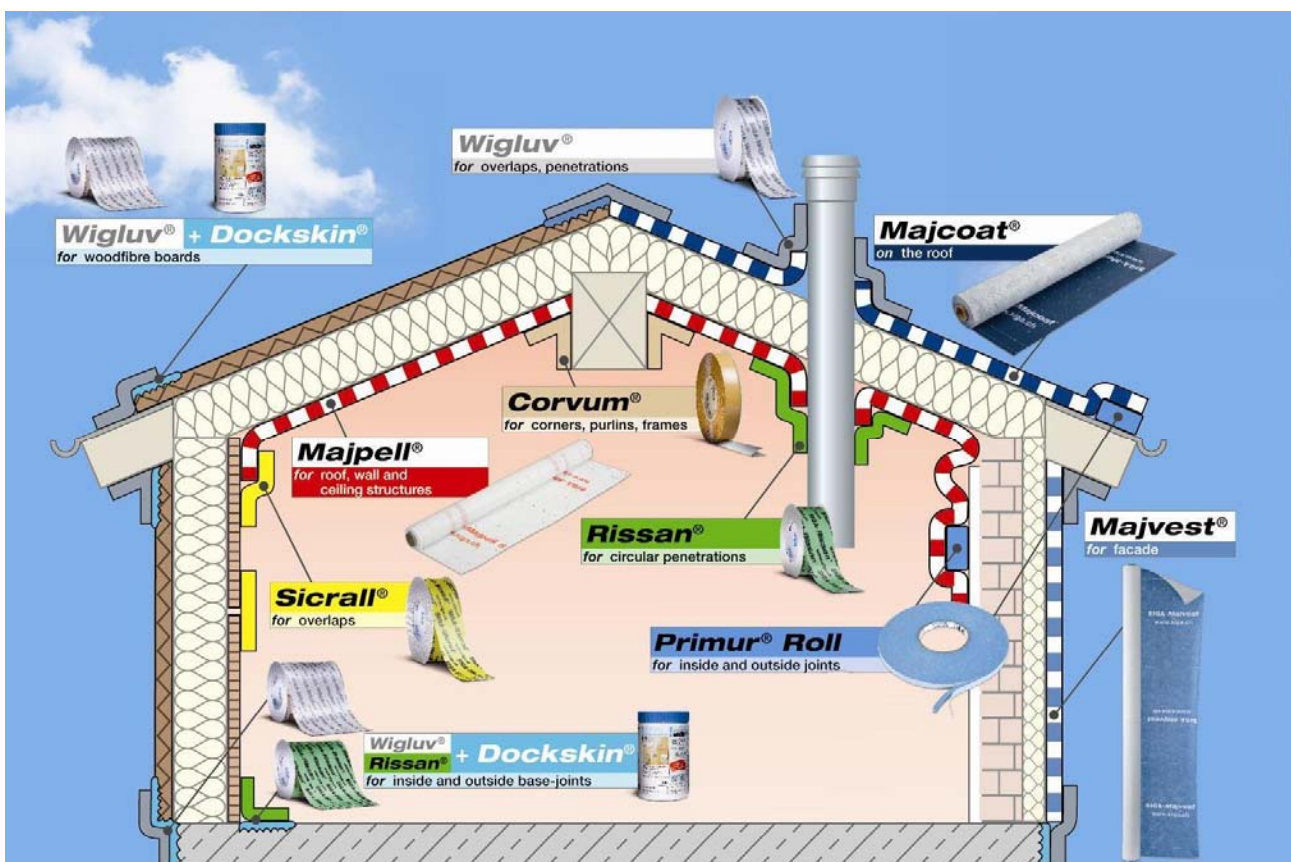


SIGA Air- & Windtightness System

Système d'étanchéité à l'air Luftdichtheitssystem

NSAI Agrément (Irish Agrément Board) is designated by Government to issue European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are 'proper materials' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2008**.



PRODUCT DESCRIPTION:

This Certificate relates to the SIGA Airtightness System which consists of the following range of tapes and adhesives:

- SIGA Corvum for joists, purlins, doors, windows and skylights;
 - SIGA Primur on plastered masonry;
 - SIGA Rissan for circular penetrations;
 - SIGA Sicrall for overlaps;
 - SIGA Twinet on hard substrates, e.g. metal, wood;
 - SIGA Dockskin for sandy and fibrous substrates;
- and the SIGA Windtightness System which consists of:
- SIGA Wigluv, Wigluv 100, Wigluv 150, Primur bead on roll, SIGA nail sealing tape and Dockskin for exterior applications for overlaps, penetrations.

This range of SIGA tapes and adhesives for airtightness can be used with SIGA Majpell or other suitable vapour control layers. The range of SIGA tapes for windtightness can be used with SIGA Majcoat or other suitable breathable roofing and SIGA Majvest or other suitable façade membranes and wood fibre insulation boards. This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2008.

USE:

Airtightness is the control of air leakage, i.e. the elimination of unwanted draughts through the fabric of the building envelope through the correct and proper installation of a vapour check or vapour barrier. Consequently condensation, mould, rot, damp and structural damage are also eliminated, ensuring a more

viable structure, and an insulation layer that can perform properly as it is now protected against penetrating moisture, reducing the amount of energy-in-use in the building and CO₂ emissions.

The airtightness layer prevents uncontrolled air infiltration, i.e. air convection, while air exchange from inside to outside by ventilation still occurs. The quality of airtightness is determined by the freedom from leakages in the building envelope, i.e. the more leakages there are in the inner building envelope such as the vapour check, the poorer the airtightness. Interior air flowing to the outside through leaks in the vapour check transports heat and consequently leads to a higher heating energy demand. Air permeability can be measured by means of pressure testing of a building prior to completion, in accordance with IS EN 13829:2000 *Thermal performance of buildings – Determination of air permeability of buildings – Fan pressurization method*, where performance is measured in terms of cubic metres per square metre of external surface area per hour (m³/(hr.m²)) at 50 Pascals pressure difference.

Windtightness deals with the external building envelope and is created by the permanently sealed breathable membrane and façade membrane. If the building envelope is not windtight, cold outside air can cool down the insulation. Furthermore, snow, rain, insects and wood pests can enter the building unhindered and damage it. A windtight building shell contributes to economical heating, retention of building value and healthy room air. The SD value of the breathable membranes and façade membranes is lower than that for vapour control layers, so underneath the membrane the following rule applies: The inside SD value must be at least 10 times higher than the outside SD value.

MANUFACTURE AND MARKETING:

The products are manufactured and marketed by:

SIGA Cover AG,
Rüt mattstrasse 7,
CH-6017 Ruswil,
Switzerland.
Tel: +41 41 499 69 00
Email: siga@siga.ch
Website: www.siga.ie

1.1 ASSESSMENT

In the opinion of NSAI Agrément, the SIGA Air & Windtightness System if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2008, as indicated in Section 1.2 of this Irish Agrément Certificate.

1.2 BUILDING REGULATIONS 1997 to 2008

REQUIREMENT:

Part D – Materials and Workmanship

D3 – The SIGA Air & Windtightness System, as certified in this NSAI Agrément Certificate, is comprised of 'proper materials' fit for their intended use (see Part 4 of this Certificate).

D1 – The SIGA Air & Windtightness System, as certified in this Certificate, meets the requirements of the building regulations for workmanship.

Part B – Fire Safety

B2 – Internal Fire Spread (Linings)

The SIGA Air & Windtightness System installed in accordance with this Certificate may be used on the internal surfaces of buildings to meet this requirement.

