Preprufe® Plus

Application Manual

GRACE

do's & don'ts

of applying **Preprufe® Plus**

Please turn over

Preprufe® - Some Do's & Don'ts

Don'ts

1. Do not use a protection screed over Preprufe® Plus The membrane is designed to bond to structural concrete.
2. Do not use as pond or tank liner.
3. Do not use Preprufe® Plus for installation in concrete infilled hollow block wall construction. Preprufe® Plus is designed for use with reinforced concrete designed for a maximum crack width of 0.6mm.
4. Avoid curved shapes for permanent formwork and blinding otherwise extensive cutting and folding of the Preprufe® Plus will be necessary. Angular formwork will generally be easier for use with Preprufe® Plus.
5. Do not try to bond the selvedge if the Preprufe® Plus is wet. A hot air gun can be used to dry the selvedge.
6. Do not use staples to fix Preprufe® Plus to temporary formwork.
7. Do not allow water to pond beneath the Preprufe® Plus prior to concreting - can lift to the membrane and damage the joints.
8. Do not 'mix & match' Grace waterproofing membranes with membranes from other manufacturers except with prior agreement with both companies.
9. Do not allow the vibrator to come into contact with Preprufe® Plus - can damage the membrane.
10. Do not apply Shotcrete to Preprufe® Plus.

Do's

1. Use flush fixings to fix Preprufe® Plus to permanent formwork.
2. Place flush fixings through the Preprufe® Plus selvedge to enable them to be covered by the next overlapping sheet.
3. Where fixings are made to secure vertical Preprufe® Plus to temporary formwork, 40 mm clout nails should be used, 20 mm being left exposed to provide an anchor for the nail during striking of the formwork.
4. Seal fixings with 2 layers of Preprufe® tape where fixings have been placed through the membrane into blinding but not overlapped.
5. Firm fold Preprufe® Plus at 90° changes in direction to allow maximum contact with the substrate.
6. Extend the Preprufe® Plus beyond the starter bars rather than the edge of the stop-end formwork to ensure easy overlapping of the adjacent bay Preprufe® Plus.
7. Stop the Preprufe® Plus minimum 50 mm below top of concrete surface on temporary (removable) formwork.
8. Use Preprufe® Tape at all overlaps including the adhesive selvedge when the ambient application temperature is expected to fall below 0°C.
9. Seal 'Fish Mouth' openings i.e. where the overlapping Preprufe® Plus has not stuck to the layer beneath should be sealed, with Preprufe® Tape.
10. Air lance debris away immediately prior to concreting unless there has been a heavy build up of mud on the Preprufe® Plus in which case use a high pressure water hose and air lance.
11. Repair damage to the Preprufe® Plus membrane before concreting.
12. Remove surplus water from the excavation to be concreted.
13. Check all the release liner has been removed before concreting.
14. Remove grout spillage on Preprufe® Plus as it can locally inhibit the bond of fresh concrete placed on it.
15. Ensure that correct concreting and vibrating practices are observed during concreting.
16. Concrete with pfa, additives and admixtures can be used with Preprufe® Plus.
17. Wait until the concrete strength is 10 N/mm^2 before striking the formwork.

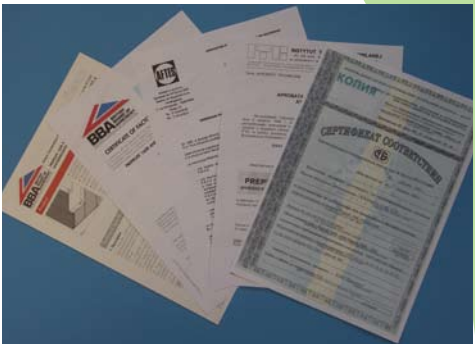
Contents

Preprufe® Plus waterproof membranes are composite sheets comprising a robust HDPE backing, a pressure sensitive adhesive and a trafficable weather resistant coating. Uniquely, the membrane develops a continuous adhesive bond to concrete poured against it. This prevents water migration between the structure and the membrane, substantially reducing the risk of leaks and minimising the risk of aggressive salts in solution reaching the structural concrete.

Grace Construction Products can provide a list of applicators, trained by Grace in the installation of Preprufe® Plus.

Applications

- Water and vapour proofing all basement grades to BS 8102:1990
- Waterproofing civil engineering substructures.
- Methane, carbon dioxide and radon gas protection in excess of the standard membrane requirements in BRE Reports 211 (Radon) and 212 (Methane and Carbon Dioxide).
- Protection of reinforced concrete structures in aggressive ground conditions.



Independent Assessments

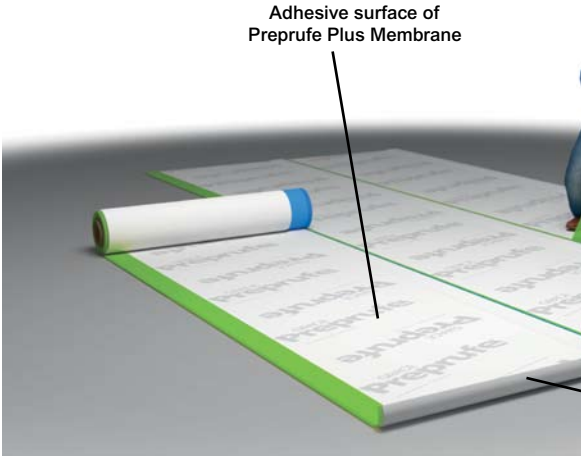
- BBA Certificate No. 97/3325
- CE Certificate No. 09/F017
- Mott MacDonald Special Services Report May 2001
- National Certifications available

Advantages

- Can be used beneath foundation slabs and with single or double-sided formwork systems.
- Seals adhesively to concrete cast against it.
- Easy to handle and install without special corner pieces.
- All joints have double side bonded 'selvedge' or Preprufe® Tape overlaps for leak protection.
- Unaffected by groundwater contaminants, ponded water or wet/dry cycling.
- Smooth surface membrane – site contaminants easily removed.
- Excellent chemical resistance – protects structure from salts, sulphate attack and most contaminants likely to be found in the ground.
- Requires no priming, surface conditioning or protection screeds.
- Simply installed without any mechanical lifting device or special equipment.
- No release liner. Kick out roll.

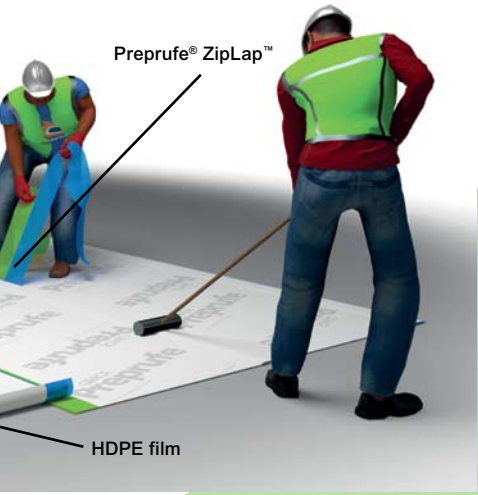
Limitations

- Preprufe® Plus should not be permanently exposed to sunlight.
- Preprufe® Plus is not intended for roof underlayments or through wall flashing applications.
- Preprufe® Plus should not be used as a pond or tank liner.
- Preprufe® Plus should not be used between concrete infilled hollow block walls.
- Preprufe® Plus is not intended to provide the main waterproofing for expansion joints.
- Preprufe® Plus is not intended for negative side waterproofing applications.
- Preprufe® Plus should not be used where in-service temperatures will exceed 65°C.
- Pour concrete within 56 days (42 days in hot climates) of installation of the membrane.



