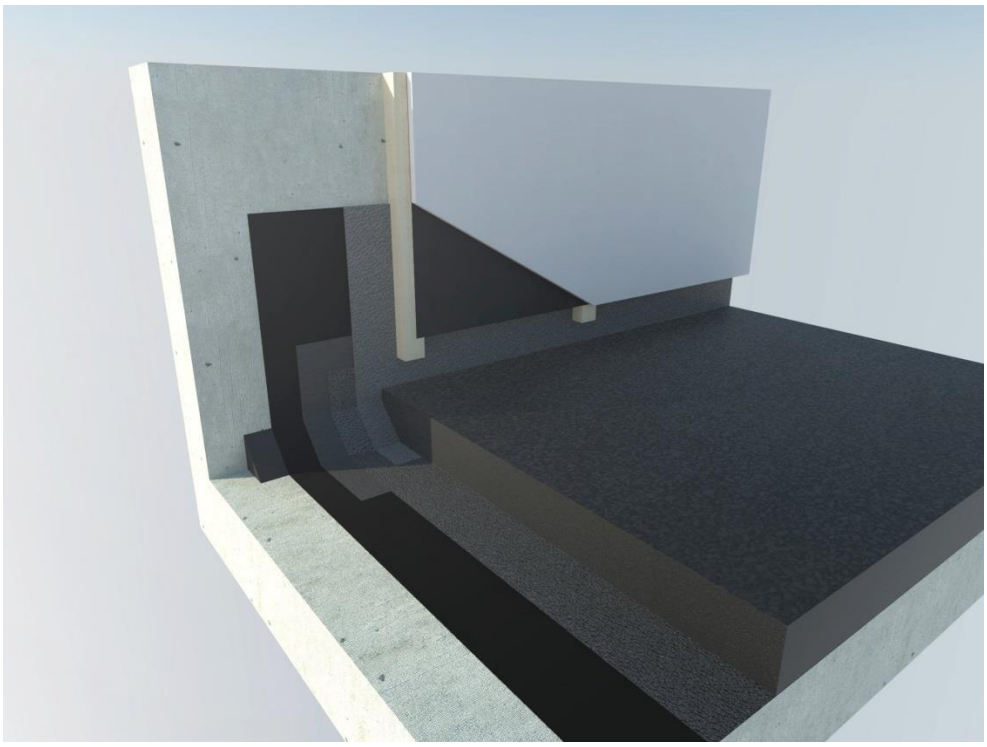
NURALITE
THE FLAT ROOF EXPERTS

Nuraply 3PC Carpark Membrane Installation Manual



2017 Edition 2

February 2017

Nuralite Waterproofing Limited
www.nuralite.co.nz

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Document Control

Issued	John Simmons	Oct 2014	2014 Edition V1
Revised	John Simmons	June 2015	2015 Edition V2
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Revised	John Simmons	February 2017	2017 Edition V2

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

Nuralite roofing and waterproofing systems are intended for application by trained and approved installers. A listing of the current approved applicators are available at www.nuralite.co.nz/Applicators_By_Region/. These notes are a technical guide to the application of the Nuraply 3PC range. The Nuralite organisation also maintains a team of skilled technical representatives who are prepared to demonstrate the correct application of Nuraply 3PC on site or to discuss any problems which may arise regarding its use.

Please note that Nuraply has a long product defects warranty period and every precaution must be taken to avoid any possible installation faults. Application according to these guidelines must be insisted upon by the Applicator to ensure that full benefits of the warranty period are maintained.

TECHNICAL ADVICE

For advice on unusual or abnormal conditions or details, please contact Nuralite Waterproofing Ltd,

Auckland phone: 09 579 2046 fax: 09 579 5136
Email: info@nuralite.co.nz

OTHER REFERENCE DOCUMENTS

This manual forms the technical documentation for the Nuraply 3PC system.

Technical literature (available at www.nuralite.co.nz)

- Nuraply 3PC detail drawings
- Material Safety Datasheets
- Technical Datasheets

Specifications

- Generic Nuraply 3PC specifications
- Project specific specification

The Nuraply 3PC Carpark Membrane System complies with the New Zealand Building Code.

As an explanation of compliance with Building Code criteria under s269 (1) of the Building Act 2004 –

Clause B1.3.2	Compliance has been established by testing to ensure that tensile strength, elongation, compression, and seam strength are adequate.
Clauses B1.3.3 (e) and (m)	Compliance has been established with testing to ensure resistance to water absorption, hydrostatic pressure, differential movement over substrate joints are adequate.
Clause B2.3.1 (b)	The membrane is part of the envelope building element and assessed for 15 year durability period based on in-service history in excess of this period.
Clause B2.3.2 (a)	The membrane is not installed over elements with lesser durability than 15 years.
Clause E2.3.1	The roof membrane system will repel water from entering building and drainage paths ensure it can shed precipitated moisture and melted snow.
Clause E2.3.2	The membrane system has been tested for water absorption, vapour transmission, hydrostatic pressure and joint seam strength to satisfy this requirement.
Clause F2.3.1	No gases liquid or particles are emitted by materials that could give rise to harmful concentrations on surfaces or in atmosphere of any space.

Compliance with other clauses have been considered and found not applicable.

1. Statement of Use & Limitations

Use

Nuraply 3PC torch on membrane system provides a durable waterproofing system for installation by approved installers, on new and existing rooftop carpark decks of any size. Installation is to be in accordance with this manual "Nuralite 3PC Roofing membrane Installation manual 2017 Edition 2", available on the Nuralite website and the "Nuralite Building Products Quality Plan 2016 v1" assessed by BEAL Certification Services Ltd

On a structure complying with the New Zealand Building Code, it may be installed directly onto the following substrates

- concrete substrates complying to the performance requirements of NZS 3101 (2006)

Nuraply 3PC membrane is a tough, reinforced, bituminous product for waterproofing concrete substrates. The trafficable surface may have hotmix asphalt laid directly on the Nuraply 3PC or concrete separated from the Nuraply 3PC with a heavy duty polyethelene slip layer.

The system may be installed in all NZS 3604 Wind Zones, up to and including Extra High.

Limitations

The design and construction of the substrate, upstands, control joints, junctions and allowances for ventilation, movement, condensation control, and fire safety provisions is specific to each building, and therefore is the responsibility of the building designer and building contractor. The membrane surface must be protected from vehicular traffic with a protective layer of concrete or hotmix asphalt. The installation of these are all outside the scope of this Codemark.

Any construction details outside those listed in this manual are outside the scope of this Codemark.

When used on existing projects, it is the responsibility of the property owner to have the structure and substrate assessed by a suitably qualified person and to the satisfaction of Nuralite Waterproofing Ltd. For this Codemark to be applicable the substrate material is limited to only those approved within this manual.

Roofs must have a minimum finished (constructed) fall of 1:80 or 1:100 in gutters. This is the fall that is achieved on the roof at the completion of construction. Designers should make allowance for construction tolerances and deflection to ensure the falls are achieved onsite.

The membranes must be installed only by Nuralite Waterproofing Ltd approved installers.

Exposed membranes, such as at upstands, must be protected with a Nuraply 3PM capsheet.

Attention must be paid to application temperature ranges and the necessary requirements for storage of products.

2. Health and Safety

An applicator's wellbeing is paramount.

Do not enter a worksite, commence work or continue working if:

1. You have not been adequately trained by your employer
2. You have not been briefed about the workplace hazards by the site manager
3. You do not have proper clothing, footwear, safety & workplace equipment.
4. You witness unsafe practices or you believe the workplace is unsafe.
5. You see wet or rainy conditions

Use your common-sense and speak up if anything concerns you.

A few points of particular relevance to Applicators are:

1. Applicators must wear protective clothing including a hard hat and suitable footwear. In particular, heat resistant gloves must be worn to reduce the risk of torch flame and heated bitumen coming into contact with skin. Footwear should have soft, non-slip soles.
2. Working with a gas torch is hazardous and requires care both for the Applicator, other associated personnel, and other persons on the work site.
3. Daily checks of all gas equipment to ensure that it is in good working order and safe for use. All personnel who use this equipment should be trained in its proper use and maintenance.
4. As torch-work can create the risk of fires, including smouldering fires, the Applicator must be trained in fire prevention and the proper extinguishing of fires. On every job fire extinguishing equipment must be kept close to the Nuraply 3PC installation area and be in good working order.
5. First aid equipment must be provided on site and work personnel trained in first-aid procedures.
6. Experience and training for working at height is important, including understanding restraint procedures. Nuraply 3PC systems are normally applied to either roofs or decks, which are usually 2.5m or more above the ground. All work carried out in such situations require sufficient safety and protection to avoid falls.
7. All applicators must have a current Site Safe passport.

3. Project Administration/Supervision

Nuralite & you, the applicator, are in a partnership designed to achieve the installation of many high quality Nuraply 3PC systems.

Nuralite works hard to get jobs specified by Architects. The Applicator is responsible for the quality control and the installation of the Nuraply 3PC membrane systems and quotations.

All work will rapidly dry up if the application is not performed in a professional manner. Not only must the workmanship be high quality, but the service and support to the builder and project manager should equal that to ensure we all get repeat business.

Nuralite recommends a pre-inspection and/or a pre-job meeting of all parties involved with the Nuraply 3PC system to identify any areas of concern. It is important for a successful installation to resolve and clarify any issues or project requirements, work programme and issues with other trades, the project documentation required product storage, and site health and safety matters.

Before commencing work, the Applicator must determine:

- That all the building consents, if required, have been issued and the specifications and detailed drawings are workable and suitable for the project
- That there is nothing that will compromise the Applicator's required responsibility under the NZ Building Code or your ability to follow these instructions and thus issue a warranty on your workmanship
- That no existing conditions at the site prevent the Applicator from performing in a professional and safe manner
- That the product to be installed is as per the official consent documents.
- A substrate readiness checklist has be competed by the head contractor (see section 9)

If you have any concerns about the project, your working conditions or the substrate preparations then raise them with the site manager, your employer or a Nuralite representative.

All applicators have the right to refuse to commence work until they are satisfied they can complete the job safely and to the highest standards.

4. Nuraply 3PC Products

Nuraply 3PC

Smooth surface

Nuraply 3PC is nominally 5mm thick, 10m long x 1m wide polymer modified bitumen. Heat fused onto the substrate with heat welded lap joints and talc upper surface. Consists of a 280 g/m² impregnated carrier with combination of polyester and glassfleece 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.

Nuraply 3PB

Smooth surface

Nuraply 3PB provides a nominally 3mm thick 10m long x 1m wide polymer modified bitumen sheet. All internal and external corners and vertical to horizontal transitions shall have Nuraply 3PB membrane gusset patches and strips applied before the main membrane application.

