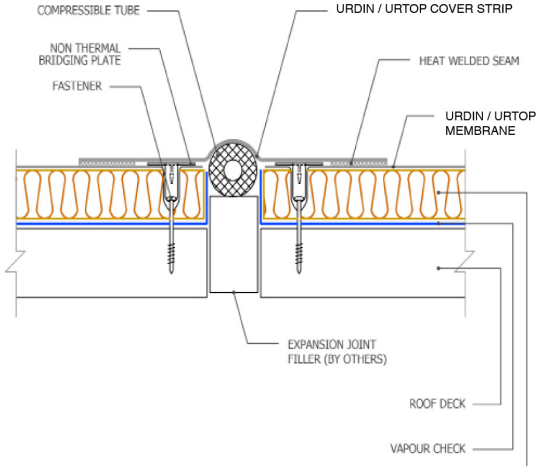
Mechianically fixing

URDIN MP / URTOP MP

First, the membrane must be unrolled on a protected surface. In the case of metal decks, this process should be done perpendicularly from the deck direction. Mechanical fasteners (screws and plates) are installed through the membrane and insulation into the crowns of the deck. An overlap of 100mm minimum, should be left between the membranes. For this purpose, a line is printed on one side of the membrane. The quantity of fasteners is calculated to resist wind uplift in the central and perimeter roof area in accordance with current guidelines.

A test weld must be carried out prior to welding the roofing sheet, to confirm adequate weld strength and performance. We highly recommend to weld URDIN MP / URTOP MP using hot air and to make a final testing on all welding.





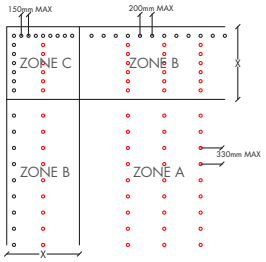
Fastening type

The type and length of fasteners are determined among others, by the:

> Type of structure
> Insulation thickness.

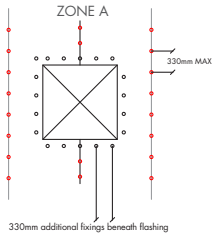
Taking into account these parameters, a number of fasteners can calculated. In the event that there is a need for the number of fasteners to be calculated, please contact us.

CORNERS AND PERIMETER

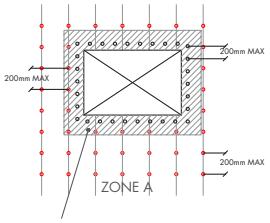


ZONE A: 20 m x 1,04 m / 20m X 2m URDIN MP/URTOP MP Membrane
ZONE B: 20m X 1,04 m URDIN MP/URTOP MP Membrane
ZONE C: 20m X 1,04 m URDIN MP/URTOP MP Membrane
- Fixings under parapet flashing
- Fixings under overlap
Note: x=4/10 of buiding height
(2m minimum) e.g. 5m high building, 4/10 of 5m = 2m,therefore X = 2m wide

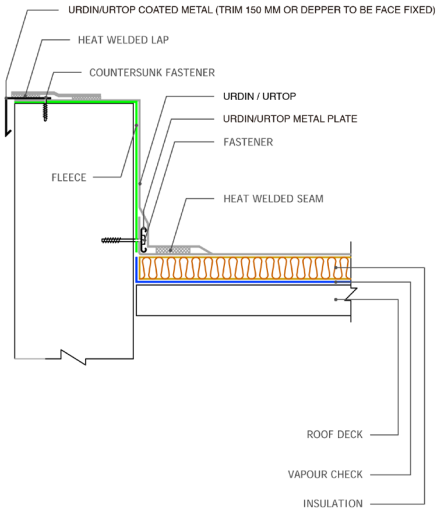
SMALL KERBS
(Less tan 1m²)

