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GENERAL PARAMETERS

This statement describes the material requirements and application procedures for Preprufe® 300R waterproof membrane system.

Preprufe® 300R is designed as a premium quality, pre-applied protective waterproof sheet membrane. Its unique integral adhesive binds with fresh concrete to provide an exceptional bond between the concrete substrate and membrane. This enables Preprufe® 300R to be installed in blind-side applications. It is used in conjunction with Preprufe® Tape and Bituthene® LM Liquid Membrane, to provide a reliable waterproof envelope for long term protection of the structure.

The Preprufe® 300R membrane system is designed to be mindful of the environment, having very low VOC. Preprufe® 300R and Preprufe® Tape are zero VOC materials. Bituthene LM has a low VOC of 80g/L.

Preprufe® 300R is well suited for use in most areas of application in industrial, commercial, and civil design. It has been formulated using patented technology and offers the particular benefits of high tensile, tear and adhesive strengths, plus high (minimum 300%) elongation and puncture resistance. Combined with properties of methane and radon gas resistance, chemical and microbial resistance, as well as being effective in all types of soils and waters (protecting the structure from salt or acid sulphate attack), the Preprufe® 300R system provides long term protection to concrete substrates in high performance applications.

Preprufe® 300R is BBA Certified for basement Grades 2, 3 & 4 to BS 8102:1990

These properties make Preprufe® 300R suitable for areas where soil conditions are problematic and ground settlement is possible, as well as zero access situations such as confined sites and retrofit lift wells etc.

Preprufe® 300R may remain exposed for up to 42 days after application and before placement of concrete, without detrimental effect. The protective surface film of Preprufe® 300R and Preprufe® Tape must be removed before concrete is installed.

Preprufe® 300R may be installed to removable or permanent timber formwork or shuttering. All formwork and void formers installed must be appropriately designed and installed by formwork professionals and the main contractor, to resist movement and blowout during the concrete installation process. Formwork movement or blowout is beyond the control of NURALITE WATERPROOFING LTD or the waterproofing applicator and could result in separation of membrane laps leading water leakage.

The waterproofing applicator is required to follow all requirements detailed in the Project Specification, this MS, NURALITE WATERPROOFING LTD Product Data Sheets and other provided NURALITE WATERPROOFING LTD documentation relative to this project. Variances can be implemented only after consultation between the applicator, the managing contractor and the NURALITE Technical Department & acceptance of the proposed variance by the managing contractor.



PRODUCT SELECTION

- o Base slabs and basement floors
- o Basement walls
- o Tunnels
- o Lift pits
- o Tanks

PREPARATION

Substrate Suitability

All substrates provided must be regular, smooth and stable with no gaps, voids or irregularities greater than 12mm wide or 12mm deep. Substrates must be designed by the main contractor, architect or substrate supplier to resist the weight and force experienced during concrete placement, without movement or deflection.

Substrate Selection

All surfaces – It is essential to create a sound and solid substrate to eliminate movement during the concrete placement process.

Horizontal Blinding

Monolithic concrete blinding slab should be used. The blinding must be free of loose aggregate and sharp protrusions.

An angular profiled blinding is recommended rather than a sloping or rounded substrate. The surface does not need to be dry before waterproof membrane application, however standing water must be removed.

Vertical - Rockwork

Rockwork shall be sound and smooth with variations less than 12mm. Protrusions larger than 12mm shall be removed.

Large voids in the rockwork surface shall be faced with shotcrete and struck smooth, level with the surrounding rock surface. Where voids are small or limited in number, patch using high strength, low shrink cementitious concrete repair mortar, finishing flush with the surrounding rock surface.

Where shotcrete or patching of rock face voids is not possible or practical, plywood, timber lagging or other lost formworks may be used as the substrate, provided they are designed with sufficient rigidity to resist deflection or movement where they span voids or are otherwise unsupported. The main contractor must be satisfied that this lost formwork is designed suitably for the purpose, based on the concrete mass of their structural design. Formwork systems must be close butted to provide full support to the membrane and be not more than 12mm out of alignment.