Nuraply 3PM

Mineral Chip

Nuraply 3PM Sheet is nominally 4mm thick, 7.5m long x 1m wide, polymer modified bitumen sheet with a prefinished mineral chip upper surface. For use on all exposed upstands.

Additional Components Supplied by Nuralite

Nuraflux Primer

For specific priming to improve adhesion such as old dry bitumen, basement walls & concrete substrates. 25L pails with coverage of 5m²/litre *(Labelled: IKOPro QuickDry Primer)*

Accessories Supplied by Nuralite

Nuraglaze

Clear acrylic glaze to seal chips and retain appearance 15l pails with coverage of 10m2/litre

Profili Bitumen Filet

A 25mm triangle of bitumen that may be installed at internal corners instead of building a mortar filet.

Metal Scuppers & Sumps

Fabricated for use with Nuraply 3PM and Nuraply 3PC. Available in 80, 100 and 150mm sizing with alternative dimensions available on request.

Termination Bar

20mm x 3mm metal strip predrilled to allow mechanical fixation of the Nuraply 3PM membrane.

MS Detail liquid flashing

MS Detail is a solvent-free, coloured, liquid, single-component waterproofing coating on the basis of MS Polymer technology.

Accessories Supplied by Others

Allproof Cast Bronze outlets and overflows

The Allproof Cast Bronze series of roof outlets is a robust means of connecting a roof system to an outlet drain. Outlet sizing and layout are the responsibility of the designer.

WABO Roofcover Expansion joints

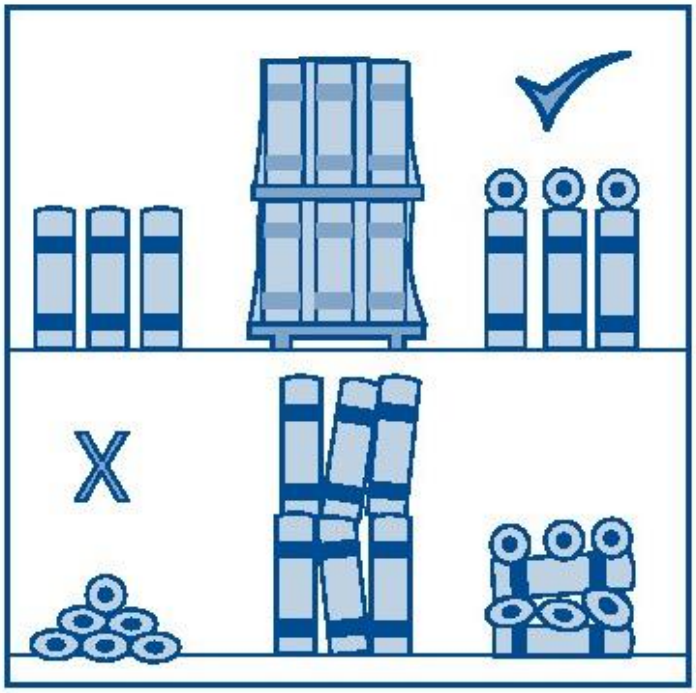
Wabo RoofCover is an aluminum system engineered for flat and sloped roofs that are subject to thermal and seismic movement. Integral weather seals and moisture barriers keep outside elements from penetrating the structural opening and interior areas.

Holdfast FixAll 220 MS Sealant

High performance MS sealant

SITE STORAGE

a. Store rolls on selvage end of roll and off the ground, with pails.
b. Protect all products and equipment from sun, heat and frost.



Tools in General

- Six head gas welding trolley
- gas torch (small 20mm for detailing & 50mm for large areas),
- 2 x fire extinguishers suitable for Class A, B, and C fires,
- moisture meter to measure moisture content of substrates water spray bottle,
- string line,
- spirit level,
- 2 x craft knife (straight & hooked blade),
- tape measure,
- straight edge,
- cutting board,
- margin trowel,
- tool belt & or tray,
- seam/printers roller,
- paint brush & roller,
- knee pads and
- gas lighter (BBQ)

5. Substrate Readiness

Many poor jobs are found to result from membranes being laid on top of a badly constructed substrate.

Before commencing laying any Nuralite systems, the installer must be sure that the substrate is ready by receiving a completed Substrate Readiness Checklist from the head contractor. The installer should contact Nuralite in case of any concerns.

Be sure to store the completed forms and supply them to Nuralite when the Materials Defects Warranty is applied for.

Ensure wood float concrete substrate has been allowed to cure well before commencing application contains less than 5% moisture content. Prepare surface, including vacuum cleaning and patching as necessary to leave smooth, clean, dry and free of debris. Curing agents are not advisable but if used they must be removed by an abrasion method before membrane installation

In particular,

a. Construction Falls — 1:80 for roofs (Note 1)
1:100 for gutters

b. Concrete substrate contains less than 5% moisture content (measured with a calibrated concrete moisture meter) and curing membranes removed.

c. Upstands filleted, edges arrised, drainage outflows rebated.

d. Surface clean and dry.

Note 1: Roofs must have a minimum finished (constructed) fall of 1:80. This is the fall that is achieved on the roof at the completion of construction. Designers should make allowance for construction tolerances and deflection to ensure the falls are achieved onsite.

Concrete Substrate Readiness Checksheet

(Completed by the Head Contractor)

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. ☐

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 specification. ☐

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

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

Notes

Signed by head contractor Date:

6. Nuraply System Installation

a. Adhesion of Nuraply 3PC Sheet to Concrete Substrate

i. Install detailing to all drainage outlets gutters and detailing in Nuraply 3PC, before laying the main roof. Ensure outlets are rebated to avoid build-up at outlets and to allow drainage outflow.

ii. Apply the Nuraflux primer (using lambswool roller) to the area that is to be installed with the 3PC membrane, ensuring the correct coverage is used (one litre per five square meters) areas not covered within 24 hours after the curing of the Nuraflux should be reprimed to ensure a completely fully bonded system without any trapped vapour pockets.

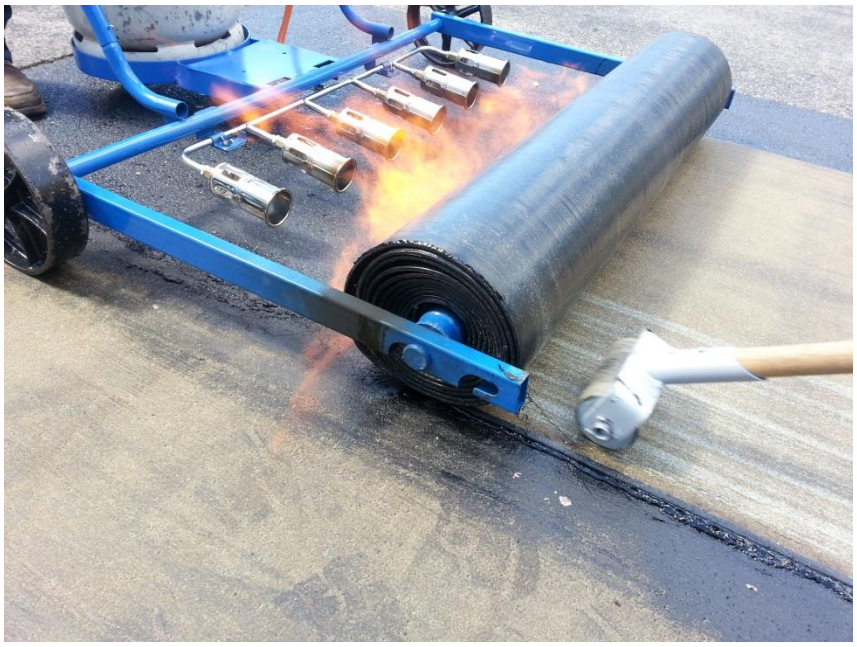
iii. Nuraflux is solvent based so allow curing thoroughly before using gas torches nearby.

iv. Use chalk lines to ensure straight neat lines to the finished membrane. Position the membrane roll to the chalk line.

v. Put the Nuraply 3PC onto the welding trolley. Line up the 3PC to run down the falls in the substrate, ensuring a minimum 80mm lap on the sides of the rolls and ends with all laps facing downhill. This is to prevent the lap joints from hindering the water flow.

vi. Light up the gas torches and heat the membrane until a bleed of membrane is visible at the interestection of the membrane and the primed concrete substrate. This process creates a fully bonded membrane without any trapped vapour pockets. Use a heavy or water filled roller to press the membrane down to ensure no pockets of air exist.

vii. Monitor the edge of the roll to ensure a continuous 5mm bitumen bleed from both sides of the membrane roll. Use pressure roller to push membrane totally flat.



viii. After every two or three rolls are laid. Check all lap welds for any signs of not enough bitumen bleed. If there is no sign of constant bitumen bleed use a manual Nuraply 3P welding techniques to redo the lapjoint (see section b below) and test all joints progressively.

ix. Welding and detailing with skill, creates perfectly fused laps, with a 5mm minimal exposed smooth bitumen, and neatly angled joint edges. Stagger the roll lying to avoid four corners meeting in one place.

b. Making the Lap-Joint manually

i. To weld lap-joints manually use the round edged finishing trowel and heat gently. Insert trowel between sheets and lift the edge of the top sheet high enough to allow the torch flame to liquefy both surfaces.

ii. Both hands must work together, moving back and forth along the sheet a distance of approximately 350mm. When the surfaces are melted, remove trowel and torch flame from between lap-joint.

iii. Position hot trowel blade firmly on top of joint approximately 50mm back from the open edge and weld the sheets together with pressure from the hot trowel. Then joggle the top sheet along the back edge of the under sheet to an angle of approximately 45^{O}. Approximately 30mm from the back of the joint is now welded together.

iv. Re-lift the edge of the upper sheet reheat under it and trowel weld the middle 25mm of the lap with pressure from the trowel. Once again, re-lift the edges of the upper sheet, reheat, and with pressure from the trowel, weld the remainder of the lap to within 5mm of the front edge. Lift the front edge, reduce heat and then apply flame between the

sheet edges.

v. Seal the front with pressure from the trowel, ensuring this time that the trowel follows closely behind the flame. The edge of the trowel is then run along the front edge of the top sheet at about 45^{O} to ensure a good seal.

vi. Finally, finish the front edge to give a similar appearance to the joggled edge by adjusting the trowel angle and dressing the front edge. Each section of jointing (i.e. approx 350mm length) should be completely welded before starting the next section.

vii. Always keep the trowel hot and scraped free of carbon build-up, to prevent Nuraply 3PC surface from dragging. A properly made lap joint should not be capable of being pulled apart at normal temperatures.

viii. Random test finished and cooled joints with the hot trowel edges, as work progresses.

c. 3PM upstands

i. Apply a 3PB reinforcing strip at the base of the upstands a minimum of 100mm on the horizontal and 100mm to the vertical ensuring a bitumen bleed is present at all lap joints.

ii. Continue with the horizontal 3PC layer 70mm up the upstands.

iii. Apply a layer of 3PM as a finishing cap sheet ensuring a horizontal lap joints of 50mm minimum.

iv. Check all lap joints for a continuous bitumen bleed.

d. Flood Testing

If possible floodtest vulnerable areas such as gutters and particularly outlets are for 24 hours before signing off the job.

