

ULTRATUFF FC waterproofing membrane

Internal & External Waterproofing System

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Last Updated 10th August 2008

DESCRIPTION:

"**ULTRATUFF FC**" is a fast cure elasticised, latex, water-based, waterproof membrane "**ULTRATUFF FC**" is designed for under Tile use in demanding internal & external waterproofing applications. Exposed areas must be over coated with "Ultratuff UV" top coats to protect the membrane from UV damage. Properly applied, "**ULTRATUFF FC**" cures to form a durable, elastic, seamless odourless and impervious membrane that will not re-emulsify once it has fully cured even if continually immersed in water.

ADVANTAGES:

"**ULTRATUFF FC**" presents the market with a number of positive characteristics encompassing very fast cure times, good resistance to alkalis, salt solutions & diluted acids, non hazardous composition with excellent strength & flexible characteristics.

APPLICATIONS:

"**ULTRATUFF FC**" has been specifically designed for the long term waterproofing of wet areas inc. shower recesses, bathrooms, laundries, exterior decks, terraces, balconies, roofs, flashings, planter boxes, retaining walls and more.

PREPARATION:

Substrates should be dry, smooth, sound and free from oil, grease, waxes, dust, laitance and all loose matter. Any surface defects should be repaired prior to application of membrane.

SUBSTRATES:

Suitable for cementitious, concrete, masonry, compressed sheeting, plaster board, plywood, timber, & metal surfaces.

PRIMING:

All surfaces are to be primed with "**ULTRATUFF Acrylic Primer**" water based acrylic primer except when over coating green concrete (must be cured at least 7 days), old membranes, old concrete, surfaces subject to excessive heat / solar induced vapour or where increased adhesion is needed first prime with "**ULTRATUFF Epoxy Primer**" water based epoxy primer then overcoat with "**ULTRATUFF Acrylic Primer.**" Old concrete may need to be diamond ground & degreasing etc. Galvanised metals and steel substrates must be suitably primed (eg, metal etch prime).

APPLICATION:

Application must only be done by approved applicators. Stir well apply by brush & long nap roller to obtain consistent even coats. 1x primer, 2x body coats are required until the cured dry film thickness is at least 1.2mm. Where potential movement of the substrate is expected such as floor to wall joints, sheet joints, penetrations and cracks a 15mm wide x 3mm thick S.M.P sealant bead (Simson ISR 70-05 from Bostic) needs to be applied over these areas as a joint filler & bond breaker. Followed by a coat of "**ULTRATUFF FC**" into which a reinforcing fabric or 225gram x 100mm wide fibreglass mat is then embedded followed by a saturating coat (ensure that the reinforcing fabric is completely saturated & there are no pin holes) allow to dry. The second body coat should be applied at right angles to the first body coat after it is completely dry. There should be no pin holes after the second body coat is dry. Apply the recommended top coats ensuring that the area is uniformly covered. All exterior & critical areas such as shower recesses, areas subject to regular foot traffic etc. including old or cracked concrete areas should also have reinforcing fabric applied throughout. Do not apply if temperature is below 5C. Do not apply if rain will develop prior to the membrane drying. Complete application details are available upon request.

WASTE OUTLETS:

Flange fittings are recommended should be rebated into the sub-straight & sanded before waterproofing. The reinforced membrane should be laid over an area 150mm around the outlet and onto the flange plate & turned down into drain finishing to a clean edge.

COVERAGE:

Unreinforced: 1 - 1.5 litres per square metre. For two coats
Reinforced: 1.5 – 2.0 litres per square metre. For two coats
(Variation may occur depending on the porosity of the substrate.)

DRYING TIME:

Average drying time is 1 hour approx at 20 degrees C in low humidity. Average drying time when reinforced is 3 hours at 20 degrees C in low humidity. (Reinforced membrane is best left to cure through overnight)
Humidity, low ventilation and cooler weather will greatly increase drying times.