B3 – Internal Fire Spread (Structure)

The SIGA Air & Windtightness System installed in accordance with this Certificate will not adversely affect the control of fire and smoke within concealed spaces in the structure or fabric of a properly designed building.

Part C – Site Preparation and Resistance to Moisture C3 – Dangerous Substances

As is the case for non-airtight buildings, the ground floor of buildings incorporating the SIGA Air & Windtightness System must include a radon sump and be provided with a facility for extracting radon. In areas where protection from dangerous substances is required, an approved gas resistant membrane and gas handling system must be provided under the ground floor.

C4 – Resistance to Weather and Ground Moisture

The SIGA Air & Windtightness System is for internal use and for use above rafter and between rafter insulation. The vapour control layer used with the system will not be damaged by moisture from the ground or carry moisture from the ground to any part of the building which would be damaged by it.

Part F – Ventilation

F1 – Means of Ventilation

The SIGA Air & Windtightness System in conjunction with trickle vents, passive ventilation and mechanical ventilation systems, can minimise background air leakage (uncontrollable ventilation) and provide controllable ventilation through use of trickle vents etc.

Part L – Conservation of Fuel and Energy

L1 – Conservation of Fuel and Energy

The SIGA Air & Windtightness System, when installed and used in accordance with this Certificate, can meet this requirement and contribute to less air leakage in the building and therefore less heat loss. A key parameter for achieving an efficient Building Energy Rating (BER) is that the building envelope is designed and insulated to a high level and the fabric air- and windtightness is to a high standard.

2.1 PRODUCT DESCRIPTION

The SIGA Air & Windtightness System is comprised of a range of tapes and adhesives, and membranes SIGA Majpell (vapour control layer), SIGA Majcoat (breathable membrane) and SIGA Majvest (façade membrane). While SIGA Majpell, SIGA Majcoat and SIGA Majvest are the membranes recommended by the certificate holder, the tapes and adhesives have been certified for use with any suitable vapour control layer. The windtightness tapes can be used with all suitable breathable roofing and façade membranes. The tapes and adhesives are free from residential toxins such as solvents (VOC), high boilers, formaldehyde, chlorine, plasticizers. The product range is shown in Table 3 and Table 4.

2.1.1 Ancillary Products

- Dispenser – for SIGA Corvum, Rissan, Sicrall, Twinet and Wigluv.
- Applicator gun – two types, for SIGA Primur tubular bag and for SIGA Primur cartridge.

2.2 MANUFACTURE

The manufacturing process of the tapes involves the bonding together of a polyethylene film with a carrier through an extrusion coating process, involving heat and pressure in a continuous process.

2.2.1 Product Quality Control

Quality control checks are carried out on the raw material, during production and on the final product. Quality control checks include:

- Visual inspection
- Dimensions
- Tensile strength
- Elongation
- Tear resistance
- Nail tear strength

2.3 DELIVERY, STORAGE AND MARKING

Rolls of each type are supplied in their own boxes along with the relevant instruction manual. The packaging shows the manufacturer's name, product description, NSAI Agrément identification mark and NSAI Agrément Certificate number. The products should be stored in a cool dry place in their original boxes.

2.4 INSTALLATION

2.4.1 General

The SIGA Air & Windtightness System must be installed in accordance with the manufacturer's instructions and the recommendations given in this Certificate, by installers who have been trained by the Certificate holder.

2.4.2 Airtight Finish From The Inside SIGA Twinet

The substrate and vapour control layer must be able to take a load, be dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Twinet, clean the substrate and vapour control layer, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

Suitable vapour control layers and vapour diffusion retarders are as follows:

- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting

Suitable substrates are as follows:

- Metal
- Plastic
- Wood
- Concrete

SIGA Twinet is not suitable for airtight bonding – SIGA Corvum, Primur, Rissan and Sicrall are used for airtight bonding.

SIGA Twinet is an application aid and is not suitable for permanent load-bearing applications. After installation the vapour control layer must be additionally fastened, e.g. using counter battens, facing.

Product	Use	Benefits
Corvum 30/30	Sealing of joists, corners, purlins, skylights	<ul style="list-style-type: none"> • Prefolded 30mm/30mm • 1 backing strip protruding, 1 already removed
Corvum 12/48	Bonding of vapour control layer to windows and door frames	<ul style="list-style-type: none"> • Prefolded 12mm/48mm • 1 backing strip protruding, 1 already removed
Majpell	Vapour control layer for wall, roof and ceiling	<ul style="list-style-type: none"> • Thin and robust • Dimensionally stable, quick crease-free fitting • High tear resistance
Primur Tubular Bag/Cartridge	Bonding vapour control layer on plastered masonry	<ul style="list-style-type: none"> • Self-adhesive and elastic • Solvent free • No supporting lath required
Primur Bead on the Roll	Bonding vapour control layer on plastered masonry	<ul style="list-style-type: none"> • Self-adhesive and elastic • Solvent free • No supporting lath required • For inside and outside sealing from -10°C • Rainproof • Extremely high adhesive strength immediately • No drying time, sealing in 1 work step
Rissan	Bonding vapour control layer at circular penetrations	<ul style="list-style-type: none"> • Flexible carrier material for short overlaps • Elastic
Sicrall	Bonding vapour control layer overlaps and joints of hard wood-based panel materials (e.g. OSB)	<ul style="list-style-type: none"> • Sturdy carrier material for long overlaps • Hand-tearable
Twinet	Installation of vapour control layers on hard substrates such as metal or wood	<ul style="list-style-type: none"> • Double-sided • Hand-tearable
Dockskin	Primer for sealing sandy, fibrous substrates	<ul style="list-style-type: none"> • Extremely good adhesion to softboards and masonry, strong penetration • Usable on cold substrates from -10°C • Solvent free

Table 1: Airtightness Product Range

Product	Use	Benefits
Majcoat	Breathable membrane for roofs	<ul style="list-style-type: none"> • Closed functional layer protected by two fleeces • High tear resistance, secure laying and safe to walk on • Driving rain proof and moisture diffusing
Majvest	Breathable membrane for facades	<ul style="list-style-type: none"> • 3 layered microporous functional layer reinforced on both sides with fleeces • High tear resistance. • Driving rain proof and moisture diffusing
Primur Bead on the Roll	Bonding vapour control layer on plastered masonry	<ul style="list-style-type: none"> • Self-adhesive and elastic • Solvent free • No supporting lath required • For inside and outside sealing from -10°C • Rainproof • Extremely high adhesive strength immediately • No drying time, sealing in 1 work step
Dockskin	Primer for sealing sandy, fibrous substrates	<ul style="list-style-type: none"> • Extremely good adhesion to softboards and masonry, strong penetration • Usable on cold substrates from -10°C • Solvent free
Wigluv	Windtight sealing of roof and façade membranes at overlaps, penetrations and joints in exterior applications with primer SIGA Dockskin for wood fibre boards	<ul style="list-style-type: none"> • High adhesive strength at high and low temperatures • Moisture-diffusing and flexible • UV-stable and rainproof
Nail sealing tape	Permanent rainproof sealing when installing battens	<ul style="list-style-type: none"> • Driving rain proof, suitable for makeshift coverage • Good bonding when hot and cold