REMEMBER: A SOUNDLY WELDED LAP-JOINT IS CRITICAL FOR THE SYSTEM TO REMAIN COMPLETELY WATERPROOF.

7. Project Sign-off Form

Project Name: _____
Sign-off below by: _____
Company: _____
Area covered by QC Sheet _____
Date: _____

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)		
Roof drains & overflows installed to specification and watertight		
Nuraflux Primer used in correct quantities. Membrane fully adhered to substrate with no evidence of bubbles or lifting.		
Membrane side laps 80mm and end laps 100mm fully welded and tidily seamed off.		
No sign of overheating/excessive bitumen bleed from laps (over 5mm).		
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)		
All upstands overlaid with Nuraply 3PM		
Any damage to membrane sheet repaired to specification.		
Membrane is watertight and ready for the installation of the trafficable topping		

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

Project Sign-off Form cont.

Remedial action required:

Note of damaged areas repaired:

Signed:

Applicator _____
Date: _____

Head Contractor: _____
Date: _____

It is the responsibility of the head contractor to protect the Nuraply 3PC membrane from damage prior to installation of the trafficable topping surface.

8. Overlay Installation – By Others

Ensure a Membrane Project Sign-off form has been completed by the head contractor as a sign that the membrane has been correctly installed. The overlay installer will be responsible for damage once the Project Sign-off form has been completed.

The topping design and installation is the responsibility of others and so is not part of this Codemark.

Asphalt Overlay
The asphalt overlay should be placed as soon as possible after application of the Nuraply 3PC and prior to any trafficable use. The parties should inspect the applied membrane prior to laying of asphalt to ensure there is no mechanical damage or other isolated moisture related blisters. Rectify any of those issues before the asphalting application commences.

Only asphalt delivery equipment should be permitted on the membrane prior to placement of the asphalt. While flat tracked paving equipment is preferred, either flat tracked or pneumatic tire equipment may be used. Equipment should be inspected prior to use for burrs, stones or sharp projections on tracks which could damage the membrane.

A minimum of 50 mm compacted overlay is recommended. Thicker overlays are recommended for heavy traffic areas, loading zones or fire truck access points. Care should be taken to minimise the possibility of pavement movement on areas with more than a 5% grade. Curved ramps can put particular stress on the paving system as cars are turning under load.

Paving must not be started following rain until the membrane surface is dry.

Take care not to splash bitumen on any surround surfaces, especially the Nuraply 3PM.

Apply a tack coat of Hot Mix primer to the whole membrane area followed by a No.10 or No.15 Hot Mix. The Hot Mix is screeded out and rolled to a minimum compacted thickness of 50 mm. The rolling out procedure is conducted at right angles to the longitudinal lap joints of the already applied membrane sheets. Compaction of the overlay should occur at a minimum asphaltic temperature of 135°C at the deck. Failure to compact the overlay at 135°C or higher may result in premature deterioration of the overlay.

Concrete Overlay
A slip layer of heavy duty black polyethene must be installed, with laps taped, so that the concrete cannot bond to the Nuraply 3PC membrane.

Failure to do this can compromise the system as the concrete curing will stres the underlying membrane

An engineer must specify the depth and reinforcing required for the concrete pour. The head contractor must ensure the polyethene and Nuraply 3PC is undamaged before pouring the concrete.

9. Nuraply Maintenance Programme - Checklist

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.

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 3PC component products and special techniques to achieve neat, unobtrusive reinstatement of the NURAPLY 3PC.

Cleaning
Location, traffic level, effective drainage, and service use will dictate cleaning requirements. Sweeping clean followed by hose and broom washing of the NURAPLY 3PC 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 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			

INSPECTION CHECKLIST

1) Surface:
   a) bare patches in solar reflective finish or chippings;
   b) accumulation of loose chippings;
   c) accumulation of silt or vegetation;
   d) 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;
   c) unbonded laps.

8) Movement joints, proprietary flush type:
   a) unbonded laps;
   b) splits, cracks, tears.

9) 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.

10) Roof fixtures and penetrations:
   a) upstand defects as above;
   b) rooflight glazing defects;
   c) damaged/missing flashings;
   d) balustrade/vent pipe, loose or missing flashing or collar;
   e) plant plinth damaged/missing flashing;
   f) lightning conductor tape, fixing loose/detached

10. Technical Datasheets

NURAFLUX PRIMER –
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

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.

Alternatively, the top surface may be protected by a concrete topping separated from the membrane with a polyethylene slip layer

INSTALLATION METHOD

- Type of protection layer: mastic asphalt, road asphalt or concrete are possible.
- 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/m2	MDV	150g/m² ± 100 g/m²
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	nitial ≥ 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 +110°C temperature; 12 weeks @ 70°C	EN1296	EN 1109 EN 1110	MDV	Flexibility at low T° ≤- 5 °C Flow resistance at elevated T° ≥
Bond strength on concrete	EN 13596	N/mm2	MLV	at 10°C: ≥ 1N/mm² at 23°C: ≥ 0.8N/mm² at 30°C: ≥ 0.6N/mm²

Characteristic	Test Method	Unit	Expression of result	Value or statement
Bond strength on system concrete + membrane + protection layer	EN 13596	N/mm2	MLV	With mastic asphalt at 23°C: ≥ 0.3 N/mm²
Bond strength on concrete + bitumen leveling layer + membrane	EN 13596	N/mm2	MLV	at 23°C: ≥ 1N/mm²
Shear strength before ageing Concrete+primer+ Polybridge+asphalt	EN 13653	N/mm2	MLV	with mastic asphalt ≥0.2N/mm2 with road asphalt ≥0.3N/mm2
Bond strength after ageing N/mm² 12 w @ 70°C on system concrete + bitumen leveling layer + membrane + protection layer	EN 1296 + EN 13596	N/mm²	MLV	with mastic asphalt ≥ 1.00
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 3PM
TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Waterproofing membrane consisting of non-woven polyester coated with modified 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: non-woven polyester
- Coating mass: plastomer bitumen.

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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

Torching method with asphalt burner.

SAFETY, STORAGE & HANDLING INFORMATION

- Do not pile pallets
- Store indoors

TRANSPORT CLASSIFICATION

N/A

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11. Installation Details

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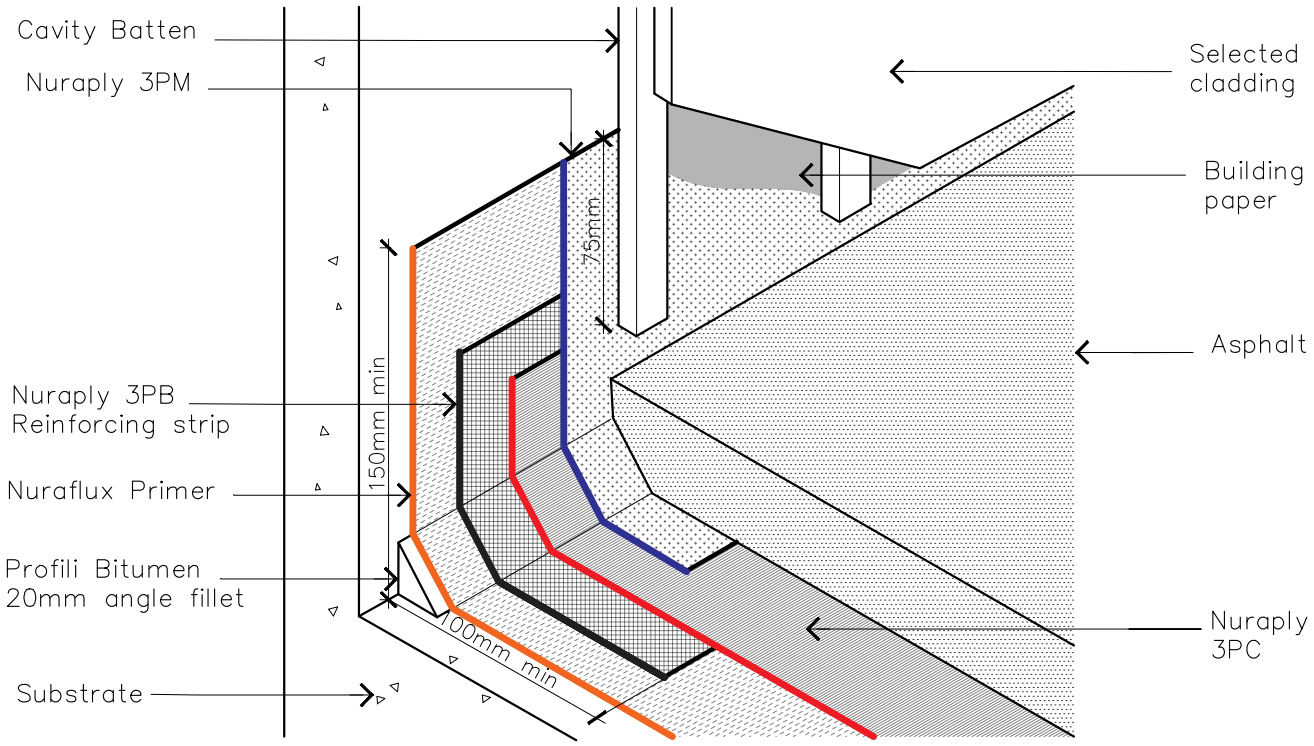

