

INSTALLATION METHOD STATEMENT

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INSTALLATION METHOD STATEMENT

This manual provides the technical information necessary to correctly specify the Nuraply TPO waterproofing membrane system. It has also been designed for use by Nuralite Waterproofing Ltd approved applicators, for training and quality management purposes.

This manual may also be used by main contractors and Building Consent Authorities (BCA's) for quality management and inspection purposes.

NOTE TO APPLICATORS

As a Nuralite Waterproofing Ltd approved applicator you are required to comply fully with the contents of this manual. Where a specific situation arises on a particular project that makes it difficult for you to follow the published procedure or comply with a particular detail drawing, you are required to communicate this to Nuralite Waterproofing Ltd for an approved solution.

FOR FURTHER INFORMATION, CONTACT:

Nuralite Waterproofing Ltd
60D Leon Leicester Ave, Mt Wellington, Auckland
0800 687254

USING THE ICONS

Four different visual icons have been created for this manual to draw the reader's attention to important pieces of information.



- 1. QUALITY CONTROL ICON**
Information about warranties, quality control checks and related information.



- 2. USEFUL TIPS ICON**
Helpful advice to make the applicator's job easier and successful installation more likely.



- 3. CRITICAL ICON**
Vital information about the system and installation methodology. It is crucial that the specifier and/or applicator are aware of these facts.



- 4. HEALTH & SAFETY ICON**
Information about the importance of safety checks and ensuring that the work environment is always safe with potential hazards identified and minimised.

BRANZ APPRAISED



BRANZ Appraised
Appraisal No.950 [2017]

The Nuraply TPO system has been BRANZ appraised as an Alternative Solution in terms of New Zealand Building Code compliance.

Please contact Nuralite Waterproofing Ltd for a copy of this BRANZ Appraisal Certificate.

You can also download the certificate on our website www.nuralite.co.nz

INSTALLATION METHOD STATEMENT

INTRODUCTION

PRODUCT DESCRIPTION

Nuraply TPO a high quality TPO (ThermoPlastic Polyolefin) used to provide waterproofing protection for a variety of roofing and exterior deck applications.

The Nuraply TPO system includes the Nuraply TPO membrane and Nuraply TPO contact adhesive. Also included as part of the system is the unreinforced Nuraply TPO membrane, pre-made corners, pipe boots, cut edge sealant along with other Nuraply TPO accessories.

Nuraply TPO Fleece back membrane consists of a TPO sheet vulcanised to a non-woven polyester matting.

The Nuraply TPO system is suitable to be applied on a structure complying with the New Zealand Building Code, it may be installed directly onto the following substrates;

- H3.2 treated Timber*, including plywood sheets and reconstituted wood panels (Strandboard), substrates complying to AS/NZ 2269 (2012) (directly or with Enertherm PIR Boards between) with treated timber trim, battens and framing where timber is detailed and Nuralite product is directly applied or,
- Concrete substrates complying to NZS 3101 (2006) (directly or with Enertherm PIR Boards between) or,
- NPM 900 metal tray decks with Enertherm PIR boards between.

Nuraply TPO has been independently appraised as an Alternative Solution in terms of the NZBC and complies with NZBC Acceptable Solution E2/AS1 Paragraph 8.5.5

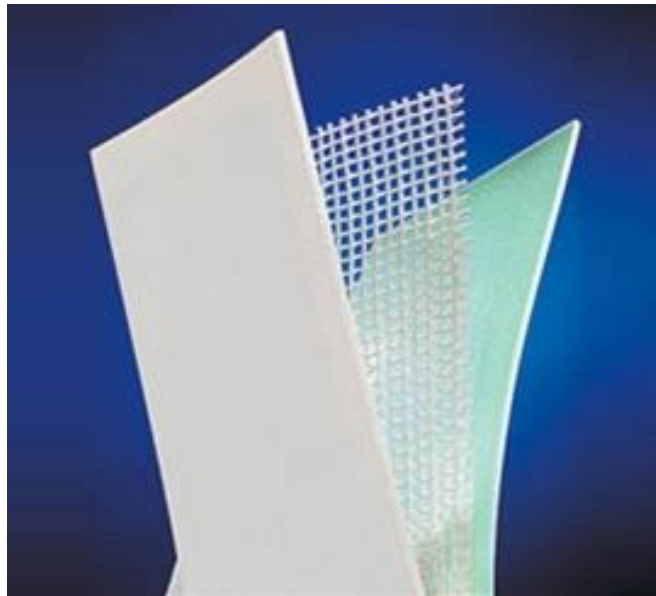
REMEADIAL ROOFING

Nuraply TPO Fleece-Backed membrane can be installed over existing membranes enabling the building owner to continue using the building while a new roof is being installed. In most cases, as the old degraded membrane does not have to be removed, new Nuraply TPO Fleece-Back roofs will provide excellent bonding and watertightness with a 20 year material warranty.

FEATURES OF NURAPLY TPO

TPO MEMBRANE

Nuraply TPO membranes have over 30 years of extensive use internationally in a wide variety of waterproofing applications. They are regarded as one of the most durable membranes available. TPO has been in New Zealand since 2004.



Nuraply TPO is internally reinforced with a polyester scrim

NURAPLY TPO AND RESISTANCE TO UV AND AGEING

BRANZ independent evaluation confirms Nuraply TPO is suitable for New Zealand climatic conditions, is resistant to New Zealand's high UV & ozone conditions and the extreme hot and cold weather extremes. This is particularly important when working on timber substrates, which are subject to movement.

HISTORY OF USE

In addition to the benefits, TPO membrane systems have an extensive history of use. First installed in the 1960's throughout the USA & Canada and then introduced into New Zealand in 2004.

MULTI USE ADHESIVE

INSTALLATION METHOD STATEMENT

Nuraply TPO single part adhesive gives a high performance bond to Enertherm PIR, plywood, concrete and Strandboard.

DECK MEMBRANE USE

Nuraply TPO is used as a roofing and exterior deck membrane. When used as a deck membrane we do not recommend it be tiled over directly but can be overlaid with timber or tile decking with Nurapads or Nurajacks supports.