Table 2: Windtightness Product Range

	Twinet®	Rissan® 60	Rissan® 100	Rissan® 150	Sicrall® 60	Sicrall® 150	Corvum® 30/30	Corvum® 12/48	Primur® cartridge	Primur® tubular bag	Primur® roll	Wigluv® black	Wigluv® 60	Wigluv® 100	Wigluv® 150
Wood	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hard wood based panel materials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Softboards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gypsum fibreboards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plasterboards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cement fibreboards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concrete, masonry, plaster	✓	✓	✓*	✓*	✓	✓	✓	✓	✓	✓	✓	✓*	✓	✓*	✓*
Bituminous sheeting in the base area	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Perimeter insulation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Metals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hard plastics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electric cables	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1: Product Matrix - Substrates

* Must be reinforced with SIGA Dockskin high-performance primer

Table 2: Product Matrix - Membranes

	Twinet®	Rissan® 60	Rissan® 100	Rissan® 150	Sicrall® 60	Sicrall® 150	Corvum® 30/30	Corvum® 12/48	Primur® cartridge	Primur® tubular bag	Primur® roll	Wigluv® black	Wigluv® 60	Wigluv® 100	Wigluv® 150
Vapour control layers / diffusion retarder sheeting <ul style="list-style-type: none"> • Smooth to rough PE/PA/PO/PP sheeting • Kraft papers • Aluminium membranes 	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vapour control layers / diffusion retarder sheeting for above rafter insulation and renovation from the outside <ul style="list-style-type: none"> • Smooth to rough PE/PA/PO/PP sheeting 	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Breathable membranes (apart from bitumen and PVC membranes except if given individual approval)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Façade membranes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Installation – Vapour Control Layer on Hard Substrate
(e.g. Timber, Metal)



- Use double-sided adhesive SIGA Twinet when mounting SIGA Majpell on metal substructures



- Unroll SIGA Majpell, cut it to the correct size.
- Stick it down with the smooth side and the writing facing operative.
- It does not need to be slack.
- Overlap the sheets by approximately 100mm.



- Use double-sides adhesive SIGA Twinet when mounting SIGA Majpell onto wooden substructures.

- Unroll SIGA Majpell and cut it to size.



- Stick it down with the smooth side and the writing facing operative.
- It does not need to be slack.
- Overlap the sheets by approximately 100mm.
- After adhesion, attach battens crosswise or lengthwise along the substructure (to bear the weight of the insulation material).
- Mount the interior cladding (protects SIGA Majpell against mechanical influences).

SIGA Majpell

SIGA Majpell is a polyethylene copolymer membrane reinforced with polypropylene fibres, with a water vapour diffusion equivalent air-layer thickness of approximately 5m.

SIGA Majpell can be fitted transversely or parallel to the substructure. The substructure must be free from protruding sharp objects, such as screws etc.

In roof structures, installation should commence with fitting SIGA Majpell at the purlin using SIGA Corvum 30/30.

Installation

- Stand roll on protruding core (protects SIGA Majpell against damage), unroll, measure and cut to length.



- Fit SIGA Majpell with the slightly rougher fibre side towards the interior.

- Allow sheets to overlap by approximately 100mm.
- Fasten with staples (approximately 300mm intervals) or with SIGA Twinet.

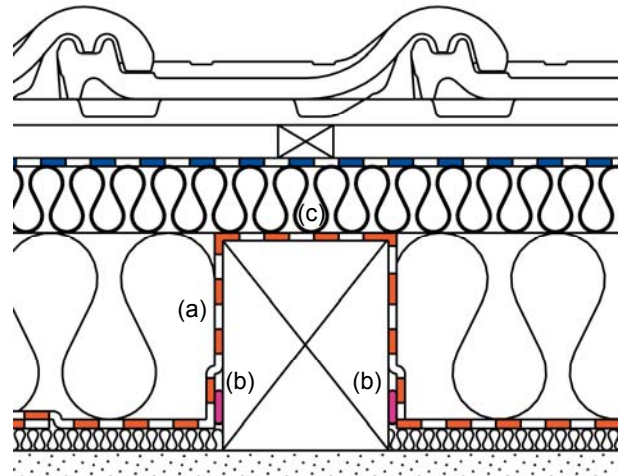


- Airtightly seal overlaps with SIGA Sicrall.
- Airtightly seal joints with plastered masonry using SIGA Primur.
- Airtightly seal penetrations, such as pipes and cables with SIGA Rissan.



- Airtightly seal joints with corners, purlins etc. and joints with skylights using SIGA Corvum 30/30.
- After sealing, install slatting transversely to substructure. Install interior wall cladding (protects SIGA Majpell against UV radiation and mechanical damage).

Mounting Vapour Control Layer from Outside during Renovation



- Seal SIGA Majpell (a) airtight at base of rafters with (b) SIGA Twinet.
- Thermal insulation layer (c) above the rafters $R \geq 1.1$ (where R is equal to thickness of insulation divided by thermal conductivity).
- For locations $>800\text{m}$ above sea level, plan with a building physicist.



- Fit a sheet of insulating material with a solid structure on top to protect SIGA Majpell against sharp, protruding objects.
- Seal SIGA Majpell at the lowest part of the rafters using SIGA Twinet.



- Bond SIGA Majpell with the smooth side and the lettering facing the operative.
- Overlap sheets by approximately 100mm, fix in place with SIGA Twinet and additionally with a stapler if required.



- Bond overlaps and penetrations airtightly using SIGA Wigluv 60.

Mounting Vapour Control During Above Rafter Insulation



- Bond SIGA Majpell with the smooth side and lettering facing operative.
- Overlap sheets by approximately 100mm, fix in place with SIGA Twinet or with a stapler.



- Bond overlaps and penetrations airtightly using SIGA Wigluv 60.

SIGA Sicrall

The substrate and vapour control layer must be able to take a load, be dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Sicrall, clean the substrate and vapour control layer, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

When installing on hard wood-based panel materials such as OSB, press on with a hard rubber roller to improve instant bonding and ease of use.

Suitable vapour control layers and vapour diffusion retarders are as follows:

- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting
- Hard wood-based panel materials (e.g. OSB)

Installation – Airtight Sealing of Overlaps

- Separate backing paper from SIGA Sicrall. Align the tape centrally along the overlap and secure it.
- Pull off backing paper and bond SIGA Sicrall without tension or wrinkles, and press on firmly.



- When airtight sealing a crease, a T-shape across the overlap should be used.

SIGA Primur

SIGA Primur Tubular Bag/Cartridge

The substrate and vapour control layer must be able to take a load, dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Primur, clean the substrate and vapour control layer, and do a bonding test.

SIGA Primur must be stored in a frost-free location. The sealing cap on the applicator gun should be replaced to keep SIGA Primur fresh.

The appropriate SIGA applicator gun is recommended for application of SIGA Primur.

Suitable vapour control layers and vapour diffusion retarders are as follows:

- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting

Suitable substrates are as follows:

- Plaster
- Concrete
- Stone

- Wood

SIGA Primur is also available as a bead on the roll.

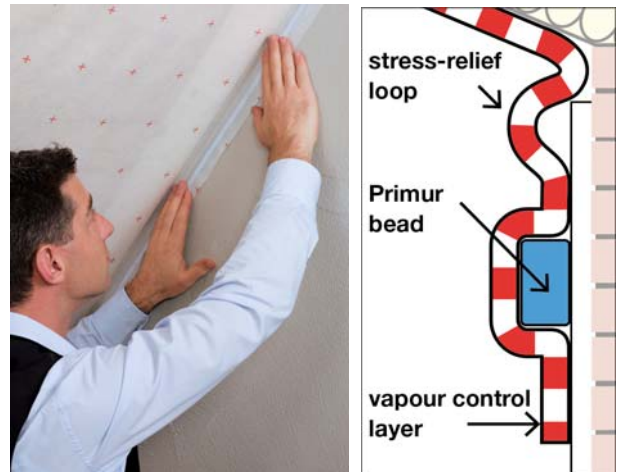
SIGA Primur Bead on the Roll



- Clean the substrate and the vapour control layer
- Apply SIGA Primur, align it and press it down.
- Cut with a knife and press on.