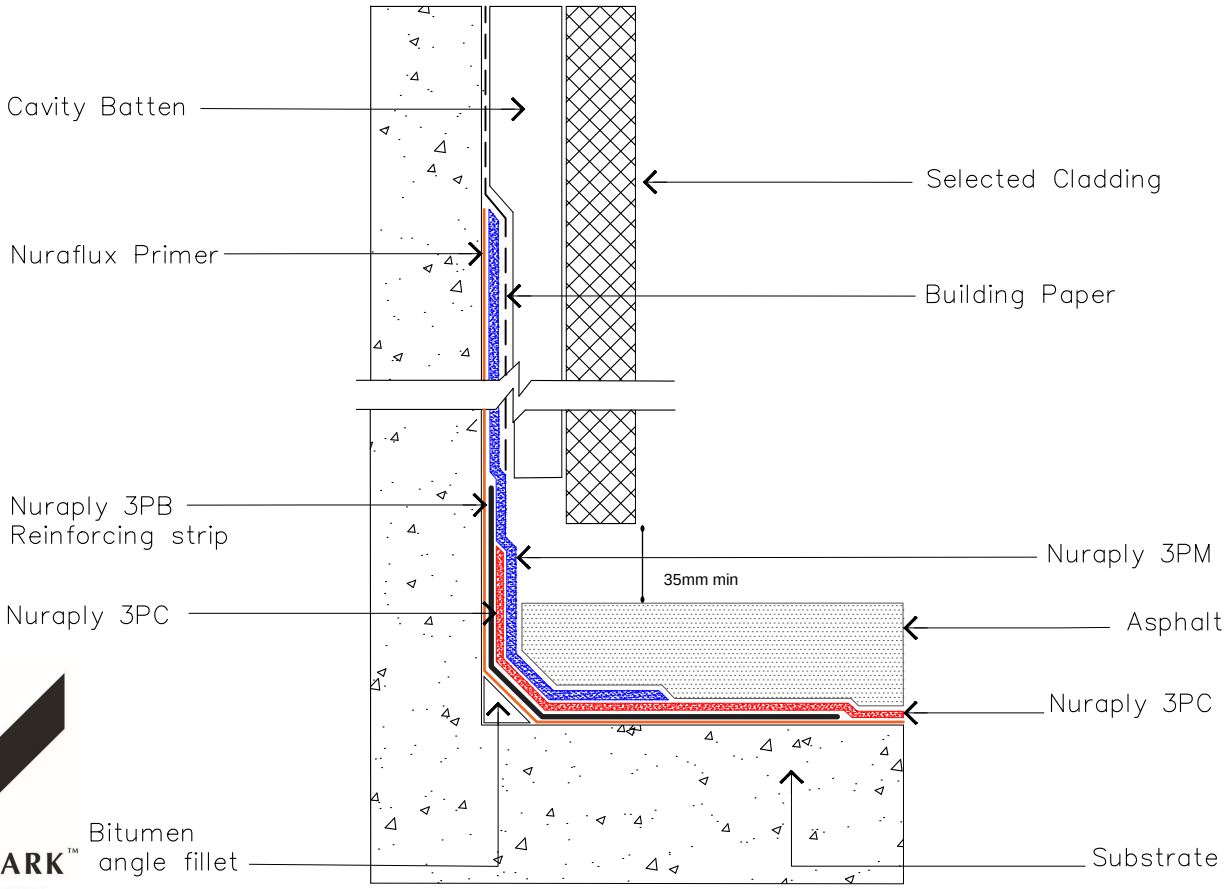

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NURALITE
THE FLAT ROOF EXPERTS

Nuralite Waterproofing Ltd.
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FAX: (64) (9) 579-5136
email: info@nuralite.co.nz
web: www.nuralite.co.nz

PRODUCT:	**NURAPLY 3PC WITH ASPHALT TOPPING**				
DESCRIPTION:	NURAPLY 3PC UPSTAND BEHIND CAVITY				
SCALE:	NTS	PREVIOUS DWG No:	New	DWG No:	**CPP-.A1**
REVISION:	Rev F	DATE:	MAY 16		

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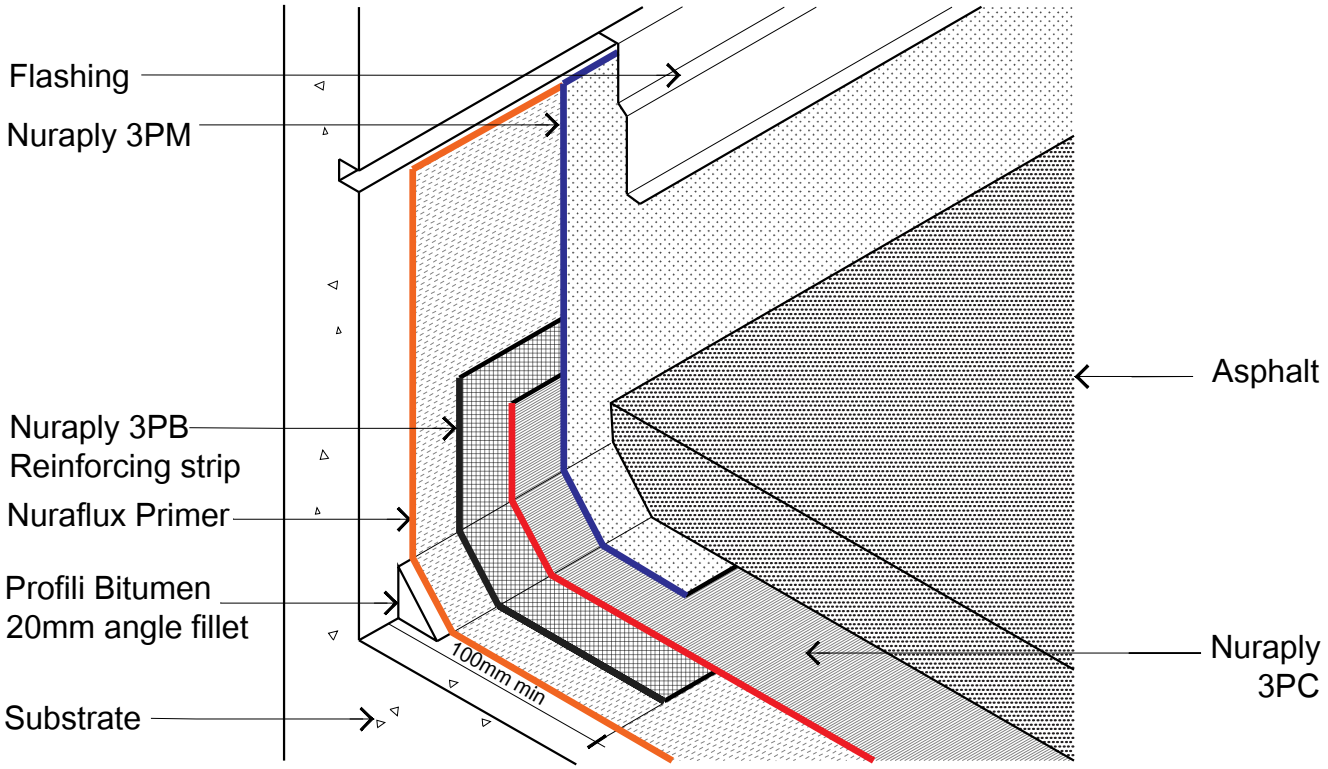

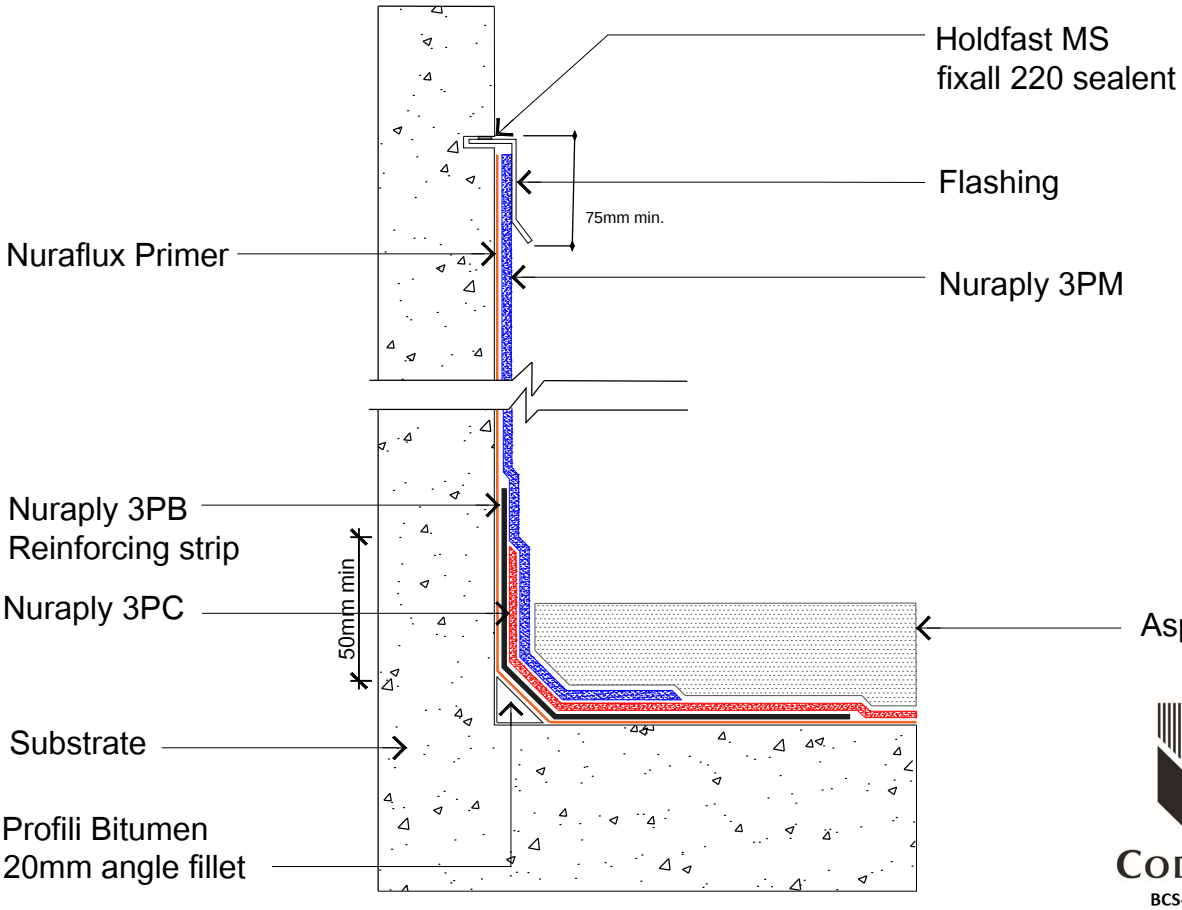

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web: www.nuralite.co.nz

PRODUCT:	**NURAPLY 3PC WITH ASPHALT TOPPING**				
DESCRIPTION:	NURAPLY 3PC INTO CHASE				
SCALE:	NTS	PREVIOUS DWG No:	New	DWG No:	**CPP-.A2**
REVISION:	Rev F	DATE:	APR 14		