DURABILITY

When installed in accordance with Nuralite Waterproofing Ltd specifications, the Nuraply TPO system will meet the NZBC B2.3.1 (b) requirements of 15 year durability. Nuraply TPO meets the ASTM D6134 standard required by the Ministry of Business, Innovation and Employment E2/AS1 Acceptable Solution.

The durability opinion given by BRANZ states that when subjected to normal conditions of environment and use, Nuraply TPO is expected to have a service life of at least 15 years.

PLEASE ALSO REFER TO:

- BRANZ Bulletin No. 345 "Flat Membrane Roofs - design & installation" published June 1996.
- Ministry of Business, Innovation and Employment Acceptable Solution E2/AS1 3rd Edition published July 2005.

PRODUCT OVERVIEW

NURAPLY TPO

A TPO (ThermoPlastic Polyolefin) membrane.

Stock available in Dove Grey (White by indent):

Smooth

1.50mm thick x 3.05m wide x 30.48m long rolls

1.50mm thick x 3.65m wide x 30.48m long rolls

1.14mm thick x 3.05m wide x 30.48m long rolls (only for areas requiring a more pliable membrane)

Fleece Back

1.50mm thick x 3.0m wide x 30.48m long rolls

NURAPLY TPO CONTACT ADHESIVE

A high strength solvent based contact adhesive formulated to quickly bond Nuraply TPO roofing membranes to a range of substrates

PRIMER

Cut back Nuraply TPO contact adhesive 50/50 with solvent.

NURAPLY TPO T JOINT PATCH

A non-reinforced TPO 100mm diameter disk to seal seam laps where perimeter and/or header sheets intersect (T-Joint).



Where Nuraply TPO membrane is to be overlaid with timber decking, or being installed in exposed deck applications, the 1.5mm thickness is required.



Supplied in 20 Litre , solvent based Nuraply TPO adhesive is flammable and must be stored, transported, and used with care. Refer to Material Safety Data Sheets for further information.



The shelf life of these products is affected by the storage temperature. To gain maximum shelf life, ensure products are stored in a COOL dry place. Do NOT leave out on roofs or other areas exposed to sunlight.

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NURAPLY TPO SAFETY WALKWAY ROLLS

3.97mm thick x 762mm wide x 15.24m long non slip safety walk way TPO provide areas of caution or hazard on the roof top.

NURAPLY TPO UNREINFORCED FLASHING

300mm wide weldable unreinforced TPO for corner, detail, and flashing areas.

WEATHERED MEMBRANE CLEANER

Cleaner specifically designed for aged, dirty, or weathered membranes.

NURAPLY TPO CUT EDGE SEALANT

A specially formulated edge sealer designed to seal off the cut edge to prevent water migrating into the Nuraply TPO reinforcement textile. Available in 16oz (473ml)

NURAPLY TPO MS40 SEALANT

A single pack sealant for terminations or other penetrations. UV resistant. Available in a 600ml cartridge.

ACCESSORIES

NURAPLY TPO PREFORMED CORNERS

A range of internal and external weldable preformed corners to make detailing both watertight and aesthetic.

NURAPLY TPO ONE WAY VENTS

In a warm roof situation ventilation is unnecessary as the insulation is designed to encapsulate the entire roof system.

If using a cool roof system then cross flow ventilation is required. Ventilation of timber roof spaces, particularly skillion roofs, has always been recommended by Nuralite to assist with removal of interstitial moisture and mitigate high temperatures in the ceiling cavity.

The method for creating cross flow ventilation is a design consideration. A practical and unobtrusive way is using soffit vents. Alternatively TPO air vents allow moist air to escape from your roof cavity reducing heat build- up, condensation and potential rot. The Nuraply TPO vents are available in grey and will vent up to 70sqm of roof space per unit. Note: A minimum of two vents are required in each roof area to be vented.

NURAPLY TPO FASTENERS

Specifically designed 60mm diameter galvalume steel pressed plates with hooking pins to ensure a mechanical grip. Nuraply TPO fasteners are heavy duty and come with angular grooved mechanic fixings.

DROPPERS OUTLETS AND OVERFLOW DROPPERS

PVC ring clamp droppers and overflows available in 65mm, 80mm and 100mm diameter sizes.

AQUAKNIGHT HI-FLOW DROPPERS OUTLETS AND OVERFLOW DROPPERS

AquaKnight heavy duty PVC dropper/overflow outlets with stainless steel ring clamp and leaf guard fittings.

Available in 50mm, 80mm, 100mm and 150mm.

AquaKnight side entry socket 50mm.

AquaKnight spigot droppers 50mm, 80mm, 100mm and 150mm.

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SCUPPER OUTLETS

Aluminium pre-lined.


Available in 200mm x 75mm x 300mm throat for main outlets.

STORAGE

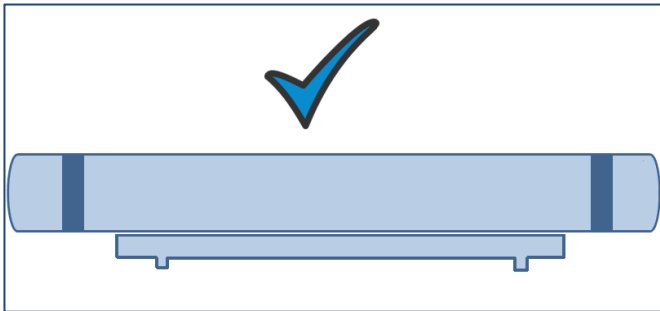
All Nuraply TPO rolls must be stored on pallets as detailed below, in a ventilated area. Primers and adhesives must be stored in an upright position.

The shelf life of the adhesives and tapes is determined by the conditions of storage, the higher the storage temperature the shorter the shelf life.

Primers and adhesives must be stored in cool conditions away from heat and direct sunlight.



Before installation, all Nuraply TPO membrane must be unrolled and relaxed for 20mins, to relieve stresses through the manufacturing process, packaging, and storage.




WEATHER

The Nuraply TPO system should be installed in dry conditions. Note that a temperature of at least 9°C is required before laying the membrane, the plywood substrate must have a maximum moisture content of 20% and concrete 75%RH at the time of laying. The “tack off” time for the Nuraply TPO adhesive will be extended when installing in cooler conditions, or when the humidity is high.