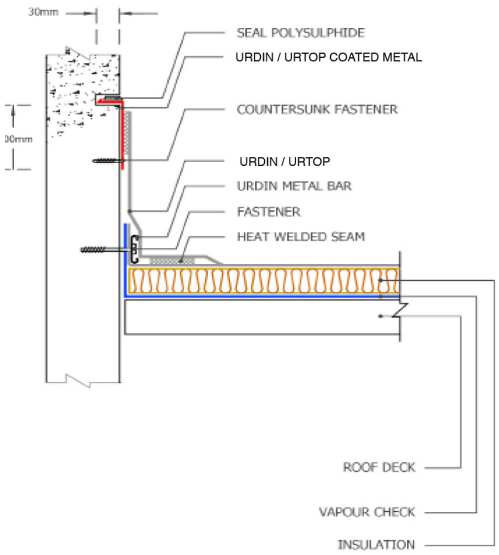


LARGE KERBS
(Greater than 1m² or a height exceeding 1m)



ZONE D: Field Sheet Fixings closed up to 200mmmax centres on overlaps.
Perimeter kerb additional fixings under flashing @ 200mm centres.





Ballasted Roofs

Presentation

URDIN MAT / URTOP MAT

Thickness	Width	Weight /mt²	Roll lengt
1,2	1,05 - 2,10 - 1,60	1,56	20 lm
1,5	1,05 - 2,10 - 1,60	1,95	20 lm
1,8	1,05 - 2,10 - 1,60	2,34	20 lm
2,0	1,05 - 2,10 - 1,60	2,60	20 lm

Storage

Store dry. Rolls to be parallel and in original packing where possible. Do not stack in cross form or under pressure.

Installation

Check out our application guidelines for URDIN MAT / URTOP MAT membranes, loose laid with ballast. If you need any further information, please contact us.

Preparation

Before applying the roofing membrane, the structure must be free of irregularities, water or ice, and any debris such as screws, metal off-cuts should be removed.

Substrates

Concrete

The surface of the concrete must be smooth and free from irregularities. The quality of the concrete must comply with national standards.

Timber

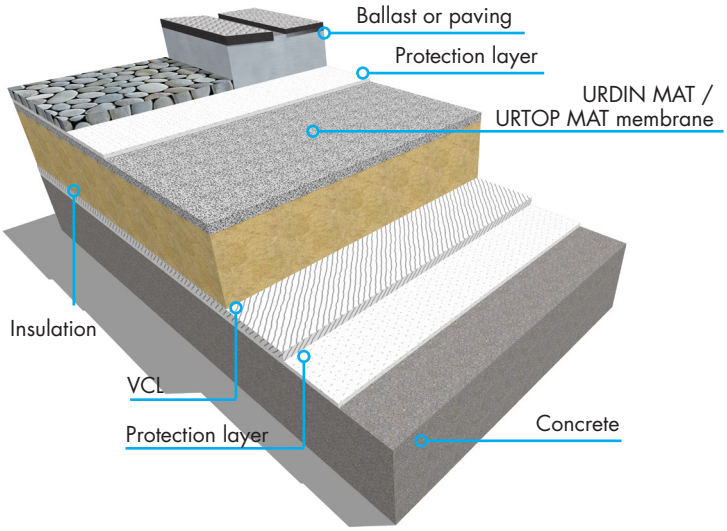
The minimum thickness of the supporting structure is:

> Wood: 25 mm (tongued and grooved)

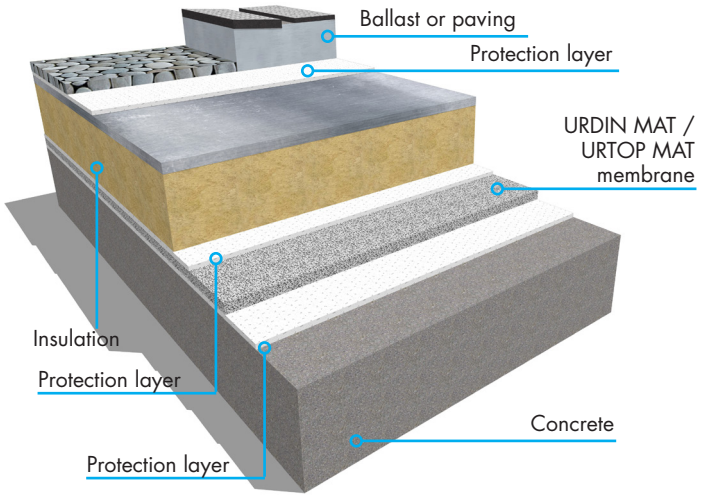
> Plywood (exterior quality): 19 mm (preferably 22 mm)

Special care must be taken with any treatment used as it has to be compatible with the different components and the fastening method of both insulation and membrane. The aim of all supporting elements is to achieve a closed deck surface where all vertical movement is excluded. Height or thickness tolerances between panels must not exceed 3 mm. The installation of the supporting timber structure must comply with local building regulations.

