



Nuraply Waterproofing Membrane

Building Product Quality Plan

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



TABLE OF CONTENTS

| | |
|--|----|
| 1. Nuraply waterproofing membrane product range covered by Codemark..... | 3 |
| 2. Introduction..... | 8 |
| 3. Reference Documents | 9 |
| 4. Company QMS Policy Statement..... | 9 |
| 5. Key Risk Issues | 10 |
| 6. Material Quality Requirements..... | 11 |
| 7. Qualifying Applicator Firms able to install product..... | 14 |
| 8. Training of Individual Applicators of Nuraply | 15 |
| 9. Issuing Warranty..... | 16 |
| 10. Complaint Handling | 16 |
| 11. Risk Management..... | 17 |
| 12. Appendix I – Substrate Readiness Checklist..... | 18 |
| NEW Plywood Substrate Readiness Checksheet | 19 |
| NEW Concrete Substrate Readiness Checksheet | 20 |
| NEW ENERTHERM Substrate Readiness Checksheet | 21 |
| Existing Roof Substrate Readiness Checksheet | 22 |
| Tanking Substrate Readiness Checklist..... | 23 |
| 13. Appendix II – Project Signoff Form..... | 24 |
| ROOF Project Sign-off Form..... | 25 |
| Installed TANKING Product Project Sign-off Form..... | 27 |
| 14. Appendix III – Warranty Example..... | 28 |
| 15. Appendix IV – User Maintenance Document..... | 29 |
| Nuraply Maintenance Programme | 29 |
| 16. Appendix V – Remedial Issue Form..... | 31 |
| 17. Appendix VI – Product Receipt Form..... | 32 |
| 18. Appendix VII – Product Datasheets | 33 |

Document Control

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The only person authorised to change this plan is the Managing Director, John Simmons.
BEAL must be copied into each version.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



1. Nuraply waterproofing membrane product range covered by Codemark

| Situation | Membrane | Substrate | Covered By | Comments |
|-----------|-----------------------|--|---|---|
| Roofing | Nuraply 3PM | Cap sheet over 3PB, 3PB-SA, 3PV or 3PV-SA | If foot traffic is expected or the area is being used as a deck the membrane should be protected with use of Nurajacks and floating tile or timber decking. | Nuraglaze may be applied to installed product for chip adhesion, improved appearance and potable water collection |
| | Nuraply 3PB | Torch applied basesheet. Used on plywood with Nurabond #10 adhesive | Nuraply 3PM | |
| | Nuraply 3PB-SA | Self adhesive basesheet. Used on plywood with Nuraflux primer. | Nuraply 3PM | |
| | Nuraply 3PV | Torch applied basesheet with venting channels. Used on concrete with Nuraflux primer. | Nuraply 3PM | |
| | Nuraply 3PV-SA | Self adhesive basesheet with venting channels. Used on Enertherm insulation without use of a primer. | Nuraply 3PM | |
| | Nuraply ALU | Vapour barrier installed between substrate and Enertherm insulation. | Enertherm PIR insulation | Used in high humidity buildings and all areas H1 zone 2 and 3 (south of Bombay Hills.) |

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



| Situation | Membrane | Substrate | Covered By | Comments |
|------------------|-----------------------|---|--|---|
| Tanking | Nuraply 3PTM | Compacted ground | Concrete Slab and Footing | Chip surface provides a mechanical key to poured slab |
| | Nuraply 3PT | Concrete or Brick Wall with Nuraflux primer | Protection/Drainage Mat and backfill | May be installed as a double layer if high risk |
| | Nuraply 3PG | Concrete or Brick Wall with Nuraflux primer | Protection/Drainage Mat and backfill | Used instead of 3PT if plants are located near the wall |
| Greenroof | Nuraply 3PG | Cap sheet over 3PB or 3PB-SA | Polyethene then drainage mat and soil or planter cells | Includes an inbuilt root inhibitor |
| | Nuraply 3PB | Concrete or plywood with Nuraflux primer | | Fully bonded base sheet |
| | Nuraply 3PB-SA | Enertherm insulation | | Fully bonded base sheet |
| Carpark | Nuraply 3PC | Concrete with Nuraflux primer | 50mm Hotmix asphalt | |

Membranes

Basesheets

Nuraply 3PB

Nuraply 3PB reinforced fibre asphalt sand faced flexible, tough, waterproofing system applied and joined by traditional NURALITE techniques. Nominal thickness of 3mm.

Labelled as IKO Base P3 T/F 10m

Nuraply 3PB-SA

Self Adhesive membrane provides a nominal thickness of 3mm thick first layer in two layer system over Enertherm Insulation

Labelled as IKO Base Stick T/SA 15m

Nuraply 3PV

Nuraply 3PV Sheet – nominally 4mm thick, 7.5m long x 1m wide APP modified bitumen sheet, first layer waterproofing, heat fused, and 40% bond pattern integral vapour diffusion underside, to avoid vapour blisters from substrate moisture. Heat welded onto Nuraflux primed substrate. With heat welded lap joints and a sand upper surface.

Labelled as IKO Base Quadra T/F 7.5m

Nuraply 3PV-SA

Nuraply 3PV-SA Sheet - 3mm thick, 10m long x 1m wide APP modified bitumen sheet, first layer waterproofing. With a 40% bond pattern integral vapour diffusion underside, to avoid vapour blisters from substrate moisture. Self adhering onto Enertherm PIR insulation panels substrate. With heat welded lap joints and a sand upper surface.

Labelled as IKO Base Quadra T/SA 10m

Capsheets

Nuraply 3PM

Nuraply 3PM Sheet – nominal 4mm thick, 7.5m long x 1m wide, APP modified bitumen sheet. Heat fused onto the basesheet underlay with heat welded lap joints, and a prefinished mineral chip upper surface.

Nuraply 3PM is available in five colour options; Pure White, Slate, Charcoal, Green or Red. Pure White is precoated in the factory with a smog converting system.

Labelled as

IKO Carbon Turbo 7.5m (Charcoal)

IKO Carrara 7.m (Pure White)

IKOgum 4 AR/F 7.5m (Other)

Nuraply 3PG

Nuraply 3PG reinforced fibre asphalt sand faced flexible, tough, waterproofing system applied and joined by traditional NURALITE techniques. Membrane incorporates an anti-root herbicide to prevent damage from adjacent plants. Nominal thickness of 4mm.

Labelled as IKO Roofgarden APP 4 T/F.

Other

Nuraply 3PT

Nuraply 3PT reinforced fibre asphalt sand faced flexible, tough, waterproofing system applied and joined by traditional NURALITE techniques. Nominal thickness of 3mm.

Labelled as IKO Base Quadra T/F 7.5m

Nuraply 3PTM

Nuraply 3PTM reinforced fibre asphalt with a mineral chip face to key into slab. A flexible, tough, waterproofing system applied and joined by traditional NURALITE techniques. Nominal thickness of 3mm.

Labelled as IKOgum 4000 AR/F 10m

Nuraply 3PC

Nuraply 3PC provides a nominal thickness of 5mm thick layer in a one layer application on a concrete substrate

Labelled as IKO Polybridge

Nuraply ALU

NURAPLY ALU Vapour Barrier is single layer, nominally 1.2 mm thick aluminium faced self adhesive membrane. Required to be installed in H1 Zones 2 and 3.

Labelled as IKO Shield PRO ALU/SA 20m

Components

NURAFLUX

Nuraflux Primer is a bitumen based adhesive solvent solution which is specifically formulated to provide excellent adhesion for Nuralite Waterproofing Membranes under many kinds of surface conditions.

NURABOND #10

NURABOND #10 adhesive is a water based adhesive designed to bond Nuraply roofing membranes to plywood and timber. It features good initial grab with excellent enduring flexibility.

NURAGLAZE

Clear acrylic coating which may be spray or rolled over NURAPLY 3PM membrane.

NURAVENTS

NURAVENTS are simple mushroom shaped vents, made of aluminum, that can be purchased in powder-coated colours to blend in with the Nuraply roof. NURAVENTS can be installed on new or existing roofs.

NURAJACKS

A Tile or Paving support system that is height adjustable and includes a self levelling head to automatically compensate for the deck gradient or any difference in the level of the substrate.

ENERTHERM PIR

IKO Enertherm and IKO Enertherm Tapered are rigid polyisocyanurate foam insulation boards faced on both sides with alu kraft composites. The boards

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



are available in various thicknesses or tapered to facilitate the installation of a sloping deck. All of the insulation boards are CFC/HCFC free.

