

Preface

The information contained in this manual is a guideline to providing sound waterproofing. The base for the guideline is many years of practical and design experience obtained by SealEco. Local legislation or design practice may differ slightly from these specifications and instructions, however the information enclosed should be considered as a general guideline towards the most effective product use and application in a given situation when installing our membranes.

Since the handling and installation is beyond our control, SealEco retain no responsibility for these areas.

We make every effort to ensure that the information provided in this document is current and accurate. However, errors, misprints, inaccuracies, omissions or other errors may sometimes occur despite our best efforts. SealEco does not warrant that the content of this document including, without limitation, product-/installation descriptions or photographs and illustrations, is accurate or complete.

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Product information

Prelasti is an unreinforced elastomeric EPDM membrane for roof waterproofing. The membrane can either be used in loose laid installation under ballast, adhered to the substrate or mechanical fastened by the unique Centrix system. Prelasti is always pre-fabricated in a factory into large panels that can be quickly installed on the roof with a minimum of seams to be performed during the installation.

Prelasti can either be prefabricated by SealEco or an authorized partner.

There are several different ways of fastening a membrane to the substrate on the roof. The Prelasti membranes are designed to be suitable for all of them, but we recommend to use the different membranes according to the matrix below.

In some cases a Prelasti membrane with thickness 1.0 mm is applied for ballasted roofing. This is mostly used when the entire roof can be covered with one panel. The installation techniques described in this manual can be difficult to apply if membrane thickness is less than 1.2 mm. When using Centrix fixation the membrane thickness should never be less than 1.2 mm.

Adhered	Centrix	Ballasted	Allowed, not recom.
Prelasti LFR/LFRT	Prelasti S/ST	Prelasti S/ST	,
Prelasti C	Prelasti C	Prelasti C	
Prelasti No Flame FR/FRT	Prelasti No Flame FR/FRT	Prelasti No Flame FR/FRT	
Prelasti S/ST		Prelasti LFR/LFRT	

Materials handling and storing

Check the material as verified by specifications, shipping document and product label. Missing or damaged goods should be reported to SealEco.

Store all materials according to the product specifications.

Packages shall not be opened until the material shall be applied. If the installation work is interrupted, unprotected rolls shall be covered or put back in their packaging.

Make sure that the substrate can carry the load when material is placed on the roof (point load).

Do not allow traffic or work by other contractors until installed roof areas are satisfactory protected. Keep the work site in good order and free from construction debris, loose nails, steels sheet off cuts etc.



Prefabrication and work planning



The basic behind an efficient made to measure roofing and prefabrication of panels is good information about the roof measurement. This is preferably acquired by careful measuring of the roof alternatively it can be gotten from adequate drawings. To be able to prefabricate a panel for the roof it is necessary to first do a precise measuring. When measuring a roof we recommend using metallic measuring tape and following the steps we recommend. Example on how to make a correct measure is available in the appendix. When a correct measuring and planning of work on the roof is done we will be able to produce a membrane with the necessary details already in place.



The roofing work as well as quality assurance becomes easier and more secure if there is a way to split the roof in smaller areas that can be finished in detail during each working period.

If the work is interrupted exposed rolls must be covered or put back in their original packaging. If the Prelasti membrane is exposed to the sun for a longer period the surface oxidizes. This is not changing the properties of membrane but the quality and strength of the Thermobond splice is strongly affected - this is on the not the case with cold splicing. When using Thermobond splicing we recommend careful planning so that all splicing is done as soon as possible after Prelasti is layed out. Another alternative is to cover the seam areas or to fold the membrane to protect seam areas. If the Prelasti membrane has oxidized the splice areas must be grinded with a grinding machine and nylon grinding disc followed by cleaning. The time it takes for oxidization to start is depending on the strength of the sun. Therefore it is of particular importance to do a seam test before starting regular seaming.



Prefabrication and work planning

The prefabricated Prelasti panels are delivered to site in a rolled up bundle, generally on a pallet. The panels are lifted up to the roof and rolled out. If there is more than one panel for a roof they have to be spliced together on the roof. However, there is only a minimum of work that has to be done on the roof with splicing and fastening of the panel. It is possible to choose any level of prefabrication you like depending on site circumstances and available measures. If you prefer a less prefabricated panel you will have more work on the roof.