Warm roof



Inverted roof



Ballasted Roofs

Protection layer

On rough surfaces or wooden structures, a geotextile protective layer is used to ensure that damage does not occur to the roofing membrane or the vapour control layer. Protective layers are loosely laid with a 50 mm overlap.

Vapour control layer

Although the membrane has a high level of vapour permeability, if, due to the special characteristics of the building and the environment, a higher humidity is expected, a vapour control layer may be required.

Insulation

Insulation boards must be approved by the respective manufacturer for use PVC or TPO roofing membranes.

The insulation is installed following the manufacturers' guidelines. The compressive strength must be adequate for mechanical fastening. On metal decks, the dimensions and thickness of the insulation boards must suit the dimensions of the metal deck profile.

Application guidelines

Geotextiles

When URDIN MAT is to be in contact with a incompatible material such as polystyrene, polyurethane or bitumen, a geotextile must be used as a separation layer. The separation layers are loose laid with a 50 mm overlap. When using an insulation board with a facing of aluminium foil, the separation layer is not required. In the event of any doubt, please contact us.

Material	Geotextile
PUR/PIR	150 gr/mt^2
Bitumen or rough surfaces	250-300 gr/mt^2

URDIN MAT / URTOP MAT

First, the membrane must be unrolled on a protected surface. An overlap of 50mm minimum, should be left between the membranes. For this purpose, a line is printed on one side of the membrane.

A weld test must be carried out prior to welding the roofing sheet, to confirm adequate weld strength and performance. In order to prevent 4 roll end coinciding, end laps must be staggered by at least 250 mm. 3 membranes overlapping is allowed, although the centre sheet must be levelled. We highly recommend welding URDIN MAT and URTOP MAT using hot air and carrying out a final test on all the welding.

Fully Adhered

Presentation

URDIN MP FB / URTOP MP FB

Thickness	Width	Weight /mt²	Roll lengt
1,2	1,60	1,81	20 lm
1,5	1,60	2,20	20 lm
1,8	1,60	2,50	20 lm
2,0	1,60	2,85	20 lm

Storage

Store dry. Rolls to be parallel and in original packing where possible. Do not stack in cross form or under pressure.

Installation

Check out our application guidelines for fully adhered URDIN MP FB and URTOP MP FB membranes. If you need any further information, please contact us.

Application guidelines

Preparation

Before applying the roofing membrane, the structure must be free of irregularities, water or ice, and any debris such as screws, metal off-cuts should be removed.

Substrates

Metal deck

The minimum thickness for metal deck to be used with mechanical fasteners is 0.7 mm.

Concrete

The surface of the concrete must be smooth and free from irregularities. The quality of the concrete must comply with national standards.

Timber

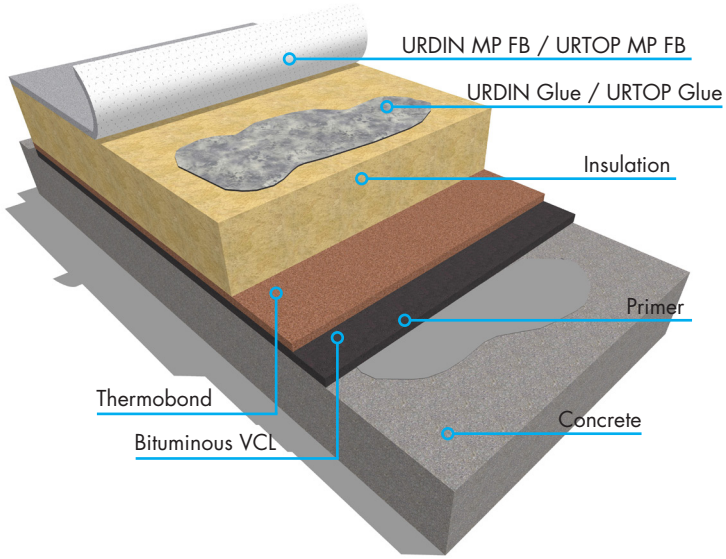
The minimum thickness of the supporting structure is:

> Wood: 25 mm (tongued and grooved)
> Plywood (exterior quality): 19 mm (preferably 22 mm).