TANKING PROTECTION BOARD

A heavy duty plastic protection board to mitigate possibility of physical damage to the installed membrane.

2. Introduction

Nuralite is a privately owned New Zealand company, developing and supplying roofing and waterproofing systems for buildings and structures.

For the past four decades, Nuralite has been used on many of the New Zealand's most important buildings. From award-winning homes to intricate temples, and Parliament buildings to ski lodges, Nuralite is used to waterproof the most inspiring architecture within New Zealand and throughout the Pacific.

Our network of applicators provides specifiers and property managers with the highest quality service, workmanship and finish on site. We are proud to work closely with them to achieve a great result for the property owner.

Nuralite systems and services are applicable to the full spectrum of buildings and structures from repairs on small remote cottages to the roofing of new hospitals, power-stations, universities and government buildings.

The Nuralite organisation also maintains a team of skilled technical representatives who are prepared to demonstrate the correct application of Nuraply on site or to discuss any problems which may arise regarding its use.

This Quality System relates to the Nuraply range of waterproofing products.

The Nuraply membrane system is an APP modified bitumen membrane system used for a wide variety of waterproofing applications including podiums, carpark decks, green roofs and tanking.

Contact info

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3. Reference Documents

AC75: Acceptance Criteria For Membrane Roof-Covering Systems
EN 13707: Flexible Sheet For Waterproofing
BS 8102-2009 Code of practice for protection of below ground structures against water from the ground

New Zealand Building Code, 2004
E2/AS1 Acceptable Solution "External Moisture"

4. Company QMS Policy Statement

Nuralite is the Flat Roof Experts.

Our expertise and market leading position require us to set very high standards in order to consistently satisfy the needs and expectations of its customers.

This level of quality is achieved through adoption of a system of procedures that reflect the competence of the Company to existing customers, potential customers, and the construction industry in general.

Achievement of this policy involves all staff, who are individually responsible for the quality of their work, resulting in a continually improving working environment for all. This policy is provided and explained to each employee by the Managing Director.

All employees are encouraged to suggest improvements in methods, materials, suppliers, and sub-contractors. The Company has established procedures for review of all activities in order to identify and evaluate all possible improvements in methods/ materials and its procedures.

To achieve and maintain the required level of assurance the Managing Director retains responsibility for the Quality System.



John Simmons
Managing Director

5. Key Risk Issues

| Issue | Likelihood | Consequence |
|---|------------|-------------|
| Product | | |
| • Items supplied to us not meeting the relevant specification | Very Low | Large |
| • Items supplied to us not properly identified | Low | Small |
| • Items supplied by us to a customer not properly identified | Low | Little |
| Storage | | |
| • Items supplied to us damaged | Medium | Little |
| • Items supplied by us to a customer damaged enroute or at the worksite | Low | Small |
| • Items supplied not stored correctly or protected on site | Low | Small |
| Installation | | |
| • Installation done by untrained personnel | Low | Serious |
| • Installation done poorly | Low | Serious |
| • Check Sheets not being properly completed by the Installer or Applicator on a predetermined basis | Low | Low |
| • Technical manual not up to date and displaying the version number | Low | Little |
| • Installation drawings not up to date and displaying the version number | Low | Little |
| • Installer or Applicator Training Manual not up to date and displaying the Issue number | Low | Little |
| Process | | |
| • An Internal Audit of our BPQP not being carried out on a regular basis (frequency) | Low | Small |
| • An External Audit of our BPQP not being carried out at least once a year | Low | Small |
| • Non-current documents are referred to | Low | Small |
| Record Keeping | | |
| • Records misplaced before there required period (up to 20 yrs) | Low | Small |

6. Material Quality Requirements

Refer Appendix VII for a complete list of Product Datasheets.

Nuralite requires that suppliers of high risk products meet quality criteria including:

- a) Supplier shall have a history over several years of supplying the specified product
- b) Supplier shall have demonstrated continuous quality control over the production of the product by way of a specific manufacturing quality management system which is audited by way of a general quality management system such as ISO 9001
- c) Supplier provides sufficient despatch and tracking documentation when supplying product to enable an effective product recall, should such a recall ever be required
- d) Supplier provides test and quality data for batches supplied to us on an agreed frequency.

Nuralite purchases the above material from ATAB (a subsidiary of IKO based in Belgium) who hold it in stock for use in Europe.

IKO is a global leader in the manufacture and supply of quality roofing products including shingles, commercial roofing and asphaltic and bituminous waterproofing products. IKO operate more than 20 manufacturing factories throughout North America and Europe.

Nuralite has had a commercial relationship with IKO for over a decade. They are the source of 90% of the products distributed by Nuralite.

The Nuraply material is produced by ATAB in an ISO 9001 and ISO 14001 accredited facility in Antwerp, Belgium. Current ISO 9001 and ISO 14001 certificates are stored as part of this BPQP.

The material is produced for use throughout Europe and the Middle East.

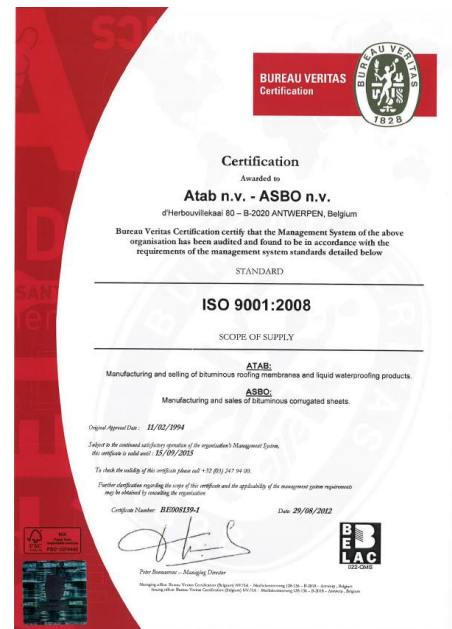
As part of the ISO 9001 requirements each master roll is checked for compliance to performance requirements.

Nuralite can access the batch tests to verify continued compliance with standards. Verification of the batch testing must be done at least annually.

Each pallet is individually labeled upon production. In the event of a product recall Nuralite can readily isolate suspect product or identify where it has been installed if necessary.

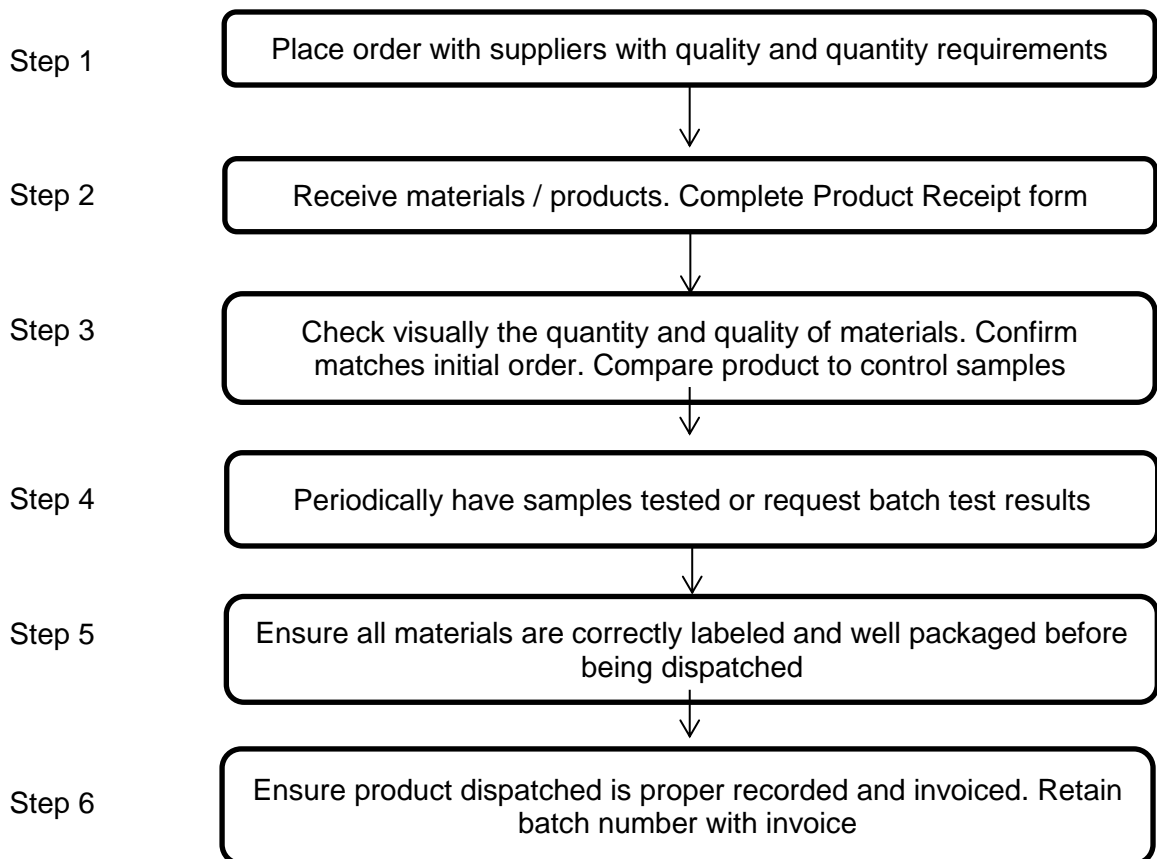
Nuralite does not manufacture any products as part of the Nuraply system. Everything is supplied by ATAB as part of a complete waterproofing solution.