The maximum size of the prefabricated panel is depending on the weight that is possible to handle on the building site and the weight the deck is able to handle.

Consideration about how to handle these folded panels on the building site is important - both to safety and protection of the panel itself. Placing of the folded panel on the roof is crucial and instructions will be sent along with the panels; where to place them and how to unfold/unroll.



Each prefabricated panel is marked with unrolling (1) and unfolding (2) instructions.



Build Up

Substrate

Prelasti can be used on all common substrates like: concrete, timber or corrugated metal deck. Concrete or timber decks can be used for cold roofs without insulation but on metal deck, insulation is required. Centrix does not work directly on substrates of magnetic metal (steel).

The roofing substrate shall have adequate strength and rigidity to carry actual loads from ballast, wind and snow etc.

Prelasti is not influenced by ponding water but we still recommend a slope of at least 1:100 (0.5°). Maximum slope for gravel ballasted roof is 1:10(5°).

The substrate shall be relatively even - equivalent to wood floated concrete. It shall be clean and free from water in any form as well as contaminations like oil or grease. Screws or nails must be properly entered into substrate without risking coming out. Substrates that are rougher than wood floated concrete shall be covered with a protection layer.

The smoothness of the substrate is particularly important under splice areas. Difference in level more than 5 mm must be levelled before splicing.

In heavy construction, like decks of reinforced concrete, the expansion joints and construction joints in the underlying concrete substrate must be made smooth with mortar, cement. There must also be an expansion zone between roof field and adjacent vertical to allow the deck to expand and contract.

Protection layer

When a protection layer for mechanical abuse for Prelasti is needed there are several design alternatives. Any of these can be chosen: Suitable insulation material, protection fabric of min. 200 g/Sq.m., plywood or synthetic board.

When a protection layer for heat during installation is needed (insulation that melts) it can be glass fabric of min. 150 g/Sq.m, bitumen felt, rubber or plywood.

Separation layer

For separation we recommend a fabric of min. 100 g/Sq.m.

Insulation

Prelasti can be installed upon any type of insulation without risk of migration. The chosen insulation must be suitable for low slope roofing and adapted to the requirements of the roof design.

For a ballasted roof the insulation must be able to resist long term pressure and handle the actual weight for each specific project. Besides the long term compression strength designed for the actual build up we require a minimum compression strength at 10% deformation of 60 kPa (60 kN/m2) to assure a proper installation.

Install insulation suitable for the roof in accordance with the guidelines of the supplier.

Polystyrene insulation can be melted and damaged by the heat from hot air machinery. For this reason we recommend that the insulation is covered by a heat protecting layer like an extra layer of Prelasti, a mineral wool board or bitumen felt around details. Automatic welders do normally not melt the insulation.

Heat from the Centrix machine can also damage insulation that can't resist heat. This can be avoided by adding a protection layer on top of the insulation. Note that the foil on foil faced insulation is insufficient as heat protection.

Keep the adhesives as well as cleaning wash 9700 away from insulation that cannot resist solvents.

Insulation suitable together with the specific adhesive must be chosen at details where adhesive is required. Mineral wool or polystyrene insulation is example of insulation that requires facing.

Avoid getting fibres from mineral wool in the splice areas and try to keep fibres from sticking to the backside of the membrane to a minimum when using Centrix fasteners. Do not drag the panel so that it slides over the insulation but unroll it in its final position.





Build Up

Vapour barrier

When installing a new warm roof a suitable vapour barrier must be applied under the insulation and it should be installed to be air tight over the entire surface.

At roof terminations, and connections to walls, the vapour barrier shall be brought up over the thermal insulation. At penetrations, the vapour barrier shall be connected air tight with construction tape.

Panel fixation - Ballast

On ballasted roof construction the membrane is laid loose to the substrate and secured by proper weight from ballast. For this reason the ballast should be applied shortly after panel installation. Example of suitable ballast is: gravel, vegetation (green roof), pavers, concrete or timber.