If formwork will be subjected to water contact, the formwork must be constructed from a water-resistant material that will not lose strength or rigidity when damp.

DETAILING

Grout all substrate penetrations for stability.

FINAL PREPARATION FOR MEMBRANE APPLICATION

Inspect substrate to verify suitability and readiness. Remove standing water from substrates.

MEMBRANE APPLICATION

Evaluate Local Conditions

Before proceeding with membrane application, determine if weather conditions will be conducive to achieving quality application. This must be determined by the applicator on site.

Guidelines follow:

a) Ambient temperature - between -4°C and 40°C.

b) Substrate temperature - between -4°C and 60°C.

c) Do not apply materials during conditions of rain, mist, fog or snow. Minor dampness or condensation to selvedge's may be removed by gentle warming with a hot air gun.

If these conditions cannot be met, application should be suspended until conditions are more favourable. Allow to cure fully before membrane application commences.

Required Equipment

Safety knife, straight edge, tape measure, spatula, scrapers, edge roller, brushes, broom, empty pail, clean rags, vacuum or blower.

Preprufe® 300R Application

General

Preprufe® 300R shall be applied at temperatures of -4°C or above. During cold or damp conditions, the selvedge and tape adhesive can be gently warmed using a hot air gun or similar to remove moisture or condensation and improve initial adhesion.

Horizontal Substrates

Place the Preprufe® 300R membrane HDPE side to the substrate with coated adhesive side facing towards the concrete pour. (To identify which side is which, Preprufe has a thin, removable, clear plastic release liner film on the adhesive side. This release liner film should face the concrete pour.)

End laps should be staggered to avoid a build-up of layers. Leave plastic release liners in place until overlap procedure is completed.

Accurate position succeeding sheets to overlap the previous sheet 75mm along the marked selvedge.

Ensure the underside of the succeeding sheet is clean, dry, and free from contamination before attempting to overlap. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller.

Immediately remove completely the plastic release liner from the Preprufe® 300R surface. Any initial tack will quickly disappear.

Vertical Substrates

Mechanically fasten the membrane vertically using fasteners appropriate to the substrate with the adhesive (plastic release film) side facing towards the concrete pour. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten such as a termination bar or by fixing 50mm below the top edge using large flat headed fasteners or fasteners with washers to spread the load. Fixings can be made through the selvedge so that membrane lays flat and allows firmly rolled overlaps. Immediately remove completely the plastic release liner from the Preprufe® 300R surface.

Any initial tack will quickly disappear. Fixings not made through the selvedge must be

covered with a 100mm x 100mm patch of Preprufe® Tape. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap.

Overlaps

Selvedge Overlaps - Roll all overlaps firmly to ensure a watertight seal. Roll Ends and Cut Edges – Overlap all roll ends and cut edges by a minimum 75mm and ensure the area is clean and free from contamination. Clean the surface with a damp cloth if necessary. If contamination is present and cannot be removed by damp cloth, consult the NURALITE Technical Department.

Allow to dry and apply Preprufe® Tape centred over the lap and roll firmly. Immediately remove completely the plastic release liner from the Preprufe® Tape.

Installation of membrane to Internal and External Corners

When installing membrane to internal or external corners, follow the forming procedure show at the end of this section.

Penetrations

Use the following steps to seal around penetrations such as service pipes, piles, lighting conductors, bolts etc.

Grout around the penetration if the penetration is not stable. Scribe membrane tight to the penetration. If the membrane is not within 12mm of the penetration, apply Preprufe® Tape to cover the gap.

Wrap the penetration with Preprufe® Tape by positioning the tape 12mm above the membrane. Mix and apply Bituthene® LM around the penetration using a 20mm fillet to form a watertight seal between the Preprufe® 300R membrane and the Preprufe® Tape.