HEALTH & SAFETY

The primers, adhesives and sealants used in the Nuraply TPO system are Class 3 flammable goods. Contractors should be aware of the Health & Safety precautions identified in the Material Safety Data Sheets.

Ensure you display appropriate signage, as shown below. Keep well away from flame and heat sources and use only in ventilated areas with suitable safety equipment.




FIRST AID

Swallowed – give water to dilute. Do not induce vomiting. Get medical attention without delay.
 Skin – Remove contaminated clothing and wash skin thoroughly with soap and water. Do not scrub skin.
 Eyes – Hold open and flush with water for at least 15 minutes. Get medical attention without delay.
 Inhalation – Remove to fresh air. If breathing difficulty get medical attention immediately.



STAINING OF NURAPLY TPO

To avoid staining of Nuraply TPO, care is required during design. To ensure water running off stained timbers (e.g. kwila) and metal (e.g. copper) is avoided.



Nuraply TPO should not be dragged across any substrate on the exposed surface. Always have the underside to the substrate.

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WATER RUN-OFF

Water is not contaminated by Nuraply TPO membrane. The first 25mm of rainfall from the newly installed Nuraply TPO roof membrane must be discarded before any drinking water collection. This is to remove residues which may have developed during the manufacturing production of the Nuraply TPO membrane. The best quality drinking water is achieved by the three steps listed and are highly recommended:

- Ensure you have first flush diverters installed which are components tapped into your down pipes and discharge initial rain fall.
- Ensure you install a U.V. filter.
- Ensure you install a Charcoal filter.

For more information please review [Health Department guidelines](#).

INSTALLATION

QUALITY CONTROL AND INSPECTIONS

Quality control substrate readiness checksheets are downloadable from our website www.nuralite.co.nz. These must be completed for each job and kept as a record of evidence to ensure the installation meets Nuralite Waterproofing Ltd specification and warranty replacements.

TOOLS REQUIRED

Tools required include the following:

- Large stainless steel scissors.
- Stanley knife.
- Hand stirrer.
- Vacuum cleaner or leaf blower.
- Belt sander.
- Chalk line.
- Measuring tape.
- Paint roller, tray and 4 inch brush.
- Nuraply TPO solvent for clean up
- Heavy roller.
- Broom.
- Hand roller.
- Sealant gun.
- Substrate moisture meter.
- Fire extinguisher.
- First aid kit.
- Leister hot air welding gun



Roofers must wear flat-soled shoes to reduce possible footprints on the membrane.

SUBSTRATE PREPARATION

The substrate to which the membrane system is being installed onto is a significant factor that determines the performance of the system. A belt sander should be used to smooth the areas around the screw fixings where wooden splints can damage the membrane. Sheet joints should be sanded flush where required. Nurapatch repair mortar (concrete substrates) applied to surface defects.

Timber fillets at all internal corners are not required.

On concrete substrates, ensure the concrete has a maximum moisture content of 5%, firm and smooth, and that any loose surface concrete or latescence is removed. Repair any cracks or voids and remove any lumps or protrusions.

Use a vacuum cleaner or leaf blower to carefully remove all dirt/dust and surface contamination. Acid etching may also be required where the concrete surface is unsuitable for laying.

Nuralite Waterproofing Ltd recommend that concrete surfaces are primed with 50/50 Nuraply TPO adhesive cut back with solvent to provide additional bond strength.

INSTALLATION METHOD STATEMENT

SUBSTRATES

CONCRETE SUBSTRATE SHOULD

- Have maximum moisture content RH75% (relative humidity) 5%.
- Ensure smooth surface, all soft areas ground off.
- Have all cracks or imperfections fixed using Nurapatch mortar.
- No mortar cove is required at internal corners
- Have all external edges chamfered to 5mm radius to remove sharp edges.
- Have adequate falls to outlets.
 - Minimum falls of 2° slope (1:30) for roofs.
 - Minimum falls of 1.5° slope (1:40) for decks.
 - Minimum falls of 0.6° slope (1:100) for gutters.

PLYWOOD SUBSTRATE SHOULD

- Be CD structural grade plywood with sanded c-face upwards, H3 CCA treated and kiln dried.
- Be a minimum of 17mm thick and complying with AS/NZS2269 for roofs and 19mm for decks.
- Be laid in a staggered pattern (offset all plywood sheets) with all edges supported and tight butted.
- Be face grain laid at right angles to supports or cross members.
- Be fixed at 150mm centres at sheet edges and 200mm through the girth.
- Be fixed with corrosion-resistant stainless steel countersunk screws (10 gauge).
- Be smooth, clean, and dry (**maximum moisture content of 20%**), and all edges sanded if necessary.
 - Minimum falls of 2° slope (1:30) for roofs.
 - Minimum falls of 1.5° slope (1:40) for decks.
 - Minimum falls of 0.6° slope (1:100) for gutters.



LOSP treated plywood must not be used with Nuraply TPO under any circumstances. T&G Plywood joints are not acceptable as replacement for square edged plywood fully supported

STRANDBOARD

- Ensure that sheets have been stretcher bond laid to falls, are rigid, with joints flush, edges arised, no lumps or hollows, smooth, clean, dry and free of debris. To be laid length ways across the line of supports below.
- Strandboard sheets supported at 400mm centred rafters and nogs for roofs unless detailed otherwise.
- Strandboard is for use on roof decks and gutters, and not to be used on balcony decks.
- Minimum finished (constructed) falls to be 1:30 for roofs and 1:100 for gutters.

NPM900 METAL TRAY (Only for Enertherm Warm Roofs)

Supporting rafters spaced as per specification (varies depending on NPM900 gauge)
Enertherm sheets staggered lay (off set) with correct falls and no ponding.

INSTALLING THE ENERTHERM SYSTEM

Vapour Barrier

- The amount of condensation depends on the temperature in-balance and the humidity of the internal air. Vapour barriers prevent moist air from reaching the dew point and so prevent condensation forming
- Before laying the membrane, prime the substrate with Nuraflux QD primer.
- When installing the membrane, ensure the Nuraply ALU vapour barrier covers the entire area and wraps up the insulation side so there is no opportunity for vapour to enter the roof system from below.
- Seal all penetrations carefully and repair any damage to the membrane.
- Because no condensation will form within the ceiling cavity there is no need to vent the ceiling when installing a Nuratherm warm roof.