System Components

Preprufe® Plus ZipLap™ have been tested for hydrostatic head resistance to in excess of 70 m (0.7 MPa).



Product	Recommended Applications	Material Properties			
		Thickness	Roll Size	Roll Area	Weight per unit
Preprufe® 300R Plus	• Beneath sub-structure slabs > 350 mm thick. • Horizontal and vertical applications where risk of membrane damage from reinforcement placement, backfilling or other site operations is considered high.	1.2 mm	1.17 m x 31 m	36 m^2	50 kg
Preprufe® 160R Plus	• Beneath sub-structure slabs < 350 mm thick. • Vertically, against sub-structure walls with single or double sided formwork systems.	0.8 mm	1.17 m x 36.5 m	42 m^2	42 kg
Preprufe® Tape LT	• Applications at – 5°C to + 30°C. • Taping roll end laps, cut edge laps and detailing.	0.7 mm	100 mm x 15 m		2 kg
Preprufe® Tape HC	• Applications at + 10°C to + 50°C. • Taping roll end laps, cut edge laps and detailing.	0.7 mm	100 mm x 15 m		2 kg

Product	Recommended Applications	Material Properties			
		Thickness	Roll Size	Roll Area	Weight per unit
Bituthene® LM	• Liquid membrane for detailing terminations, pile caps and pipe penetrations. Application temperature 5°C and rising.				5.7 kg
Grace Protection Board	• Optional protection of Preprufe® 160R applied in double sided formwork, prior to backfilling.	3 mm	1 m x 2 m		5 kg per board
Adcor® 550 MI/T-MI	• Hydro expansive injectable waterstop for added security of concrete construction joints		5 m rolls 6 rolls/carton		13 kg
Adcor® 500S/T	• Hydro expansive waterstop for use in concrete construction joints and at pipe entries.		5 m rolls 6 rolls/carton		23 kg
AT System	• Hydro-expansive PVC co-extruded waterstop for movement and expansion joints.	**Available in shapes and configurations to suit site requirements.** **Refer to AT system Data sheet.**			

Safety data sheets for PREPRUFE® PLUS & PREPRUFE® TAPES are not required, since they are finished goods. Nevertheless, customers are provided with the information below to assist with the safe use of the product. Safety data sheets for other Grace products are available on our website: www.grace.com

First Aid Measures

- Eye Contact: Direct contact with adhesive layer may cause irritation. Rinse opened eye for several minutes under running water. Seek immediate medical advice.

Fire-fighting Measures

- Suitable extinguishing media: Water, foam, and carbon dioxide.
- Special exposure hazards: Do not breathe smoke.
- Special equipment for fire-fighters: Self contained breathing apparatus.

Handling and storage

Gloves should be worn to reduce hand contamination. Any transfer of adhesive to skin should be removed with soap and water - not solvent.

- Store in cool, dry building to prevent physical damage.

Environmental effects

Not expected to be dangerous for the environment.

- Safety Instructions are on the side of the Preprufe® cardboard container boxes and on the main can of Bituthene® LM.

Personal Protection Equipment (PPE)

Minimum recommended PPE for installers of Preprufe® Plus/ Preprufe® Tape/ Adcor® 500S/T/ Adcor 550MI/T-MI:

- Safety helmet
- Safety shoes
- Safety glasses
- Where Preprufe® is applied in bright sunlight conditions, it is advisable that tinted safety glasses be used by installers
- Gloves

Minimum recommended PPE for application of Bituthene® LM in non-confined areas:

- Long sleeved overalls
- Safety helmet
- Safety footwear
- Safety glasses/spectacles
- Gloves - long gauntlet type
- Refer to Safety Data Sheet

Full boxes of Preprufe® 160R Plus and 300R Plus require two men to lift. Alternatively mechanical lifting equipment can be used.

Wet Preprufe® with its plastic release liner in place can be slippery to walk on.

Delivery to site

Normally Preprufe® Plus is delivered to site shrink wrapped on pallets and will required mechanical equipment for offloading at site. However, small orders may be delivered as individual rolls.

Material Storage

Store Preprufe® Plus rolls vertically. Sequence deliveries to avoid delays, but minimise on-site storage. Select a safe, covered secure location for material storage for each day's use in a location that won't require movement a second time. Do not stack pallets of waterproofing on the job site. Provide cover on top and all sides.

Substrate Preparation

Concrete Blinding

Suitable substrates include:

- concrete blinding
- well compacted sand on rolled crushed stone
- rigid insulation
- clay heave boards
- permanent formwork
- removable formwork
- 19 mm plywood
- Plastic fluted protection board
- Hydroduct® drainage sheets
- Adjacent sub-structures

Compacted Sand Blinding

It is essential that the substrate is sound and solid to ensure no membrane movement during the concrete pour.

Substrates should be uniform with no gaps or voids greater than 12 mm. Where these exist fill with a material of sufficient strength to support the membrane.
All substrates must be free of loose aggregate and sharp protrusions.

Where possible, avoid sloping or rounded concrete blinding, any required change in blinding level musst be angular.

In crushed stone applications, it is important to create a sound and solid substrate around “through slab” penetrations to eliminate movement during the concrete pour. Excessive movement may jeopardise the waterproofing integrity around the penetration. Therefore grout around the penetration prior to installing the membrane.

The surface does not need to be dry, but standing water must be removed. Substrates must have sufficient rigidity not to move during the concrete pour. Boarded substrates must be close butted to provide support and not more than 12 mm out of alignment.

Removing Preprufe® Plus from the box

The following sequence indicates the recommended method for removing the Preprufe® Plus from its box.


3


4

Tools/Materials Required

- Heavy duty lap roller
- Utility knife with retractable blade (blade must be sharp).
- Tape measure
- Cotton cleaning cloths
- Plywood or similar cutting board
- Thin metal straight edge
- Chalk line
- Broom
- 2 metre long pipe or heavy broom handle
- Spiral paddle for mixing Bituthene® LM
- Heavy-duty low speed (500 rpm) drill
- Round nose trowel or spatula
- Required protection and/or drainage boards and other ancillary products

Preprufe® Plus membranes are supplied in rolls 1.17m wide with dual adhesive Preprufe® ZipLaps™ on both edges to enable fully bonded laps between adjacent rolls. All other laps must be taped with Preprufe® Tape.

Application Sequence for Slabs - Method 1 - vertically applied Preprufe® < 900 mm

1. Form internal/ external corner sections

Forming corners - refer to page 20

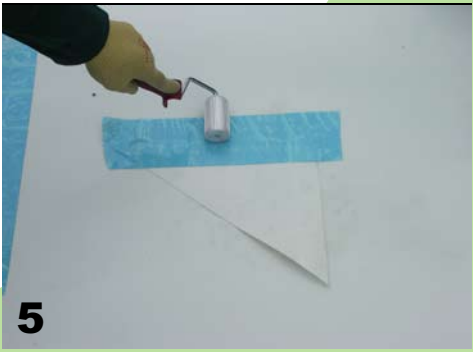
2. Install horizontal/vertical interface.