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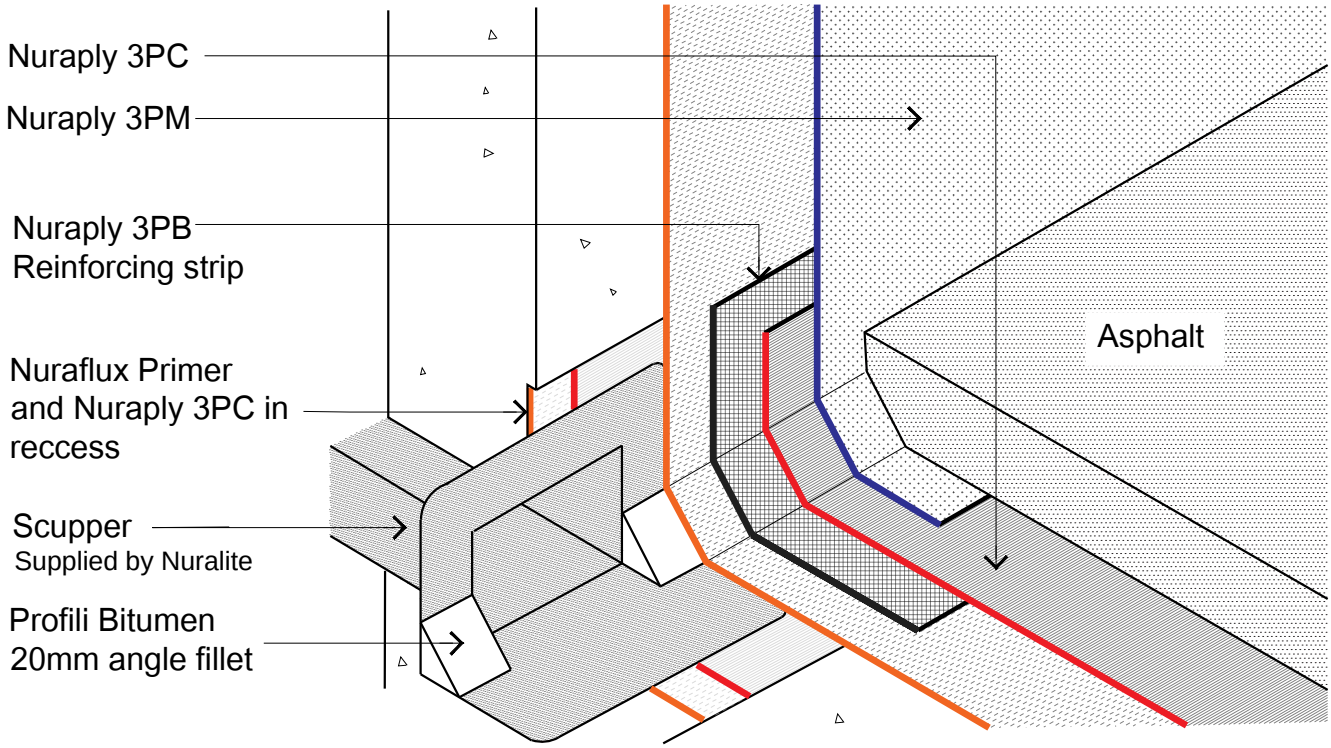

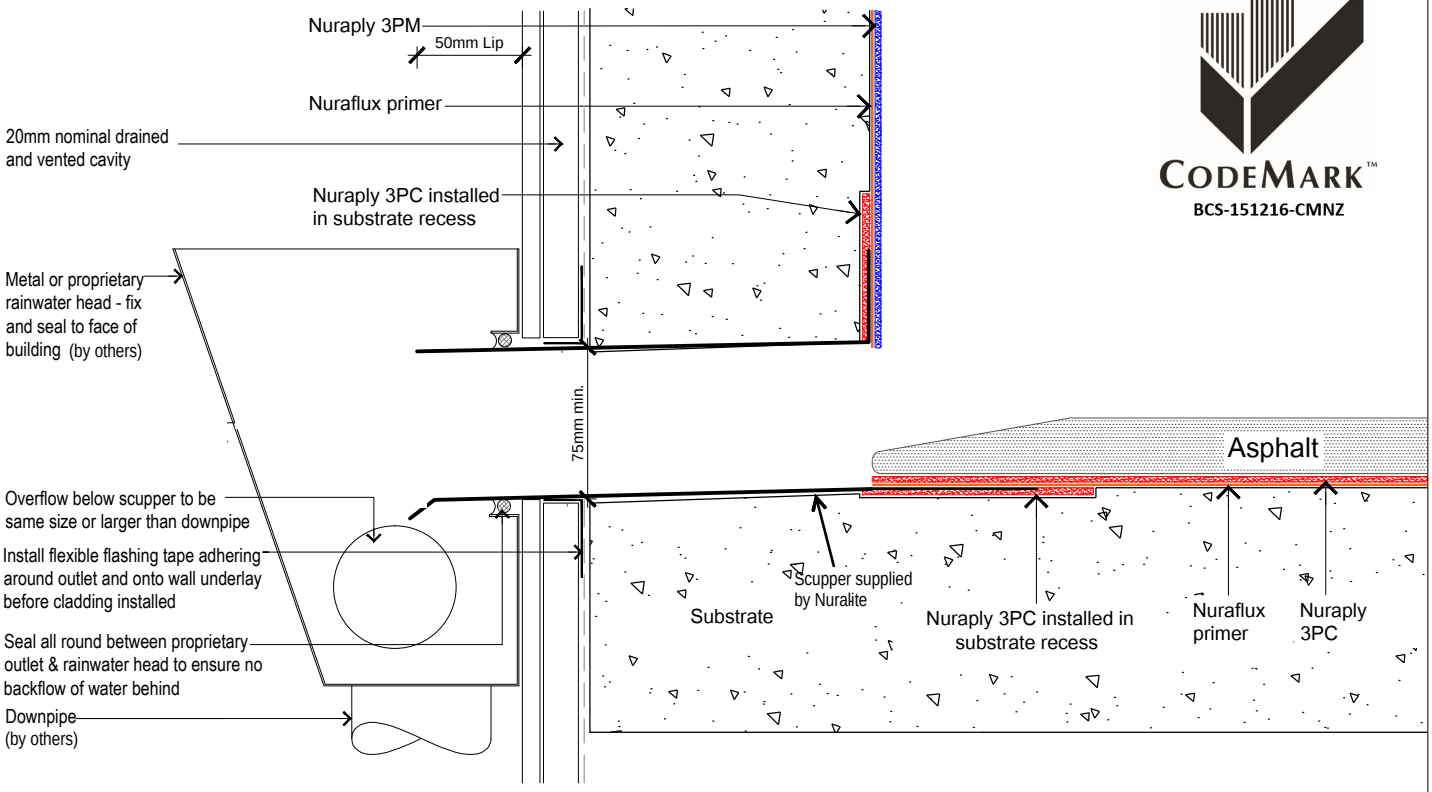

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PRODUCT:	**NURAPLY 3PC WITH ASPHALT TOPPING**				
DESCRIPTION:	NURAPLY 3PC SCUPPER DETAIL				
SCALE:	NTS	PREVIOUS DWG No:	New	DWG No:	**CPP.A3**
REVISION:	Rev F	DATE:	APR 14		

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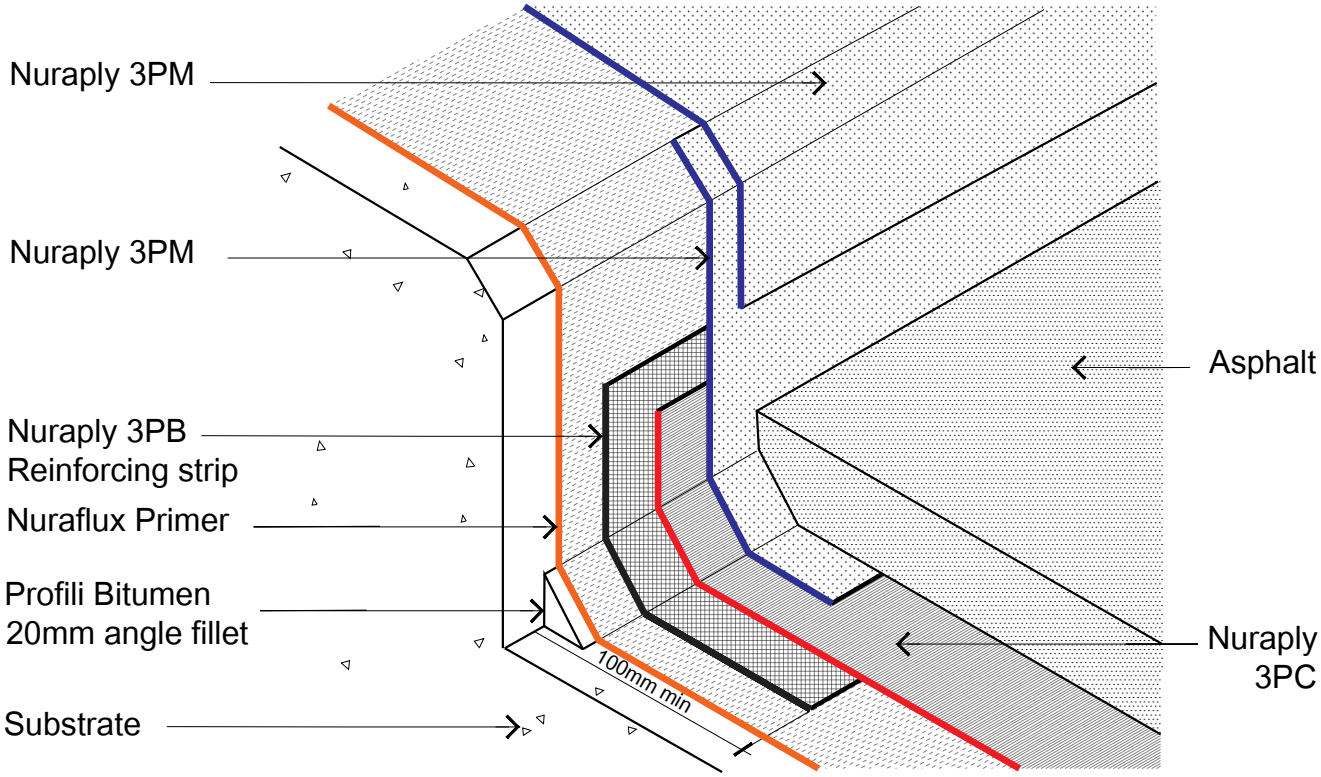

