



The Nuratherm Warm Roof system provides a robust waterproofing solution with optimum energy efficiency.

Higher standards demanded by consumers and specifiers requires a complete rethink about how we construct our buildings. Cold, vented roofing is ineffective as it allows heat to escape and condensation to form. The Nuratherm system is the best option for living areas.

When it comes to flat roofs, international best practice is to use "warm roof" designs. These designs put the insulation above the substrate, completely enclosing the roof area with a highly efficient insulation layer. Nuralite has sourced from Europe the most effective product available. We have combined it with our respected waterproofing products to make the Nuratherm Warm Roof system.

New Zealand Green Building Council is calling for all buildings to be Net Zero Energy by 2030. A Nuratherm Roof can be used on Net Zero Energy projects or even Passive Houses as it is the most energy-efficient way to construct a flat roof, providing continuous insulation with no airflow or thermal bridging.

A critical component of NZ Architects Declare is to upgrade existing buildings for extended use. Nuratherm has the solution as It can be retro fitted on existing buildings to increase energy efficiency. Useful when you have an outdated roof, Nuratherm is ideal for an outdated roof that needs to be upgraded with a new layer.

- BENEFITS:**
- No Thermal Breaks.
 - Improved R Value.
 - Roof Vents Eliminated.
 - Less Solar Gain.
 - Airtight, Vapour Control.
 - Improved Acoustics.
 - CodeMark Certified to 1 Degree Falls.
 - Thermal Fixing Options.
 - 20 Year Warranty.
 - Easy Installation.



BENEFITS

THE NURATHERM SYSTEM

The previous approach to flat roofing in New Zealand is demonstrably inferior. When insulation is laid on top of the ceiling and the cavity space is ventilated, it invites roof space condensation and is inefficient as rafters and downlights allow heat to leak through breaks in the insulation.

International best practice is to place the insulation on top of the roof substrate. A vapour barrier is installed before laying the insulation as a continuous layer. The system is then capped by two layers of bituminous membrane – the first being a special self-adhesive vented sheet.

This warm roof promotes an R-value that is consistent across the entire roof envelope. The most cost effective substrate for Nuratherm is when it is installed on the Dimond NPM900 metal tray. The system can be installed on plywood, concrete or metal substrates, on new or existing buildings and on flat roofs with minimal falls as low as 1 degree.

WARRANTY

Nuralite warrants the Nuratherm Warm Roof system against materials defects for 20 years from the date of installation.

The warranty must be applied for at the completion of the job. For this extended warranty to remain current the customer must maintain the roof and have it inspected every five years by a qualified Nuralite applicator.

The workmanship is covered by a separate workmanship warranty issued by the applicator. Nuralite will inspect the completed job if requested.

APPLICATORS

Nuratherm can only be installed by Nuralite approved applicators. We work closely with applicators to ensure quality standards are maintained.

Our applicators install both the insulation and waterproofing systems. Because it comes in lightweight sheets, the insulated roof system is simple and quick to install.