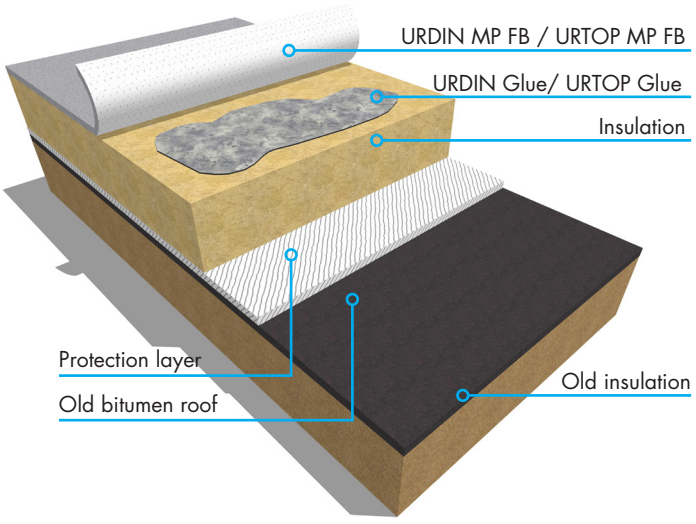
Special care must be taken with any treatment used as it has to be compatible with the different components and the fastening method of both insulation and membrane.

The aim of all supporting elements is to achieve a closed deck surface where all vertical movement is excluded. Height or thickness tolerances between panels must not exceed 3 mm. The installation of the supporting timber structure must comply with local building regulations.

New roof



Reconditioned roof



Fully Adhered

Application guidelines

Vapour control layer

Although the membrane has a high level of vapour permeability, if, due to the special characteristics of the building and the environment, a higher humidity is expected, a vapour control layer may be required.

Insulation

Insulation boards must be approved by the respective manufacturer for use PVC roofing membranes. The insulation is installed following the manufacturers' guidelines. The compressive strength must be adequate (at least 0.06 N7mm^2 at 10% compression). On metal decks, the dimensions and thickness of the insulation boards must suit the dimensions of the metal deck profile.