Nuralite will not be sourcing Nuraply material from any other supplier.



Material Purchase, Storage and Tracking

Flow Chart from ordering to receipt to distribution



Material Acceptance and storage

Materials and goods received, whether the property of the company or others, will, as far as practicable, be protected and their quality preserved until such time as they are transferred to a customer, or disposed of to a third party. The objective is to prevent deterioration and damage whilst in storage, or in the process of transportation, installation, commissioning or maintenance.

All stores areas are maintained as secure as practical. All items received by the Company are identified and verified in accordance with the requirements of the Delivery Note and Purchase Order, and are inspected for correct identity, quantity and any signs of damage.

The membrane product should be stored on standing up their end. Pallets may be stacked on top of another provided a plywood sheet is laid between the pallets to spread the load evenly.

Product should be sorted in the warehouse by production date. This should ensure regular stock turn and that product is sold from the same batch for colour consistency.

Once delivered to site the membrane should be protected against exposure from rain and site dirt.

Material non-conformance

All goods received are documented and, in the event of non-conformance, the items are placed in a reject area or labeled to ensure identification. The extent of the non-conformance is noted and subject to disposition review by nominated personnel.

Once non-conforming items have been noticed they are identified by location, associated documents, or specific markings to prevent their inadvertent use. All non-conforming items and customer complaints are subject to review and rectification by nominated personnel. The type and extent of non-conformity is documented in order to establish trends and identify possible areas for improvement.

The corrective action required to prevent recurrence is evaluated, documented, and its effective implementation is monitored. All rectification is subsequently re-inspected to ensure complete customer satisfaction.

Material tracking

A record is kept of the sale date of each pallet of material.

In case of material quality issues at a later date the project location will be used to identify the relevant invoice, the date of sale and consequently the exact product which was supplied.

7. Qualifying Applicator Firms able to install product

Nuralite only sells waterproofing membranes to suitably qualified firms. Before approving a business Nuralite vets them paying attention to:

- Credit worthiness
- Longevity of business
- Experience in waterproofing
- Size of business
- References from property owners
- References from building firms
- LBP Number

Nuralite interviews the proprietor about their views on customer service and approach to business. Before entering an applicator relationship a formal contract is signed by both parties (draft copy stored in folder)

Our experience is that new applicators cause most problems and are most likely to fail. Consequently few businesses are accepted as new applicators and many are declined.

The Nuralite website will clearly identify applicators who are in a position to install Nuraply membrane.



Nuralite 3P Installation Manual & Quality Control check lists

THIS MANUAL WAS PRESENTED TO

WHO ATTENDED TRAINING ON

2012 v1



1. Cover of Training Manual

8. Training of Individual Applicators of Nuraply

All Nuraply applicators must maintain a team of skill installers. To meet demand Nuralite runs training sessions covering the essential elements of torch-on membrane installation.

At this stage new applicators are issued with a Nuraply Installation Manual and a complete set of Detail Drawings to act as reference material on future jobs.

Nuralite technical advisors regularly visit sites at random to check on installation quality and detailing. Any issues are addressed at the time and additional training is arranged if required.

The Nuralite approved trainers are:

Andrew Smith 20+ years experience, NZQA Roofing Installer

9. Issuing Warranty

The Warranty process provides the opportunity to close the quality circle. When the Authorised Applicator business applies for the warranty they must:

- Reference the job location
- State the products used
- Identify the individual who installed the product
- Quote the invoice number they purchased the product under
- Include a completed Substrate Readiness checklist
- Include a completed Project Signoff form

Nuralite can then ensure that the correct products were used, on a suitable substrate and installed by a trained installer.

Warranties are stored electronically as a pdf and also in a database listing. Records are retained for a minimum of 20 years from issue.

At least once a year, on a random basis, Nuralite will check on a completed job by every trained installer to check they are completing the paperwork thoroughly and doing the installation in a thoroughly professional manner.

It is the responsibility of the applicator to provide the warranty to the end user as they only do so once the job is finished and paid for.

Nuralite is investigating sending reminder letters to customers on the anniversary of their warranty so they maintain their building maintenance.

10. Complaint Handling

A complaint is a serious matter which needs prompt resolution.

Complaints indicate a dissatisfied customer but also flag a potential quality problem which may be systematic. Identifying the cause of the problem is critical to prevent the issue being replicated on other jobs.

When a complaint is made the advisor taking the call completes a remedial issue form and passes it to the Nuraply technical advisor.

The advisor must arrange to visit the site with the installer with a view to identifying the cause of the complaint. A photographic record of the problem should be made a remedial instructions issued. The advisor must also consider what steps can be taken to prevent a repetition which may include:

- Additional training for the installer
- Changing the installation manual
- Implementing a new detail
- Writing an All Applicators Instruction letter
- Reporting back to IKO if there are concerns about the membrane

Records of complaints are kept for a minimum of five years from resolution.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



11. Risk Management

| Risk | Responsible | When | Action Required |
|--|--|--|---|
| • Items supplied to us not meeting the relevant specification | Managing Director | Annually | Check at Master Roll Test Results meet specification |
| • Items supplied to us not properly identified | Warehouse Manager | Each Shipment | Visually confirm items delivered against Purchase Order |
| • Items supplied to us damaged | Warehouse Manager | Each Shipment | Confirm that product in good condition |
| • Items supplied by us to a customer not properly identified | Warehouse Manager | | On notification arrange for items to be returned and replaced |
| • Installation done by untrained personnel | Nuraply technical advisor and other advisors | Site inspections | Order work stopped on site |
| • Installation done poorly | Nuraply technical advisor and other advisors | Site inspections at least annually for each individual installer | Suspend approval / withhold sales of product until retrained |
| • Check Sheets not being properly completed by the Installer or Applicator | Office Manager | Warranty issued | Notify Nuraply technical advisor of any discrepancies |
| • Complaint handling | Nuraply technical advisor and other advisors | When complaints are made | Investigate the complaint thoroughly and take steps to prevent a reoccurrence |
| • Non-current documents referred to | Managing Director | When documents revised | Archive old document versions and remove from common use |

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

12. Appendix I – Substrate Readiness Checklist

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NEW PLYWOOD SUBSTRATE READINESS CHECKSHEET

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

Fax Number: _____

Structure complies to 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 600mm centred rafters and nogs for roofs and decks. 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. ☐

Fillets installed to all internal junctions and neatly fitted. ☐

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, clean, firm and suitable condition for laying . ☐

When substrate is ready complete this form and fax to the Nuralite applicator

Notes

Signed by head contractor

Date:

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NEW CONCRETE SUBSTRATE READINESS CHECKSHEET

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

Fax Number: _____

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. ☐

Mortar or Profili Bitumen fillets to all upstands and smooth 5mm radius to all external edges ☐

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 speciifcation. ☐

Substrate clean, firm and suitable condition for laying the Nuralite systems. ☐

When substrate ready complete this form and fax to the Nuralite applicator

Notes

Signed by head contractor

Date:

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NEW ENERTHERM SUBSTRATE READINESS CHECKSHEET

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

Structure complies to the New Zealand Building Code ☐

Sheets stagger lay (fully offset). ☐

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. ☐

Any gaps in the insulation filled to prevent thermal bridging. ☐

Material fastened with the correct quantity of IKOfix Telescopic Fixing Plates and Fixing Screws (5 per sheet normally, 10 per sheet in Extra High wind zones). ☐