Treatment of Expansion Joints

Preparation

Determine precise location of waterstop and mark by stringline on the adhesive surface of the Preprufe® 300R.

Install External Waterstop

Apply Bitustik® Tape Super along the previously marked location for the waterstop. Install Swellseal 2010® external waterstops to the Bitustik® Tape, as required by waterproofing design. Waterstop shall be installed to form a continuous, unbroken waterstop. Waterstop joins shall be heat welded and detailed using Swellseal® Mastic WA if required to ensure waterproof continuity.

Treatment of Construction Joints

Preparation

Clean the concrete surface from the previous pour to remove dirt, dust, concrete waste, concrete protrusions, contamination. Dry the concrete surface to remove all surface water

Install External Waterstop

To smooth finished concrete surfaces, install Swellseal® 2010SW (saltwater grade) Hydro-swelling rubber waterstop. Fix securely to concrete by pinning. Overlap joins by a minimum 100mm. To irregular concrete surfaces, gun Swellseal® Mastic WA to the concrete surface as a 10mm bead. Concrete must be dry or slightly damp, but not wet,



prior to Swellseal® Mastic WA application. Bed the Swellseal® 2010SW waterstop into the Swellseal® Mastic WA and fix securely by pinning. Overlap joins by a minimum 100mm.

Minimum concrete cover must be 75mm. Use Swellseal® Mastic WA to detail corners or as a gap filler. Any damaged sections shall be removed and repaired with either a new section of waterstop or a 20mm x 10mm bead of Swellseal® Mastic WA. As additional protection, Swellseal® Mastic WA may be used to form a secondary waterstop around and between reinforcing starter bars.

Junction with Associated Waterproof Membranes after Concrete Placement

Bituthene Sheet Membranes

Apply Bituthene® 3000 self-adhesive sheet membrane onto the previously installed Preprufe® 300R, to overlap a minimum 150mm. Roll firmly to facilitate overlap bond and then seal the perimeter edge of Bituthene® 3000 with a 2.5mm thick x 150mm application of Bituthene® LM.

REPAIR OF DAMAGED MEMBRANE

Repair damage by wiping the membrane surface with a damp cloth to ensure the area is clean and free from contaminants. Allow to dry. Apply Preprufe® Tape centred over the damaged area and pressure roll firmly.

Any areas where Preprufe® adhesive has been damaged shall be covered with Preprufe® Tape. Remove plastic release liner from the tape. Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and cover with fresh Preprufe® Tape, rolling firmly. Alternatively, gently use a hot air gun or similar to activate adhesive and firmly roll the lap to achieve a watertight seal.

INSPECTION

Inspect Installed Membrane and Waterstops

Prior to release of membraned area to other trades, carryout the following visual examinations to confirm membrane integrity.

1) All membrane has been applied to correctly engineered blinding or formwork.

2) Any membrane damage sustained has been repaired using Preprufe® 300R and Preprufe® Tape.

3) All membrane has been installed with plain surface to blinding/formwork and adhesive surface facing to receive concrete.

4) All plastic release film has been fully removed from Preprufe® 300R and Preprufe® Tape.

5) All selvedge's have been overlapped by the correct amount and align with the selvedge guide marks printed on the Preprufe® 300R.

6) All selvedge overlaps are fully sealed, without wrinkles or fishmouths and have been pressure rolled.

7) All end laps and cut edge laps have been sealed using Preprufe® Tape and have been pressure rolled.

. 8) All corners are formed correctly and cut edges sealed using Preprufe® Tape and have been pressure rolled. Corner folds shall be well creased and cleanly folded.

9) All fastener penetrations have been patched using 100mm x 100mm patches of Preprufe® Tape and the patches have been pressure rolled.

10) Surface of Preprufe® is largely clean, free of all ponded water, concrete splashes or other contaminants.

11) All penetrations are detailed and sealed using Preprufe® Tape and Bituthene® LM.