INSTALLATION METHOD STATEMENT

Enertherm Boards

- Lay the sheets in a brick bond fashion to prevent movement. The sheets can be cut with a knife or saw
- Keep the sheets dry onsite and only install sheets that can be waterproof that day to prevent entrapping moisture.
- It is vital that no thermal breaks exist in the system so fill any gaps with Gorilla Fire Rated Expanding Foam.
- Ensure that sheets have been stretcher bond laid to falls.
- IKOfix Thermal Break Insulation Flanges and Fixing Screws used in the correct quantities and positions. Any gaps in the insulation are filled completely with Holdfast Fire Proof Expanding Foam.
- Nurapply Foil Tape over all flanges, exposed PIR, and sheet joins. Edges of sheets supported by metal angle.

Fixing Enertherm PIR on Timber or Metal Traydeck

- IKO Fix fasteners are designed to penetrate the insulation and has the following advantages:
 - Reduces thermal bridging
 - Is cost effective because it uses shorter screws
 - No risk of the screw penetrating the membrane if someone stands on the fixing.
- Secure the sheets with 4 fixing per sqm for wind zones up to and including Very High. The fixings should be inset by 200mm in each corner with at least one in the centre. For wind zones extra high and above consult with Nuralite who can commission a site specific fixing plan.
- If you notice the boards move when walking on them, use additional fixings to ensure the boards are stable and flat.

Fixing Enertherm PIR on Concrete

- The Nurabond High Foaming PU Adhesive is cold applied and has been specially developed to allow the safe, rapid partial bonding of roofing components.
- It is moisture curing and tolerant of use in damp conditions. A degree of moisture is required, either in the atmosphere or on the surface, to allow the correct adhesive bond to be achieved. However, all liquid water should be removed from surfaces prior to use.
- Curing time is dependent upon ambient temperature and humidity conditions however, curing will usually occur between 2 to 6 hours. The adhesive will take 24 hours to achieve full bond strength.
- The minimum working temperature is 5°C. At low temperatures, warming the containers in hot water prior to use will improve handling characteristics. (N.B do not boil the product). Maximum working temperature 30°C.
- Surfaces to receive adhesive should be stable and clean. No priming is required.
- Nurabond High Foaming PU Adhesive is applied straight from the container in strips. The maximum distance between the strips is 25cm. Use the spout on can for pouring lines of adhesive.
- Weight the Enertherm boards once they are laid into the adhesive to ensure a good bond between the two surfaces.

WORKING WITH ADHESIVES

As with any adhesive-based system, the application of the adhesive and subsequent application of the membrane is critical to the success of the system. The adhesive application rate, conditions of application and the time between applying the adhesive and placing the Nurapply TPO membrane are all important factors.



Make sure you:

- Thoroughly mix the Nurapply TPO adhesive with a hand stirrer to ensure it is fully mixed and has consistency.
- Apply the adhesive at the correct rate. Failure to achieve the correct coverage rate will reduce the bond strength of the membrane to the substrate.
- Achieve a good even coverage so a consistent bond is achieved across the system.

INSTALLATION METHOD STATEMENT

- Allow the adhesive to “tack-off” properly before closing Nuraply TPO membrane. If sufficient time is not allowed, solvent entrapment will result in the Nuraply TPO membrane bubbling. Leaving the adhesive too long will result in poor bond strength.
- Install in correct conditions. Moisture and temperature extremes will affect the performance of the adhesive.
- Make sure the adhesive is used within its shelf life. If the Nuraply TPO adhesive does not flow from the stirrer when drawn from the can, it is likely to have expired.

APPLYING THE NURAPLY TPO ADHESIVE

Ensure the Nuraply TPO adhesive is stirred and viscosity consistent. Apply with a brush, roller, or spray. Coverage approximately 30m² of laid material per 20L can.



Prime substrate before laying the Nuraply TPO membrane. **DO NOT** lay Nuraply TPO membrane in temperatures below 9°C.

Allow both surfaces to “tack-off” before installing Nuraply TPO membrane into place and bonding the substrate.

Ensure you wear appropriate safety equipment and have adequate ventilation.

LAYING THE MEMBRANE

Ensure the substrate is clean and dust free.

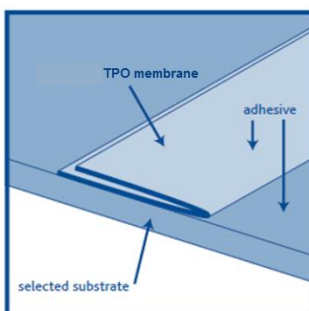
Choose the correct membrane for the substrate. Fleece back for concrete and Enertherm. Smooth Back for ply and Strandboard.

Once the Nuraply TPO material has relaxed, lay out the membrane in the exact position in which it will be finally positioned. Take one side edge and fold back the membrane sheet to expose half of the underside.

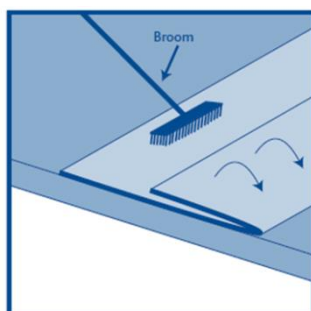
To the exposed underside, apply Nuraply TPO adhesive to Nuraply TPO and the substrate. When adhesive is tacky to touch but does not adhere to your fingers (approx. 10-20 mins. dependent on climate conditions) lay the membrane by carefully drawing back the membrane into its final permanent position. Broom or roll with water filled roller the surface of the membrane to remove all air and any wrinkles, taking care not to wrinkle the membrane.

Repeat this application with the other half of the membrane to complete the installation of the sheet. Roll the surface of the membrane to obtain a full bond.

When installing onto parapets or up stands over 170mm, it is better to install the membrane in two pieces, making sure the lap is positioned 150mm above the roof line. Take care to avoid damaging the membrane during installation. The membrane must be installed in a relaxed state.



Apply Adhesive to both membrane and substrate



draw back the membrane and broom to remove wrinkles



Once you have applied the adhesive, sometimes the membrane sticks where you do not want it to. If you need to reposition the membrane, flick the Nuraply TPO quickly to release it from the adhesive. This way you do not peel the adhesive off the membrane or substrate.