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. ☐

When substrate ready complete this form and fax to the Nuralite applicator

Notes

Signed by head contractor

Date:

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

EXISTING ROOF SUBSTRATE READINESS CHECKSHEET

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

The structure and substrate assessed in writing by a suitably qualified person ☐

Confirm the substrate is suitable with no signs of deterioration in the form of rust or rot. ☐

Cladding, doors and windows removed to allow upstands to be formed. ☐

Confirm the substrate slope exceeds minimum requirements unless approved by Nuralite for this specific project. ☐

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. ☐

Plinths formed for any exterior ventilation, solar panels or fixtures. ☐

Substrate clean, firm and suitable condition for laying the Nuralite systems. ☐

When substrate ready complete this form and fax to the Nuralite applicator

Notes

Signed by head contractor

Date:

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

TANKING SUBSTRATE READINESS CHECKLIST

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

Structure complies to the New Zealand Building Code ☐

Underslab

Compacted hardfill, sand blinding or site concrete installed complying with the requirements of NZS 3604-2011. ☐

Reinforcing steel installed with care to avoid unnecessary puncture or damage. ☐

Concrete Walls

Concrete cured and thoroughly dry. ☐

Cavities and cracks filled with repair mortar, flushed off and cured. ☐

Waterstops installed to construction joints as per specification - located 50mm from reb ☐

Concrete surface firm with any soft concrete or laitance removed. ☐

All protrusions removed. Surface free from foreign matter ☐

Mortar or Profili bitumen fillets to all upstands and smooth 5mm radius to all external edges ☐

If terminating into a chase, pre-form the chase and ensure it's straight and 20mm deep. ☐

Substrate clean, firm and suitable condition for laying the Nuralite system. ☐

Notes

Signed by head contractor

Date:

NURAPLY WATERPROOFING MEMBRANE
BUILDING PRODUCT QUALITY PLAN

13. Appendix II – Project Signoff Form

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

ROOF PROJECT SIGN-OFF FORM

Project Name: _____
 Builder Firm: _____
 Applicator Firm: _____
 Area covered by QC Sheet _____

| Roofing membrane installation item | Comply Y/N/Na | Comments |
|--|------------------|----------|
| Substrate readiness form completed | | |
| Underflashings installed to all corners and upstands (pay attention to parapets, gutters, junctions) | | |
| Gutters correctly and neatly installed, particularly the internal corners | | |
| Roof drains & overflows installed to specification and watertight | | |
| Membrane adequately adhered to substrate with no evidence of bubbles or lifting. Correct quantities of primer or adhesive used as per specification. | | |
| Cap sheet and basesheet fully bonded together, no areas of delamination. | | |
| Cap sheet side laps 80mm and end laps 100mm fully welded and tidily seamed off. | | |
| No sign of overheating/excessive bitumen bleed from laps (over 2-3mm). | | |
| Cap sheet and base sheet laps offset satisfactorily. No three layer lap build-ups | | |
| Overall installation free of wrinkles, creases and splits | | |
| Nuravents installed to specification. | | |
| All penetration details completed to specification including under/overflashing | | |
| Standard details used throughout including at upstands, parapets, construction joints | | |
| All non standard details installed as per pre-approved specifications (attach approved drawing) | | |
| Gutters and outlets have been floodtested | | |
| Any damage to cap sheet repaired to specification. | | |

Note: Where an element identified in the above checklist is not applicable, please record N/A in the comply column.

NURAPLY WATERPROOFING MEMBRANE
BUILDING PRODUCT QUALITY PLAN

Project Sign-off Form cont.

Remedial action required:

Note of damaged areas repaired:

Signed Builder _____
Date: _____

Signed Applicator _____
Date: _____

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

INSTALLED TANKING PRODUCT PROJECT SIGN-OFF FORM

Project Name: _____

Form Completed by: _____

Company: _____

Area ready: _____

Applicator _____

Concrete Substrate checklist completed before work commenced. ☐

Any movement joints installed to approved specification/detail. ☐

Mortar/concrete fillets fitted to all internal junctions and corners chamfered at a 45° radius. ☐

All corners and upstands incorporate reinforcing or underflashing ☐

Under-slab membrane extends beyond footing and protected until vertical membrane installed. ☐

Side laps 100mm and end laps 150mm fully torched and seamed. Bleed visible on all joints. ☐

All penetrations installed to specification including under/over flashings. ☐

Junction of the floor and wall membranes installed to specification fully bonded and watertight. ☐

All non-standard details installed as per pre-approved specification (attach approved drawings). ☐

Any mechanical damage to membrane repaired to specification. ☐

Membrane termination completed to approved detail. ☐

Suitable drainage system installed below footing as per specification. ☐

Membrane fully adhered to substrate with no bridging, bubbling, or delaminating. ☐

Overall installation free of wrinkles, bubbles, creases and splits. ☐

Membrane protection boards installed correctly after membrane confirmed free of defects. ☐

Notes

Signed:

Date:

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

14. Appendix III – Warranty Example

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

15. Appendix IV – User Maintenance Document

NURAPLY MAINTENANCE PROGRAMME

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

When first installed there should be 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.

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 component products and special techniques to achieve neat, unobtrusive reinstatement of the Nuraply .

Cleaning

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

You may do this yourself or talk to your applicator if you would like them to include you in an annual program of inspections & cleaning.

Five Year Authorised Service Checks

To maintain your warranty, every five years you must have an Approved Applicator visit to inspect the roof and ensure it remains in good condition.

The Applicator will thoroughly check the roof for signs of damage, water ingress or potential problems. These checks are inexpensive and are the best way to ensure the roof over your head stays in top condition.

| | Applicator | Date | Signed |
|---------------------|-------------------|-------------|---------------|
| Inspection 1 | | | |
| Inspection 2 | | | |
| Inspection 3 | | | |
| Inspection 4 | | | |

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

INSPECTION CHECKLIST

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 fillet;
- 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

NURAPLY WATERPROOFING MEMBRANE
BUILDING PRODUCT QUALITY PLAN

16. Appendix V – Remedial Issue Form

REMEDIAL ISSUE FORM
– *INITIAL ENQUIRY* –

Your Name:

Date:

Customers Name:

Phone number:

Property Location:

Product Used:

Applicator:

Date Installed:

Warranty Number:

Brief summary of the issue:

Has the applicator been and inspected the problem?:

Put this form in the “Remedial Cases File” and ensure technical advisor is notified

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

17. Appendix VI – Product Receipt Form



GOODS RECEIVED NOTE

| | |
|---------------|------|
| supplier | atab |
| container no. | |
| reference | |

| | |
|---------|--|
| date | |
| PO no. | |
| invoice | |

| product | | code | | received | comments |
|----------------------------|------|-----------|--|----------|----------|
| Nuraply 3P | 10m | RF110 | | | |
| Nuraply 3PB/ Nuraply 3PT | 10m | RF124 | | | |
| Nuraply 3PB SA | 15m | RF124SA | | | |
| Nuraply 3PM - Charcoal | 7.5m | RF117 new | | | |
| Nuraply 3PM - Green | 7.5m | RF119 | | | |
| Nuraply 3PM - Slate | 7.5m | RF122 | | | |
| Nuraply 3PM - Burgundy | 7.5m | RF118 | | | |
| Nuraply 3PM - White | 7.5m | RF116 | | | |
| Nuraply 3PG | 7.5m | RF121 | | | |
| Nuraply 3PV | 7.5m | RF120 | | | |
| Nuraply 3PV SA | 10m | RF120SA | | | |
| Nuraply 3PTM | 10m | RF124TM | | | |
| Nuraply Alu Vapour Barrier | 20m | RF105 | | | |
| Nuraply 3PC | 10m | RF113 | | | |
| Loose chip - Charcoal | 25kg | N/S | | | |

18. Appendix VII – Product Datasheets

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURABOND NO 10

TECHNICAL DATA SHEET

DESCRIPTION

Nurabond adhesive is a water based adhesive designed to bond Nuraply roofing membranes to concrete, plywood and timber. It features good initial grab with excellent exterior weathering resistance.

SPECIFICATION :

Type: Modified synthetic latex / bitumen emulsion.
Colour: Black.
Viscosity: Brushable or spreadable.
Solids: 55% approx.
Cleaner: Water while wet, Bostik Solvent No.2 or 3 when dry
Stability: Protect from frost. Not freeze-thaw stable.

APPLICATION :

All surfaces must be clean and free from grease, oil, release agents or dust etc. It can be applied using brush, roller.