Internal & External Waterproofing System

STORAGE:

Store for up to 18 months in sealed containers. The product is not freeze/thaw proof, do not allow too freeze.

CLEAN UP:

Utensils and minor spills can be cleaned with water if still wet. Cured "ULTRATUFF FC" can be cleaned with Xylene.

PACKAGING AND COLOUR:

15 Lt Plastic Pails: Available in Tan.

Tiling:

1. The surface must be clean and dry (can be Tiled 24hrs after final coat is completely dry, usually 48hrs)
2. The surface needs to be primed with ASA Multiprime 2 part, in accordance with the ASA instructions.
3. Suitable adhesives are ASA Accelerflex mixed with ASA Fixall **or** ASA Conflex mixed with water.
4. Grouting must be done after the adhesive has fully cured.
5. Movement joints must be provided as per the tiling standards.
6. Tile within seven days or lay a protection sheet over the membrane until tiling or covering.
7. Ensure membrane that is going to be left exposed once Tiles are laid is first protected by 2x coats of "ULTRATUFF UV".
8. When fixing underfloor heating on top of the membrane Conflex should be used to cover the elements.

Exposed & Unprotected Areas:

For all exposed & unprotected areas such as roof tops, gutters & decks topcoat with 2x coats of "ULTRATUFF UV", available in Grey & Bison Hyde for U.V. & additional foot traffic protection. Other colours available choose from BS5252 colour charts on request. Decks that are subject to regular foot traffic should have ("Ultraflex CS") or ("Ultraflex RC") added also, see Anti Slip below.

Anti Slip, Decorative & Extra Protection:

ULTRATUFF Coatings also has available "Ultraflex RC" with rubber crumb to improve sound proofing, insulation & is a rubberised, textured coating. Ultraflex RC is more suitable for areas where young children play & a softer surface is desired. "Ultraflex CS" with ceramic spheres is a light textured finish. More suitable for areas where higher amounts of wear are expected & anti slip is an important feature. Both products will help to protect & extend the life of the waterproofing membrane. The selected Ultraflex coats are applied between the "ULTRATUFF FC" & the "Ultraflex UV" coats. Only one coat of UV is needed when over coating Ultraflex Anti slip coatings if the two coats are the same colour.

PHYSICAL PROPERTIES:

Shore Hardness:	Shore A 70.
Tensile Bond Strength:	> 2N/mm ² (14 Days Cure)
Carbon dioxide Permeability:	Equivalent to 100 metres of still air.
Water vapour:	<4g/m ² (BS3177:1995) (24 hours@ 25° C/ 75%RH / 0.6mm dry film thickness
Resistance to Water Permeability:	0.2N/mm ² – (equivalent to approx 20 metres head of water.)
Tensile Strength:	2.6 N/mm ² 5.4 N/mm ² (reinforced 7 days) 7.5 N/mm (21 day) (At a speed of 100mm per minute at 23 degrees C)
Elongation at Break:	+ 400% 80% (reinforced) after 21 days
Crack Bridging:	+/- 2mm at 23° C.
Slant Shear Strength	20N/mm after 28 days. (BS6319: Part 4: 1994)
Chemical Resistance:	Good resistance to alkalis, salt solutions and diluted acids.
Aging:	Not U.V. Stable. For areas subject to U.V. & foot traffic apply "ULTRATUFF UV",

ULTRATUFF UV TOP COAT

External Trafficable U.V. Stable Topcoat

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Last Updated 5th APRIL 2006

DESCRIPTION:

"ULTRATUFF UV" is designed as a highly UV resistant top coat for "ULTRATUFF FC" system & is made from safe water based ingredients, is not toxic and has low odour. Is used in exterior situations to protect "ULTRATUFF FC" & is suitable for applications where a finished product is required & for areas subject to U.V. & light pedestrian traffic. The product exhibits excellent durability, aging and weathering. These areas can include balconies, roofs, decks & gutters. ULTRATUFF Coatings Ltd anti-slip coatings may also be incorporated into it if an anti-slip, heavy duty system or decorative finish is required. See anti-slip below

PREPARATION:

Substrates should be smooth, sound and free from oil and grease, waxes, dust, laitance and all loose matter. Any surface defects should be repaired prior to application of membrane. Old membranes & painted surfaces must be cleaned and lightly sanded to ensure that the priming system achieves a key. Rusted metal will need the rust treated before the application of a primer.