3. Place horizontal lengths

Refer to page 24

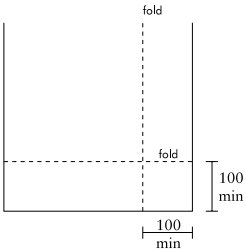
4. Remove release film

5. Inspect & repair any damage

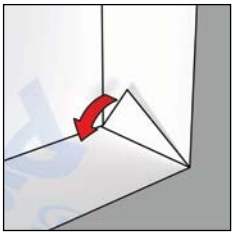


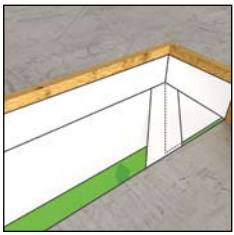
Installation - Internal & External Corners

Internal and external corners should be formed as shown in the diagrams returning the membrane a minimum of 100mm and sealing with Preprufe® Tape. Ensure that the apex of the corner is covered and sealed with Tape and roll firmly. Crease and fold the membrane to ensure a close fit to the substrate profile and avoid hollows.

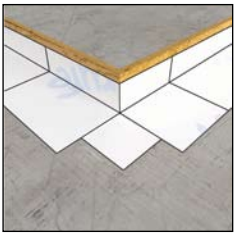


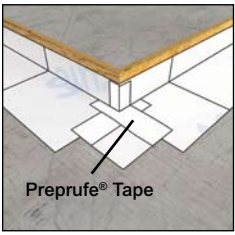
Internal





External





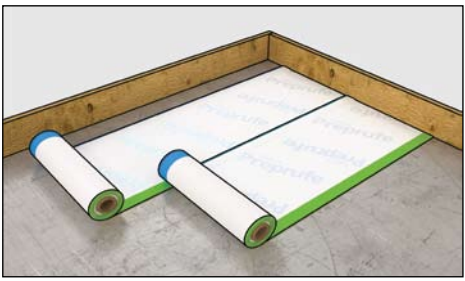
Measure, crease & fold membrane

Fold internal corner & tape

Form external corner & tape

Application Sequence for Slabs - Method 2 - vertically applied Preprufe® > 900 mm

1. **Place horizontal lengths first.**

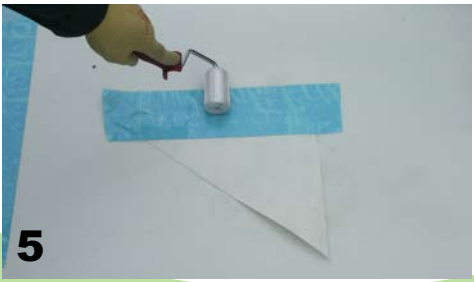


2. **Form internal/external corners.**
   Refer to page 23

3. **Install horizontal/vertical interface - wall paper fashion.**

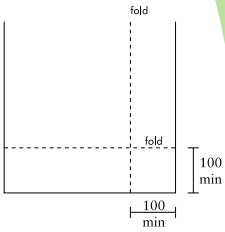
4. **Remove release film**

5. **Inspect & repair any damage**

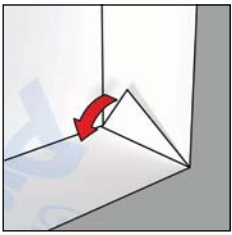


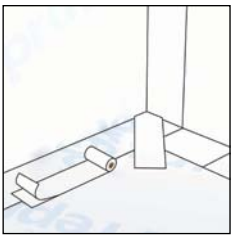
Corners

Internal and external corners should be formed as shown in the diagrams returning the membrane a minimum of 100mm on the horizontal and sealing with Preprufe® Tape. Ensure that the apex of the corner is covered and sealed with Tape and roll firmly. Crease and fold the membrane to ensure a close fit to the substrate profile and avoid hollows.

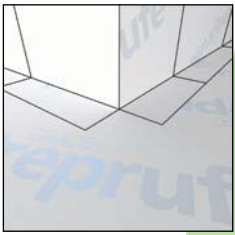


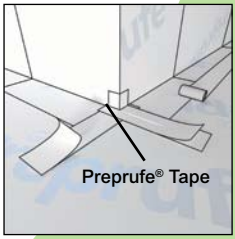
Internal





External





Installation – Horizontal

Place the membrane with the green zip strip facing towards the concrete pour. End laps should be staggered to avoid a build up of layers. Leave green and blue zip strips on the membrane until overlap procedure is completed. Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Peel back and remove both the green and blue zip strips in the overlap area to achieve an adhesive to adhesive bond at the overlap. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. On completion of the installation, ensure complete removal of the plastic zip strips from all overlaps and tape.

When installing Preprufe® Plus in cold or marginal weather conditions (<0°C) the use of Preprufe® Tape LT is recommended at all laps and detailing. Preprufe® Tape LT should be applied to clean dry surfaces and the release liner must be removed immediately after application.

End Laps and Cut Edges

Overlap all roll ends and cut edges by a minimum 75mm and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary.

Allow to dry and apply Preprufe® Tape centred over the lap and roll firmly. Remove blue release liner. Refer also to Preprufe® Plus Standard Details.

Penetrations

To seal around penetrations such as service pipes, pile heads, reinforcing bars, lightening conductors etc. mark and cut the membrane tight to the penetration. If the membrane is not aligned within 12 mm of the penetration, apply Preprufe® Tape lapped onto the membrane and butted tight to the penetration. For pipe penetrations wrap the pipe with Preprufe® Tape. Mix and apply Bituthene® LM around the penetration using a fillet to provide a watertight seal between the Preprufe® Plus membrane and Tape. Refer also to the Grace manual, Detail Drawings - Waterproofing Reinforced Concrete Structures, available on request.

Membrane Outside Pour Area

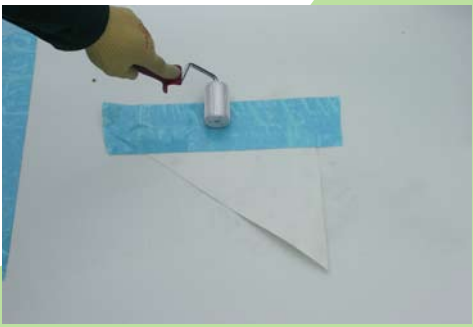
Lay Preprufe® Plus just beyond any reinforcement starter bars to ensure easy access for further overlaps. Where this is not achievable the direction of membrane application may be changed to simplify overlap procedure.

Membrane Repair

Inspect the membrane for damage before installation of reinforcement steel, formwork and final placement of concrete. Clean by jet washing if required.

Wipe the area with a damp cloth to ensure the area is clean and free from dust, and allow to dry. For minor repairs, apply Preprufe® Tape centrally over the damaged area and roll firmly. For larger repairs use a patch of Preprufe® Plus and tape all edges with Preprufe® Tape. Remove plastic release liner from Tape.

Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and overband with Preprufe® Tape and roll firmly.



Installation – Vertical

Apply the membrane with the green zip strip facing towards the concrete pour. Mechanically fasten the membrane vertically using flat headed fixings appropriate to the substrate. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten or fixings 50 mm below the top edge. Use fixings at typically 600 mm centres to secure the membrane flat against the substrate. Fixings can be made through the selvedge, this allows firmly rolled overlaps, which are covered by the subsequent strips of Preprufe® Plus. Any exposed fixings should be patched with Preprufe® Tape. Peel back and remove both the green and blue zip strips in the overlap area to achieve an adhesive to adhesive bond at the overlap. Ensure a continuous bond is achieved without creases and roll firmly. On completion of the installation, **completely remove the plastic zip strips from all overlaps and tape.**

Placement on Vertical Pile Walls

The Preprufe® Plus is fixed through the selvedge into the regularised diaphragm/ secant wall and does not require any separation board unless used to face up the walling where it is rough and full of voids and depressions. Board can be plywood or high quality fibreboard capable of taking the weight of Preprufe® Plus fixings and the weight of concrete during the pour.