- Remove the backing strips.



- Make a stress-relief loop in the vapour control layer.

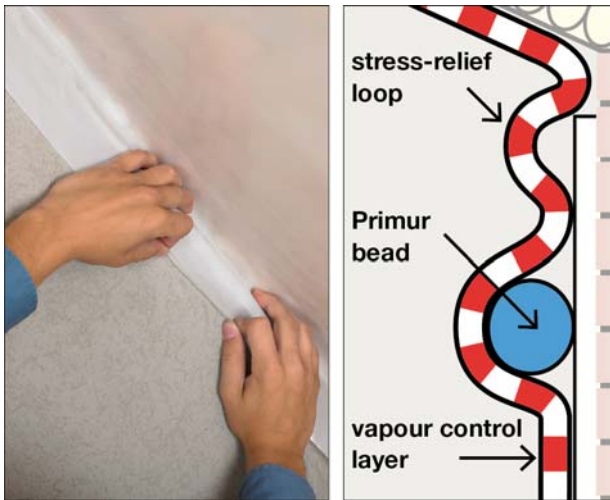
- Press the vapour control layer against the SIGA Primur bead.
- The vapour control area is now permanently sealed against plastered masonry with SIGA Primur.

Installation – Wet Method

This method is for use by experienced operatives.



- Release secured vapour control layer immediately after applying SIGA Primur bead.



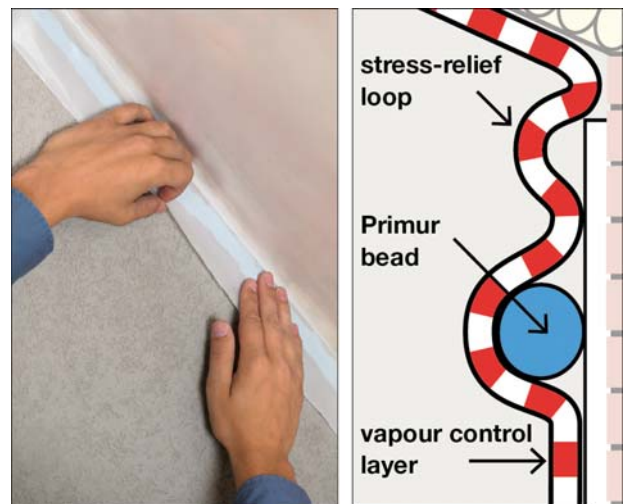
- Make stress-relief loop in vapour control layer to take up structural movements.
- Gently press vapour control layer onto SIGA Primur bead but do not press flat – SIGA Primur bead must remain at least 4mm thick.

Installation – Dry Method

This method offers the best protection against application errors and is for use by inexperienced operatives.



- Apply 8mm bead of SIGA Primur and allow to rest for 1 to 3 days.



- Make stress-relief loop in vapour control layer to take up structural movements.
- Firmly press vapour control layer onto SIGA Primur bead.

SIGA Rissan

The substrate and vapour control layer must be able to take a load, dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Rissan, clean the substrate and vapour control layer, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

Suitable vapour control layers and vapour diffusion retarders are as follows:

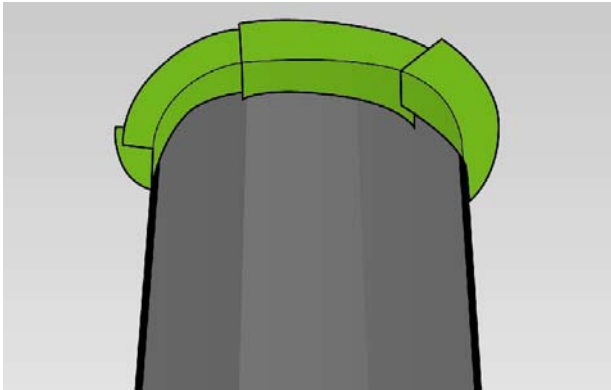
- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting
- Hard wood-based panel materials (e.g. OSB)

Suitable substrates are as follows:

- Hard plastics, e.g. extractor ducts and conduits
- Wood
- Metal, e.g. windows, doors

Installation

- To remove short pieces of tape from the roll, separate SIGA Rissan from backing paper while simultaneously pulling on the tape and backing paper. Grip the SIGA Rissan roll with one hand and use the other hand to tear off tape over the dispenser blade with a quick movement.
- Crease each short piece of tape lengthwise and apply half to the pipe and then to the vapour control layer without tension.

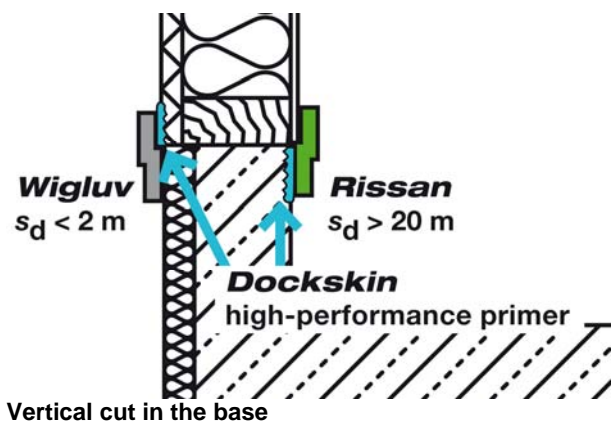


- Affix SIGA Rissan in layers around circular parts.

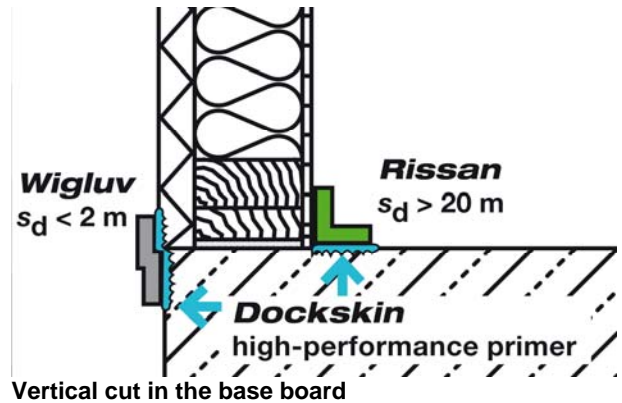


- The finished penetration should be durably and airtightly sealed with SIGA Rissan in layers.

Creating the Base Joint Airtightly with Rissan 100/150 and Dockskin



Vertical cut in the base



Vertical cut in the base board



- Shake SIGA Dockskin primer.
- Apply a covering coat.
- Depending on the temperature and substrate, wait 5-20 minutes until SIGA Dockskin is transparent and sticky.



- Apply SIGA Rissan in the middle and align.
- Peel off the slit backing strips one after another and press down.
- Make sure to apply sufficient SIGA Rissan on the concrete and softboards.

SIGA Corvum 30/30

The substrate and vapour control layer must be able to take a load, dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Corvum 30/30, clean the substrate and vapour control layer, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

When installing on hard wood-based panel materials such as OSB, press on with a hard rubber roller for a more reliable bond on slightly rough substrates.