PRIMING:

Not required when top coating "ULTRATUFF FC" within seven days. Priming is recommended when over coating old "ULTRATUFF FC" or other surfaces once cleaned, prime with "ULTRATUFF Acrylic Primer" water based primer.

Precautions:

"ULTRATUFF UV" is a safe water based product however; avoid contact with the skin and eyes. If poisoning occurs contact a doctor treat symptomatically, may cause vomiting. Wash out mouth with water. The use of gloves and eye protection is always recommended. Provide adequate ventilation if spraying in confined areas. Contact in NZ is 0800 154 666 for specialist advice. Info safe number: IA253 Issued by Nuplex NZ. See also material safety data sheet.

APPLICATION:

Stir well; apply by brush, roller, or airless spray to obtain consistent even coats. 1x primer if required followed 1x or 2x top coats are required until the final coating has a dry film thickness of at least 80 microns dry. Areas subject to regular foot traffic or harsh conditions may require recoating at 4 to 5 year intervals or when the top coat is showing signs of wear. Do not apply if temperature is below 10C or rain is imminent.

Anti Slip, Decorative & Extra Protection:

ULTRATUFF Coatings also has available "Ultraflex RC" with rubber crumb to improve sound proofing, insulation & is a rubberised, textured, finish. Ultraflex RC is more suitable for areas where young children play & a softer surface are desired. "Ultraflex CS" with ceramic spheres is a harder slight textured finish. More suitable for areas where higher amounts of wear are expected & anti slip is an important feature. Both products will help to protect & extend the life of the waterproofing membrane. The selected Ultraflex coat is applied between the "ULTRATUFF FC" & the "ULTRATUFF UV" coats.

COVERAGE PER COAT:

Top coating: 6 – 8m² per litre. (Variation may occur depending on the texture of the surface.)

DRYING TIME:

Average drying time is 2 hours at 20 degrees C 50%RH. Recoat 3 Hours at 20 degrees C 50%RH.

STORAGE:

Store for up to 24 months in sealed containers out of direct sunlight.

CLEAN UP:

Equipment and spills can be cleaned with water if still wet.

PACKAGING:

"ULTRATUFF UV" is available in 10 litre pails.

Precautions:

"ULTRATUFF UV" is a safe waterbased product however; avoid contact with the skin and eyes. If poisoning occurs contact a doctor treat symptomatically, may cause vomiting. Wash out mouth with water. The use of gloves and eye protection is always recommended. Provide adequate ventilation if spraying in confined areas. Contact in NZ is 0800 154 666 for specialist advice. Info safe NLY4Q Issued by Nuplex NZ. See also material safety data sheet.

Maintenance:

Preventative maintenance to exposed membranes is very important to ensure long term performance of an Ultratuff roof or deck installation. Where the surface is exposed, an additional top coat shall be applied following the duration of a minimum of nine years and a maximum of ten years from the time of the original application of the system. Areas subject to regular foot traffic may require recoating at four to five year intervals when the top coat is showing signs wear. After such time "ULTRATUFF UV" will normally require recoating at 5 to 7-year intervals & areas subject to regular foot traffic may require recoating at 3 to 5 year intervals.