Joints

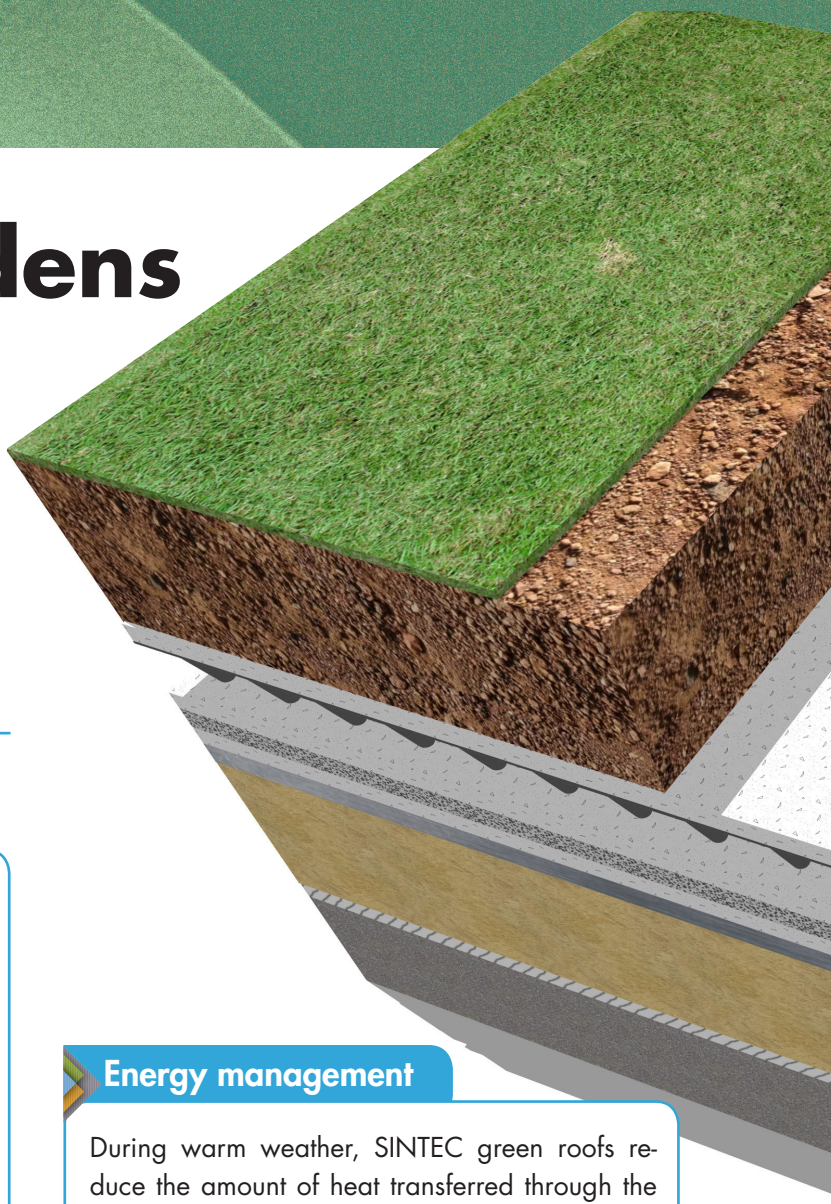
As we are using a fully bonded system, special attention must be paid to the structure joints, specially to their width. If this is greater than 30 mm, a specific joint construction is required.

URDIN MP FB and URTOP MP FB

After preparing the surface, spread the glue evenly over the surface, using a brush or roller. Avoid any over concentration of glue. To use the glue, dry weather and a temperature of above 5°C is needed.

The installation method involves laying out the rolls without tension with side and end overlaps of subsequent membranes, applied with an even coat of URDIN Glue / URTOP Glue to the membrane and to the surface that it is being applied to, i.e. deck or insulation. The laps are subsequently heat welded using semi-automatic hot air welding equipment to form a homogeneous joint at the seam. In inverted or ballasted roof format, URDIN MP FB / URTOP MP FB can be loose laid with laps being subsequently welded.

Roof Gardens



Advantages of Sintec Green Roof System

Storm-water management

SINTEC green roofs make use of existing roof space and prevent runoff before it leaves the lot, storing water during rainfall events, delaying runoff until after peak rainfall and returning precipitation to the atmosphere through evapotranspiration. The depth of substrate, the slope of the roof, the type of plant community, and rainfall patterns affect the rate of runoff. SINTEC green roofs can reduce annual total building runoff by as much as 60% to 79%.