Suitable vapour control layers and vapour diffusion retarders are as follows:

- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting
- Hard wood-based panel materials (e.g. OSB)

Suitable substrates are as follows:

- Wood, e.g. rafters, purlins, joists
- Metal
- Hard plastics, e.g. window and door frames

Installation – Airtightly Sealing a Joist



- Cut SIGA Corvum 30/30 to length and add about 30mm at each end.
- Bond tightly into corner with folded edge against joist.
- Remove backing strip, unfold and press on.
- Cut into the excess at a 45° angle (start cut just short of corner of joist).



- Fold over and press on.
- Repeat on each side of joist.



- The finished joist should now be airtightly sealed.

Installation – Airtightly Seal Inside Corners



- Unfold a short piece of SIGA Corvum.
- Make a cut in centre of side without backing strip.
- Fold over at a 90° angle.
- Bond together.



- Prefold to fit tightly into corner.
- Fold back backing strip.



- Stick down SIGA Corvum corner and press on well.
- Repeat first in every inside corner.



- Then connect the inside corners.
- Position SIGA Corvum accurately in corner and bond side without backing strip first, pressing on firmly.
- Remove backing strip and press on.

Installation – Airtightly Seal Outside Corners

- Affix SIGA Corvum 30/30 to wall with folded edge flush against outside edge.
- Add about 30mm at each end and cut off.



- Remove backing strip and unfold.
- Cut into the corner from inside out at a 45° angle (start cut just short of corner).



- Fold around outside corner and press on.
- Repeat on each side.
- Fit a short piece of SIGA Corvum 30/30 into corner.
- Remove backing strip and press on.



- Repeat on each side.



- Outside corners should now be airtightly sealed.
- Procedure is the same for film as for OSB.

Installation – Airtight Sealing of Installed Skylight



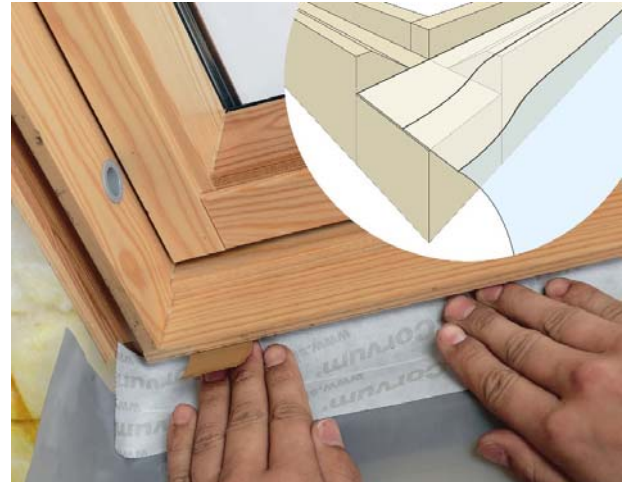
- Prepare the skirt before installing the skylight.



- Cut the vapour control layer and SIGA Corvum to size.



- Affix SIGA Corvum to centre of vapour control layer (with folded edge flush with sheet edge).
- Press on.
- Unfold SIGA Corvum.



- With the backing strip folded back insert SIGA Corvum accurately into the groove, fix and press on.
- Bond SIGA Corvum right into corners.
- Successively remove backing strip and press on SIGA Corvum in groove.
- Repeat on all sides.
- Cut and staple vapour control layer and cut off excess.



- Cut off a short piece of SIGA Corvum.
- Cut out a 90° angle piece.



- With the backing strip folded back, bond SIGA Corvum accurately into the corner.



- Remove backing strip, press on firmly and repeat in all corners.
- Bond vapour control layer sheeting into corner with an additional piece of SIGA Corvum.



- Cut into centre of excess, fold over and press on.



- Airtightly seal vapour control layer sheeting overlaps with SIGA Sicrall.

Installation – Bonding Vapour Control Layers Airtightly to Purlins



- Bond SIGA Corvum accurately to the purlin below the rafters with the prefolded edge at the top.
- Press on firmly.



- Successively remove backing strip and bond vapour control layer to SIGA Corvum.
- Press on firmly.



- Bond vapour control layer to rafters with SIGA Twinet, or staple it on.



- The purlin should now be airtighty sealed.

SIGA Corvum 12/48

The substrate and vapour control layer must be able to take a load, dry, and free of dust and grease. They must not be adhesive-resistant. Before bonding with SIGA Corvum 12/48, clean the substrate and vapour control layer, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

When installing on hard wood-based panel materials such as OSB, press on with a hard rubber roller for a more reliable bond on slightly rough substrates.

Suitable vapour control layers and vapour diffusion retarders are as follows:

- SIGA Majpell
- Smooth to slightly rough PE/PA sheeting
- Kraft papers
- PP fleece
- Aluminium sheeting
- Hard wood-based panel materials (e.g. OSB)

Suitable substrates are as follows:

- Window and door frames made of wood, metal, plastic, aluminium, coated aluminium
- Wood

Installation – Airtight Bonding of Flush Window & Door Frames

- Cut off a short piece of tape and unfold.
- Make a 12mm cut in the centre of one side.



- Fold over at a 90° angle.
- Bond together.
- Make a corner crease.



- Remove backing strip.



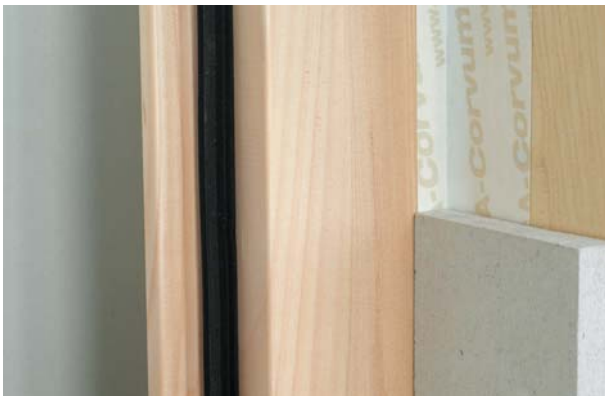
- Press into inside corner.
- Affix 12mm side of SIGA Corvum to window frame.
- First repeat in each inside corner.



- Then bond the inside corners.
- Affix 12mm side of SIGA Corvum to window frame.
- Measure and cut to the correct length.



- Remove backing strip, unfold and press on.
- Repeat on each side.



- The recessed window frame is now airtight bonded with SIGA Corvum.
- SIGA Corvum is invisible behind the cladding.

Installation – Airtight Bonding of Protruding Window & Door Frames

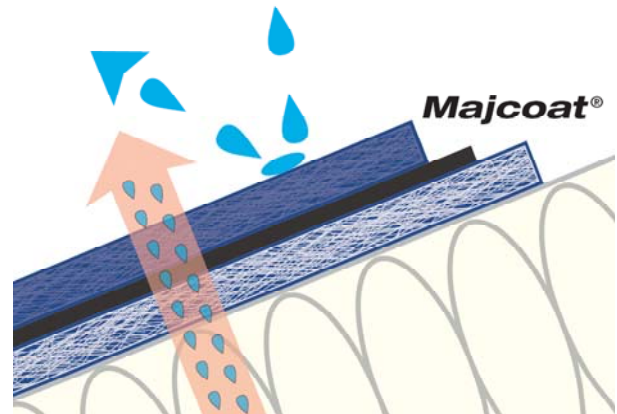
- Measure off required length of tape, and add about 30mm at each end.
- Precisely affix 12mm side to window frame.
- Remove backing strip, unfold and press on.
- Cut in at a 45° angle at the corner, fold over and press on.