NOTE: Concrete must be cured for a minimum of 27 days and have a moisture content of 18% or less. Plywood and timber must have a moisture content of 18% or less and be of the correct standards.

PACKAGING :

15 litres plastic pail

STORAGE :

Store in cool, dry conditions out of direct sunlight between 5° C and 25° C. This product MUST be protected from frost.

SHELF LIFE :

12 months under normal temperature conditions and in original containers.

VERSION :

Version 1 3rd October 2006

IMPORTANT NOTICE:

The above recommendations are intended for the assistance of users and are of a general nature. They are based on our experience and judgement but because the conditions under which, and the materials with which our products are used, are beyond our control our recommendations must not be regarded as amounting to legal warranty or as involving any liability on us.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAFLUX PRIMER

IKOPro PU Adhesive

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Nuraflux Primer is a bitumen based adhesive solvent solution which is specifically formulated to provide excellent adhesion for Nuralite Waterproofing Membranes under many kinds of surface conditions. Nuraflux Primer is an integral part of the Nuralite Waterproofing System and sufficient primer must be used on dry surfaces to condition them to be dust free so that the substrate is suitable for the application of Nuralite Waterproofing Membranes.

Used to prime all structural concrete, masonry, or wood surfaces on which waterproofing membranes will be used.

Designed to be used on applications down to -4°C .

May be used on horizontal surfaces, but remains tacky, and precautions must be used in this application to prevent contamination of the Primer surface prior to installation of the membrane.

May be used on all concrete block and brick wall conditions.

APPLICATION

Nuraflux Primer may be applied with roller, brush or spray. A roller with a heavy nap should be used to carry sufficient material to the area being primed.

Apply all Nuraflux Primer to a clean, dry, dust free and frost free surface at a coverage of approximately 5 sqm/litre. The primer should be spread sufficiently to avoid areas of excess material. Areas of excess material will lengthen the drying time on the application of the primer.

Nuraflux Primer will dry in a minimum of one hour - may dry quicker due to drying conditions, such as wind and warmth.

This product is black in colour and will remain tacky when dry.

The application of primer should be limited to what can be covered with Waterproofing Membrane in one working day. Any areas not covered with membrane during the day must be reprimed - be sure to cover all open containers when not applying primer, as the primer is volatile.

SAFETY, STORAGE & HANDLING INFORMATION

Nuraflux Primer vapours are flammable. User should review Material Safety Data Sheet (MSDS) for this product and follow safety instructions listed therein.

TRANSPORT CLASSIFICATION

IMDG Class 3.1
UN No. 1294

1

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAGLAZE

TECHNICAL DATA SHEET

Description:

NURAGLAZE is a water based, interior/exterior coating with a unique cross linking technology that gives a tough, hard wearing, satin finish.

NURAGLAZE is designed for use on new or existing Nuradeck membrane deck systems or over Nuraply 3PM mineral chip membrane.

Once applied, the NURAGLAZE surface is hard wearing yet does not get dirty easily.

Typical Uses

Provides a film over the Nuraply 3PM to bond chips down, keep the membrane surface cleaner and aid with collection of potable water. May be tinted to alter the appearance of the Nuraply 3PM mineral chip membrane.

Physical Properties:

| | |
|----------------------|--|
| Binder Type | Unique cross-linking Acrylic |
| Solvent | Water |
| Colour | White though dries clear. Can be tinted any colour |
| Finish | Satin 15%gloss @ 60°C (Approx) |
| Dry Time | 30 minutes at 20°C. Allow 12 hours before walking. |
| Recoat time | 2 hours at 20°C |
| Number of Coats | 2 |
| Film Thickness | 100 microns WFT |
| Theoretical Coverage | 8-10m ² /litre over bare concrete, |
| (per coat) | 12-14m ² /litre over painted surfaces |
| Thinning & Clean Up | Water |

Surface Prep Nuraply 3PM

- Ensure surface is in sound condition, dry and free from dirt, dust, grease or oils.
- Brush or blow loose chips from the membrane surface.

Application

- Apply 1 or 2 coats of NURAGLAZE. The application should be thin to ensure the glaze does not develop a “milky” appearance.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

Performance & Limitations Performance

Non yellowing
Easy application properties with excellent flow and levelling
Excellent durability

Limitations

Do not paint if air or surface temperature is less than 10°C or above 35°C .
Cold or humid conditions may require longer dry times.

Health & Safety

Waterborne
NURAGLAZE is a water reducible non toxic coating. It is non flammable and requires no special handling. We recommend the use of a barrier cream for hands when applying.
Transport UN No. : 1263
Class : N/A
Hazchem : N/A

Storage

Avoid freezing or temperatures in excess of 50°C.

IMPORTANT NOTE

This product as supplied by **Nuralite Waterproofing Ltd** is warranted to conform to those physical properties listed in the Typical Properties section of this information sheet. Otherwise the information presented including that on suggested areas and methods of use is in good faith only and is specifically without recommendation or guarantee as to particular suitability. It is the responsibility of the purchaser to satisfy itself that the product is both fit for the purpose intended and that their use of the product can and does achieve that purpose in any particular instance or condition. Usage rates are presented as an initial guide only and do not account for wastage or substrate or build variations.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

Nuraply ALU Vapour Barrier

IKO Shield PRO ALU/SA 25m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Roofing membrane with glass fibre reinforcement, topside finished with polyester reinforced aluminium foil and under-side coated with self-adhesive SBS modified bitumen.

The combination of glass fibre reinforcement and aluminium finish layers ensures a dimension-stable, accessible roofing membrane, which facilitates stepping on metal deck during operation.

- The bottom side is coated with self-adhesive, SBS modified bitumen, which guarantees an immediate and high adhesion strength to the substrate surface.
- The top is finished with a polyester reinforced aluminium foil.
- The bottom side is finished with a removable silicon foil.

APPLICATION

Self-adhesive vapour barrier on metal deck, accessible during operation.

Also as vapour barrier on fully substrate substructures, if it is dry, dust and fat free.

Nuraply ALU Vapour Barrier is applicable as vapour barrier for roofing systems in buildings with high humidity conditions (Inner climate: class IV).

COMPOSITION

- Bitumen coating mass: self-adhesive SBS modified bitumen.

TECHNICAL DATA (EN 13707 et EN 13970)

- Tensile strength:
 - longitudinal: 525 N/50 mm
 - transversal: 350 N/50 mm
- Elongation @ break
 - longitudinal: 12 %
 - transversal: 12 %
- Dynamic indentation : Ø 20mm
 - Low temperature flexibility self-adhesive coating: -25°C
 - Dimensional stability: 0,1%
 - Watertightness (EN 1928/B): 200 kPa
 - Water vapour transmission (EN 1931): $\mu\text{d} > 1500\text{m}$

See test report according EN 13970 (Bitumen water vapor control layers) from MPA Dresden (DU) nbr 2006-4-667/9.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

DIMENSIONS

- Thickness: 0.6 mm
- Length: 25 m
- Width: 1,08 m
- Weight: 25 kg
- Packaging: 24 rolls per pallet

APPLICATION

Nuraply ALU Vapour Barrier is applied as a vapour barrier in buildings with inner climates till class IV. The substrate should be smooth, dry, clean, fat- and dust free. All substrates, with exception of pre-coated metal deck, needs to be coated with bitumen primer IKOpro SAPrimer. In case of application on metal deck the membrane shall be placed parallel on to the corrugations, as to position the side laps supported on the metal deck, and have the ability to rightly pressure it.

The first membrane is unrolled and lined out and rolled up again till approximately half the length of the strip. The remove-able silicon foil should be cut in cross direction and pulled up in one time while unrolling the membrane. This way, the self-adhesive underside will get in direct contact with the substrate and stick immediately. The same procedure should be repeated for the other end of the roll. The next membrane Nuraply Aluminium Vapour Barrier is applied in the same way with a side lap of 8 cm and an end lap of minimum 10 cm. Overlaps are to be pressured with a medium hard pressure roller.

In case of application during colder periods the material should be stored at least 12 hours before application in an ambient temperature of $\geq 10^{\circ}\text{C}$. Attention: Finish the roofing system every working day until at least 1 watertight layer on the insulation material in order to protect the aluminium foil of the Nuraply Aluminium Vapour Barrier against thermal shocks.

SAFETY, STORAGE & HANDLING INFORMATION

Do not pile pallets

Store indoors, preferably in dark room; avoid direct sunlight

Apply as quickly as possible after production

Pot-life: depending on circumstances: ideally in dark room at 10 to 20°C, maximum 6 months.