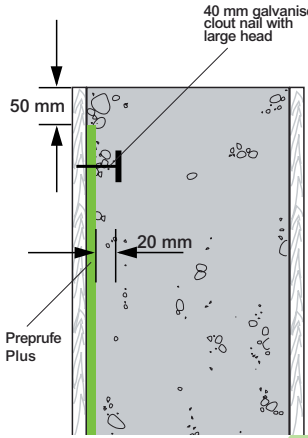
Similarly, sheet piling will require the prior installation of plywood or high quality fibreboard or concrete infill before installing Preprufe® Plus vertically against the piling.

Installation – Double Sided Formwork

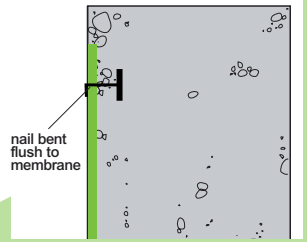
Wooden formwork:

1. Apply the membrane with the green zip strip facing towards the concrete pour.
2. Cut lengths of membrane to height of formwork less 50 mm.
3. Align the first piece of membrane against the formwork edge and 50 mm below the top of the formwork.
4. Nail the membrane in place at the top of the formwork using 40 mm galvanised clout nails at 300 mm centres. The nail heads should be left protruding a minimum 20 mm. (This will enable encapsulation of the nail head when the concrete is poured).
5. At the middle and bottom of the formwork cut and apply 150 mm x 150 mm square patches of Bitustik™ 4000 double sided bituminous tape to both edges of the membrane.
6. The Bitustik™ 4000 patches will partially adhere the membrane to the formwork and keep it flat during the concrete pour.
7. All edge laps should be formed using the self-adhesive selvedge on the membrane.
8. Any cut edge laps and end laps should be sealed with Preprufe® Tape.
9. On completion of the installation, completely remove the plastic zip strips from all overlaps and tape.
10. Place formwork, pour and vibrate concrete.
11. Remove formwork when concrete has a minimum strength of 10 N/mm^2.

12. After removal of formwork:
    a. Use a hammer to bend all protruding nail points flush to membrane surface.
    b. Fill tie bar holes with BETEC® 350 or Grace approved equivalent. Allow 48 hours to dry then prime with Preprufe® SC1 and cover with cut patches of Preprufe® 800PA self adhesive membrane, 150 mm x 150 mm.
    c. Lap Preprufe® Plus membrane at bottom of wall to slab edge membrane using Preprufe® Tape.
    d. Form agreed termination detail at ground level using Bituthene® LM.



Preprufe® Plus - Double Sided Formwork (wooden) Termination Detail Before Formwork Removal

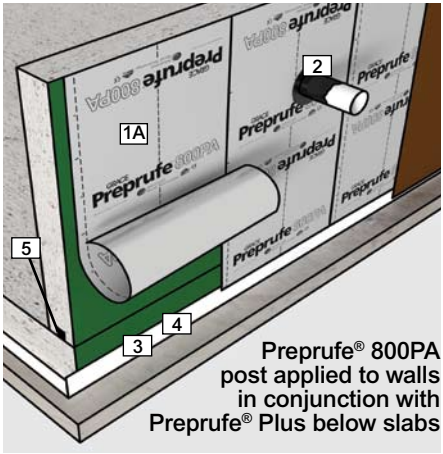


Preprufe® Plus - Double Sided Formwork (wooden) Termination Detail After Formwork Removal

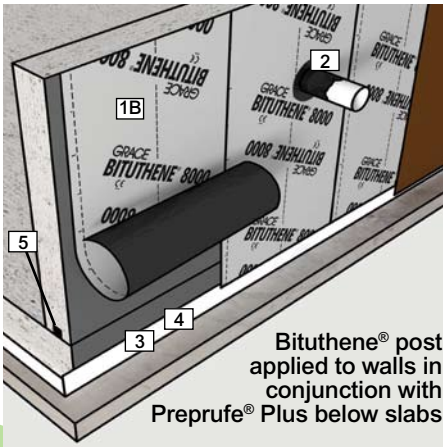
Installation – Double Sided Formwork

Metal formwork:

1. Install Preprufe® Plus as for wooden formwork except:
2. At top of metal formwork fix Preprufe® Plus membrane to flange of formwork system using bolts or tie wire.
3. On removal of formwork cut the excess unbonded membrane at the top of the wall flush, using a straight edge to avoid damaging the bonded membrane.



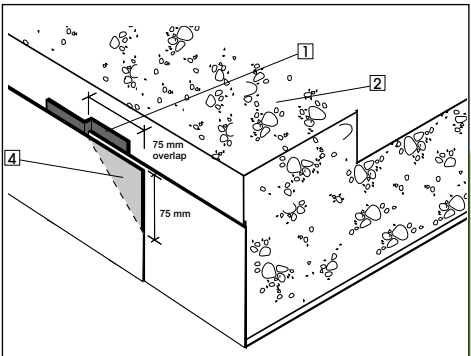
Preprufe® 800PA post applied to walls in conjunction with Preprufe® Plus below slabs



Bituthene® post applied to walls in conjunction with Preprufe® Plus below slabs

Preprufe® Plus Preparation when Preprufe® 800PA or Bituthene® are used on Walls

Inspect the Preprufe® Plus around the perimeter edge of the concrete slab. Identify any exposed non-selvedge overlaps in Preprufe® Plus. To ensure continuity of the fully bonded system, carefully cut and remove a 75 mm triangular piece of the top flap of Preprufe® Plus only, as shown shaded in the standard detail, 'Slab Perimeter Detail – Non Selvedge Lap.'



Slab Perimeter Detail

1. Taped non-selvedge lap
2. Poured Concrete
3. Remove formwork
4. Cut and remove shaded piece before applying Bituthene

Perimeter Detail for Non-Selvedge Lap

1A	Preprufe® 800PA on primed concrete surface
1B	Bituthene® on primed concrete surface
2	Bituthene® LM
3	Do not prime Preprufe® Plus with Primer
4	Preprufe® Plus
5	Adcor® 500S/T / Adcor® 550MI/T-MI

Inspection Procedures

Preprufe® Plus application's should be inspected on completion of a specific area before placing any reinforcing steel. Any damage to the membrane system should be made good using Preprufe® Tape or oversize patching with Preprufe® Plus.

During placing of reinforcing steel any damage should be identified and made good while access to the membrane is relatively easy. On completion of reinforcing placement another inspection should occur and any damage made good.

It should be noted that use of an air lance to blow out debris prior to pouring concrete is a good identifier of poorly bonded Preprufe® Tape, and overlaps. A further application of Preprufe® Tape will be required after the affected areas have been cleaned and dried.

Placing of Reinforcing Steel

Before placing reinforcement ensure that the membrane application is continuous, has bonded laps, end laps taped, penetrations and pile heads sealed with Bituthene® LM and all the plastic release film removed from the membranes and tapes.