In many cases different ballast is suitable for different areas on the same roof. Pavers are most suitable at areas with regular foot traffic. Gravel is extra suitable around drainage details for paver ballasted or green roofs.

The weight of the ballast must be adapted for each building and be based upon local conditions and requirements. Example that influence the needed load from ballast are: wind zone, terrain, height and shape of building and height of parapets. There is also different legislation in different countries. We recommend a ballast weight of 80 Kg/m² or more but never less than 50 Kg/m². If there is less ballast than 50 Kg/m² an additional fixation of the membrane is necessary.

The influence from wind load is always bigger in the corners and at perimeters of the roof than in the field. Therefore gravel ballast should be applied with thicker layer in corner and perimeter zone than in the field.

A general guide to designing gravel thickness can be:

- ♦ Thickness x 1 in Field Zone.
- ♦ Thickness x 2 in Perimeter Zone.
- ♦ Thickness x 3 in Corner Zone.

The ballast should be applied with care so that the panel isn't damaged.





Build Up

Panel fixation - Centrix mechanically attachment

Prelasti is laid loose to the substrate and secured by Centrix fixations that are fixed to the substrate prior to panel lay-out. When installed on a warm roof the Centrix fixations also secures the insulation. It is crucial that the Centrix fixations gets covered by the Prelasti panel as soon as possible and not being left open followed directly by welding the fixations to avoid wind damages.

The wind load calculation and design of fixation pattern must be done by SealEco or associated partners. It is critical that proper information about the project is given so that proper dimensioning of fasteners can be obtained. The information should be given via standardized form for wind load calculation. Additional to membrane fixation suitable fixation pattern for chosen insulation must also be considered.

The admissible load used for wind load calculations for Centrix fixations with Prelasti are:

Prelasti C 1,2 mm	453 N / Fastener
Prelasti S/ST 1,2 mm	400 N / Fastener
Prelasti S/ST 1,5 mm	453 N / Fastener
Prelasti NO FLAME FR/FRT 1.2 mm	453 N / Fastener
Prelasti NO FLAME FR/FRT 1.5 mm	517 N / Fastener

In addition to the Centrix fixations there should be a base tie-in of the membrane around the perimeters and around details in the field that is 500 mm or larger. The base tie-in should be done as a linear fixation with Termination bar or fixed under clad metal, both alternatives fixed with cc max 200 mm.

When refurbishing an existing roof using Centrix fixation a pull out test on the actual roof must be carried out and documented.

Make sure to control that the build up and products chosen is compatible with the local fire legislations.

Panel fixation - Adhered

Prelasti panels are fixated to surface of the substrate with a PUR adhesive or a waterbased adhesive. This adhesive must be compatible not only with the EPDM but also with the substrate. Therefore it is important to choose the right substrate. Examples on substrates that are compatible with the PUR adhesive are: concrete, wood, old bitumen, sheet metals and some isolation boards. If the isolation is not compatible with the adhesive or if the strength of the isolation material is not good enough, a board of a compatible material must be put above the isolation and fixated mechanically to the substrate.

The amount of adhesive to use over the surface is described in our product specifications.

A contact adhesive is used at the perimeters of the roof and also towards up stands and details of the roof. There are several different contact adhesives but practical circumstances decide which one to use. The contact adhesive should be applied on both of the surfaces that is about to be bonded.

Prelasti C is the membrane that is most suitable for adhered fixation and gives the strongest bonding strength between membrane and the adhesive. Prelasti LFR/LFRT and Prelasti No Flame are also suitable membranes to use for adhesion towards the substrate.

The weather conditions have influence on the result of the adhesion between panel and substrate. The temperature must not be below 5 °C. The panel and the substrate need to be dry and clean. The lower temperature, the longer is the curing time of the adhesive. The curing time is also affected by the dampness in the air. Curing time can be between 1-5 hours.



Build Up - Gravel Ballasted





Build Up - Green Roofs





Build Up - Paver Ballasted





Build Up - Concrete ballasted



Note! Make sure to control and install the correct load to a timber deck roof considering that the density of the timber itself might be insufficient to give proper fixation.

If the timber deck shall be treated, protected with wood oil there must be a protection layer like polyethylene foil on top of the Prelasti to prevent chemical damage.