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PB

IKO Base P3 T/F 10m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing membrane consisting of straight run bitumen heavily modified with polymers and reinforced with a non-woven polyester.

FINISHING

- Top surfaced finished with white calibrated sand
- Underside finished with a smooth thermofusible film

APPLICATIONS

- Underlay in multi layer waterproofing system

COMPOSITION

- Reinforcement : non-woven polyester 180 g/m²
- Coating mass : polymer modified bitumen

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength (U.E.A.t.c.)
 - longitudinal : 600 N
 - transversal : 550 N
- Elongation at break (U.E.A.t.c.)
 - longitudinal : 40 %
 - transversal : 40 %
- Resistance to heat (U.E.A.t.c.) : > 140°C
- Low temperature flexibility (U.E.A.t.c.) : -5°C
- Dimensional stability : <0,5%
- Tear resistance (U.E.A.t.c.)
 - longitudinal : 160 N
 - transversal : 160 N

DIMENSIONS

- Thickness : 3 mm
- Length : 10 m
- Width : 1 m
- Surface : 10 m²
- Average weight : 41 kg

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PB – SA

IKO Base Stick T/SA 15m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Roofing membrane with polyester fibre reinforcement for use on areas requiring quality waterproofing without the use of naked flames.

- The polyester reinforcement has high mechanical strength.
- The bottom side is coated with self-adhesive, SBS modified bitumen, which guarantees an immediate and high adhesion strength to the substrate.
- The topside is finished with quartz mineral and a removable silicon foil of 8 cm on the side lap area, which guarantees a fast and secure sealing.
- The bottom side is finished with a removable silicon foil.

COMPOSITION

- Reinforcement: polyester fibre, 160 g/m².
- Bitumen coating mass:
 - Topside: flexible bitumen.
 - Bottom side: self-adhesive SBS modified bitumen.

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength: (UEAtc)
 - Longitudinal : 700 N
 - Transversal : 500 N
- Elongation at break (UEAtc)
 - Longitudinal : 35 %
 - Transversal : 35 %
- Low temperature flexibility self-adhering coating : -25°C

DIMENSIONS

- Thickness: 2.5 mm
- Length: 10 m
- Width: 1 m
- Weight: 32 kg

APPLICATION

The substrate should be smooth, dry, clean, fat- and dust free.

All non-insulated substrates, with exception of pre-coated metal deck, needs to be coated with Nuraflux bitumen primer. In case of application on metal deck the membrane shall be placed

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

parallel on to the corrugations, as to position the side laps supported on the metal deck, and have the ability to rightly pressure it.

The first membrane is unrolled and lined out and rolled up again till approximately half the length of the membrane. The removable silicon foil should be cut in cross direction and pulled up in one time while unrolling the membrane. This way, the self-adhesive underside will get in direct contact with the substrate and stick immediately.

The same procedure should be repeated for the other end of the roll.

The next membrane Nuraply 3PB – SA is applied in the same way with a side lap of 8 cm. Before unrolling it definitively, the silicon foil on the welding strip of the first membrane shall be removed.

Pressure shall be exerted with a medium hard pressure roller. The end laps should be sealed over a width of at least 10 cm with a smooth flame or hot air gun.

In multi layer roofing systems the top layer may be another layer of Nuraply 3PB-SA with a coating applied or Nuraply 3PM torched-applied onto the Nuraply 3PB–SA.

Temperature in application $\geq 10^{\circ}\text{C}$.

In case of application during colder periods the material should be stored at least 12 hours before application in an ambient temperature of $\geq 10^{\circ}\text{C}$.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors, preferably in dark room; avoid direct sunlight
- Apply as quickly as possible after production
- Pot-life: depending on circumstances: ideally in dark room at 10 to 20°C, maximum 6 months.

TRANSPORT CLASSIFICATION

N/A

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PM

IKO Turbo 7.5m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing membrane consisting of non-woven polyester coated with plastomer bitumen. With slate layer in either Charcoal, Slate, Pure White, Red or Green.

FINISHING

- Top surfaced finished with a mechanically rolled slate layer (colour red) offering excellent bonding with PP film on the 8 cm overlap.
- Underside finished with a thermofusible film

APPLICATION

- Cap sheet in multi layer waterproofing system

COMPOSITION

- Reinforcement: 180gm² non-woven polyester
- Coating mass: polymer modified bitumen.

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength (EN 12311-1)
 - longitudinal : 650 N
 - transversal : 500 N
- Elongation at break (EN 12311-1)
 - longitudinal : 40 %
 - transversal : 40 %
- Resistance to heat (EN 1110): > 140°C
- Low temperature flexibility (EN 1109): -8°C
- Dimensional stability (EN 1107-1): ≤ 0,5 %

DIMENSIONS



- Thickness : 4 mm
- Length : 7.5 m
- Width : 1 m
- Surface : 7.5 m²
- Average weight : 43 kg
- Colour : Charcoal, Slate, Pure White, Red or Green

FIXING

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

Torching method with asphalt burner.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PV

IKO Base QuadraT/F 7.5m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Roofing membrane, consisting of a non-woven polyester reinforcement, coated with modified bitumen and provided with a built-in vapour diffusion layer.

- The built-in vapour diffusion layer on the under-side of the roofing membrane is realised by an additional diamond-shaped profiled coating, consisting of self-adhesive plastomer bitumen that can be thermally activated. The bonding area to the substrate is approx. 40 %, achieving the ideal ratio between wind resistance and vapour diffusion.
- The wide, diagonal-shaped channels, provided with a heat-resistant mineral anti-adhesive finish, ensure the optimum vapour diffusion.
- The welding strip on the underside of the roofing membrane is additionally provided with a self-adhesive plastomer bitumen that can be slightly thermally activated. The welding strip on the top of the roofing membrane is provided with a thermofusible film.
- These two finishing's ensure a safe joint, by means of the gentle flame from the asphalt burner.
- The top of the roofing membrane is surfaced with talc. The underside is provided with a thermofusible film.

COMPOSITION

- reinforcement: non-woven polyester 180 g/m²
- coating mass: polymer modified bitumen

TECHNICAL SPECIFICATIONS (average values)

- tensile strength (EN 12311-1)
 - longitudinal : 900 N
 - transversal : 550 N
- elongation at break (EN 12311-1)
 - longitudinal : 45 %
 - transversal : 45 %

DIMENSIONS

- length : 7,5 m
- width : 1 m
- weight : 32 kg

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

FIXING

Thermally activate the profiles on the underside by means of the gentle flame of the asphalt burner.

APPLICATION

Vapour diffusion under layer for the Nuraply 3P, 3PM or 3PG system.

Used on concrete substrates or areas of high moisture content within the built environment.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PV-SA

IKO Base QuadraT/SA 10m

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Roofing membrane consisting of a impregnated polyester reinforcement, coated on both sides with flexible coating bitumen and bottom side provided with a build-in vapour diffusion layer based on diamond-shaped profiled self-adhesive SBS modified bitumen.

- The polyester carrier has a high mechanical strength and is accessible during operation.
- The build-in vapour diffusion layer is based on diamond-shaped profiled plots consisting of self-adhesive SBS modified bitumen.
- The adhesive surface underneath is about 40 %, so that the ideal relation between wind resistance and vapour pressure exposure is achieved.
- The optimal vapour pressure diffusion is achieved by the broad, diagonal canal structure of the non-faced reinforcement.
- The bottom side is covered with diamonds of self-adhesive SBS modified bitumen, which guarantees an immediate and high bonding to the supporting substrate.
- The topside is finished with quarts mineral and a re-movable silicon foil of 8 cm at the side lap area. This guarantees fast and secures water tightness.
- The bottom side is finished with a removable silicon foil.

COMPOSITION

- Carrier polyester, 170 g/m²
- Bitumen coating mass: polymer modified bitumen
- Bottom side: build-in vapour pressure diffuser based on diamond-shaped profiled self-adhesive SBS modified bitumen

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength: (UEAtc)
 - Longitudinal : 700 N
 - Transversal : 500 N
- Elongation at break (UEAtc)
 - Longitudinal : 35 %
 - Transversal : 35 %
- Low temperature flexibility self-adhering coating : -25°C

DIMENSIONS

- Thickness: 2,5 mm
- Length: 10 m
- Width: 1 m
- Weight: 32 kg

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

APPLICATION

Used as self-adhesive vapour pressure diffusing under layer in a multi-layer roofing system. Can be placed on substrates with enough delaminating resistance such as concrete, existing bituminous membranes, stable wooden supports.

