

WATER PROOFING WITH VULKEM ELASTOMERIC MEMBRANE OVER PLYWOOD AND FIBRE CEMENT COMPRESSED SHEET.

Surface Preparation

Plywood must be treated to H3.2 (CCA treated). The use of LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under Vulkem 350 membranes. NZ Plywood must comply with NZBC Acceptable Solution E2/AS1 paragraphs 8.5.3 and 8.5.5.1. Where specific design is required, the plywood thickness may increase and centres may need to be reduced to meet specific wind uplift and loadings.

Minimum plywood thickness is 17mm complying with AS/NZS 2269, at least CD Structural Grade plywood with the sanded C face upwards. Substrates must be dry when membrane system is applied. The plywood and the timber substructure shall have a maximum moisture content of 15% when membrane system is applied.

High density fibre cement compressed sheet must be manufactured to comply with AS 2908.2 and be suitable for exterior applications. Minimum thickness for fibre cement compressed sheet is 18mm.

All construction must be carried out in accordance with the relevant building regulations and standards. Prior to installation, ensure the new / existing flooring and supporting framing is suitable. Follow the fibre cement compressed sheet manufacturers installation recommendations for residential pedestrian waterproof deck installations.

Where specific design is required, the plywood thickness may increase and the centres for plywood and fibre cement compressed sheet may need to be reduced to meet specific wind uplift and loadings.

External edges shall be chamfered with a minimum radius of 5mm. Plywood and fibre cement compressed sheet must be fixed with stainless steel countersunk head screws, with 3mm gaps between all sheets, at 150mm centres on edges, and 300mm in the body of the sheets.

Adequate falls must be incorporated into the structure eg:

- Decks and balconies 1:40;
 - Gutters 1:100;
 - Roofs 1:30;
- with falls sloping to an outlet.

Closed-in construction spaces under membrane roofs and decks must have adequate ventilation to prevent the accumulation of moisture under the membrane. There must be a gap between the underside of the substrate and any insulation – please consult an architect or engineer.

Application of waterproofing membrane to be carried out by approved applicators holding a current licensed building practitioner qualification.

New Decks

Leave a 3mm gap between each sheet of plywood or fibre cement compressed sheet (for filling with sealant). Ideally, glue the sheets down and fix with stainless screws (minimum is fixing with stainless screws), do not use nails. The sheet perimeter must have screws at a minimum of 150mm apart and the sheet centres must have screws at a minimum of 300mm apart. Lightly sand and vacuum clean surface to be coated. Ensure the surface is dry prior to application of membrane system.

Existing Decks :

Surface to be coated shall be scrubbed down with a **Alkali based cleaning solution** (eg Cascade Allkleen) to remove all surface contamination. Rinse clean. Remove any broken down and loose sealants from cracks and joints. If the plywood has been fixed in place with nails, either remove the plywood and re-lay new plywood following the above recommendation or punch the nails completely through the plywood deck and then use the above recommendation to screw in place the plywood to the deck structure using stainless screws using the above recommendation. The surface may require some sanding to remove worn, fibrous surface. Ensure the surface is dry prior to application of membrane system.

TREATMENT OF JOINTS (Treat all joints as moving joints):

Timber Decks :

Enlarge all joints to 3 to 4 mm, after sealing with Vulkem 171 Primer, fill with polyurethane sealant (Sikaflex 11FC). Next day prime the joint about 120mm wide with Vulkem 171 Primer and then apply Vulkem 350R membrane over the joint, inlay polyester webbing reinforcing tape over the joint, brush Vulkem 350R membrane over the reinforcing tape to about 1mm membrane wet thickness and finish the edges with a roller to give a tapered finish (ie no ridges).