Laying membrane should not commence until the substrate is up to standard, and the relevant substrate readiness check sheet has been completed.

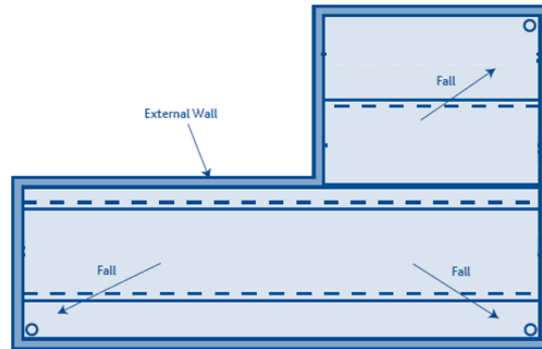
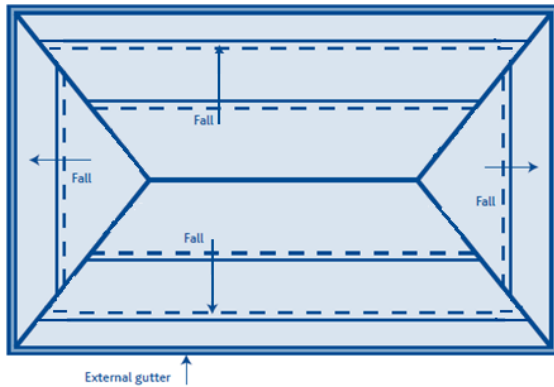
INSTALLATION METHOD STATEMENT

LAYING PATTERN

Start from the lowest point (i.e. at valleys or water outlets / gutters) and lay the membrane across the roof fall.

Work up to the highest point on the roof. This will ensure that water runs over the laps rather than down the lap edge.

Mark out the 40mm (minimum) lap on the roll to be installed. Set out subsequent rolls to that mark and continue, ensuring all 40mm end laps are allowed for and maintained.



NURAPLY TPO LAP EDGE SEAL

It is important to seal completed lap edges with cut edge sealer or heat and seal off with a penny roller to prevent any water getting into the Nurapply TPO reinforcement textile.



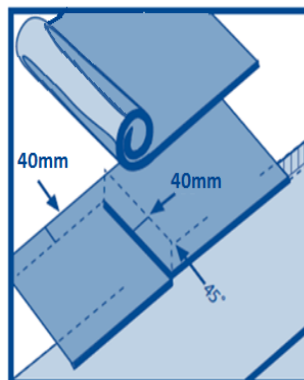
Laps should be aligned across the roof or deck fall so water runs over the lap or aligned from ridge to gutter. Internal gutter laps to be kept to an absolute minimum and at the highest point in a gutter

FORMING LAPS

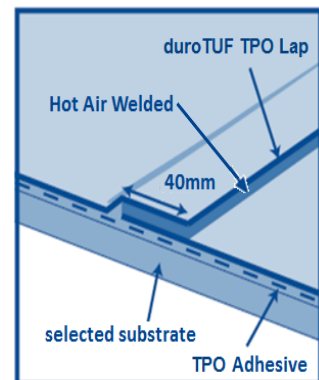
The waterproofing performance of the system is dependent on good lap integrity. Ensure all contaminants are removed from the lap area before proceeding. Use Nurapply TPO membrane cleaner prior to welding the laps.

Welded laps are overlapped with a minimum of 40mm cover.

Using the TPO heat welder, carefully heat both surfaces evenly, within the lap at the same time whilst firmly rolling on top of the sheet with a hand roller.



Cut 3 Way laps at 45°



All Side and End Laps to be 40mm

FLASHING

On the internal corner do not cut the membrane, simply fold back to create the "pig's ear" to lay behind the main sheet. Note: under flashing tapes are not required in internal corners.

On external corners do not cut the membrane to the very base of the junction, stop 3-4mm from the base. Install the Nurapply TPO pre-made corners or use unreinforced Nurapply TPO membrane to form a watertight external corner.



Automatic and hand welder



INSTALLATION METHOD STATEMENT

INSTALLING GUTTERS

Ensure the gutter is clean and dry, bond breaker tapes are not required.

Cut the Nuraply TPO membrane allowing enough width for the full internal girth of the gutter plus a 40mm allowance for the lap. Cut the length to suit, allowing for both end upstands and any laps.

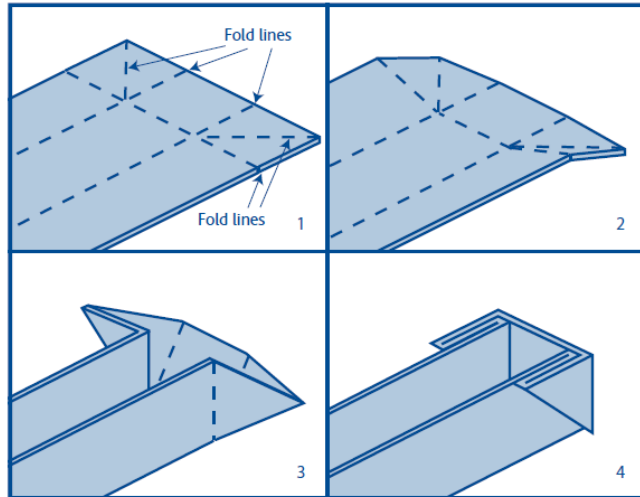
Pre-prime the substrate with a 50/50 cut back primer adhesive mix using Nuraply bonding adhesive and Nuraply TPO Solvent.

Apply the Nuraply TPO adhesive at the specified rate to the gutter base and all side/end up stands. Allow to tack off. Place the Nuraply TPO membrane into the gutter and position correctly. Fold back the Nuraply TPO in manageable sections and apply the Nuraply TPO adhesive at the required rate to the membrane. Allow to tack off and dress the membrane into place eliminating all creases and any air entrapment.


Proceed accordingly until the full gutter has been installed. Carefully dress the membrane into the internal corners forming the pig's ear. Do not cut the membrane.