Build Up - Centrix Mechanically attached





Build Up - Centrix Mechanically attached





Details - Upstands

All places where the substrate makes a change in angle greater than 15° should be considered as an upstand and treated accordingly. Exception to this is details in the roof surface measuring max. 500 mm (side or diameter).

The height of an upstand should be minimum 200 mm over the top layer of the roof.

When connecting to a curb our preference is that the membrane is terminated on the outside of the curb but termination at the top or the inside is also allowed.

The Thermobond technique and the cold splicing technique are similar but please observe that these two techniques must never be mixed. Meaning that you should not use Thermobond details to adhere to panels.

Upstand for adhered, mechanically attached and ballasted roofs



If the substrate does not allow adhering with contact adhesive we recommend using a reinforced EPDM strip and mechanically attach this at the corner between the upstand and the roof surface. It is also possible to use a sheet of metal and mechanically attach this to the surface.





Details - Upstands





Details - Corners

Corners for roofs





Details - Corners





Details - Pipe Penetrations



Note! Same techniques are used with cold bonding and EPDM details.



Note! Same techniques are used with cold bonding and EPDM details.



Note! This build up is valid for ballasted roofs and adhered roofs. The PE outlet can be used also for adhered or Centrix mechanically attached roofs.



Details - Expansion joint

Expansion joint for ballasted constructions



Expansion joint for adhered, ballasted or Centrix mechanical attached constructions





Details - Edge details



When prolonging the drip edge sheet of Thermobond clad metal the sections should be placed with a gap of 5 mm where the gap is bridged with duct tape and sealed off by welding a cover strip of Thermobond R splice strip.



Panel positioning

Panel fixation - Mechanically attached/ballasted

Place the panels on the roof so close to their final position as possible and make sure that the substrate can carry the point load of the packed panels. Unfold and unroll the membrane carefully so that as little tension as possible is brought to the membrane. The panel can be moved by waving so that air comes underneath and then move it around.

Before any seaming, cutting or fixation of a panel is done it must be allowed to relax for a minimum of 30 minutes in intended position. Fixation of Prelasti with ballast or Centrix should be applied directly after installing the membrane. If this isn't possible temporally ballast for fixation during the installation should be applied.

Some wrinkles in the membrane are normal and indicates that the installation have been done in the right way. This does not damage the function of the membrane. Prelasti shall never be over stretched in order to get rid of every wrinkle. We recommend that all cuts and overlaps for splicing should be properly marked with a caulk line before execution. Straight line for cuts and splice is crucial for easy installation and good appearance.

Panels should be positioned so that no Centrix fixation is positioned under seam area. In addition to the Centrix fixations there should be a base tie-in of the membrane around the perimeters and around details in the field that is 500 mm or larger. The base tie-in should be done as a linear fixation with Termination bar or fixed under clad metal, both alternatives fixed with cc max 200 mm.

When refurbishing an existing roof using Centrix fixation a pull out test on the actual roof must be carried out and documented. Make sure to control that the build up and products chosen is compatible with the local fire legislations.

Panel fixation - Adhered

Spread the sheet out over the roof area according to our recommendations.

PUR adhesive is applied in beads by punching holes with a spacing of 40-50 mm in the can, then using the can to spread the adhesive. It is also necessary to open the lid in the can. Apply adhesive over an area approximately 1 - 2 meters ahead of the rolled back Prelasti. Allow some time, usually 5 - 10 minutes, to allow the solvent in the adhesive to flash of. This time will depend on the weather conditions. Use a broom to brush the membrane immediately while the adhesive is still liquid to remove creases and bubbles. These should be brushed to the sheet edges. While the adhesive is still wet, the membrane may be worked in to place by brush and by hand.

The WBA 001 adhesive is applied using a roller. Apply the adhesive over a suitable roof area depending on workplace conditions.

Spray adhesives need to been applied on both the substrate and the membrane. Therefore, consider a suitable amount of roof squaremetres to be treated at the same time.

Depending on the weather conditions at the time of installation the curing time varies. Please see correspondion product specification for detailed information.

Some blisters may remain under the sheet. The majority of these will disappear over time as the solvent apors dissipate under and through the membrane.