- Repeat these steps on all sides of the frame to airtight seal the protruding frame.

2.4.3 Windtight Finish From The Outside

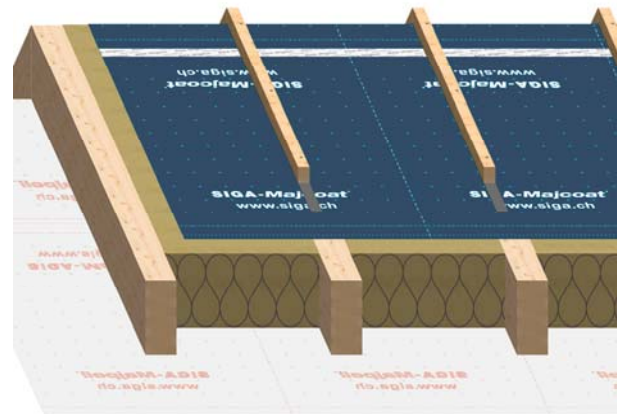
SIGA Majcoat

SIGA Majcoat has a closed functional layer protected by two fleeces.

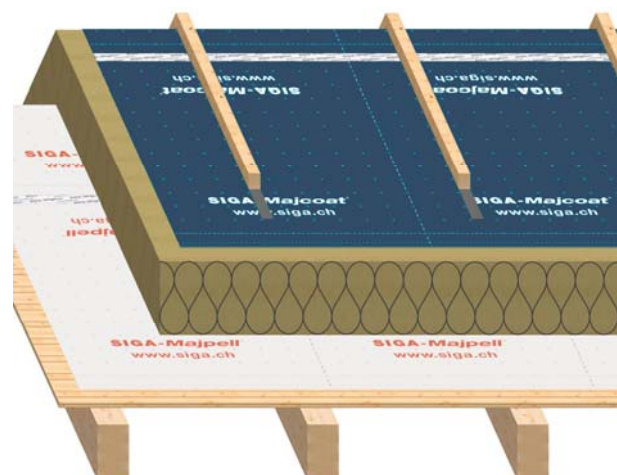


SIGA Majcoat can be used as a roof underlay to improve the windtightness of a building. The substructure must be free from protruding sharp objects, such as screws etc.

SIGA Majcoat has imprinted cutting, laying and bonding aids to help the installer save time installing the product.



SIGA Majcoat for between rafter insulation
(Note: No air gap necessary with this construction).



SIGA Majcoat for above rafter insulation

Installation

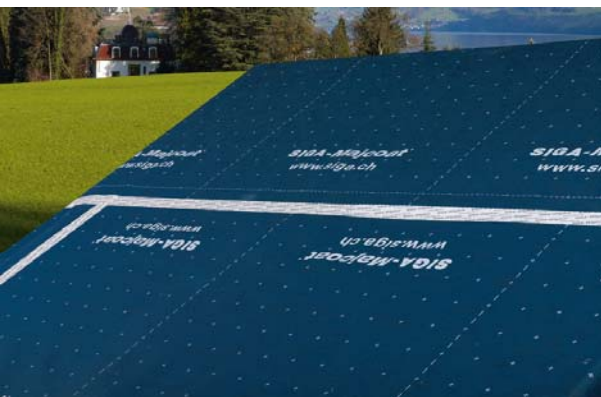
- Apply SIGA Majcoat with the lettering facing the installer.
- In the overlap area, secure in place with a stapler.



- Overlap the membrane by approximately 100mm.
- Secure the overlapping membrane in the bonding area with a stapler.



- Align SIGA Wigluv 60 centrally along the overlap and secure in place.
- Bond without tension or wrinkles and press on firmly.



- The overlap is now permanently sealed to make it windtight with SIGA Wigluv.

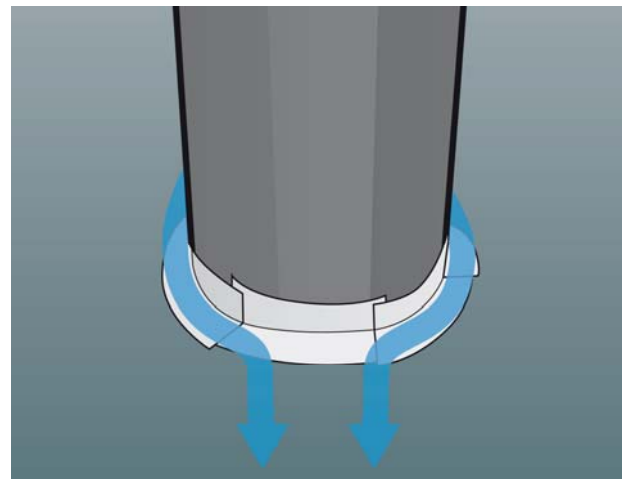
Installation – Sealing of Circular Penetrations



- Guide the membrane precisely around the circular penetration.
- **Note: Start sealing at the lowest point.** This provides extra protection against water penetration.
- Crease SIGA Wigluv lengthwise.



- Fix SIGA Wigluv half on the circular penetration then half on the membrane. Press down firmly.
- Apply subsequent pieces in overlapping layers.



- Around the penetration should now be windtight sealed.

- Water will reliably run off.



- Circular penetration should now be sealed windtightly.

Installation – Sealing of Skylights



- Make a Y-cut in the roof membrane to the size of the installation frame.
- Fold back the sides



- Fit the skylight into the mounting frame.
- Screw it on.

- **Note:** Read and observe the instruction manual supplied by the skylight manufacturer.



- Secure roof membrane to installation and skylight frame on all sides.



- Cut off approximately 30mm below the top of the skylight frame.



- Seal the corners windtight with short pieces.
- **Note:** Start sealing at the lowest point. This provides extra protection against water penetration.



- Seal the roof membrane all round the skylight frame so that it is windtight.



- Procedure is the same for chimney as it is for dormer window.



- Skylight is now sealed windtightly with SIGA Wigluv.
- Provide the penetration with extra protection with a deflection plate.

Use of Nail Sealing Tape



- After sealing SIGA Majcoat roof underlay, bond the nail sealing tape to the underlay.

Installation – Bond to Plastered Masonry



- Clean the substrate and breathable membrane.
- Apply Primur bead on the roll, align it and press it down.
- Make a stress-relief loop in the breathable membrane, press the sheeting down firmly.
- Cut off any excess sheeting.



- Install the battens.

SIGA Majvest

SIGA Majvest is a 3-layered membrane, with a microporous functional layer reinforced on both sides with PP fibre-fleece. SIGA Majvest can be used as a façade membrane to improve the windtightness of a building. The substructure must be free from protruding sharp objects, such as screws etc.

SIGA Majvest has imprinted cutting, laying and bonding aids to help the installer save time installing the product.

Installation



- Apply SIGA Majvest with the lettering facing toward the installer.



- Overlap the membrane by approximately 100mm.
- Secure the overlapping membrane in the bonding area with a stapler.



- After adhesion, for final attachment of the membrane mount counter slatting in structure direction directly on the bearing structure.



- Align SIGA Wigluv centrally along the overlap and secure in place.
- Bond without tension and wrinkles and press on firmly.
- The overlap is now permanently sealed windtight with SIGA Wigluv.