Technical Notes:

WFT per coat:	200 microns.
DFT per coat:	80 microns.
Shelf Life:	24 months in a cool dark environment.
Clean Up:	Water
Early Fire Hazard:	(FE1677)
Ignitability:	None
Spread of Flame:	None
Heat Evolved	None
Smoke Developed	Four
Application Temperature:	10 to 45 degrees C.
Dilution:	Nil.
Volume Solids:	40%
Fungus Resistance:	Anti Bug and Fungal Additive
Finish:	Semi-Gloss

ULTRAFLEX CS & RC

External Trafficable U.V. Stable Anti-Slip Coatings

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Updated 6th June 2005

DESCRIPTION:

"Ultraflex CS" (Ceramic Spheres) & "Ultraflex RC" (Rubber Crumb) is an acrylic/urethane high build, trafficable UV stable waterproof coating which is designed to cope with pedestrian foot traffic & is made from safe water based ingredients, is not toxic and has almost no odour. "Ultra Flex CS & RC" cures to form a very durable, elastomeric, seamless odourless membrane.

"Ultraflex RC" is supplied with rubber crumb mixed into it to improve sound proofing, insulation & is a rubberised, textured, finish. Ultraflex RC is more suitable for areas where young children play & a softer surface is desired. "Ultraflex CS" is supplied with ceramic spheres mixed into it, has a harder slight textured finish. More suitable for areas where higher amounts of wear are expected & anti slip is an important feature. Both products will help to protect & extend the life of the waterproofing membrane. The selected Ultraflex coat is applied between the "ULTRATUFF FC" & the "ULTRATUFF UV" coats. The product exhibits excellent durability, aging and weathering.

APPLICATIONS:

"Ultraflex Trafficable" is designed as a highly UV resistant hard wearing intermediate top coat for "ULTRATUFF FC" (fast cure) system in exterior situations to help protect "ULTRATUFF FC" & is suitable for applications where a finished product is required to areas subject to light pedestrian traffic. These areas can include balconies, roofs, decks, gutters, walkways & any surface requiring an anti-slip, trafficable waterproofing membrane or when a more decorative finish is required.

PREPARATION:

Substrates should be smooth, sound and free from oil and grease, waxes, dust, laitance and all loose matter. Any surface defects should be repaired prior to application of membrane. Old membranes & painted surfaces should be cleaned and lightly sanded to ensure that the priming system achieves a key. Rusted metal will need the rust treated before the application of a primer.

PRIMING:

Not required when top coating "ULTRATUFF FC". Priming is recommended when over coating old ULTRATUFF membranes once cleaned will need to be primed with "Ultratuff Primer" water based primer.

SUBSTRATES:

Suitable for concrete, masonry, compressed sheeting, plaster board, plywood, timber & metal surfaces.

APPLICATION:

Stir well; apply by brush & goop loop textured or long nap roller to obtain the desired effect in a consistent even coat. The ULTRATUFF UV top coat should be applied at right angles to the previous coat when it is dry. Areas subject to high U.V. exposure or if a colour change is required an additional ULTRATUFF UV coat can be applied to further protect & extend the life of the product. Do not apply if temperature is below 10C or if rain is imminent. Complete application details are available upon request.

COVERAGE PER COAT:

Top coating: .6 – .8 litres per square meter.

(Variation may occur depending on the porosity of the substrate.)

Ultraflex CS & Ultraflex RC

External Trafficable U.V. Stable Anti-Slip Coatings

Product Data Sheet

DRYING TIME:

Average drying time is between 2 and 4 hours at 25 degrees C per normal coat and up to 24 hours if reinforced. At 25 degrees C. "Ultra Flex Trafficable" achieves water resistance 10 to 12 hours after coating is dry.

STORAGE:

Can be stored for up to 12 months in sealed containers out of direct sunlight.

CLEAN UP:

Equipment and minor spills can be cleaned with water if still wet. Cured "Ultra Flex Trafficable" can be cleaned with a Xylene.

PACKAGING:

Ultra Flex is available in 15 litre pails.

Precautions:

Ultraflex is a safe water based product however; avoid contact with the skin and eyes. If poisoning occurs contact a doctor or the poison information centre. Do not induce vomiting. Give water to drink. The use of gloves and eye protection is always recommended.