Thermobond R Splice Strip

Connection of panels

If connections between panels are needed the Prelasti panels are preferably positioned butt jointed without overlaps and welded with a cover strip of Thermobond R splice strip. If using cold splicing a overlap of 130 mm is required.

Multiple layers

More than three layers waterproofing (Prelasti or Thermobond R splice strip) shall be avoided when installing. This can be done by planning work so that panels and details are made staggered or at an extreme to cut off lower layer.

Prelasti



Connection of panels. April 2017 | 6:21



Panel positioning

Gutters

If possible panels should be laid in the directions of the gutters to avoid splice perpendicular to water runoff. It is however allowed and no problems to lay panels cross the gutter.

When Prelasti is fixed with Centrix there must be an Centrix fixation along the low point of the gutter.

Panel tailormade to size in one piece

If the roof area isn't bigger in size than a panel that is practical to handle it is advisable to make the panel in one piece. How big that is practical to handle depends on circumstances for the project but we recommend a size of 300 m².

Panel installed in grid







When Prelasti is installed as a grid with four panel corners connecting the panels must be installed butt jointed without panel overlap. The lower Thermobond R splice strip must be sealed off with hot melt sealant at the intersection point of the upper strip to level the different in height. The Thermobond hot melt sealant shall be applied so that it stretches minimum 10 mm at each side under the upper strip.

Note! A four panel corner is not allowed with cold splicing

Panel installed staggered





When Prelasti is installed with staggered length it is possible to overlap the Prelasti panels if required even if we recommend keeping the panels butt jointed, when using Thermobond splicing.



Details

T-joints Thermobond



All T-joints should be levelled in height by applying the Thermobond hot melt sealant before the upper layer is installed. The hot melt sealant is applied with hand held hot air blower and silicone roller and the sealant shall stretch minimum 10 mm outside the upper layer. Directly after the upper Thermobond R strip is spliced it shall be pressed to the hot melt sealant using a brass pressure roller.

Note! T-joint for prefabricated splice should be treated with Thermobond hot melt sealant as the splices made on site.

T-joints Cold splicing

When making a T-joint with the cold splicing method, pay extra attention when using Sealant 5590.

Visible corners

Visible corners in the top layer shall be rounded to a radius of approx 30 mm.





Details

Prolongation of cover strip - Thermobond

When Thermobond R splice strip needs to be prolonged this is done by overlapping the strip minimum 50 mm and welding them to each other. Visible corners to be rounded off at upper layer.



Cover strip passing over angels - Thermobond

All places where the Thermobond R splice strip are used as a cover strip (not as flashing!) passes over an angle $\geq 15^{\circ}$ it shall be broken with the underlying part passing the break line with min 50 mm. The upper Thermobond R splice strip should overlap min 100 mm and be seamed in place. Visible corners to be rounded off.





Cold splicing system

An alternative to the Thermobond welding is the cold splicing that doesn't require electricity on site. This method is used for joining rubber to rubber to form a waterproof seal. It may be used for example at the lap sealing of two adjacent sheets, for patch repairs or for the application of preformed items.

Procedure

Cold bonding should not be attempted at temperatures below 5°C or in wet conditions. Surfaces to be bonded must be clean, dry and free of grease or other contaminants. If in doubt, use cleaner 9700 on the surface and allow to dry thoroughly prior to the application of adhesive.

Apply Contact Adhesive 5000 to both surfaces to be bonded using a fleece roller or brush. The overlap should be 130 mm but the last 30 mm at the edge of the lap is for subsequent sealing with Sealant 5590 (Picture 6:1). The adhesive should be applied sparingly to produce a thin, even film over the surface of the EPDM. Leave the adhesive to dry on the surface of the material until touch-dry, but still tacky. This normally takes approximately 10 minutes, depending on the weather conditions.





Picture 6:2

Area for Sealant 5590

Area for contact adhesive

Picture 6:1

When the adhesive has reached the stage at which it can be touched with a finger but not adhesive comes away when the finger is lifted, the surfaces are ready for bonding. Carefully bring both surfaces together taking care that they are in the correct position to each other. As the bonding agent is a contact adhesive, where the surfaces will be bonded on contact, there is no room for alteration once the two pieces of material have been brought together. When the surfaces to be bonded have been jointed, apply pressure using a pressure roller.