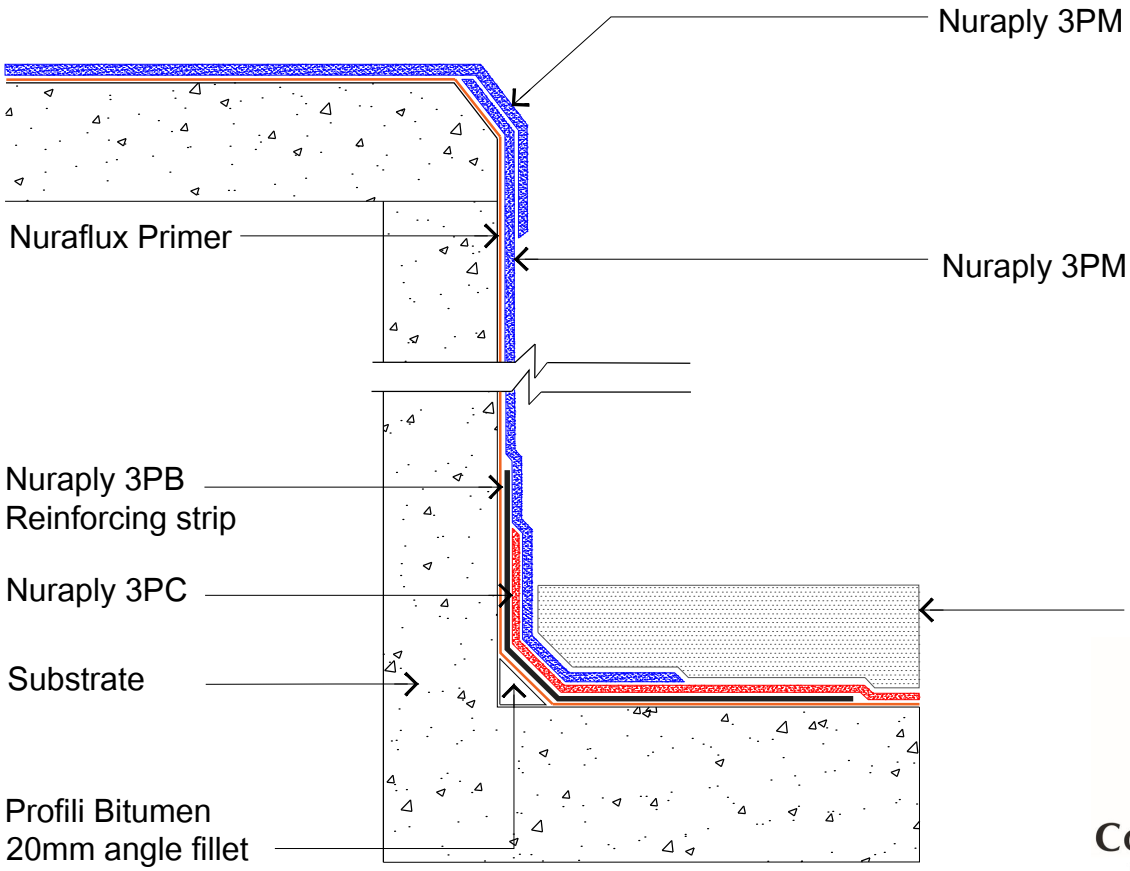

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web: www.nuralite.co.nz

PRODUCT:	NURAPLY 3PC WITH ASPHALT TOPPING				
DESCRIPTION:	NURAPLY 3PC PARAPET				
SCALE:	NTS	PREVIOUS DWG No:	New	DWG No:	CPP. A4
REVISION:	Rev F	DATE:	APR 14		

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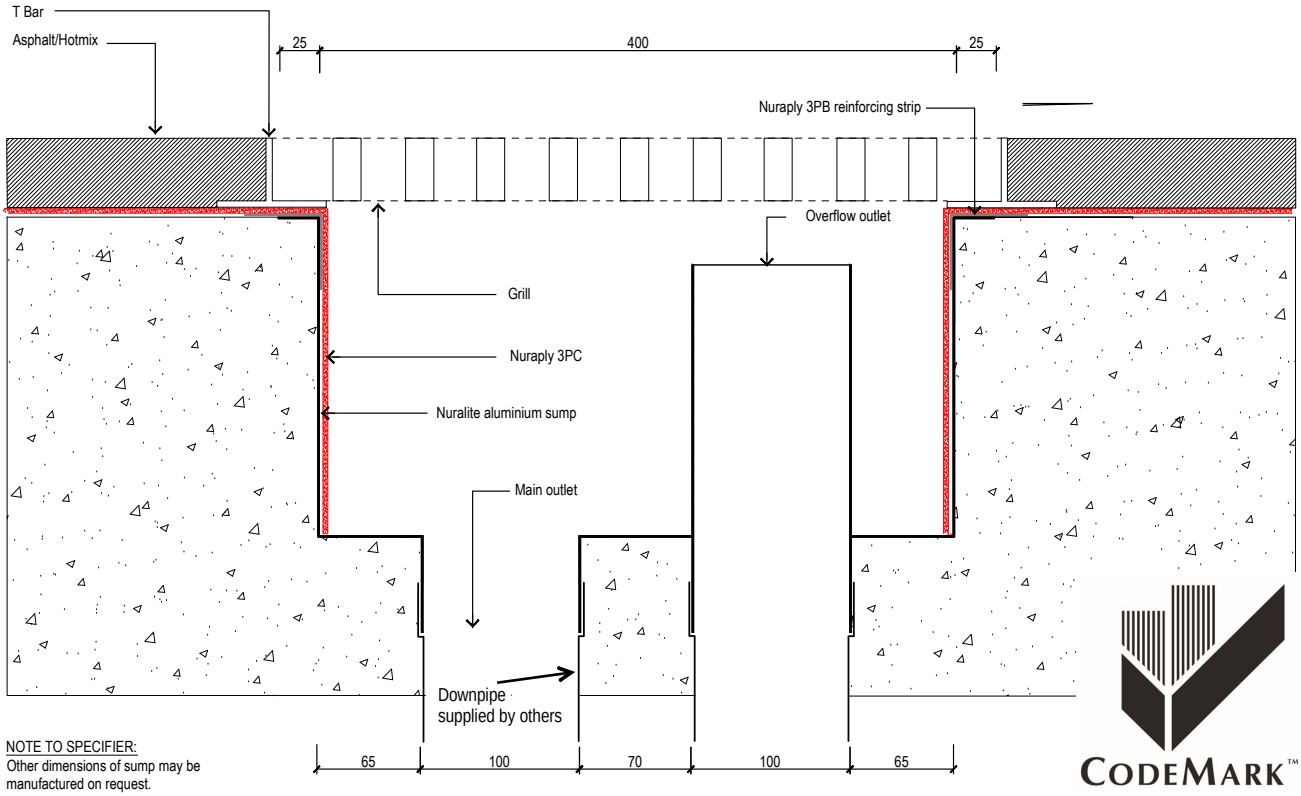

NOTE TO SPECIFIER:
Other dimensions of sump may be manufactured on request.

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PRODUCT: NURAPLY 3PC WITH ASPHALT TOPPING
DESCRIPTION: CAR PARK - SUMP WITH GRILL
SCALE: NTS | PREVIOUS DWG No: New | DWG No: CPP.B2
REVISION: Rev D | DATE: APR 14

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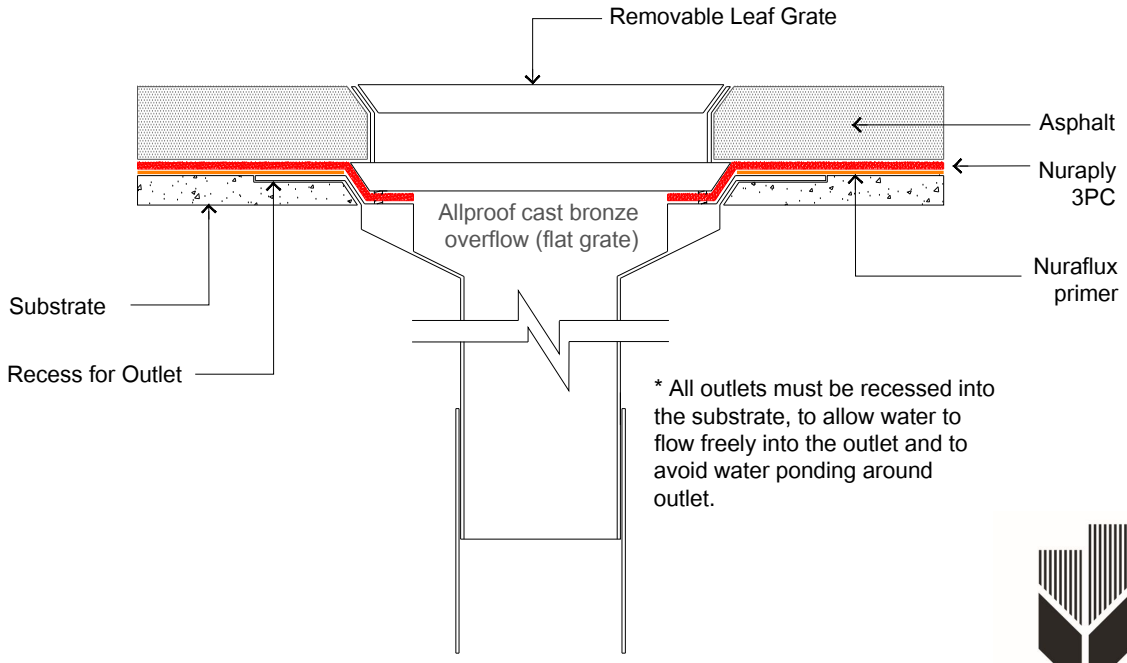

* All outlets must be recessed into the substrate, to allow water to flow freely into the outlet and to avoid water ponding around outlet.