Secondly, as a first layer on IKO enertherm MG/ALU): do not prime-on beforehand!

Nuraply 3PV - SA is applied as a base layer in multi layer roofing systems. The substrate should be smooth, dry, clean, fat and dust free. All substrates, with exception of thermal insulation, needs to be coated with Nuraflux bitumen primer

The first membrane is unrolled and lined out and rolled up again until approximately half the length of the strip. The removable silicon foil should be cut in cross direction and pulled up in one time while unrolling the membrane. This way, the self-adhesive underside will get in direct contact with the substrate and stick immediately.

The same procedure should be repeated for the other end of the roll. The next membrane Nuraply 3PV – SA is applied in the same way with a side lap of 8 cm and an end lap of at least 25 cm.

Pressure shall be exerted with a medium hard pressure roller. The end lap will be torched with a gentle flame.

Next, the top layer will be fully torched-applied on the Nuraply 3PV -SA with a smooth flame of an asphalt torch.

Temperature in application $\geq 10^{\circ}\text{C}$.

In case of application during colder periods the material should be stored at least 12 hours before application in an ambient temperature of $\geq 10^{\circ}\text{C}$.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors, preferably in dark room; avoid direct sunlight
- Apply as quickly as possible after production
- Pot-life: depending on circumstances: ideally in dark room at 10 to 20°C, maximum 6 months.

TRANSPORT CLASSIFICATION

N/A

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PG

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing root-resistant membrane, consisting of a non-woven polyester reinforcement, coated with plastomer bitumen. Root resistant top layer for waterproofing systems under green roofs with selected plants or in areas where there is the risk of membrane attack from plant roots.

FINISHING

- Top finished with sand
- Underside with a thermofusible film

APPLICATION

Lay the second NURAPLY 3PG layer by heat fusing over the cleaned repaired and NURAFLUX primed (if necessary) surface of the first layer. Joints in the second layer must not correspond with joints in the first layer. Second layer joints to be welded lap-joints, minimum 80mm wide down roll edges and minimum 100mm wide across roll ends, to the NURAPLY 3PG supplier's requirements. Roll junctions must be staggered to avoid 4 layer lap-weld build-up of NURAPLY 3P at corners. Ensure unobstructed drainage flow at outlets.

COMPOSITION

- carrier: non-woven polyester 180 g/m²
- plastomer bitumen, consisting of + 70% bitumen and + 30 % atactic polypropylene (APP), with addition of a root-rejecting element.

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength: (UEAtc)
 - longitudinal: 700 N
 - transversal: 450 N
- Elongation at break (UEAtc)
 - longitudinal: 30 %
 - transversal: 40 %
- Low temperature flexibility: -8°C
- Heat resistance (EN 1110): 140 °C
- Dimensional stability (EN 1107-1): < 0,4%
- 4 year period FLL German root-test accomplished

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

DIMENSIONS

- | | |
|-------------|-----------|
| - Thickness | : 4 mm |
| - Length | : 7.5 m |
| - Width | : 1 m |
| - Weight | : 36.1 kg |

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets and keep rolls upright
- Store indoors

TRANSPORT CLASSIFICATION

N/A

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PT

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing membrane consisting of straight run bitumen heavily modified with polymers (APP = Atactic Polypropylene) and reinforced with a non-woven polyester.

FINISHING

- Top surfaced finished with white calibrated sand
- Underside finished with a smooth thermofusible film

APPLICATIONS

- waterproofing of underground walls

COMPOSITION

- Reinforcement : non-woven polyester 180 g/m²
- Coating mass : plastomer bitumen, consisting of ± 70 % bitumen and ± 30 % atactic polypropylene (APP).

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength (U.E.A.t.c.)
 - longitudinal : 600 N
 - transversal : 550 N
- Elongation at break (U.E.A.t.c.)
 - longitudinal : 40 %
 - transversal : 40 %
- Resistance to heat (U.E.A.t.c.) : $> 140^{\circ}\text{C}$
- Low temperature flexibility (U.E.A.t.c.) : -5°C
- Dimensional stability : $\leq \pm 0,5\%$
- Tear resistance (U.E.A.t.c.)
 - longitudinal : 160 N
 - transversal : 160 N

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

DIMENSIONS

- Thickness : 3 mm
- Length : 10 m
- Width : 1 m
- Surface : 10 m²
- Average weight : 41 kg

.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PTM

TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing membrane consisting of straight run bitumen heavily modified with polymers (APP = Atactic Polypropylene) and reinforced with a non-woven polyester.

FINISHING

- Top surfaced finished with a mechanically rolled slate layer offering excellent bonding with PP film on the 8 cm overlap.
- Underside finished with a thermofusible film

APPLICATIONS

- Waterproofing underneath poured floor slabs

COMPOSITION

- Reinforcement : non-woven polyester
- Coating mass : plastomer bitumen, consisting of ± 70 % bitumen and ± 30 % atactic polypropylene (APP).

TECHNICAL SPECIFICATIONS (average values)

- Tensile strength (U.E.A.t.c.)
 - longitudinal : 600 N
 - transversal : 550 N
- Elongation at break (U.E.A.t.c.)
 - longitudinal : 40 %
 - transversal : 40 %
- Resistance to heat (U.E.A.t.c.) : $> 140^{\circ}\text{C}$
- Low temperature flexibility (U.E.A.t.c.) : -5°C
- Dimensional stability : $< 0,5\%$
- Tear resistance (U.E.A.t.c.)
 - longitudinal : 160 N
 - transversal : 160 N

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

DIMENSIONS

- Thickness : 3 mm
- Length : 10 m
- Width : 1 m
- Surface : 10 m²
- Average weight : 41 kg

.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURAPLY 3PC – TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Nuraply 3PC consists of an impregnated carrier with combination of polyester and glassfleece (280 g/m² for 5 mm thick), covered at the bottom side with flexible polymer bitumen.

The finish of the top surface of this membrane, talcum, admits direct application of road asphalt at a temperature of max. 160°C-200°C or mastic asphalt with a temperature of approx 250 °C.

The positioning of the carrier close to the upper surface of the membrane ensures a thorough adhesion between membrane and substrate.

INSTALLATION METHOD

- Type of protection layer: both mastic asphalt and road asphalt are possible.
- Type of overlay for the application: road asphalt is also possible over protection layer of mastic asphalt
- Intended use and method of application: for waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles.

TECHNICAL SPECIFICATIONS (average values)

| Characteristic | Test Method | Unit | Expression of result | Value or statement |
|---|---------------------------|--------------------|----------------------|---|
| Watertightness without pretreatment | EN 14694 | — | Pass | 1000 cycles of 500 kPa on membrane |
| Initial amount of mineral surface protection | EN 12039: 1999 Annex B | g/m ² | MDV | 150g/m ² ± 100 g/m ² |
| Tensile properties: max | EN 12311-1 | N/50mm | MDV ± 20 % | Thickness 5 mm: L 1000 N / T 900 N |
| Tensile properties: | EN 12311-1 | % | MDV ± 15 % | Thickness 5 mm: 35 % |
| Water absorption | EN 14223 | % | MLV | ≤ 0,5 % |
| Flexibility at low temp | EN 1109 | °C | MLV | initial ≤- 15 °C |
| Flow resistance at elevated temperature | EN 1110 | °C | MLV I | initial ≥ 130°C |
| Dimensional stability / 24 h at 80°C | EN 1107-1 | % | MLV | EN 1107-1: ≤0,2% |
| Dimensional stability at elevated temp/ 1 h at 160°C | EN 1107-1 + Annex B of EN | % | MLV | ≥ -0,5% |
| Thermal ageing by long term exposure to elevated temperature; 12 weeks @ 70°C | EN1296 | EN 1109 EN 1110 | MDV | Flexibility at low T° ≤- 5 °C Flow resistance at elevated T° ≥ +110°C |
| Bond strength on concrete | EN 13596 | N/mm ² | MLV | at 10°C: ≥ 1N/mm ² at 23°C: ≥ 0.8N/mm ² at 30°C: ≥ 0.6N/mm ² |