Fibre Cement Compressed Sheets :

Leave a 3-4mm gap between the fibre cement compressed sheets reinforce the joints. Seal the joint with Vulkem 171 Primer and then fill with polyurethane sealant (Sikaflex 11FC). Next day prime the joint with Vulkem 171 Primer about 120mm wide and then apply Vulkem 350R membrane over the joint, inlay polyester webbing reinforcing tape over the joint, brush Vulkem 350R membrane over the reinforcing tape to about 1mm membrane wet thickness and finish the edges with a roller to give a tapered finish (ie no ridges).

Deck to Wall Joints:

Prime the joint about 140mm wide, install a closed cell backing rod and form a 50mm radius cove with polyurethane sealant. Allow to fully cure, typically 24 hours. Re-prime the joint and apply Vulkem 350R membrane over the joint, inlay polyester webbing reinforcing tape over the joint, brush Vulkem 350R membrane

over the reinforcing tape to about 1mm membrane wet thickness and finish the deck edge with a roller to give a tapered finish (ie no ridges).

NOTE:

When applying **Vulkem 171 Primer** the membrane should be applied over the primer as soon as the **Vulkem 171 Primer** tacks off to achieve maximum adhesion (Typically 1-2 hours at 25 °C). **Vulkem 171 Primer** must be overcoated within 6 hours weather dependant. If not overcoated the same day, abrade the surface, wipe down with thinners and re-apply **Vulkem 171 Primer**.

MEMBRANE APPLICATION

Step 1

Treat all joints – Please see above for detail.

Step 2

Sand any exposed cured primer used on joints and then apply to all prepared surfaces by roller or brush one full coat of **Vulkem 171 Primer** at a coverage rate of approximately 8.0 m² per litre. Check the substrate for any evidence of excess porosity and remedy (re-prime) if evident.

Step 3

Then apply by roller, squeegee, brush or spray one full coat of **Vulkem 350SL** to deck surfaces at a coverage rate of 1m² per litre (to achieve a WFT of 1.0mm and a DFT of 0.75mm).

Step 4 Optional

Next day, apply a second full coat of **Vulkem 350SL** to the pedestrian deck surfaces at a lower coverage rate of 3m² per litre (to achieve a WFT of 0.33mm and a DFT of 0.25mm) and broadcast **ESTES Broadcast Medium** aggregate (Coverage rate of ½Kg per m²) into the wet membrane. Applicators should wear soft soled shoes or plastic covers to keep all stones from coming into contact with the membrane.

Step 5

Next day sweep off the excess aggregate and apply to the entire surface by roller one full coat of **Vulkem 346** polyurethane topcoat (thinned 10% by volume with Thinner P10) at a coverage rate of 2.5m² per litre (to achieve a WFT of 0.4mm and a DFT of 0.25mm). Overall the nominal membrane system thickness should not be less than 1.0mm.

Allow membrane system to cure for at least 24 hours (upto 3 days in cold, dry environment) before allowing light pedestrian access and 4-7 days for full pedestrian access. Temperature and humidity will influence cure times. ***Test deck membrane surface before allowing pedestrian access.***

NOTE:

This a moisture cured polyurethane system and a relative humidity of above 50% is required.

Warranties exclude excessive substrate movement and may exclude ponding and unnecessary wear and tear.

For existing structures, warranties exclude any failure of the membrane due to the construction not complying with the NZ Building Code. Appropriate falls must be designed into the structure being waterproofed.

General

1. This specification must be read in conjunction with the standard “data sheets” issued by the manufacturers and the direction instructions supplied with each pack of material.
2. The ideal application temperature range is 18 to 30 °C at 50-70% relative humidity.
3. The spreading rates quoted above are average figures to achieve the film thickness specified and all allowances must be made for wastage, application technique, wind and weather conditions when estimating material requirements.
4. Expansion joints must be routed and bridged/reinforced.
5. Coving must be installed to all internal corners.
6. Other sharp edges must be bevelled.
7. Applicator must confirm with the council authority that the water proofing system and applicator are approved by the building council authority.
8. To maximise the life of the deck waterproofing membrane and maintain the waterproofing warranty, regular maintenance must be carried out. Refer to the maintenance and inspection programme.