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PRODUCT: NURAPLY 3PC WITH ASPHALT TOPPING
DESCRIPTION: ALLPROOF CAST BRONZE DECK DRAIN OUTLET
SCALE: NTS | PREVIOUS DWG No: New | DWG No: CPP. B1
REVISION: Rev F | DATE: APR 14

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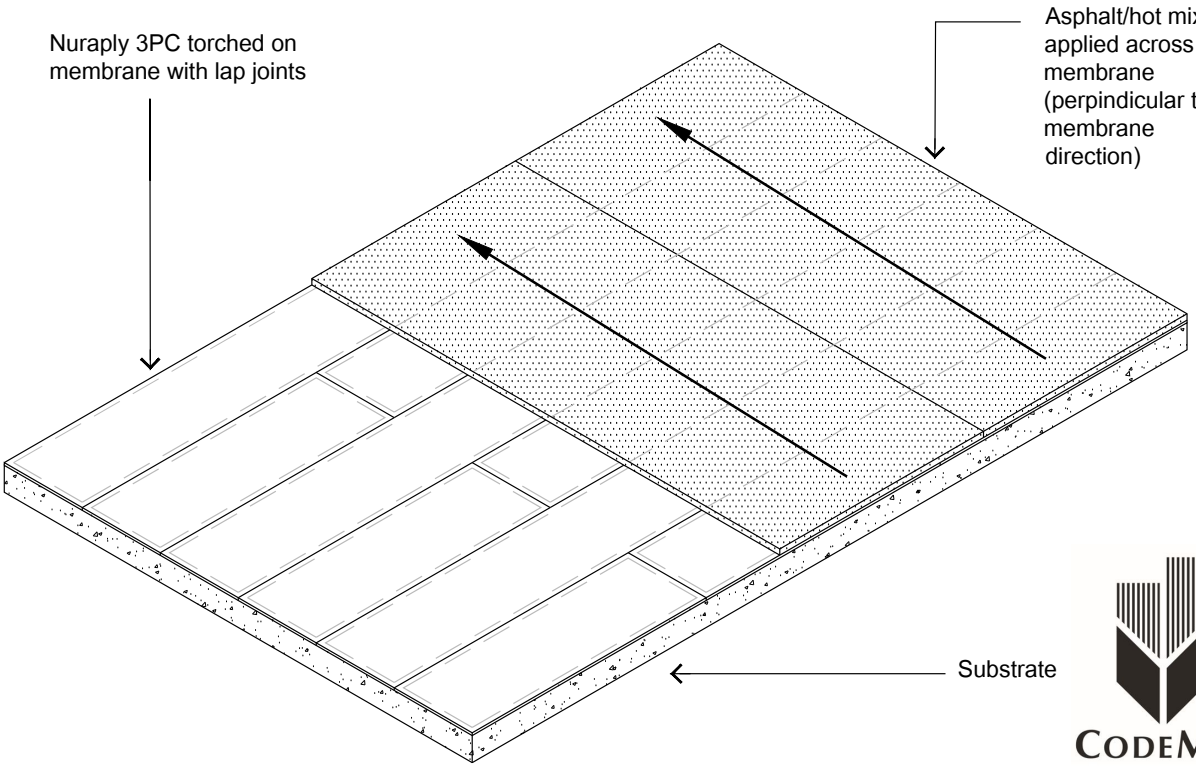

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web: www.nuralite.co.nz

PRODUCT: NURAPLY 3PC WITH ASPHALT TOPPING
DESCRIPTION: MEMBRANE AND ASPHALT/HOTMIX APPLICATION DETAIL
SCALE: NTS | PREVIOUS DWG No: New | DWG No: CPP.C1
REVISION: Rev B | DATE: APR 14

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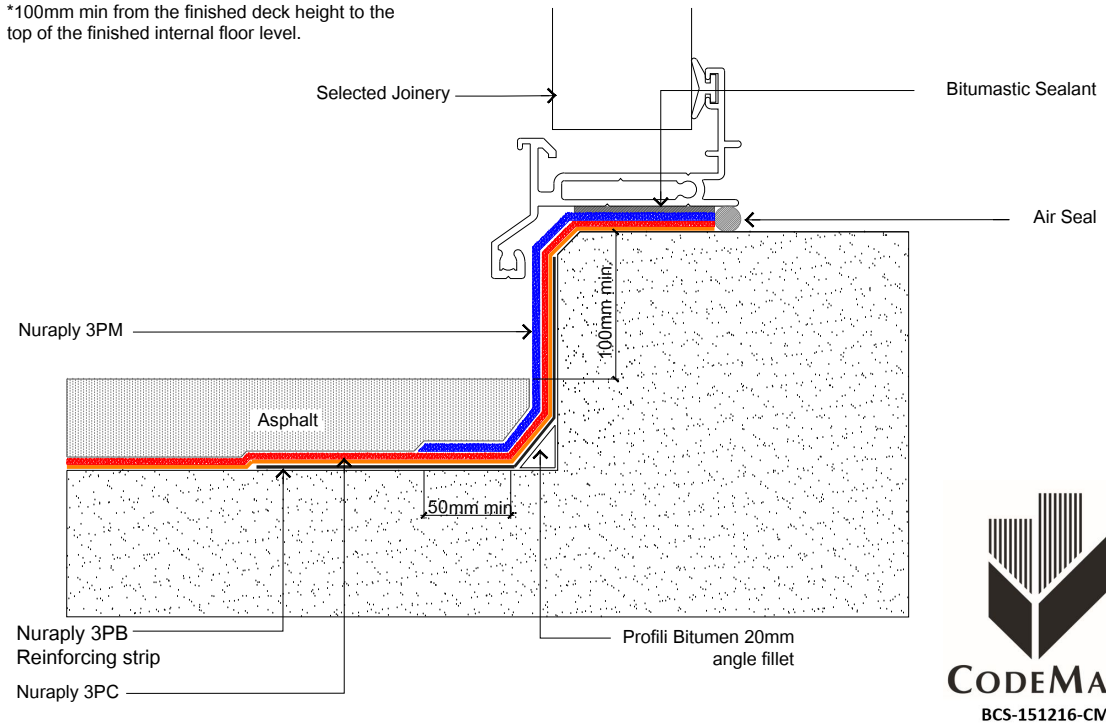

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PRODUCT: NURAPLY 3PC WITH ASPHALT TOPPING
DESCRIPTION: DOOR SILL TRANSITION
SCALE: NTS | PREVIOUS DWG No: New | DWG No: CPP. B3
REVISION: Rev F | DATE: APR 14

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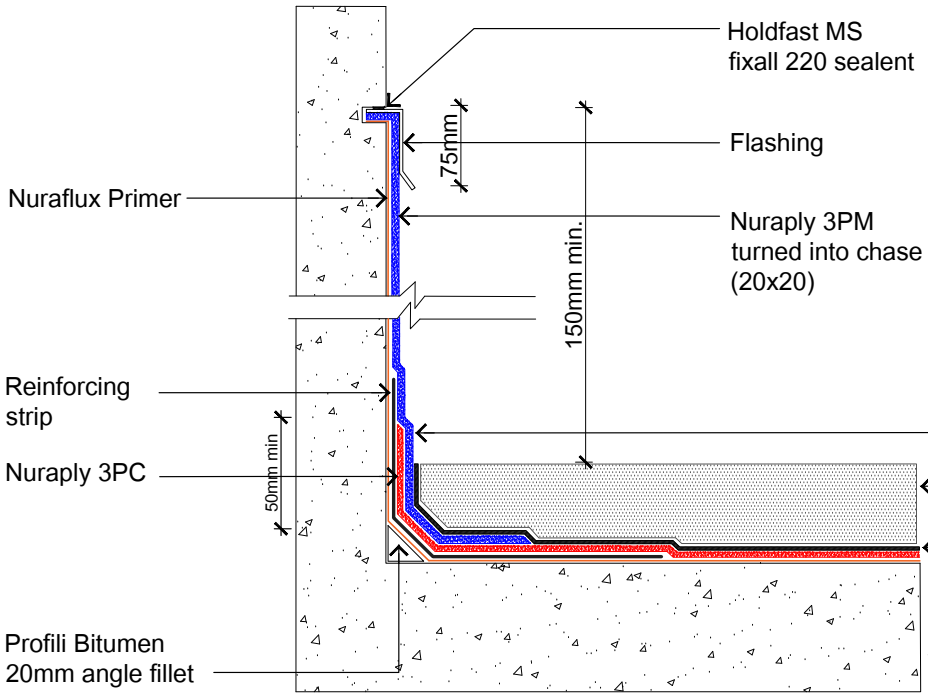

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PRODUCT:	NURAPLY 3PC WITH CONCRETE TOPPING
DESCRIPTION:	NURAPLY 3PC INTO CHASE
SCALE: NTS	PREVIOUS DWG No: New
REVISION: Rev D	DATE: APR 14
DWG No:	CPP-.D2

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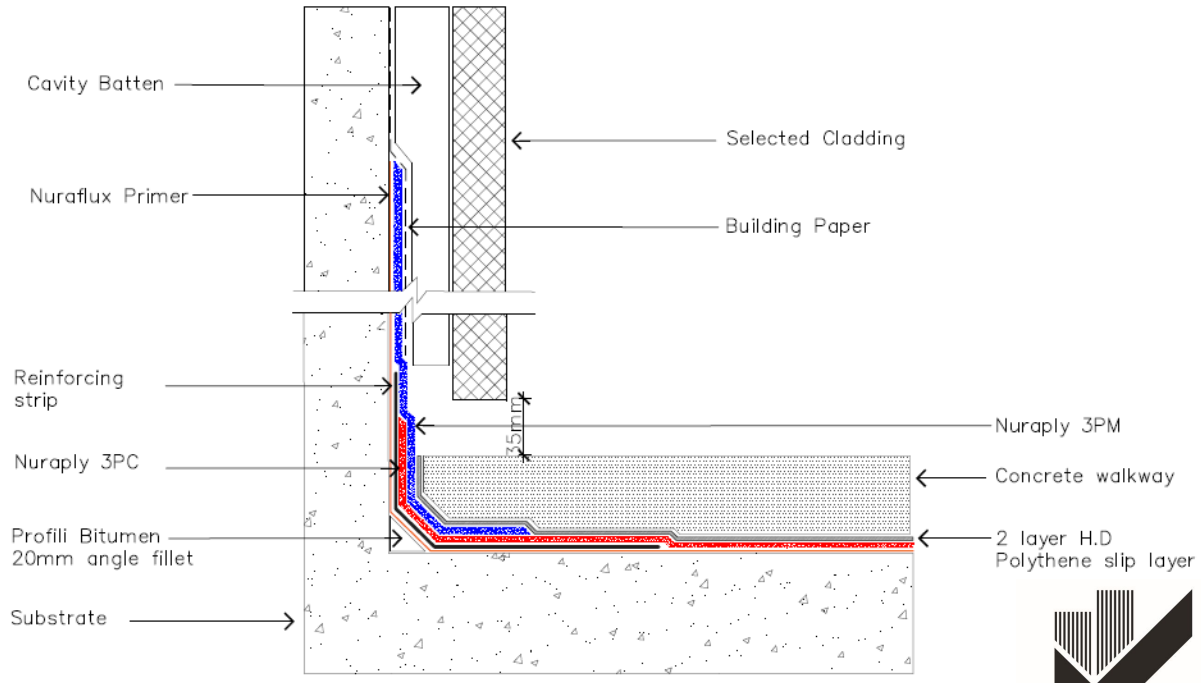