Extended roof life

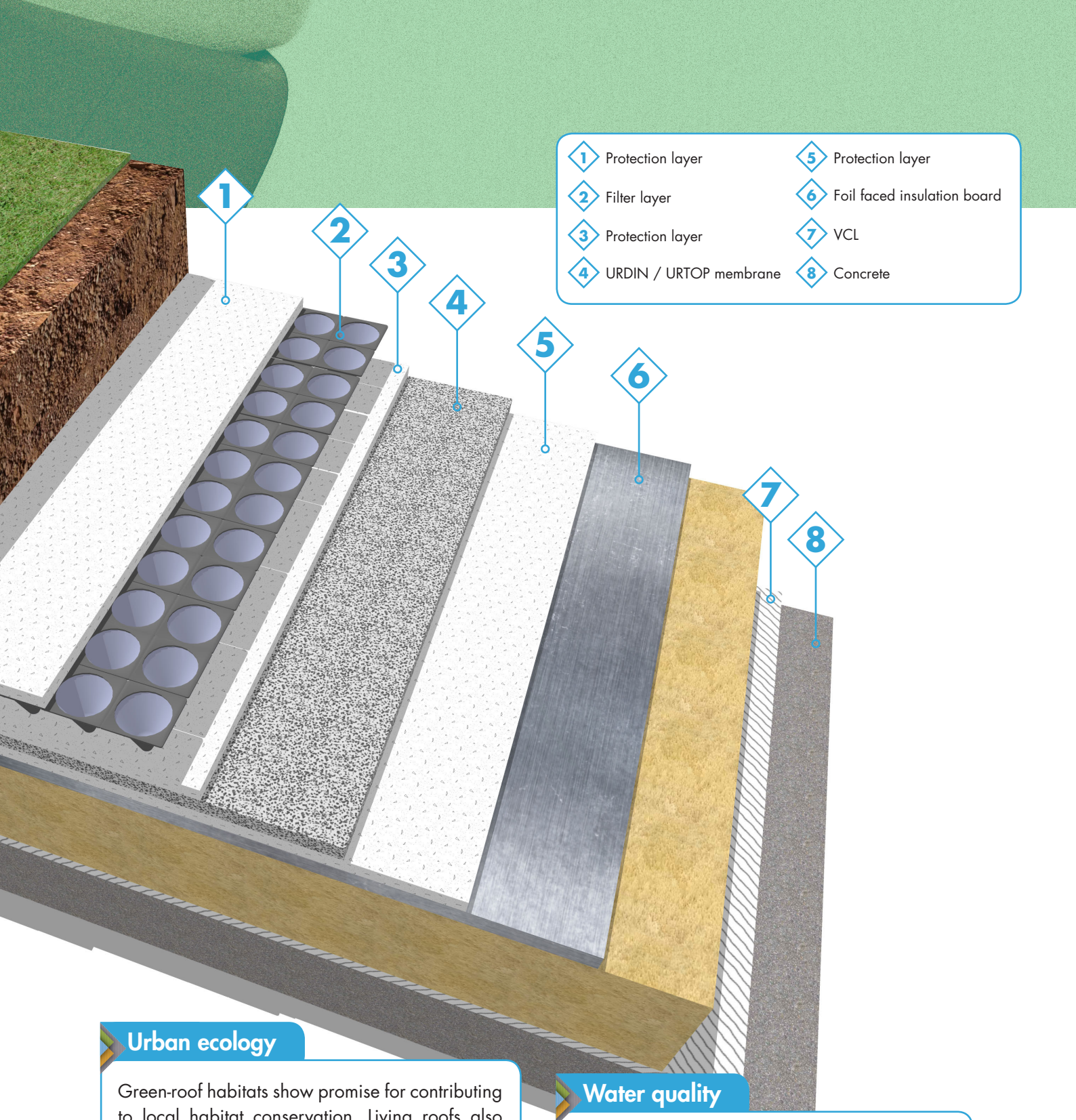
By physically protecting against UV light and reducing temperature fluctuations, SINTEC green roofs extend the life span of the roof's waterproofing membrane and improve building energy conservation. Although nowadays the membranes have an expected life of more than 25 years, the fact that they are protected from weather conditions means this is possibly much higher (over 50 years). Temperature stabilization of waterproofing membranes by green-roof coverage may also extend their useful life. An unvegetated reference roof could reach temperatures higher than 70 °C in summer, while the surface temperature of the SINTEC green roof only reaches 30°C.

Energy management

During warm weather, SINTEC green roofs reduce the amount of heat transferred through the roof, thereby lowering the energy demands of the building's cooling system.
In summer, SINTEC green roofs reduce heat flux through the roof by promoting evapotranspiration, physically shading the roof, and increasing the insulation and thermal mass.

Urban heat island

In urban environments, vegetation has largely been replaced by dark and impervious surfaces (e.g., asphalt roads and roofs). These conditions contribute to an urban heat island whereby urban regions are significantly warmer than surrounding suburban and rural areas, especially at night. This effect can be reduced by increasing albedo (the reflection of incoming radiation away from a surface) or by increasing vegetation cover with sufficient soil moisture for evapotranspiration.