When the bonded surfaces have been pressed tightly together, apply the Sealant 5590 into the 30 mm margin at the edge of the lap (Picture 6:2). This should then be pressed lightly by pressure roller until the sealant extrudes from the lap to form a bead along this edge (Picture 6:3). This bead may be smoothed out using spatula or wetted finger if desired. Leave the Sealant 5590 to cure fully before disturbing the joint in any way. This procedure must be done every time you need to bond a Prelasti membrane to another.

Picture 6:3





Hot air welding techniques

Prefabrication splicing into Prelasti roof panel is made by SealEco or associated partners. This can be done with Hotbond or Thermobond splicing techniques. Both these are welding techniques created by heat and not adhesives or solvents.

For the onsite seaming during the installation the Thermobond hot air seaming technique is applied. Automatic welders like Leister Varimat and Variant or similar should be used on all places where it is possible to do so. Handheld Leister Triac in combination with silicone or brass pressure roll is used for detail work and at locations with narrow space.

Connections between panels are made by welding a Thermobond R Splice Strip as cover strip on top of the Prelasti membrane.

Recommended machinery

Machine	Application	Settings
Leister Varimat	Connection between panels, Upstands with Thermobond R Flashing.	Temperature: 620°C Speed: 1,5-3 m/min Pressure: +15 Kg
Leister Variant	Connection between panels, Upstands with Thermobond R Flashing.	Temperature: 10 Speed: 1,5-3 m/min Pressure: +15 Kg
Leister Triac	Detail work: corners, pipe boot, repairs	Temperature: 6-8 Speed and pressure: To be adopted Nozzle: 40 mm

Environment

Thermobond heat splicing can be made in ambient temperature in the range -20 to+50°C.

Thermobond seaming should not be done during precipitation, in the presence of excessive moisture, in areas of ponding water or during excessive winds.

Membrane

The splice areas of the membrane must be smooth clean and free from wrinkles.

It is of major importance that both areas that should be seamed together are heated before the contact areas are joined.

No stress should be built into a Thermobond seam.

Support Strip

We strongly recommend the use of our product Support Strip when splicing with automatic welders. The support strip is placed on top of the Thermobond R Splice Strip that should be connected to the Prelasti membrane and keeps the underlying layers in place during splicing. As the pressure from the machine is levelled out folds in the splice areas are avoided.

Splice Properties

Recommended splice width is 40 mm with automatic hot air machinery and 50 mm when splicing with hand machine and silicone roller. Minimum seam width is 30 mm.

Note that the Thermobond seam doesn't reach full strength until it has cooled down.

Temperature-Speed settings are correct when the Thermobond is melted into a pasty consistence without development of white smoke.

A test weld should always be done at start-up of each working shift. The sample should be examined and tested to assure good quality.

Oxidization

If Prelasti is exposed to the sun for a longer period the surface oxidizes. This is not changing the properties of the membrane but the quality and strength of the Thermobond splice is strongly affected. Therefore we recommend careful planning so that all splicing is done as soon as possible after the Prelasti membrane is layed out. Another alternative is to cover the seam areas or to fold the membrane to protect seam areas. If the Prelasti membrane have oxidized the splice areas must be grinded with a grinding machine and nylon grinding disc followed by cleaning. The time it takes for oxidization to start is depending on the strength of the sun. Therefore it is of particular importance to do seam test before starting regular seaming.



Centrix fixing

The Centrix washers should be installed according to design pattern as specified by valid wind load calculation and also be adopted to proper fixation pattern for chosen insulation.

When working on soft insulation a plastic tube that ensures that the screws don't penetrate the membrane is needed.

The Centrix washer should never be fixed too deep into the insulation. The bonding areas must be above the insulation to assure proper bond.

The Centrix washers should be covered with Prelasti as soon as possible after they are fixated and never later than the same day. The welding of the fixations must not be done immediately even if this is advisable.

Centrix fixation should never be positioned directly under Prelasti seam.

Centrix washer could not be installed closer than 100 mm from obstacles that prevent the Centrix tool to reach centre of washer.