12) All Bituthene® LM applications are cured and non tacky.

13) Expansion joint waterstops are located as per specification requirements,

undamaged, firmly bonded to the Preprufe® membrane and joined in a watertight manner. 14) Construction joint waterstops are located as per specification requirements, undamaged and firmly fixed to substrate.

If all examination parameters above are met, the area may be released for reinforcing installation etc.

After reinforcing installation is complete, make a final examination to identify membrane damage that may have been sustained by other trades. Any damage identified must be rectified prior to concrete placement.

In addition, immediately prior to concrete placement, ensure the membrane surface is free from standing water.

PLACEMENT OF CONCRETE

Concrete Placement Internal

Concrete shall be poured within 42 days of membrane application.

Concrete Placement External

Concrete must be placed and compacted carefully to avoid damage to the membrane. Compaction must be thorough if full waterproof integrity and membrane to concrete bond is to be achieved.

REMOVAL OF FORMWORK

Preprufe® 300R can be applied to removable formwork, such as slab perimeters, elevator and lift pits etc. Formwork must remain in place until the poured concrete has gained sufficient compressive strength to develop the surface bond.

A minimum concrete compressive strength of 10 N/mm² is recommended prior to stripping formwork supporting Preprufe®. Premature stripping may result in displacement of the membrane and/or spalling of the concrete.

As a guide, a structural concrete mix with an ultimate strength of 40 N/mm², will require a concrete cure time of approximately 6 days at an average ambient temperature of 4°C, or 2 days at 21°C.

APPLICATION RECORDS

Inspection Test Plan

The applicator must maintain records for future reference, including a photographic record of each stage of application.

The application manager should draw up an ITP covering the records required, that can be used and completed by the applicators.

As a minimum requirement the following records must be maintained:

- 1) Application area
- 2) Lot numbers of all materials used
- 3) Substrate condition and faults identified
- 4) Method of rectification (by others)
- 5) Waterproofing issues, faults and rectifications raised during the application
- 6) Post application examination results:
- All membrane has been applied to correctly engineered blinding or formwork.

- Any membrane damage sustained has been repaired using Preprufe® 300R and Preprufe® Tape.

- All membrane has been installed with plain surface to blinding/formwork and adhesive surface facing to receive concrete.

- All plastic release film has been fully removed from Preprufe® 300R and Preprufe® Tape.

- All selvedges have been overlapped by the correct amount and align with the selvedge guide marks printed on the Preprufe® 300R.

- All selvedge overlaps are fully sealed, without wrinkles or fishmouths and have been pressure rolled.

- All end laps and cut edge laps have been sealed using Preprufe® Tape and have been pressure rolled.

- All corners are formed correctly and cut edges sealed using Preprufe® Tape and have been pressure rolled. Corner folds shall be well creased and cleanly folded.

- All fastener penetrations have been patched using 100mm x 100mm patches of

Preprufe® Tape and the patches have been pressure rolled.

- Surface of Preprufe® is largely clean, free of all ponded water, concrete splashes or other contaminants.

- All penetrations are detailed and sealed using Preprufe® Tape and Bituthene® LM.
- All Bituthene® LM applications are cured and non tacky.

- Expansion joint waterstops are located as per specification requirements,

undamaged, firmly bonded to the Preprufe® membrane and joined in a watertight manner. - Construction joint waterstops are located as per specification requirements,

undamaged and firmly fixed to substrate.

7) Inspection for damage to waterproofing following reinforcing placement.

8) Inspection immediately prior to concrete placement.

Jubstiate	concrete	
Substrate Comments	Insitu concrete to be cured before application of Bituthene - Min 28 days	
Adhesive/Primer		
Bituthene primer	Yes	
Basesheet		
Bituthene	Yes	
Preprufe	No	
Capsheets		
Nuraply 3PTM	Yes	

SAFE2TORCH CHECK LIST (PRIOR TO BASE SHEET INSTALLATION)

It is recommended that anyone preparing a specification or applying a membrane should complete this check sheet and if any boxes are ticked avoid the use of a direct torch-on application in these areas.