Maintenance:

"Ultraflex will normally require recoating at 8 to 10-year intervals if it is left exposed & areas subject to foot traffic may require recoating at 4 to 5 year intervals

Technical Notes:

WFT per coat:	600 to 800 microns.
DFT per coat:	400 to 500 microns.
Elongation:	300 - 350%
Shelf Life:	12 months in a cool dark environment.
Clean Up:	Water
Flash Point:	None
Application Temperature:	10 to 45 degrees C.
Viscosity:	4550 (cps)
Dilution:	Nil.
Volume Solids:	60%
Fungus Resistance:	Anti Bug and Fungal Additive
Tensile Strength:	13.36 newtons

ULTRATUFF Acrylic Sealer

Product Data Sheet

PRODUCT:

ULTRATUFF Sealer is a Styrene Acrylic emulsion is supplied in 20Litre containers. Acrylic Sealer is a fast dry sealer, providing excellent adhesion to a wide variety of substrates.

Suggested Uses:

As a sealer for most water based conventional and high build coatings, Gib board, Concrete block, cementitious plasters, renders, brick, hard board, particle board, plywood.

PROPERTIES:

Non flammable & Low odour, waterbased Film possess excellent water and alkali resistance. SG:1kg/litre Minimum application temperature - + 10°C. Finish Semi gloss. Colour Milky liquid

Dry Times:

Touch dry: 60 minutes Recoat 2 hours

APPLICATION:

Surface Preparation

Surface must be clean and sound, free from oils, dust, chalk mildew and any other contaminants. If any of these are present then remove accordingly, either by scraping, sanding or power washing.

Thinning:

Clean potable water, concrete, brick, plaster etc, 1 part sealer, 1 part water
Gib board, particle board, plywood etc, 2 parts sealer, 1 part water

Application Method:

Brush, roller.

Avoid low surface/air temperatures as well as high humidity as this will increase drying time and curing rate. Do not apply below 10°C or above 85% relative humidity.

Ensure adequate air movement.

Coverage Rates:

8m²/litre/coat Note: 2 coats may be required on porous substrates.

Cleaning:

Wash up in water immediately after use.

For safety see the Material Safety Data Sheets:

All information is given in good faith without warranty. Users are encouraged to assess the product under their own conditions and for their own applications

Shelf Life:

24 months in unopened containers.

Flash Point:

None.

NZ Dangerous Goods Class:

Not applicable.

ULTRATUFF Epoxy

PRODUCT:

ULTRATUFF Epoxy is supplied in parts A & B, mixed prior to application. Used as a primer and for **damp proofing** walls and floors. Applied to the interior side, it is often used to waterproof interior floors and walls from moisture coming from outside or from under floor slabs. Ultratuff Epoxy is recommended as a DPC (Damp Proof Membrane). It is often used to treat existing floors to create new living spaces.

Suggested Uses:

Primer for Ultratuff membranes on concrete or damp surfaces Mortar admixes Waterproofing under carpet, vinyl Food processing industries Waterproofing floor slab in absence of damp proof course. Tank linings

Not Recommended:

Contact with strong acids, alkalis or aggressive solvents. Unprotected exterior exposure. Floors subjected to heavy traffic without protective coating. Over untreated steel, Application over actively leaking water. On red (clay) bricks

Features:

Waterproofing interior, exterior, masonry & concrete surfaces. Ultratuff Epoxy is a chemically cured, water based epoxy coating which is applied in moderately heavy films. Exceeds the waterproofing requirement of the US Federal spec 11-P-001411. Tested to withstand up to 40 psi hydrostatic pressure (equivalent to 28 metres head of water). Moisture vapour permeability BS test method 3177:1959 – 9.4gms, mil.m²/24 hours. Non-toxic: approved for potable water (AS4020(int) – 1994). Will not flow or sag at elevated temperatures. Will bond to oil contaminated surface (read text for details). Used to waterproof floors prior to carpet, vinyl, etc. Compatible with most floor adhesive types. May be applied to damp surfaces. Compliant with NZBC E2 & E3 (see rear section) Compliant with BRANZ: Good practice guide: Concrete floors; section 8.6.4