An Centrix fixation can be loosen by reheating it and this can be used for adjustments or dismantling. It is however not acceptable to reuse an Centrix washer once it has been loosened.

Recommended machinery

Centrix should be fixated by the means of Centrix machine only and the machine setting should be set to 6.5 seconds operating time. Follow the guidelines of Centrix machine.

Welding with hot air is not acceptable.

Operation

The Centrix washer can be detected visually or by using a magnet. Fine positioning of the tool is made by the guidance diodes on the handle that indicates how to position the tool. When the tool finds its position it automatically starts welding. Apply some pressure with one hand on the tool during welding. Do not move tool until the machine beeps and the welding stops.

Immediately after the Centrix have been welded a magnet should be placed on top of Prelasti to assure pressure during cooling. The magnet must be left until the membrane has cooled down so that it can be touched without discomfort. If cooling is limiting the speed of installation we recommend using more magnets.



Environment

Centrix fixing can be made in ambient temperature in the range -15 to +45°C.

Centrix fixing should not be done during precipitation, in the presence of excessive moisture, in areas of ponding water or during excessive winds.

Membrane

The Prelasti membrane that should be bonded must be smooth clean and free from wrinkles.

No stress should be built into an Centrix fixation and the membrane should never be stretched to be fixated.

Quality assurance

A test bond with Centrix should be performed at start up of the working shift. Quality assurance of the system should be made as outlined under Quality Assurance and Control.



Quality Assurance and control

Quality control and assurance are essential elements in the installation of Prelasti Roofing System.

As the quality of the waterproofing is highly dependent upon the workmanship of the installer only contractors that are trained and certified by SealEco are allowed to do installations.

Documentation

Each installation should be carefully documented including data on membrane, prefabrication information and a plan over the roof areas giving possibilities to trace material from production to installation.

Visual control

Visual controls of the work and the quality should be done throughout roof installations. Problems and faults should be detected and fixed as early as possible. Controlling aspect should be:

- ◊ That correct material are being used and installed with the right equipment.
- That the material is installed according to the guidelines of SealEco, local regulations and in accordance with good workmanship practice.
- ♦ That the material isn't risking mechanical abuse.

Splice control

Test splices shall be carried out with every hot air machine at the beginning of each working period as well as longer interruptions.

The Thermobond shall be seamed with the intended machine settings to minimum length 200 mm and width 40 mm.

When the splice has cooled down to 35-40° C the splice is peeled by pulling the two sheets apart.

When the splice is peeled, it shall delaminate leaving Thermobond material on each membrane surface.

If the splice doesn't pass this test the equipment must be controlled, adjusted and a new test performed. Regular site splicing is not allowed until an approved test splice has been allowed.

Splice strength testing

The splice strength is controlled by destructive testing of a seam from the roof area.

A sample of min. 200x200 mm is taken centrally over the splice. The hole shall be repaired according to our guidelines.

The test samples are tested by peel according to EN 12316-2 and should reach peel strength of minimum 100N/50 mm, typical value in peel is 150-200N/50 mm for Thermobond. For Cold splicing, a minimum of 50N/50 mm, typical value in peel is 100-150N/50 mm.

Splice tightness testing Thermobond

The tightness of the seam shall be tested by running and applying some pressure with a blunt object like a screwdriver or similar along the seam. Extra attention should be addressed at corners, T-joints, penetrations and the roof perimeter.

An alternative tightness test is to use the air lance test method. This is executed by blowing compressed air perpendicular to the seam. If the seam has some deviation it will show and also the sound that the compressed air creates will change.

All deviation should be marked and repaired in a suitable manner.







Quality Assurance and control

Centrix verification

Test bonding of Centrix should be performed at start-up of each working period. The visual control should show a bond over the whole contact area. After the material have cooled down the membrane should be cut to a sample of approx 25 mm in width and pulled in shear. Proper bond should give break in membrane. Thereafter the membrane should be peeled of the Centrix washer leaving a clear membrane imprint over the bonding area alternatively pulling the laminated foil from the metal.





Supervision & Maintenance

The Prelasti membrane is maintenance free and has excellent durability without any sort of treatment.