SIGA Wigluv

The substrate must be able to take a load, and free of ice, dust and grease. It must not be adhesive-resistant. Before bonding with SIGA Wigluv, clean the substrate and roof façade/membrane, and do a bonding test.

To protect rolls against dirt, always leave the side protection films on the roll, and store the roll in its original box.

Water must not be able to pool anywhere after sealing, i.e. no standing water. Creases or stresses in the membrane or tape must be removed by cutting open the crease and carefully sealing the cut and overlap with SIGA Wigluv as shown below.



Suitable membranes are as follows:

- SIGA Majcoat
- SIGA Majvest
- Roof membranes
- Counter ceiling webs
- Roof sheathing
- Façade membranes and wind papers

Suitable substrates are as follows:

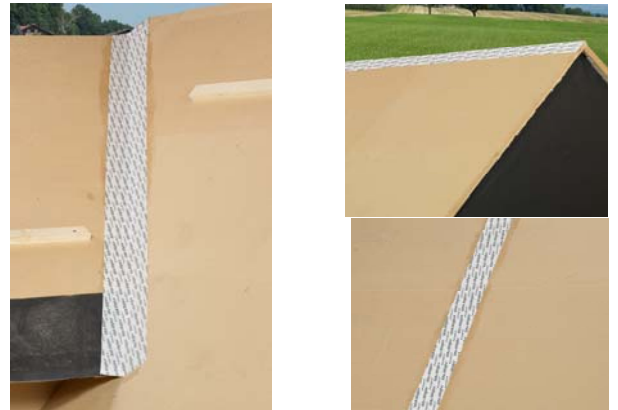
- Smooth, hard, wood-based panel materials
- Metal, e.g. chimneys, pipes, windows
- Hard plastics, e.g. extraction ducts, windows, roof hatches.

SIGA Wicluf 100 and SIGA Wicluf 150 are wider rolls (100 and 150mm respectively, compared to 60mm for SIGA Wicluf) and are used with primer SIGA Dockskin for windtight sealing of softboards (soft timber boards either natural or bituminised).

Softboards – Sealing Valley, Ridge & Joint



- Apply SIGA Wicluf in the middle and align.

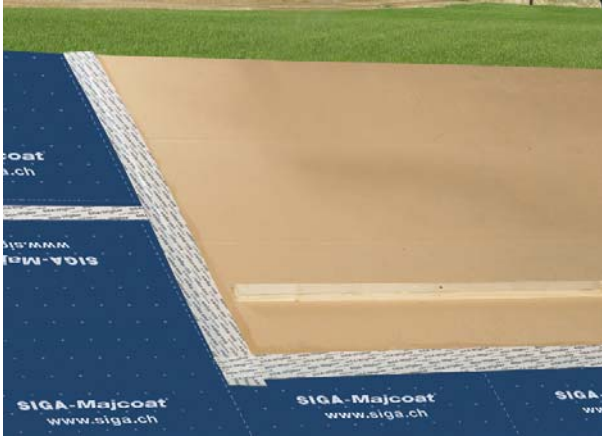


- Valley, ridge and joint are windtightly sealed with SIGA Wicluf and SIGA Dockskin.

Softboards – Bonding Membrane to Softboard



- Apply SIGA Wicluf in the middle and align.
- Remove both backing strips simultaneously and press on.



- The transfer area between the covering membrane and the softboard is sealed windtightly with SIGA Wigluv and SIGA Dockskin.

Softboards – Sealing Penetrations



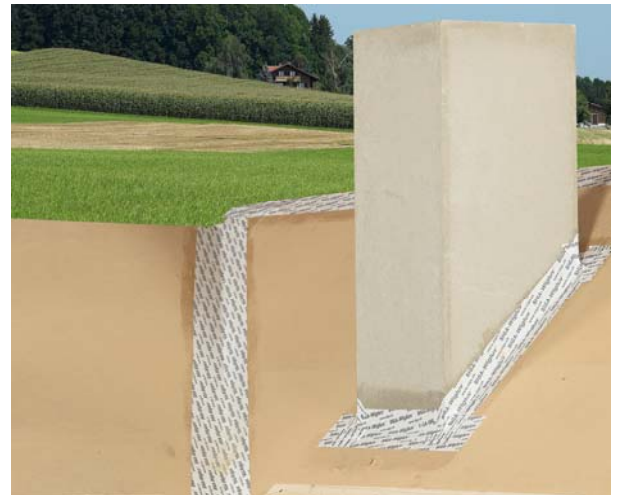
- Starting at the bottom and working upwards, cut SIGA Wigluv at both ends with approximately 50mm excess.
- Bond half of SIGA Wigluv onto the penetration and then half onto the softboard.



- Cut into the excess bisecting the angle and fold over.
- **Cut just short of the corner.**



- Repeat on each side, from bottom to top.

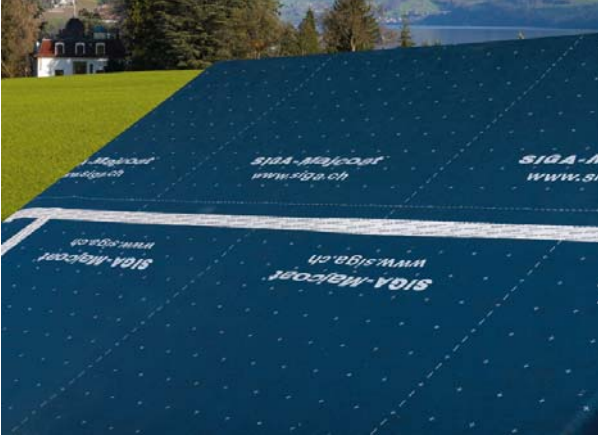


- The penetration is now sealed with SIGA Wigluv and SIGA Dockskin.

Installation – Windtight Sealing of Overlaps



- Align SIGA Wigluv centrally along the overlap and secure in place.
- Bond without tension or wrinkles and press on firmly.
- The printed bonding aid saves time.



- The overlap should now be permanently sealed to make it windtight with SIGA Wigluv.

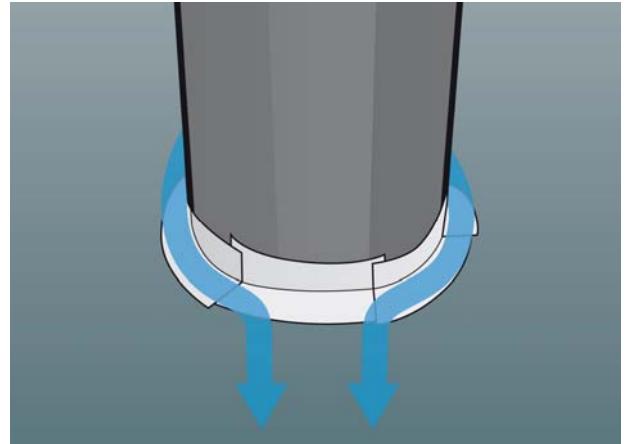
Installation – Sealing of Circular Penetrations



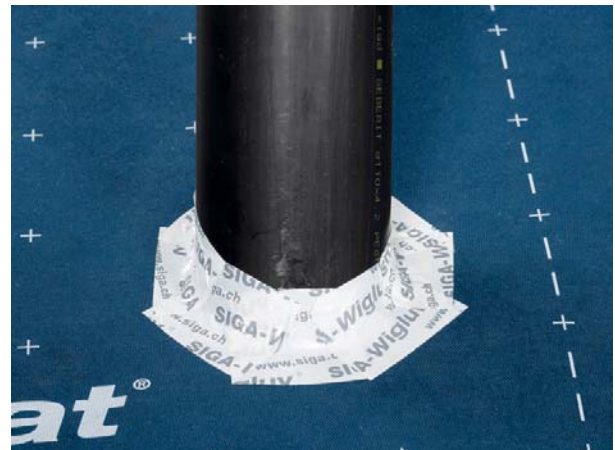
- Guide the membrane precisely around the circular penetration.
- **Note: Start sealing at the lowest point.** This provides extra protection against water penetration.
- Crease SIGA Wigluv lengthwise.