Urban ecology

Green-roof habitats show promise for contributing to local habitat conservation. Living roofs also provide aesthetic and psychological benefits for people in urban areas. Even when SINTEC green roofs are only accessible for visual relief, the benefits may include relaxation and restoration, which can improve human health. Other uses for SINTEC green roofs include urban agriculture: food production can provide economic and educational benefits for urban dwellers. Living roofs also reduce sound pollution by absorbing sound waves outside buildings and preventing inward transmission.

Water quality

The role of SINTEC green roofs in storm-water retention is well understood, but some research demonstrates that green-roof runoff includes increased levels of nitrogen and phosphorus due to leaching from the substrate. Organic matter, nutrients, and contaminants in the growing medium or roof membranes can cause discharged water to be a new source of surface-water pollution. Research on more inert substrates, and on integrated grey-water reuse systems, may lead to mitigation of these effects.

Air quality

Although extensive SINTEC green roofs, as they are low in biomass, have little potential to offset carbon emissions from cities, intensive roof gardens that support woody vegetation could make significant contributions as an urban carbon sink. Urban vegetation is known to trap airborne particulates and to take up other contaminants such as nitrogen oxides.

Noise and sound reduction

The SINTEC green roof system can reduce external sound by 8-10db compared with a conventional roof system. The vegetation barrier and entrapped air within the vegetation acts as a sound insulation barrier and sound waves are absorbed, reflected or deflected.

Recyclable materials

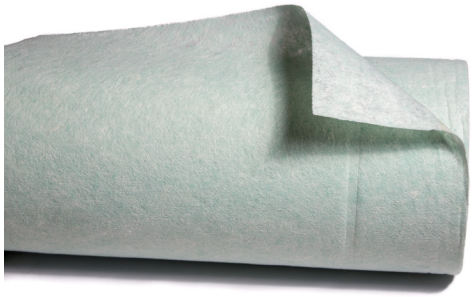
Many of the products used within the SINTEC green roof system are recyclable or made from recyclable building materials, rubber or plastic. Where possible, depending on project location, the SINTEC green roof system can re-use secondary aggregates.

Ancillary products

URDIN roofing solutions go beyond the membrane itself. We provide an extensive selection of ancillary products to guarantee a perfect finish for the roof.

Geotextile

Polyester Fleece used as a separation layer between URDIN / URTOP and timber or brickwork abutments, as well as cushion/separation layer between URDIN / URTOP and ballast roof systems.



PVC / TPO Rainwater & Parapet Outlets

Stainless steel spigots with a synthetic flange offered in a wide range of sizes. A synthetic spigot option is also available as well as leaf/gravel guards.

URDIN / URTOP Pipe Collars

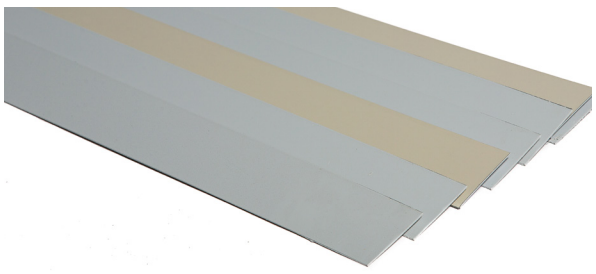
Synthetic pipe collar purpose made for SVP's etc., available in a range of sizes

URDIN / URTOP angles and corners

Preformed synthetic internal and external corners for detailing.

URDIN metal sheet / URTOP metal sheet

Galvanised sheet with URDIN and URTOP and URTOP laminated to one side providing detail trims, drip edges and flashings.



SINTEC S.L.
Head offices
P.I. Júndiz c/ Arroxeta P. 3-4
01015 Vitoria-Gasteiz
Tel. (+34) 945 24 47 62
Fax (+34) 945 20 04 56
info@sintecproof.com
www.sintecproof.com

SEALBOND CHEMICAL INDUSTRIES INC.

Exclusively Distributed by:
Sealbond Chemical Industries Inc.
A2 Araneta St. Ibayo Tipas Taguig City,
Metro Manila Philippines
843-4498 / 845-0137 / 845-0205
info@sealbondchemicals.com
jlss@sealbondchemicals.com