Placing of the reinforcement should be done with care to prevent damage to the membrane using spreader type spacer blocks or similar, to avoid point loadings and puncturing. Progressive removal of temporary membrane protection used for access and storage should occur as steel fixing proceeds. Localised displacement of the Preprufe® adhesive may occur around spacer blocks but is not detrimental to membrane performance.

Placing of Concrete

Ensure the plastic zip strips have been removed from all overlaps and Tape.

It is recommended that concrete be poured within 56 days of application of the membrane. Where Preprufe® Plus is used in hot climates, the membrane exposure should be reduced to 42 days.

Concrete must be placed and compacted carefully to avoid damage to the membrane. Never use a sharp object to consolidate the concrete.

Where grout splashes occur on the Preprufe® Plus these should be immediately removed before curing begins and the surface cleaned with damp cloths. If grout splashes have occurred and bonded onto the Preprufe® Plus, a Bitustik™ strip should be applied to the cleaned and dried underside of the membrane to enable an underlap to be made ensuring membrane continuity.

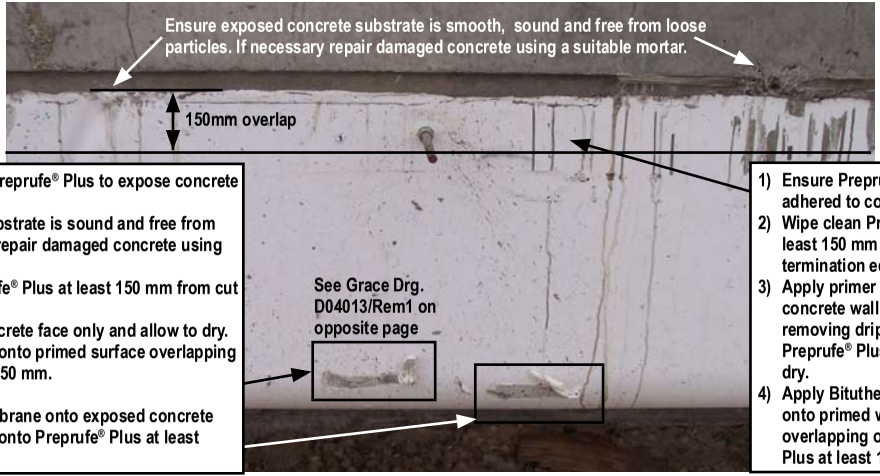
Alternatively grout may be removed with a metal scraper together with the top adhesive layer to expose the white HDPE before joining or lapping adjacent sheet.

Removal of Formwork

Preprufe® Plus membranes can be applied to removable, slab perimeter formwork, pile caps etc. Once concrete is poured, the formwork must remain in place until the concrete has gained sufficient compressive strength to develop the surface bond with Preprufe® Plus.

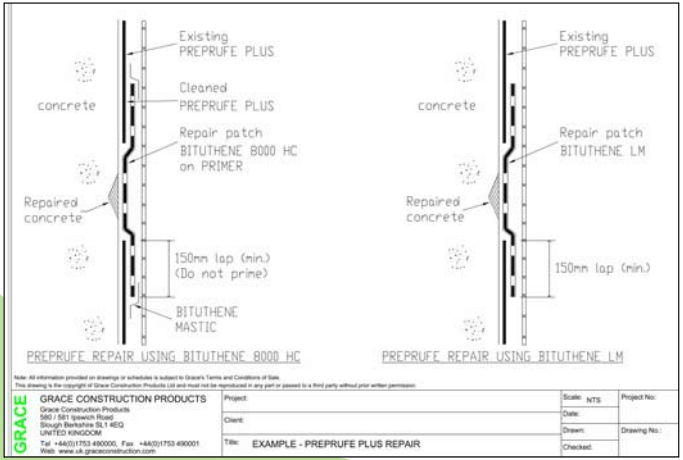
A minimum concrete compressive strength of 10 N/mm^2 is recommended prior to stripping formwork supporting Preprufe® Plus membranes. Premature stripping may result in loss of adhesion between the membrane and concrete.

Repairs to Preprufe® Plus - damaged after concrete placement

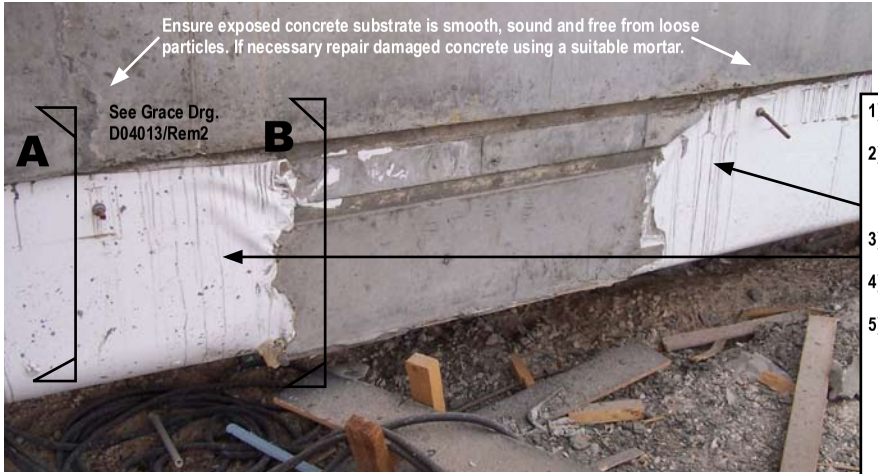


1) Remove loose and crinkled Preprufe® Plus to expose concrete Substrate.
2) Ensure exposed concrete substrate is sound and free from loose particles. If necessary repair damaged concrete using a suitable mortar.
3) Wipe clean remaining Preprufe® Plus at least 150 mm from cut edges.
4) Apply primer to exposed concrete face only and allow to dry.
5) Apply Bituthene® 8000 patch onto primed surface overlapping onto Preprufe® Plus at least 150 mm.
   OR
   Apply Bituthene® Liquid Membrane onto exposed concrete (without primer) overlapping onto Preprufe® Plus at least 150 mm.

1) Ensure Preprufe® Plus is adhered to concrete.
2) Wipe clean Preprufe® Plus at least 150 mm from termination edges.
3) Apply primer to exposed concrete wall face removing drips from Preprufe® Plus and allow to dry.
4) Apply Bituthene® 8000 onto primed wall surface overlapping onto Preprufe® Plus at least 150 mm.