CHECK YOUR SPECIFICATION

Although bond breaker tapes are not required, some architects may specify them in their Masterspec specification. The specification for the job takes precedence over all other general documentation. Remember to read the job specification and follow any requirement.



Installing Gutters



DO NOT CUT THE MEMBRANE. The end up stand is to be bonded in the normal way but the additional material (pig's ear) is to be folded behind the membrane.

PIPE PENETRATIONS

NURAPLY TPO MOULDED PIPE BOOTS

Moulded pipe boots designed to fit 20mm-150mm pipe penetrations.

Install a Nuraply TPO pipe boot around the penetration and hot air weld to the new Nuraply TPO membrane. Tighten the pipe boot onto the pipe penetration with Nuraply MS40 sealant and the sealable clip supplied.


Over-roll the base of the pipe out to ensure all air entrapment and wrinkles are removed.

MOVEMENT JOINTS

Purpose-made expansion joints and flashings should be installed to meet the specific stresses expected and be compatible with Nuraply TPO membranes.

Movement joints should be allowed for in the following situations:

- Around perimeter of columns and post penetrations through roof or deck.
- Where a new roof area meets and joins an existing roof or deck.
- At changes of direction or at changes of heights in a roof or deck surface. i.e. at all "T" or "L" type building junctions.
- Where construction plywood abuts a concrete slab or wall.



Nuralite recommend that all movement joint details and locations are approved by Nuralite and the architect/engineer.

ROOF DRAINS & SCUPPERS

INSTALLATION METHOD STATEMENT

The substrate should be recessed to accommodate the outlet. Apply Nuraply TPO MS40 Sealant to this recessed area and put the outlet into place. Fix with stainless steel screws.



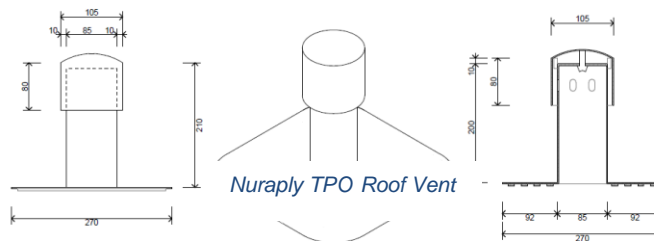
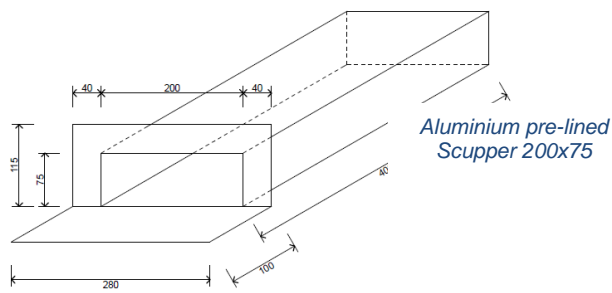
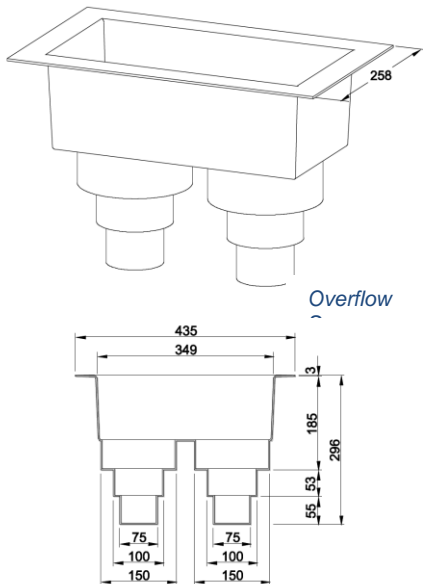
When working on substrates where moisture is present, it is vital to vent under the membrane. Failure to do so will allow entrapped moisture to expand under the membrane causing bubbling.

Lay the Nuraply TPO membrane in the normal manner, installing across the outlet. At this point roll the membrane to form a bond across the flush surface of the outlet. Cut a small hole in the centre of the rainwater outlet. Carefully fold the Nuraply TPO into the outlet ensuring the membrane is dressed neatly down. Insert the ring clamp fitting.



If a Hi Vac ventilation system is going to be installed by another contractor, DO NOT install our roof space vents. Check with ventilation engineer for advice.

When dressing Nuraply TPO into a rain water overflow sump, ensure the Nuraply TPO is extended 60mm into the sump and bonded using an 80mm Nuralite Waterproofing Ltd lap tape. Over flash the internal corners with unreinforced Nuraply TPO membrane. Apply Nuraply TPO MS40 sealant along the cut edge of the Nuraply TPO membrane in the sump.



ROOF VENTS

VENTING

Moisture venting helps remove any retained moisture in the substrate and substrate structure. Roof-space venting in confined skillion-type roofs creates air flow and equalises roof space pressure. Venting minimises temperature variations across the roof and so reduces substrate movement due to thermal expansion and contraction. To vent the roof space, simply cut out a small hole (20-30mm) in the plywood and position the vent accordingly.

INSTALLING NURAPLY TPO VENTS

A minimum of two vents are required in each roof area to be vented. The Nuraply TPO vents are available in grey and will vent up to 70m² of roof space per unit.

CONCRETE SUBSTRATE ROOFING

Install 36mm wide PVC bond breaker tape onto concrete in a 600mm grid pattern. Ensure the Nuraply TPO vent is positioned on a junction in the grid tape layout.

MEMBRANE TERMINATION

CHASE TERMINATION

INSTALLATION METHOD STATEMENT

A chase flashing is normally required when terminating into a concrete block or any masonry wall. The chase is to be a minimum of 100mm up from the substrate. The chase is recommended to be 6mm x 20mm deep. Remove all dust from the chase.

Dress the Nuraply TPO through the internal angle, up the wall face terminating at the bottom edge of the chase. Install a metal flashing into the chase and mechanically fix. Insert a 6mm Backer Rod, then apply Nuraply TPO MS40 sealant adhesive into the chase between the metal flashing and chase cavity, tooling off the outer edge to a 45° angle.

UPSTAND TERMINATION

When dressing the Nuraply TPO onto a vertical surface which will be covered by exterior cladding, the Nuraply TPO is to be installed to a minimum height of 150mm.