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

| Characteristic | Test Method | Unit | Expression of result | Value or statement |
|--|---|--------------------|----------------------|--|
| Bond strength on system concrete + membrane + protection layer | EN 13596 | N/mm ² | MLV | With mastic asphalt at 23°C: $\geq 0.3 \text{ N/mm}^2$ |
| Bond strength on concrete + bitumen leveling layer + membrane | EN 13596 | N/mm ² | MLV | at 23°C: $\geq 1 \text{ N/mm}^2$ |
| Shear strength before ageing Concrete+primer+Polybridge+asphalt | EN 13653 | N/mm ² | MLV | with mastic asphalt $\geq 0.2 \text{ N/mm}^2$ with road asphalt $\geq 0.3 \text{ N/mm}^2$ |
| Bond strength after ageing 12 w @ 70°C on system concrete + bitumen leveling layer + membrane + protection layer | EN 1296 + EN 13596 | N/mm ² | MLV | with mastic asphalt $\geq 1.00 \text{ N/mm}^2$ |
| Crack bridging ability | EN 14224 or Annex E of this European Standard | °C | Pass test temp | - 10°C |
| Compatibility by heat conditioning 91 days @ 50°C on system concrete + membrane + protection layer | EN 14691 + EN 13653 | % of initial value | MLV | With mastic asphalt: +170 % With road asphalt: + 140 % |
| Compatibility after 20 freeze-taw cycles according EN 13687-1 on system concrete + membrane + protection layer | EN 13687-1 + EN 13653 | % of initial value | MLV | With mastic asphalt +143% |
| Resistance to compaction of an asphalt layer | EN 14692 + EN 1928 | - | Pass | pass result |

DIMENSIONS

- Thickness : 5 mm
- Length : 10 m
- Width : 1 m
- Surface : 10 m²
- Average weight : 57 kg

FIXING

Torching method

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NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

ENERTHERM PIR INSULATION BOARD

TECHNICAL DATA SHEET

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.

The insulation board is designed for the application in mechanically fixed or loose laid roof waterproofing systems made of reinforced polymers modified bitumen membranes and single ply plastic sheets.

APPLICATIONS

Thermal insulation of flat roofs, floors and walls.

TECHNICAL CHARACTERISTICS

- Core density: 32 kg/m³
- Compression strength at 10% deformation: ≥ 120 kPa (EN 13165)
- Performance under the influence of an equally distributed load: class C
- λ_d -value (EN 13165 – declared value) : 0,023 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
- Chemical resistance: only degraded by concentrated leach and acids. Most in practice used paintings and solvents have no influence on the foam.
- Fungus resisting: PIR insulation boards have no potential on growing micro organisms.

THERMAL PERFORMANCE

λ_d value according EN 13165 = 0,023 W/mK

CERTIFICATION

Product homologation certificate from Intron bv in Holland registered under # CTG 485.
ACERMI CSTB France Certificate n° 06/103/434/2.
CE-key: PIR – EN – 13165 – T2-DS(TH)8-DLT(2)5-TR80-CS(10\Y)120.

FIXATION OF INSULATION

- Mechanical fixation to the substrate
- Nurabond High Foaming PU adhesive

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

DIMENSIONS

FLAT BOARDS

Board dimensions 1000 x 1200 mm

Thickness mm

30 40 50 60 70 80 100

INTEGRATED SLOPE 1:60

Dimensions 1200 x 1200 mm

Thickness mm

40-60

60-80

80-100

100-120

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

NURABOND HIGH FOAMING PU ADHESIVE

IKOPro PU Adhesive

TECHNICAL DATA SHEET

DESCRIPTION AND USE

Nurabond High Foaming PU Adhesive is a permanent elastic high performance moisture-cured single part polyurethane adhesive with light foaming capacity for bonding bituminous roofing membranes, vapour control layers and rigid insulation boards. For use on various substrates including profiled metal decking, existing bitumen membranes, concrete, timber etc.

The adhesive is cold applied and has been specially developed to allow the safe, rapid partial bonding of roofing components to a wide variety of substrates.

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

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.

APPLICATION

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.

Application time: max 20 minutes

Surfaces to receive adhesive should be stable, clean and free of any liquid water (damp surfaces are acceptable)

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.

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN

Advised glue consumption:

| <u>Average Consumption</u> | <u>Roofzone</u> | <u>per m2</u> |
|----------------------------|-----------------|---------------|
| Metal Plates | Centre | 300g |
| | Perimeter | 500g |
| | Corner | 700g |
| Full Substrates | Centre | 250g |
| | Perimeter | 400g |
| | Corner | 500g |

These glue consumption rates are minimum advised rates and are valid for buildings with a maximum height of 15 metres

The membrane or insulation should be applied and pressed into position before formation of a skin on the adhesive. It is recommended that the bond is checked from time to time, by lifting a corner of the insulation/membrane to ensure that the adhesive ridges have been squeezed flat. This is particularly important with uneven substrates.

CLEANING

Trichloroethane or methylene chloride

PACKAGING

Nurabond High Foaming PU Adhesive is supplied in 6kg containers

STORAGE

Keep containers tightly closed when not in use. Store in its sealed container, in dry conditions at a temperature between 5°C and 25°C.

To avoid the risk of spillage, always store and transport in a secure upright position.

HEALTH & SAFETY

Keep container tightly sealed and away from direct heat. Keep away from sources of ignition. No smoking. Avoid contact with skin and eyes. Should there be contact with skin, wash immediately with soap and water or a recognized skin cleaner. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In the event of accidents, seek medical attention immediately. Do not empty into drains. Do not allow solvent vapour to enter the air intakes of ventilation systems of buildings.

FIRE

In case of fire, use foam, dry powder, carbon dioxide or sand. Never use water jet.

IMPORTANT NOTICE:

The above recommendations are intended for the assistance of users and are of a general nature. They are based on our experience and judgement but because the conditions under which, and the materials with which our products are used, are beyond our control our recommendations must not be regarded as amounting to legal warranty or as involving any liability on us.

IKO MS DETAIL

TECHNICAL DATA SHEET

DESCRIPTION AND USE

IKO MS Detail is a solvent-free, high-build, liquid-applied waterproofing coating based on MS polymer technology that cures as a result of a chemical reaction with the ambient humidity. Once cured the coating becomes a tough, monolithic waterproof membrane. IKO MS Detail was designed to coat and protect complex details such as flashings, roof skylights, mechanical equipment, roof and wall penetrations etc., which would normally require intricate labour.

APPLICATION

- Waterproofing roof details such as flashings, domes, roof lights, chimneys, air-conditioning nozzles, gutters, etc.
- Waterproofing of roofs with complex shapes and only accessible for the annual inspection and/or maintenance.
- Suitable for all types of bituminous waterproofing membranes.
- Not to be used on wet substrates.
- Not to be used on hard PE, and on PC.
- Not to be used on the following types of synthetic roof membranes: TPO, ECB, Butyl and PE.
- Can be applied to Spectraplan TPE, PVC membranes and to certain types of EPDM after a specific pre-treatment with a belt sander and a special primer; contact the manufacturer in advance.
- Not to be used on natural stone.
- For all other substrates, please contact IKO first.

PROPERTIES :

- Does not flow; this also applies to high flashings.
- Free from solvents.
- Adequate adhesion without primer to most common construction materials, such as wood, hard PVC tubing, copper, zinc, bituminous substrates and polyester dome fittings.
- High elasticity.
- Excellence resistance against Ultra-Violet radiation, changing weather conditions and air pollution. 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.
- The membrane that is formed after the curing process is perfectly fitted to the different shapes of the substrate.
- Bonds with damp substrates.
- MS Detail is not harmful to plants after curing.

TECHNICAL PROPERTIES :

- | | |
|----------------------------|--------------------|
| • Colour: | Grey |
| • Appearance: | Viscous paste |
| • Application temperature: | + 5°C to + 35°C |
| • Temperature resistance: | -40°C to +90°C |
| • Density at 25°C: | 1.40 kg/l +/- 0.03 |
| • Flash point: | none |

NURAPLY WATERPROOFING MEMBRANE

BUILDING PRODUCT QUALITY PLAN



- Hardness Shore A (DIN 53505): 35
- % elongation up to point (DIN 53504): 450% • Tensile strength (DIN 53504): 2 MPa
- Skin formation at 23°C 50% RH: 60-120 minutes • Curing time at 23°C 50% RH: 2 mm per 24 h

PACKAGING :

- 3.5 kg or 7 kg tins
-

CONSUMPTION:

- 1.7 kg/m² for a thickness of 1.2 mm

TOOLS :

- Toothed spatula
- Brush or roller for flashings or roof details
- Masking tape