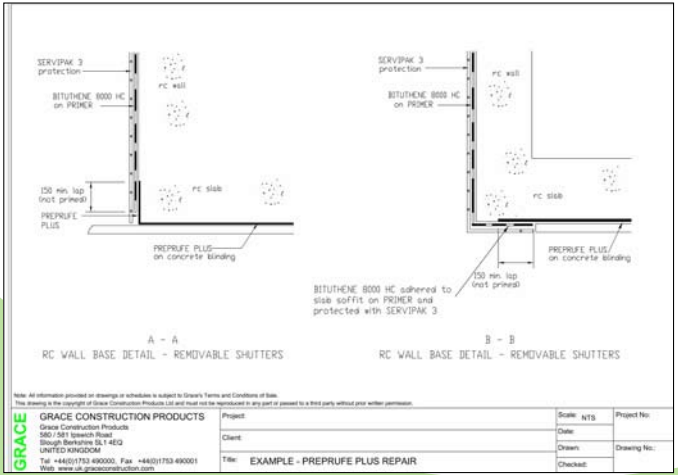


Grace Drawing

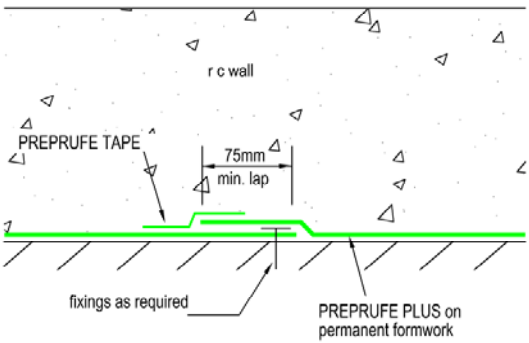


Repairs to Preprufe® Plus - damaged after concrete placement

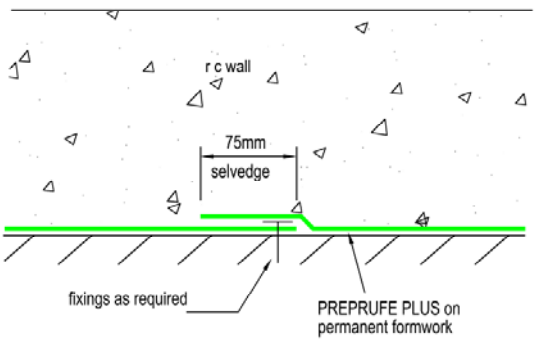
1) Remove loose and crinkled Preprufe® Plus to expose concrete Substrate.
2) Ensure exposed concrete substrate is sound and free from loose particles. If necessary repair damaged concrete using a suitable mortar.
3) Wipe clean remaining Preprufe® Plus at least 150 mm from cut edges.
4) Apply primer to exposed concrete face only and allow to dry.
5) Apply Preprufe® 800PA patch onto primed surface overlapping onto Preprufe® Plus at least 150 mm.
   OR
   Apply Bituthene® Liquid Membrane onto exposed concrete (without primer) overlapping onto Preprufe® Plus at least 150mm.



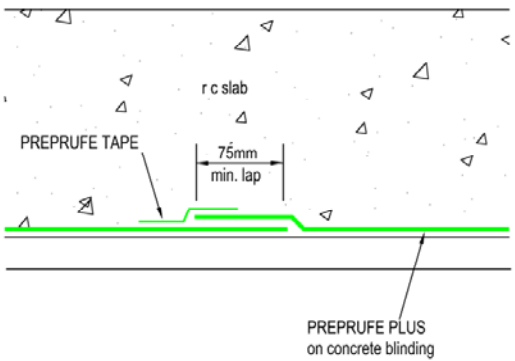
Grace Drawing



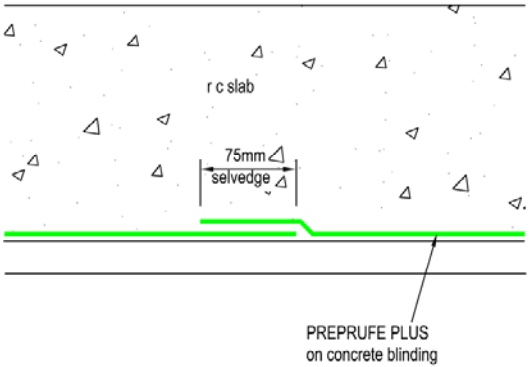
Non-Selvedge Overlap
Detail RC Wall Plan



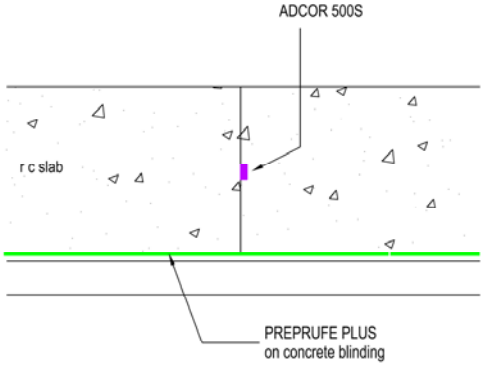
Selvedge Overlap Detail
RC Wall Plan



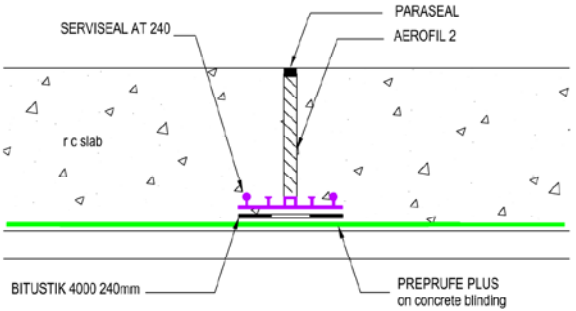
Non-Selvedge Overlap
Detail RC Slab



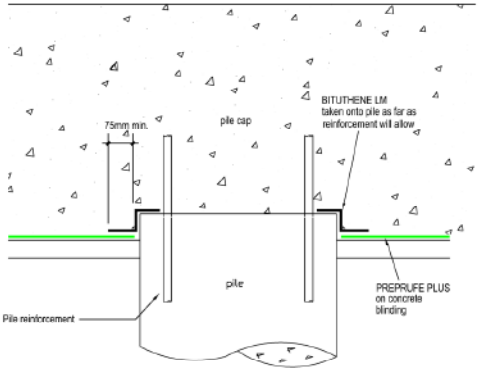
Selvedge Overlap Detail
RC Slab



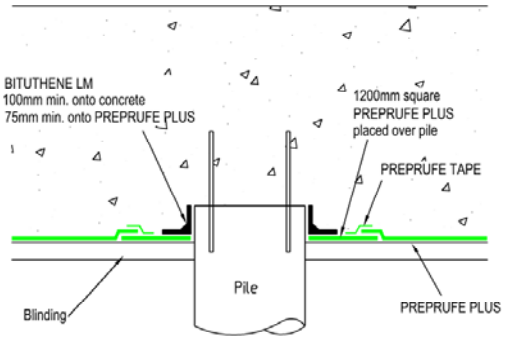
RC Slab Construction Joint



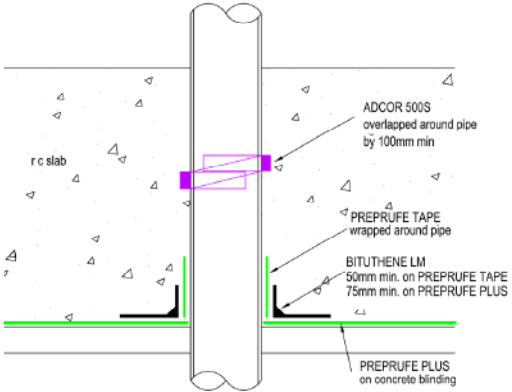
RC Slab Expansion Joint



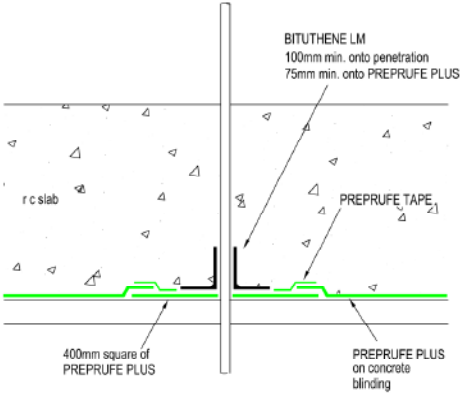
Pile Detail
(large diameter)