COMPRESSION FLASHING

Strike a chalk line to mark the height of the up stand. Install the Nuraply TPO membrane up to this mark. Install the metal compression flashing with the top fold (6mm angle) lining up with the top edge of the Nuraply TPO membrane and mechanically fix into place. Using a sealant gun, apply Nuraply TPO MS40 sealant into the 6mm cavity and tooled off at a 45° angle.

COMPLETION INSPECTION

Once the membrane is fully installed remove all dust, debris and sweep clean. Make good any imperfections and check all laps are fully bonded and probe tested.

During installation, the Quality Control checksheet is to be used by the installer to ensure that the work complies with our specification.

On completion, inspect all work for defects, making good as required. Pay particular attention to penetrations and other complex details and laps. Remove unused materials from site leaving the completed works clean and tidy for hand over.

Protection boards are to be used by any following trades.

Ensure that the Quality Control checksheets are completed and signed off, preferably with the main contractor.

WARRANTY

When laid by an approved applicator in accordance with Nuralite Waterproofing Ltd specifications and QC checksheets completed, a material 20 workmanship years warranty is available on request.



Maintenance procedures are required in product technical sheets, these are downloadable from our website www.nuralite.co.nz under the required product.

DECK APPLICATIONS

Refer to page 6 for substrate requirements. On timber decks, the supporting joists are to be installed at 400mm centres with 20mm CCA treated H3.2 grade plywood, glue and screw fixed.

The membrane is installed in the same way as outlined on pages 6-11, with the following additional requirements or adjustments.

INSTALLATION METHOD STATEMENT

1. TILED DECK APPLICATIONS

For a tiled deck finishes we recommend Nuraply TPO with the structural tile on Nurajacks or Nurapads



DO NOT tile directly onto the Nuraply TPO waterproofing membrane.

2. TIMBER DECK APPLICATIONS

Lay the timber bearers so that water will be able to flow freely to the water outlet. Install Nurajacks or Nurapads with timber joist levelling head together with Nurajack acoustic pads if required at the base of the Nurajack or Nurapad. This ensures the Nuraply TPO membrane is protected from any contact by the timber raft system.

NURAJACKS and NURAPADS

Nurajacks and Nurapads form part of the acceptable solution E2/AS1 (paragraph 7.3) and allow maintenance access to the membrane. Nurajack or Nurapads also allow services to be run underneath the paver stand system. Unlike standard tile applications, Nurajacks or Nurapads can have a variety of surface finishes installed on them.



Nurajacks or Nurapads can be installed with Nurajack SE Acoustic Pads between the Nurajack or Nurapad and Nuraply TPO membrane if required.

Nurajacks are available in a range from 28mm - 550mm

Nurapads are available in 12mm, with 1mm, 2mm, and 3mm shims.



On substrates with a significant slope, the slope correction support makes it much easier to keep a level surface while following the contour of the substrate.

Nurajack acoustic pads are also available for locations where a contribution to sound reduction is required.

When possible, a roof maintenance service contract should be arranged to ensure the longevity of the system. Use the above maintenance grid as a guide to arrange timeframes for this service.

INSTALLATION METHOD STATEMENT

NURATHERM PLYWOOD & STRANDBOARD SUBSTRATE READINESS CHECK SHEET FOR NURAPLY TPO (Prior to vapour barrier Installation)

Project Name: _____
 Form Completed by: _____
 Company: _____
 Area ready: _____
 Applicator _____

Structure complies with the New Zealand Building Code and plywood complies with AS/NZ 2269 H3.2 CCA treated plywood sheets 17mm thick for roofs, 21mm thick for decks.	
Plywood sheets supported at 400mm centred rafters and nogs for roofs and decks.	
Strandboard laid as per plywood with rafters and nogs at 400mm centres. Unless otherwise specified.	
Sheets stagger lay (fully offset) with falls as per plan.	
5mm clearances from all abutments, 5mm radius to all exposed edges.	
All sheet edges supported, fixed 150mm on edges and 200mm through girth, edges butt-jointed with no gaps except at abutments.	
Sheets fixed by gluing and Stainless Steel countersunk screw fixing.	
Mitres neatly formed.	
Rainwater outlets and overflow recesses formed to fit outlets rebated into the surface.	
Sharp edges and lips removed and cavities filleted. All joints flush.	
Plinths formed for any exterior ventilation, solar panels or fixtures.	
Substrate dry, (less than 20% moisture), clean, firm and suitable condition for laying.	

Notes

Signed by main contractor (builder)

Date:

METAL TRAY SUBSTRATE READINESS CHECK SHEET (Prior to vapour barrier Installation)

INSTALLATION METHOD STATEMENT

Project Name: _____
Form Completed by: _____
Company: _____
Area ready: _____
Applicator _____

Dimond sheet installed with the narrow trough down	
Fastening the metal tray sheet in the pan with 6 fasteners per purlin support.	
If using timber supports, installed bitumen tape between timber and metal tray.	
Confirm the substrate slope complies with specification.	
Rainwater outlets and overflow recesses formed to fit outlets.	
Ensure only approved accessories to be used for drainage.	
Review penetrations to minimize number and complexity.	
All edges of insulation supported by timber to prevent damage	
Plinths formed for any exterior ventilation, fixtures or similar.	
Substrate clean, firm and suitable condition for laying the Nuralite systems.	

Notes

Signed by Applicator

Date:

INSTALLATION METHOD STATEMENT

ENERTHERM SUBSTRATE READINESS CHECK SHEET

(Prior to Enertherm Installation)

Project Name: _____
Form Completed by: _____
Company: _____
Area ready: _____
Applicator _____

Structure complies to the New Zealand Building Code	
Confirm the substrate slope complies with plans.	
Rainwater outlets and overflow recesses formed to fit outlets rebated into the surface.	
Ensure only approved accessories to be used for drainage and venting.	
Review penetrations to minimize number and complexity.	
Ensure the NURAPLY ALU vapour barrier is installed correctly and that any damage has been repaired.	
Plinths formed for any exterior ventilation, solar panels or fixtures.	
Substrate clean, firm and suitable condition for laying the Nuralite systems.	