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PRODUCT:	NURAPLY 3PC
DESCRIPTION:	NURAPLY 3PC UPSTAND BEHIND CAVITY
SCALE: NTS	PREVIOUS DWG No: New
REVISION: Rev F	DATE: MAY 16
DWG No:	CPP-.D1

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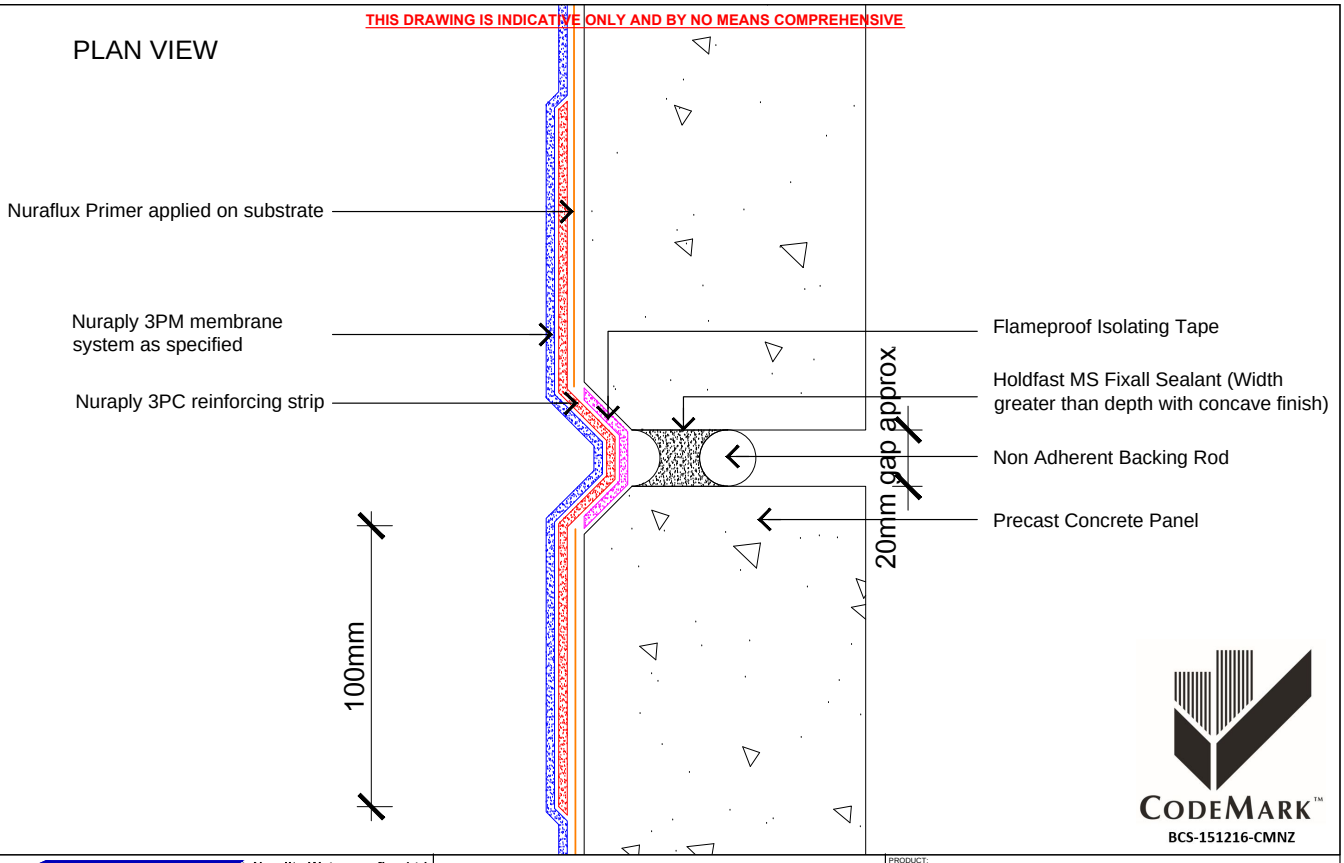
PLAN VIEW



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PRODUCT:	NURAPLY 3PC
DESCRIPTION:	PRECAST PANEL - MINOR EXPANSION JOINT/TANKING
SCALE: NTS	PREVIOUS DWG No: New
REVISION: Rev A	DATE: APR 14
	DWG No: CPP-.E1

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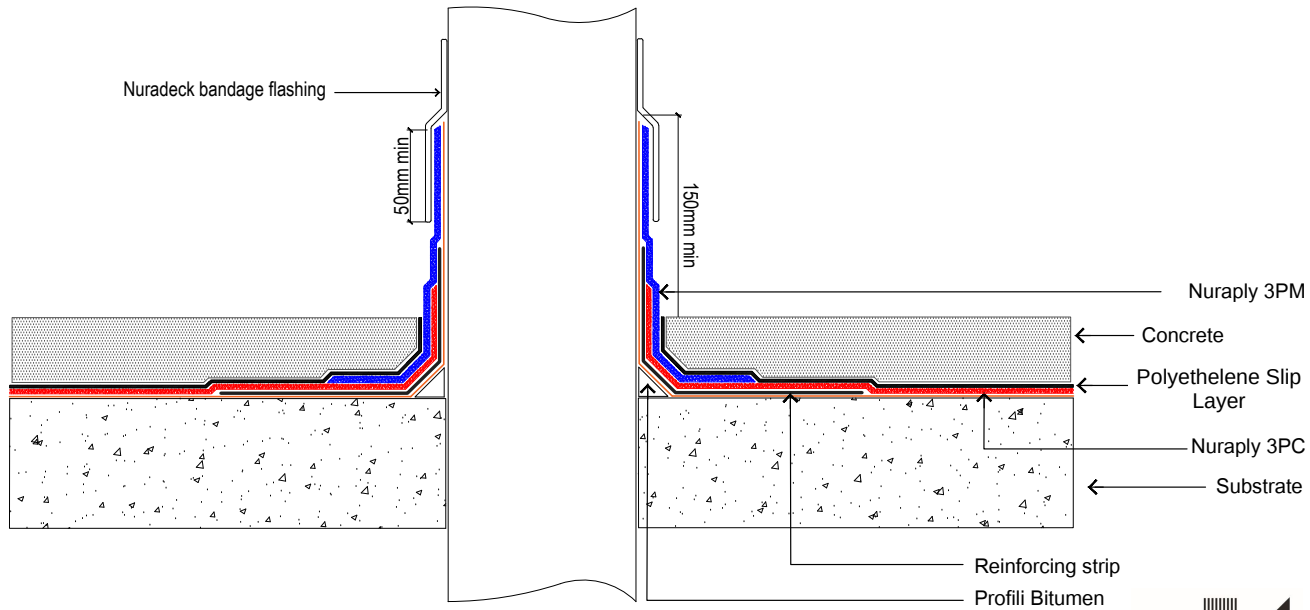

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web: www.nuralite.co.nz

PRODUCT:	NURAPLY 3PC WITH CONCRETE TOPPING
DESCRIPTION:	COLD ROOF- POST OR PIPE PENETRATION
SCALE: NTS	PREVIOUS DWG No: New
REVISION: Rev D	DATE: APR 14
	DWG No: CPP-.D3

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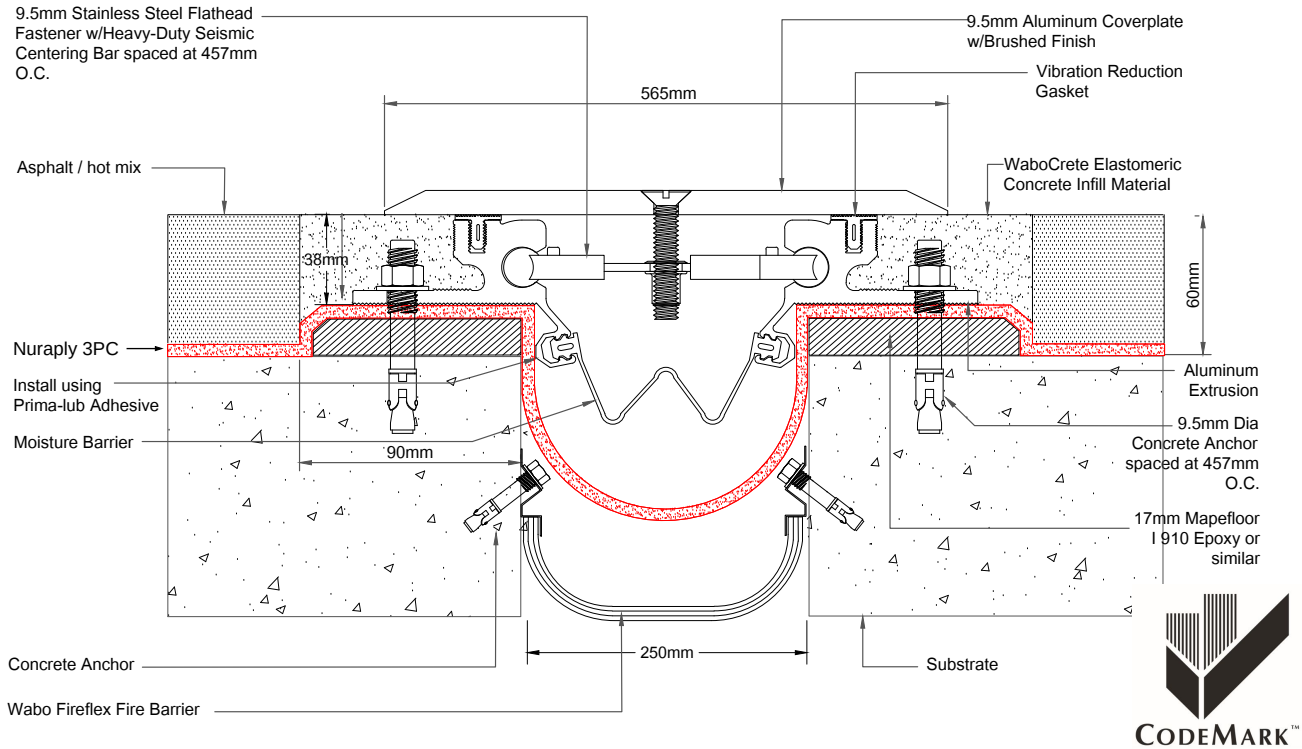

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web: www.nuralite.co.nz

PRODUCT:	NURAPLY 3PC WITH ASPHALT TOPPING			
DESCRIPTION:	WABO SEISMIC SPAN DETAIL 1			
SCALE: NTS		PREVIOUS DWG No: New	DWG No:	CPP-.F1
REVISION: Rev F		DATE: APR 14		