We recommend that the roof is inspected by an authorized roofer on a regular basis and also after extreme weather like storms or excessive precipitation. During the inspection the function of the roof is evaluated and deviations should be handled. Details in the roof are of higher importance than the surface and should be carefully examined: skylights, ventilation, curbs, connections to walls, drains, and pipe penetrations.

To maintain good functionality of the roof it should be cleaned on a regular basis. All objects that aren't belonging on the roof should be removed like contaminations, vegetations and leafs. It is of extra importance to keep the drainage free so that dewatering can function as intended.

Prelasti should never be exposed to aromatic hydrocarbons like oil, diesel or fat. If this type of chemicals should leak to the roof it must be removed immediately or it will damage the membrane.

Regular walking on the membrane should be kept to a minimum. If there is regular traffic this should be considered in the design by adding walkways or pavers in that area.

If snow or ice needs to be removed from a roof, shoveling must be done carefully leaving minimum 5 cm on the roof surface to make sure that the membrane is not damaged by the work.

Leakage

If a leakage into a building is detected there can be several reasons and a careful investigation must be done. Leakages does not necessary mean that there is a problem with the Prelasti membrane. Finding the problem includes considering:

- Mechanical damage of the membrane?
- ♦ When did the leakage first show?
- ♦ Weather conditions prior to leakage?
- ♦ Clogged drains or bad piping?
- ♦ Bad roof windows or ventilation shafts?
- ♦ Bad cladding in connection to the roof or the façade?
- ◊ Condensation from within due to wrong construction?
- ♦ Under what conditions does the leakage start/stop or does it constantly leak?
- ◊ Point of leakage in comparison to the slope of the roof (drained area)?

SealEco can assist in and have well developed techniques for finding leakages.



Repairs

Start by locating the damage and try to find out the reason for it: installation failure, mechanical damage etc. When the reason is established it's easier preventing similar damages to occur.

Thermobond system

Measure the size of the damage and cut Thermobond R splice strip to the size required. If the damage area is bigger it can be repaired by applying an Prelasti membrane that is spliced to the existing membrane with a Thermobond R splice strip as a cover strip. The overlap between the existing membrane and the repair must be at least 50 mm. The surface of the existing membrane must be grinded with grinding machine (2500 rpm) and nylon disc before splicing. After grinding the surface must be cleaned with water or cleaning wash 9700 and be left to dry. Splicing is done according to regular methods for Thermobond splicing.

Cold splicing system

The overlap when making repairs has to be at least 80 mm. The surface around the damaged zone must be cleaned with water or Cleaning Wash 9700 and left to dry. The splicing is then done according to regular methods suitable for the adhered system.





Refurbishment requirements

Before initiating a refurbishment of a roof an investigation should be performed. This should include finding the reason for the refurbishment and if some circumstances have led to shorten life span of the waterproofing than expected. It is also importance to evaluate which components of the roof that can be reused and which that needs to be changed. Ballast is one thing that normally is possible to reuse. Vapour barrier, insulation and clad metal are other aspects that must be checked if they must be replaced or not. A roof fixated with Centrix fixation is possible to dismantle without tearing of the membrane by heating the washers with the machine.

When connecting to an existing membrane other than Prelasti out on a surface a curb detail should be constructed. Both the Prelasti and the other membrane should be terminated at the top of the curb and be covered by suitable coping.

EPDM

No specific action needs to be taken. Only inspection and treatment of troubled areas needs to be done like, sharp edges from metal details, nails and screws properly entered into substrate etc.

BITUMEN

Old bitumen felt roofs must be swept clean, sealed and levelled. Stones and sharp objects shall be removed i.e. with a steel scraper. Wrinkles, blisters, waves and loose felt shall be cut off and repaired. If possible the panels should be positioned parallel to the lay out direction of the bitumen felt. All differences in height under Prelasti seam areas should be levelled to be smooth. If the bitumen felt have rough slates it must be covered with a protection layer.

PVC

During renovation of PVC roofs we recommend that the old PVC should be removed from the roof. A minimum requirement is that the PVC is cut loose at perimeters, at details and in sections over the roof and that a protection layer is installed.