Notes

Signed by Applicator

Date:

INSTALLATION METHOD STATEMENT

ENERTHERM SUBSTRATE READINESS CHECK SHEET (Prior to Membrane Installation)

Project Name: _____
Form Completed by: _____
Company: _____
Area ready: _____
Applicator _____

Sheets stagger lay (fully offset).	
Any gaps in the insulation filled to prevent thermal bridging.	
Material fastened with the correct quantity of IKOfix Thermal Break Flanges and Fixing Screws (as per the Technical Note document up to 3.33 kPa ULS).	
Edges of insulation supported by metal sheet ridges	
Plinths formed for any exterior ventilation, solar panels or fixtures.	
Substrate clean, firm and suitable condition for laying the Nuralite systems.	

Notes

Signed by Applicator

Date:

Nurapply TPO

INSTALLATION METHOD STATEMENT

CONCRETE SUBSTRATE READINESS CHECK SHEET

(Prior to vapour barrier Installation)

Project Name: _____
 Form Completed by: _____
 Company: _____
 Area ready: _____
 Applicator _____

Structure complies to the New Zealand Building Code and concrete complies with NZS 3101 (2006)	
Concrete cured with curing membranes removed. Concrete substrate contains less than 5% moisture content.	
Surface smooth and clean with falls as per plan.	
Cavities and cracks filled with repair mortar, flushed off and cured.	
Concrete surface firm with any soft concrete or laitance removed.	
Ponding areas removed.	
Roof drains and overflow recesses formed to fit rebated outlets.	
If terminating into a chase, pre-form the chase and ensure it's straight and 20mm deep.	
Plinths formed for any exterior ventilation, solar panels or fixtures.	
Construction joints incorporated in slab as per designers specification.	
Substrate clean, firm and suitable condition for laying the Nuralite systems.	

Notes

Signed by main contractor (builder)

Date:

INSTALLATION METHOD STATEMENT

CHECKLIST FOR PROJECT SIGNOFF

Project Name: _____
Form Completed by: _____
Company: _____
Area ready: _____
Applicator: _____

Project Review	Comply Y/N/Na	Comments
Substrate readiness form completed		
Gutters correctly and neatly installed, particularly the internal corners		
Roof drains & overflows installed to specification and watertight		
Adhesive used in correct quantities. Membrane fully adhered to substrate with no evidence of bubbles or lifting.		
Correct quantity of fastenings used if Mechanically fastened.		
All laps fully welded and tidily appearance.		
Overall installation free of wrinkles, creases and splits		
All penetration details completed to specification including under/overflashing		
All non standard details installed as per pre-approved specifications (attach approved drawing)		
Any damage to membrane repaired to specification.		
Gutters correctly and neatly installed, particularly the internal corners		
Roof drains & overflows installed to specification and watertight		

Remedial action required:

Signed: _____
Date: _____

INSTALLATION METHOD STATEMENT

NURAPLY MAINTENANCE PROGRAMME

To get the longest life from a roof it must be regularly inspected & maintained.

When first installed the building owner should arrange inspections each spring and autumn, to enable the effects of annual extremes of weather to be checked. Following that an annual program of roof inspection and cleaning should be established by the building owner as part of general building maintenance.

Roofs exposed to high levels of pollution or in close proximity to trees might require more frequent inspection.

Any inspection of a roof should include the interior of the building for signs of water penetration or condensation and for alterations, which may have affected the roof. Externally, abutting construction, which can affect the performance of the roof, should also be inspected.

Annual Inspections & Cleaning

Inspections

The inspection should concentrate on “high risk” areas such as hatches, drains and around all roof top equipment, as well as a general inspection of the entire roof. Inspections should also include the examination of the roof deck if possible from the underside for evidence of leaks, deteriorated decking, structural cracks or movement and other deficiencies. Parapets and edging should also be examined for evidence of cracking, deterioration and moisture infiltration.

Damage

If damage is found on the roof surface it should be repaired immediately by an approved Nuralite Applicator. They will use NURAPLY TPO component products and special techniques to achieve neat, unobtrusive reinstatement of the NURAPLY TPO.

Cleaning

Location, traffic level, effective drainage, and service use will dictate cleaning requirements. Sweeping clean followed by hose and broom washing of the NURAPLY TPO roof is recommended, not water blasting. If mould does appear it should be removed with a long-term mould killer such as Nuracide.

The building owner may do this them self or engage an approved applicator if they prefer.

Five Year Authorised Service Checks

To maintain the material defects warranty, every five years the owner must engage an Approved Applicator to inspect the roof and ensure it remains in good condition. Failure to maintain the roof system will void the warranty.

The Applicator must thoroughly check the roof for signs of damage, water ingress or potential problems.

	Applicator	Date	Signed
Inspection 1			
Inspection 2			
Inspection 3			
Inspection 4			

INSTALLATION METHOD STATEMENT

1) Surface:	
a) accumulation of silt or vegetation;	
b) areas of ponding.	
2) Membrane:	
a) blistering, ripples, rucking, detachment;	
b) cracks, splits, tears, punctures, indentations;	
c) pimpling, pitting, crocodiling;	
d) pulled, unbonded laps;	
e) softening of surface.	
3) Substrate:	
a) depressions in surface;	
b) lack of support/soft support to membrane.	
4) Rainwater outlets:	
a) blocked;	
b) not bonded to membrane (if bonded type);	
c) clamping ring loose (if clamped type).	
5) Upstands:	
a) damaged/detached flashings;	
b) sagging membrane;	
c) splits, cracks, tears;	
d) membrane unsupported at junction;	
e) unbonded laps;	
f) blistering.	
6) Eaves/verge:	
a) unbonded or peeling membrane;	
b) cracking/splitting or strain in membrane;	
c) displacement or signs of movement of edge trim.	
7) Movement joints, upstand type:	
a) unsealed capping joints;	
b) dislodged flashing/capping;	
8) Abutting construction:	
a) parapet copings cracked, loose, unsealed;	
b) damaged damp-proof course, lack of continuity in damp-proofing;	
c) open joints, cracking in construction;	
d) loose/missing pointing.	
9) Roof fixtures and penetrations:	
a) damaged/missing flashings;	
b) balustrade/vent pipe, loose or missing flashing or collar;	
c) plant plinth damaged/missing flashing;	
d) lightning conductor tape, fixing loose	