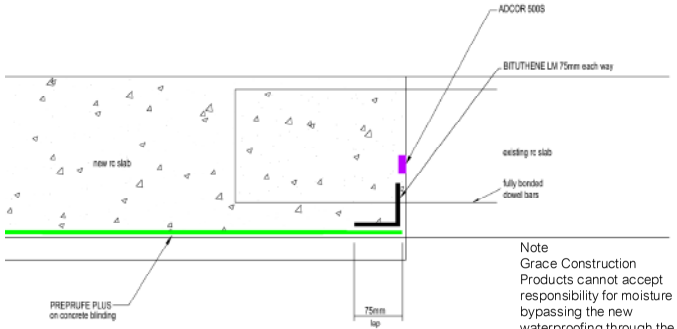
Pile Detail
(small diameter)



Pipe Through RC Slab

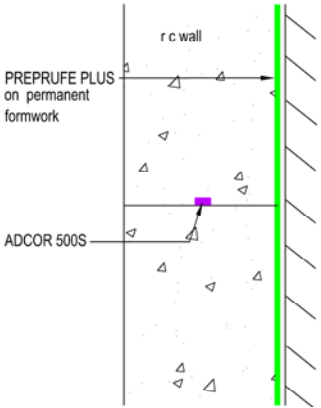


RC Slab - Rod Penetration

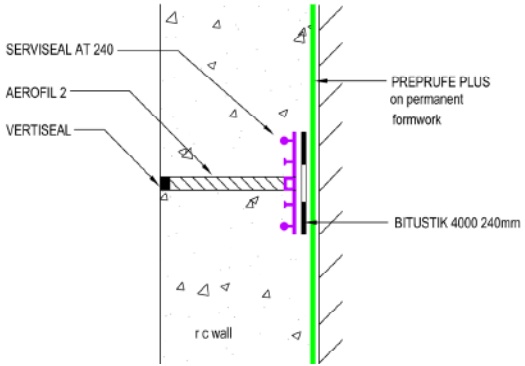


Note
Grace Construction Products cannot accept responsibility for moisture bypassing the new waterproofing through the existing structure.

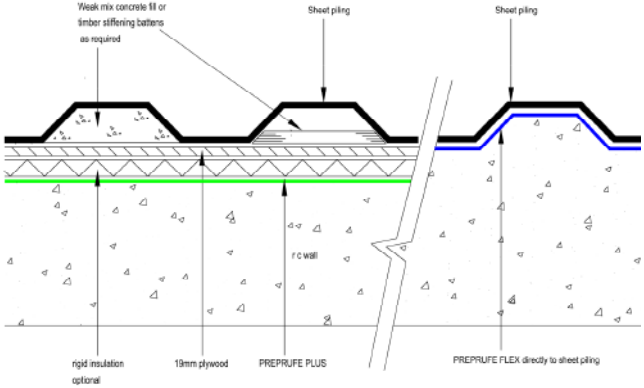
New To Existing Slab Detail
Preprufe®



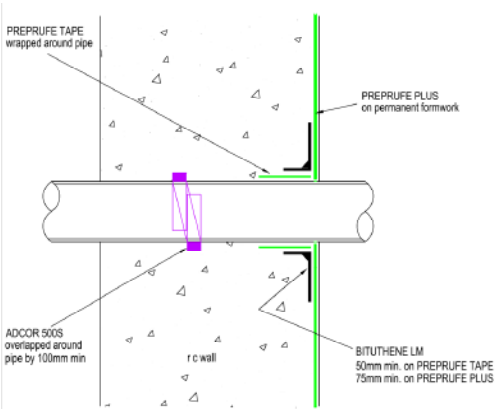
RC Wall Construction Joint



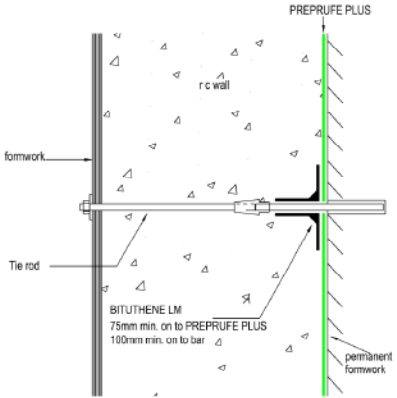
RC Wall Expansion Joint



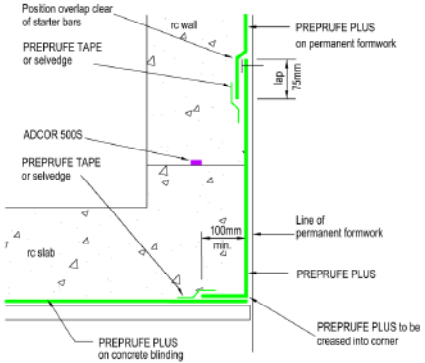
Preprufe® On Faced Sheet piling



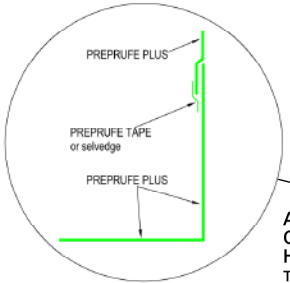
Pipe Through RC Wall



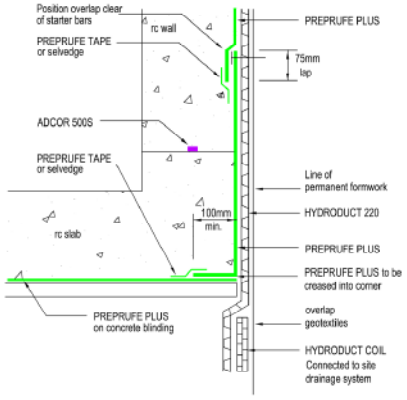
Pre-Fixed Formwork Tie detail



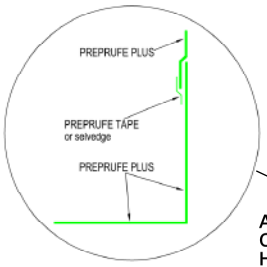
RC Wall Base Detail
Against Permanent Shutter



Alternative Preprufe® Configuration
Horizontal To Vertical
To be read in conjunction with above details

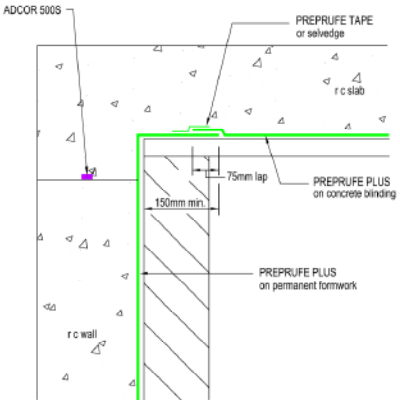


RC Wall Base Detail With Drain Sheet

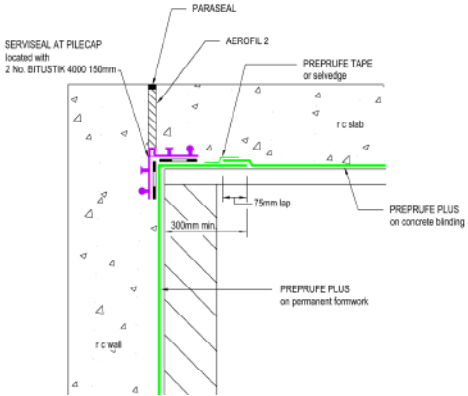


Alternative Preprufe® Configuration Horizontal To Vertical

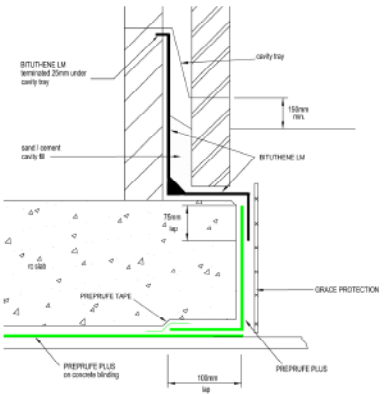
To be read in conjunction with above details