GENERAL APPLICATION METHOD

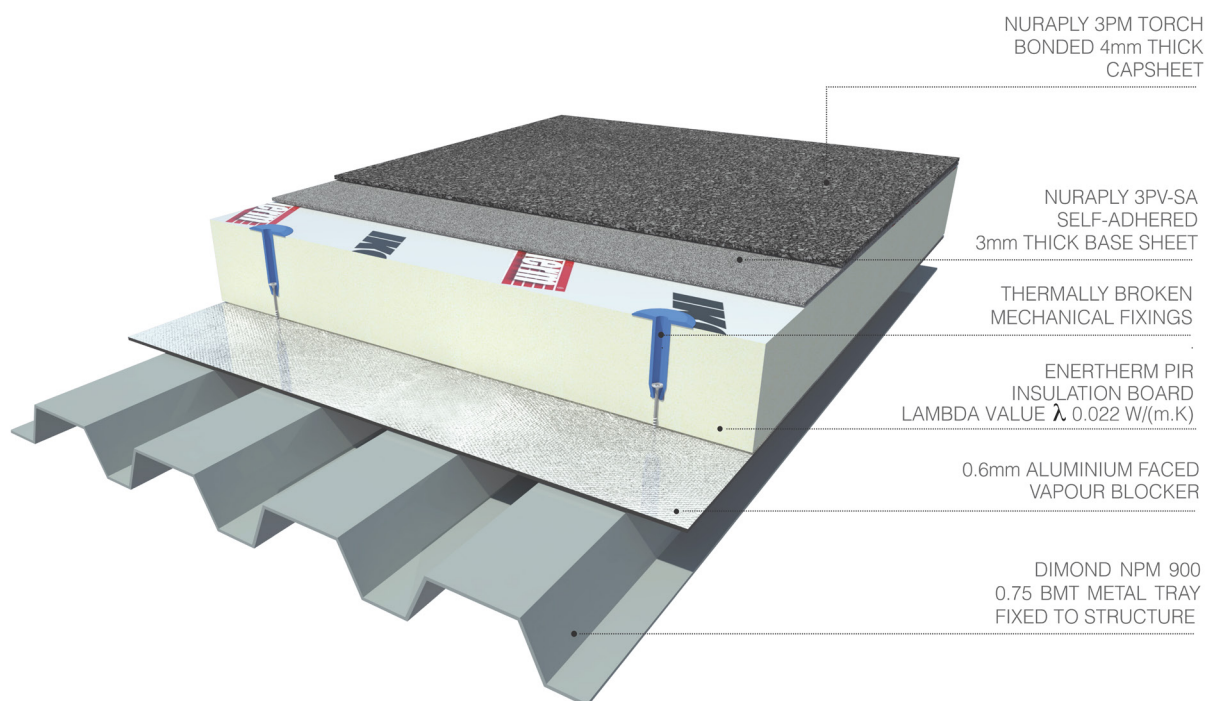
In New Zealand a vapour control layer is laid upon the substrate in all situations. Depending on the project timetable, this layer can be left exposed to act as temporary waterproofing.

The insulation is secured using screws with a thermal break flange which is especially designed for warm roofs. In some situations, such as on concrete decks, the Enertherm Insulation sheets can be adhered to the vapour barrier.

The Enertherm Insulation sheets are laid in a brick bond pattern (except for when using tapered sheets). The 3PV - SA base layer is then installed. Being self-adhesive it is quick to apply but sometimes needs to be welded in cold conditions to ensure it's completely waterproof. 3PB-SA base sheet is used on all vertical surfaces.

Nuraply 3PM is the cap sheet that is welded onto the base layer. The joints are welded shut to ensure a watertight solution. The edges and penetrations are detailed to suit typical Nuratherm details.

NURATHERM WARM ROOF SYSTEM on metal tray substrate.



SCOPE



With **CodeMark Certification**, Nuraply 3PM can be installed on substrates with falls as low as 1 degree.

THINGS TO CONSIDER

THERMAL MODELING

If building a home that does not comply with H1 via the Schedule method, a Nuratherm roof can provide valuable energy saving units to offset against other areas like oversized glazing. Due to the absence of thermal bridges (via rafters or downlights) a warm roof requires approximately 10% less energy to heat a house compared to a cold roof house built using materials with similar R values.

RETRO FITTING

If a building is being renovated, consideration should be given to boosting the thermal efficiency by adding insulation outside of the current building envelope. By adding retro fitted insulation, improvement in air conditioning loads can be achieved without disturbing the inside core of the building.

DETAILING

Ensure that the insulation is correctly detailed in all specification drawings. Visit www.nuralite.co.nz for a set of Nuratherm Roof details and contact Nuralite if you have any questions.

ACOUSTICS

Airborne Sound Transmission - overall rating is STC 37 (Rw 36dB). Rainfall - an artificial rainfall rate of 112mm/hr the roof produces a noise level LIAM norm of 50dB.

PARAPETS

With the Insulation being installed upon the substrate, attention needs to be paid to parapet heights. This is particularly relevant if a retrofit to an existing building is proposed.

CONDENSATION

The Nuratherm warm roof system specification has been developed based on normal residential environmental conditions. Adequate ventilation must be provided to bathrooms, laundries, habitable spaces and other areas where moisture may be generated or may accumulate.