PEDESTRIAN DECK WATERPROOF MEMBRANE SYSTEM

Product:	Process:	Pack Size:	Coverage Rate:	Typical Recoat times **
Vulkem 171 Primer	Primer for concrete, timber, fibre cement compressed sheet and polyurethane coving	5 US gal pails	6-10 m ² per Litre. 110-190m ² per pail. Multiple coats may be required depending on porosity of the substrate	2-3 hours @ 20°C
Vulkem 350R base membrane	Treatment of joints with bandage system	5 US gal pails	150 lineal metres per pail to achieve a 1mm WFT @ 125mm width	12-18 hours @ 20°C and 70% humidity
Polyester Reinforcing Tape 80mm	Reinforcing of moving joints	50m rolls		N/A
Sikaflex 11FC polyurethane sealant	Polyurethane Sealant cove	600mL sausages	7.5 metres per litre for a 50mm radius coving	50mm radius cove 16 hours @ 20°C and 75% humidity
Vulkem 350SL	Waterproofing Membrane	5 US gal pails	1m ² per litre. 19 m ² pail. Minimum 0.75mm DFT.	Upto 24 hours @ 20°C and 70% humidity
Estes	<i>Optional</i> aggressive non-slip	22.7 kg bags	<i>As required*</i> (0.5kg per m ²)	N/A
Vulkem 346 Topcoat	UV resistant hard wearing flexible topcoat	5 US gal pails	2.5m ² per litre. 47 m ² per pail.	4 - 8 hours @ 20°C and 70% humidity
Vulkem 191 Primer	A primer for use in applying a fresh coat of Vulkem coating or sealant after the preceding coat has been exposed/cured for long periods of time.	1 US gal can	12-18 m ² per Litre. 45-68m ² per can.	1-2 hours @ 20°C

*For use on pedestrian ramps and where there is ponding.

** Recoat times dependant on ambient and substrate temperature, humidity, film builds etc.

*** WFT – wet film thickness, DFT – dry film thickness.

Troubleshooting

This section describes common industry application issues when certain environmental conditions exist and their remedies. If any of these should occur, it is always recommended that you contact your local Polymer Group Sales Representative.

Polymer Group requires that any possible recoating job be reviewed and approved by your Sales and/or Technical Representative prior to installation.

1. When a fibre cement compressed sheet (FCCS) deck contains too much moisture, the moisture may change into a vapor, which then condenses at the FCCS - membrane interface before the coating has cured and may cause blisters or bubbles, ultimately interfering with proper adhesion. If this should occur, the blisters can be cut out, allowing moisture to escape. After moisture has escaped and the surface is dry, the area can be repaired.

2. When a timber deck contains too much moisture, the moisture will dissipate in hot weather (Summer) resulting in the timber shrinking and any joints opening up resulting in splitting of the reinforced joints. If this should occur, the joints can be cut out and repaired.

3. If the coating application has been installed at a thickness that is greater than the recommended installation instructions, pinholes, blisters or bubbles may develop in the coating. To avoid this occurrence, the material should be applied in accordance to the installation instructions.

4. If the coating is applied in very hot ambient temperatures over FCCS or timber substrates, any air in the pores of the FCCS or timber may expand and release into the membrane forming blisters within the membrane. Applying the coating in very hot ambient temperatures may also result in rapid skinning over of the membrane which will trap solvent within the membrane and result pin holes and blisters.

5. If the previous coating application has not fully cured prior to applying the next coat, solvent may become trapped between the coats and lead to large blisters. When cut out, they may still be tacky on the underside. Blisters may be cut out and repaired after the surface has been allowed to fully dry.

6. If the substrate (FCCS or timber) is porous after priming, vapour may be released from the substrate especially on warm days before the coating has cured resulting in blisters and/or pin holes forming in the membrane. If this should occur, the membrane should be removed and the blisters and pin holes filled and then the area repaired. Contact local Polymer Group Sales Representative should this occur.

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