Project name:	
Form completed by:	
Company:	
Area ready:	
Applicator	

Decks and Insulation	X / 🗸
Timber / Other combustible materials.	
Metal deck (refurbishment) where old materials may accumulate in the troughs.	
Insulation – unless specifically designed and tested for use with torch-on membranes.	

Details Χ/√ Expansion joints with voids and/or combustible fillers. Bitumen or timber fillets. Detail under all abutments to roof tiles, slates, and roofing iron. All timber substrates. Change in level details with fixed timber or plastic facias and/or all soffits, gutters or restricted spaces. Windowsills and frames, door sills, louvered vents, air ducts, intakes, and outtakes. Junctions to existing waterproofing with flammable insulation/deck materials. Vulnerable plastic curbs, domes, pipes, and the like. Working when in close proximity to potentially flammable coatings and shrinkwrap. Cladding and roofing underlays. Working in close proximity to stored chemicals, flammable liquids and explosives. Existing weathering components with concealed flammable materials? X / v Timber, DPC or sarking membranes beneath fixed metal capping systems. Existing kitchen extraction plant coated in oils or fats. Flammable wrapping to trunking/ducting/bitumen sheet rolls and roll inserts. Timber cladding. Existing metal or plastic copings/capping's.

Notes

Signed:

Date:



BITUTHENE®/PREPRUFE® CONCRETE SUBSTRATE READINESS CHECKLIST

Project name:	
Form completed by:	
Company:	
Area ready:	
Applicator	

	Х /√
Concrete cured with curing membranes removed. Concrete substrate contains less than 5% moisture content.	
Cavities and cracks filled with repair mortar, flushed off and cured.	
Waterstop installed to construction joints as per specification – located 75mm from rebar.	
Concrete surface firm with any soft concrete or laitance removed.	
All protrusions removed. Surface free from foreign matter.	
Mortar or 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:

Date:



BITUTHENE®/PREPRUFE® INSTALLED PRODUCT CHECKLIST ON CONCRETE SUBSTRATE

Project name:	
Form completed by:	
Company:	
Area ready:	
Applicator	

	Х /√
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°.	
All corners and upstands incorporate reinforcing or under flashing.	
Under-slab membrane extends beyond footing and protected until vertical membrane installed.	
Side laps and end laps fully bonded and seamed. Bleed visible on all joints where applicable.	
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 protection boards installed correctly.	
Membrane fully adhered to substrate with no bridging, bubbling, or delaminating.	
Overall installation free of wrinkles, bubbles, creases, and splits.	

Notes

Signed:

Date:



BITUTHENE[®]/PREPRUFE[®] CHECKLIST FOR PROJECT SIGNOFF

Project name:	
Form completed by:	
Company:	
Area ready:	
Applicator:	
Product used:	

Х /√

Under flashings installed to all corners and upstands.	
Drains & overflows installed to specification and watertight.	
Nuraflux adhesive used in correct quantities. Membrane fully adhered to substrate with no evidence of bubbles or lifting.	
In two-layer system, Cap sheet and base sheet fully bonded together, no areas of delamination.	
Cap sheet side laps and end laps fully bonded 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.	
All penetration details completed to specification including under/over flashing.	
All non standard details installed as per pre-approved specifications. (attach approved drawing)	
Any damage to cap sheet repaired to specification.	

Remedial action required:

Signed:	
Date:	

The information in this product Method Statement is based on Nuralite Waterproofing Ltd experience and testing. It represents the latest information available at the time of printing, but no guarantee of its accuracy is made or implied, nor responsibility taken for use to which this information may be put. We reserve the right to alter or up-date information parameters and formulations at any time without notice.



Preprufe 300R







September 2020