For unusual building conditions, consult a Nuralite expert as a specific vapour control layer specification may be required.

REMEDIAL WORK

Instead of repitching old metal tray roofs, consider replacing it with Nuratherm over Dimond NPM900. A cost effective way to remedy the problem and improve building performance in one go. Enertherm is available as a tapered board to provide additional fall if none currently exists.

COMPRESSIVE STRENGTH

10% deformation @ 175kPa (17.5 ton/m²). No need for additional roof cover boards, will not cup or bow. The finished surface is suitable for typical roof maintenance and foot traffic. If heavier loads are anticipated, please contact Nuralite.

ROOF SYSTEM COMPARISON

	Watertightness	Airtightness	Insulation	Thermal Bridge	Vapour Control	Cost
Nuratherm Warm Roof	No extra penetrations or details.	Vapour barrier provides air barrier and may be sealed to wall air barrier.	Any R-value may be accommodated.	Enertherm layer provides continuous insulation.	No condensation due to vapour barrier before dew point.	Nuratherm install on metal tray saves costs.
Traditional Cold Roof	Nuravents are a breach in the membrane.	No air barrier, in fact air flow is critical to the system.	R-value limited by the depth of the rafter.	Thermal bridge from rafters.	Condensation expected hence the need for venting.	Cold roofs cost more during the build and life of the building.



TECHNICAL INFO

TECHNICAL INFORMATION

IKO Enertherm ALU is a 100 % CFC-free insulation board with a rigid polyisocyanurate foam core, faced with aluminium tri-laminate foil on both sides.

Enertherm's is Europe's leading PIR product, it out-performs all other types of thermal insulation. The insulation board is designed to be mechanically fixed or applied using specific adhesives.

ENERTHERM PIR CHARACTERISTICS

- Core density: 32 kg/m³
- Compression strength at 10% deformation: ≥175 kPa (EN 13165).
- Performance under the influence of an equally distributed load: class C.
- d-value (EN 13165 – declared value) : 0,022 W/Mk
- Tensile strength perpendicular to surface: > 80 kPa (EN 1607)
- Facing: aluminium tri-laminated foil.
- Fire reaction: Class E according to EN 13501 part 1.

THERMAL PERFORMANCE

- Lambda value according EN 13165 $\lambda = 0,022$ W/mK
- Vapour diffusion resistance coefficient:
- PIR boards: $\mu = 60$
- ALU-facing: $\mu > 100.000$

MEMBRANE SELECTION

A Warm Roof can used with a range of waterproofing membranes depending on the situation.

Nuraply 3PM is double layer, torch on system that is suitable for small or large projects. Particularly robust and bulletproof, this membrane is useful when detailing is required.

Another option is Nuraply TPO made up of a single layer thermoplastic, this is suited to large, rectangular roofs such as commercial or apartment buildings.

Nuraply 3PG can also be used on a Warm Roof system. Designed for living roofs, Nuraply 3PG it has a root inhibitor and makes up part of the build up for Green Roofs.

APPLICATION

A Nuratherm Warm Roof system can be installed on a new build and an existing roof. It can be used with timber, concrete and metal tray substrates.

For a remedial overlay the Nuratherm can be placed over an existing flat roof or metal tray roof to rebirth without needing to remove. Overlaying a roof is a good option to save time and money, it also provides another layer of insulation and improved acoustics.

DETAILING

A comprehensive set of design details and specifications are available at www.nuralite.co.nz. Nuralite technical advisors are all very experienced and willing to help either on the phone, in your office or on site. Call 09 579 2046 or 0800 Nuralite (0800 687254).

ENERTHERM R-VALUES (M2.K/W)

IKO Enertherm ALU (mm)	30mm	40mm	50mm	60mm	70mm	80mm	100mm
1200 x 600	1.36	1.82	-	2.70	-	-	-
2270 x 1200	-	-	2.27	-	3.18	3.64	4.55
ALU TAP (1200 x 1200)	Thickness						
1:60 (1.67)	40- 60	60- 80	80-100	100-120			

* New Zealand stock holdings will fluctuate. Other sizes are available by order. R-value is a measure of thermal resistance. The stated R-values are true long term values based on an accumulated life cycle of 25 years.

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