- Fix SIGA Wigluv half on the circular penetration then half on the membrane. Press down firmly.
- Apply subsequent pieces in overlapping layers.



- Around the penetration should now be windtight sealed.
- Water will reliably run off.



- Circular penetration should now be sealed windtightly.

Creating a Base Joint Windtightly



- Bond the concrete base joint with SIGA Docks skin.

- Align SIGA Wigluv 100 or SIGA Wigluv 150 to the centre of the joint, secure in place.
- Remove backing strip.
- Bond without any tension and wrinkles and press on firmly.



- The base joint should now be sealed windtightly with SIGA Wigluv.

Sealing a Penetration Windtightly



- Cut SIGA Wigluv to size, add 30mm to each end, secure in the corner and press on.
- Cut into the excess bisecting the angle.
- Start cut just short of the corner.



- Fold over and press on.



- Repeat at each side of the penetration.



- The angular penetration is sealed windtightly with SIGA Wigluv 60.

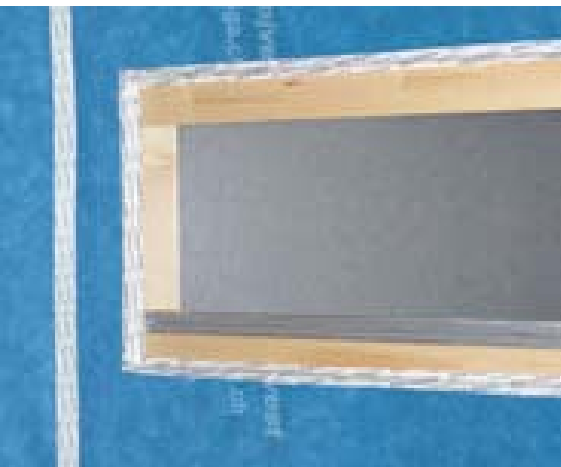
Sealing a Window Windtightly



- Fold SIGA Wigluv to form a corner.
- Stick it precisely into the corner of the window.
- Repeat all around.



- To join the corners, cut SIGA Wigluv to the right length and position in the centre of the corner.
- Remove backing strip and press on.



- The window is sealed windtightly with SIGA Wigluv 60.

3.1 GENERAL

The SIGA Air & Windtightness System is suitable for traditional masonry, timber frame and steel frame constructions. Suitable timber frame constructions are defined as those designed and built in accordance with the relevant parts of BS 5268:Part 1:1996 *Structural use of timber*. Suitable steel frame constructions are defined as those designed and built in accordance with BS 5950-1:2000 *Structural use of steelwork in building – Code of practice for design – Rolled and welded sections*.

3.2 STRENGTH

SIGA Majpell, SIGA Majcoat and SIGA Majvest will resist the loads associated with the installation of the material on to a wall, roof or ceiling.

The vapour control layer used with the SIGA Air & Windtightness System should not be left uncovered for longer than is absolutely necessary. Should the membrane be damaged by high winds, careless handling or by vandalism, any damaged areas should be repaired or replaced before the final internal finish is applied.

3.3 VENTILATION

The SIGA Air & Windtightness System can minimise background air leakage (uncontrollable ventilation) and provide controllable ventilation through use of trickle vents, passive ventilation and mechanical ventilation. In accordance with good building construction practice, all openings for services and trap doors should be draught sealed, and trap doors should not be located in bathrooms, shower rooms or kitchens.

3.4 CONSERVATION OF FUEL AND ENERGY

In conventional constructions, energy loss by air infiltration and exfiltration can account for a significant portion of the total heat loss through the building envelope. The SIGA Air & Windtightness System, when installed as per the manufacturer's instructions and this Certificate, will significantly reduce the potential for interstitial condensation, reduce heat loss due to convection, and significantly reduce the possibility of structural degradation, dry rot and mould growth.

4.1 BEHAVIOUR IN FIRE

SIGA Majpell, SIGA Majcoat and SIGA Majvest were tested to IS EN ISO 11925-2:2002 *Reaction to fire tests – Ignitability of building products subjected to direct impingement of flame – Single flame source test* and IS EN 13501-1:2007 *Fire classification of construction products and building elements – Classification using data from reaction to fire tests* and achieved a fire class of F. Cavity barriers must be provided as indicated in Section 3 of the TGD to Part B of the Building Regulations 1997 to 2008.

The toxicity risks in relation to the SIGA Air & Windtightness System in the event of fire are negligible in wall construction.

4.2 WATER PENETRATION

The SIGA Air & Windtightness System, when used in accordance with this Certificate, presents no significant risk of water penetration.

4.3 WATER VAPOUR PENETRATION AND CONDENSATION RISK

The risk of condensation is highest in new-build construction during the first heating period, where there is high moisture loading due to wet trades, such as in-situ cast concrete slabs or plaster. The risk of condensation diminishes as the building naturally dries out. Dryers are recommended in the winter to accelerate the drying process in order to prevent the high relative humidity persisting long-term.

The general design guidelines contained in TGD to Part F of the Building Regulations 1997 to 2008 and BS 5250:1989 *Codes of practice for control of condensation in buildings* must be met when installing the SIGA Airtightness System.

4.4 DURABILITY

The SIGA Air & Windtightness System will be unaffected by the normal conditions found in a wall, roof or ceiling construction and will have a life comparable with other elements of construction in accordance with BS 7543:1992 *Guide to the durability of building elements, products and components*. However, the products, like most similar materials, must be protected from sunlight, flame and solvents.

4.5 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- Dimensional accuracy
- Tensile strength
- Density
- Nail tear resistance
- Elongation at break
- Water vapour permeability
- Efficiency of the construction and installation process

4.6 OTHER INVESTIGATIONS

- (i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.
- (ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) Blower door site tests were performed on the SIGA Air & Windtightness System.

5.1 National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:

- (a) the specification of the product is unchanged.
- (b) the Building Regulations 1997 to 2008 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
- (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
- (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
- (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
- (f) the registration and/or surveillance fees due to NSAI Agrément are paid.

5.2 The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

5.3 In granting Certification, the NSAI makes no representation as to;

- (a) the absence or presence of patent rights subsisting in the product/process; or
- (b) the legal right of the Certificate holder to market, install or maintain the product/process; or
- (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

5.4 This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

5.6 The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

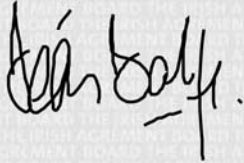
5.7 Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

NSAI Agrément

This Certificate No. **08/0314** is accordingly granted by the NSAI to **SIGA Cover AG** on behalf of NSAI Agrément.

Date of Issue: **April 2008**

Signed



Seán Balfe
Director of NSAI Agrément

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.n Sai.ie

Revision: August 2009

- Inclusion of SIGA Majcoat & SIGA Majvest breathable felt and façade membranes.
- Inclusion of SIGA Primur as a bead on a roll.
- Inclusion of SIGA nail sealing tape.