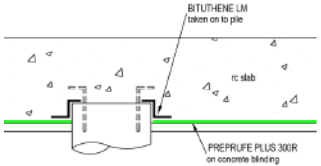
RC Wall To Upper Level
RC Slab Detail
Preprufe® to Preprufe®



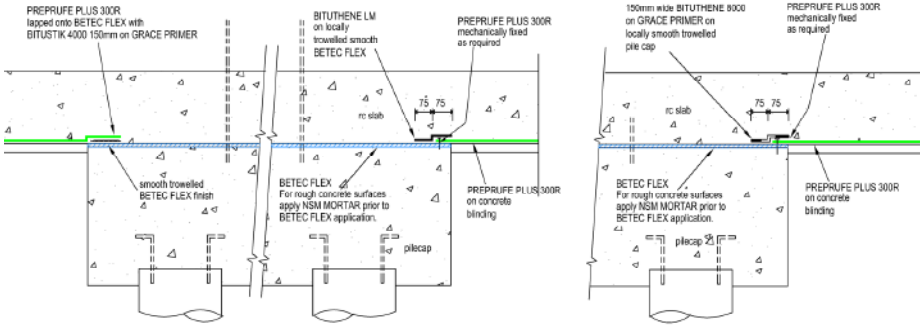
RC Wall To Upper Level RC Slab Detail
Preprufe® to Preprufe®



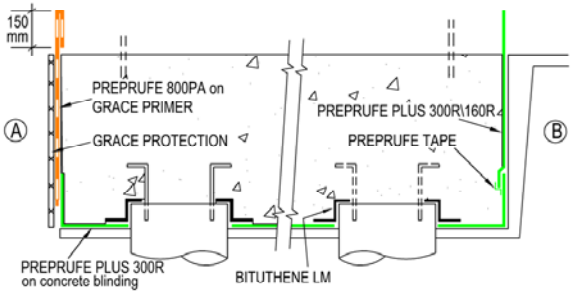
Slab Edge Termination
Preprufe®



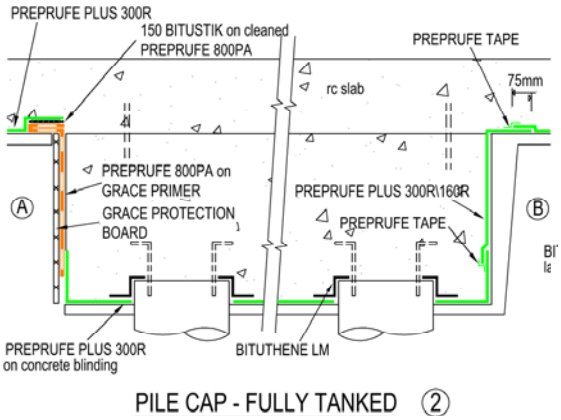
Pile Direct To Slab



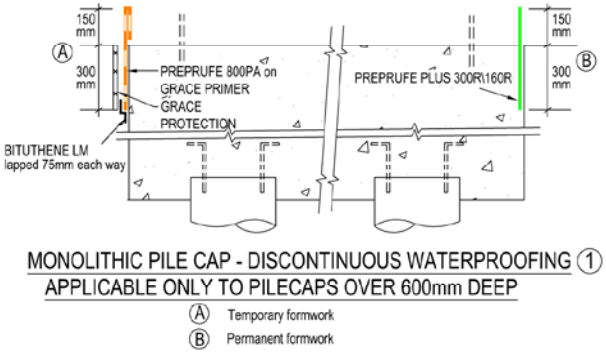
Preprufe® Terminations On Monolithically Cast Pile Cap



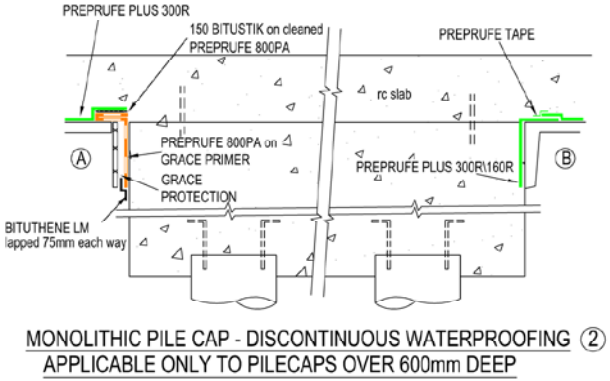
Pile Cap - Fully Tanked 1



Pile Cap - Fully Tanked 2



Monolithic Pile Cap - Discontinuous Waterproofing 1
Applicable Only To Pilecaps Over 600 mm Deep



Monolithic Pile Cap - Discontinuous Waterproofing 2
Applicable Only To Pilecaps Over 600 mm Deep

Installation Checklist

Before Preprufe® Plus Installation Check

- Substrate is firm & regular.
- Gaps or voids greater than 12 mm filled.
- No protrusions likely to damage membrane.
- Substrate swept clean.
- No ponded water.
- Tools & equipment in place.
- Installers are trained for Preprufe® Plus installation.
- Concreting to be within 56 days (42 days in hot climates) of Preprufe® Plus installation.

Preprufe® Installation – refer pages 12 to 37

After Preprufe® Installation Check

- Area of installed Preprufe® Plus.
- Preprufe® Plus side & end laps are sealed. Reinforce with Preprufe® Tape if necessary.
- Internal & external corners are sound & properly taped. Reinforce with Preprufe® Tape if necessary.
- Damage to membrane is repaired. Refer pages 29.
- Penetrations and pile (head) treatment has been correctly carried out.
- Temporary fixings to formwork.
- Ensure plastic zip strips have been removed from all overlaps and Tape.

Placement of Reinforcing Steel Check

- Temporary membrane protection where grinding/welding etc. being carried out.
- Temporary protection removed as installation progresses.
- Spacer blocks used beneath reinforcement.
- Any damage to Preprufe® Plus repaired as installation of reinforcement progresses.
- Again all plastic zip strips removed from all overlaps and tape.

Immediately before Concreting Check

- Damage to Preprufe® Plus & Laps. Repair as necessary.
- All plastic zip strips removed.
- External waterstop is secured and correctly positioned/sealed against Preprufe® Plus.
- Preprufe® Plus self-adhesive laps area intact behind external waterstop.
- Membrane surface clear of dust & debris.
- Concreting will be within 56 days (42 days in hot climates) of membrane installation.

During Concreting Check

- Concrete placement procedure will not damage membrane.
- Vibrating pokers do not touch the membrane surface.

Formwork Removal Check

- Concrete has a minimum compressive strength of 10 N/mm^2.
- Good membrane to concrete adhesion. Repair if necessary.

Grace technical experts can assist throughout your project delivery process

Grace has a global specification team committed to ensure that projects in all countries run smoothly and receive full support and coordination from the conception of the specification to its execution. No matter the distance between you and your project, we can help.

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