Properties:

Non flammable, Low odour, Waterbased, resists considerable physical damage. Minimum application temperature +10°C, Maximum humidity during application and cure 85% RH. Solids weight – 56% mixed, Solids volume – 42% mixed, S.G. – 1.25kgs/litre mixed. **Colour:** white, may be tinted to pastel colours. Finish semi gloss

Drying Conditions: Ultratuff Epoxy cures by first **drying** and then the **curing** of the epoxy system occurs. Good ventilation to remove moisture vapour must be available. Open windows and doors. Heat rooms if very cold. Warmth and air movement help cure. Under poor conditions, **white cement** can be used to accelerate the cure. Add one cup (300mls) of white cement to 4 litres of mixed Ultratuff Epoxy. Mix well and apply quickly, as the pot life will be shortened.

As a membrane primer

Once prepared thin up to 10% with clean potable water apply one coat allow to dry then apply one coat of Ultratuff acrylic primer. Once dry proceed with waterproofing membrane.

Application:

a) Surface Preparation for Concrete

It is essential that concrete surfaces are prepared well. Ultratuff Epoxy Primer works by bonding tenaciously to **concrete** surfaces. All paint, adhesive or other coatings must be removed. On concrete surfaces the weak concrete surface layer must be removed by grinding, shotblasting or acid etching. Acid etching has proved simple and effective with Ultratuff Epoxy Primer. Paint and/or adhesive is removed by the use of commercial angle grinders, water blasting or sand blasting. Ultratuff Epoxy Primer will **not** work if it is applied to paint, flaking paint, old adhesive, lime concrete, plaster or lime plaster.

(i) Cracks or floor joints:

Ultratuff Epoxy will **not** fill or cover large cracks. Fill these with Araldite K130 or K125 prior to application.

(ii) Fine Cracks:

If these cracks are suspected of, or have the potential for movement then the cracks must be pretreated. Laminate a strip of 300gsm chopped strand fibreglass matt (CSM) over the joint using mixed Ultratuff Epoxy. The strip is normally 150-200mm wide. Ensure the strip is fully saturated with Ultratuff Epoxy Primer. Ensure this is well dry prior to application of the first coat of Ultratuff Epoxy. A wall-floor junction of, for example, concrete blocks and a concrete floor may well benefit from a laminated tape from the wall to the floor.

b) Mixing and Application

Ensure that you have **part A** and **part B**. Mix them individually. Add them in measured equal volumes. Stir until uniform with an electric drill and paint stirrer. Once mixed the product may be applied with brush or roller. Apply evenly. The first coat should make the surface uniformly **white** (not grey). This implies the application of the correct coverage rate of material. As soon as the surface can be walked on, the second coat may be applied. **Normally** the two coats are applied on subsequent days. Allow one full day to cure prior to the application of other coatings.

Use Under Top coverings:

Ultratuff Epoxy is used to stop moisture coming up under vinyl, carpets, tiles etc. For use under vinyl certain techniques must be used as waterbased adhesives will not dry between the Ultratuff Epoxy and vinyl i.e. they are both impervious. Contact adhesives may be used to bond the vinyl to the Ultratuff Epoxy. A layer of floor levelling compound (eg: Nuplex screed systems) is often used over the Ultratuff Epoxy to absorb adhesive moisture. This has been found to be effective.

Floor Levelling:

Old floors often require both waterproofing and floor levelling. It is essential that the Ultratuff Epoxy is applied first to the prepared concrete. Floor levelling compounds are then applied to the Ultratuff Epoxy. **NB:** Prior to the installation of flooring levelling compounds it is advised to prime the Ultratuff Epoxy with Lockfast Neoprime. This should be left no longer than 2 hours. If a longer time elapses a further coat of Neoprime is to be applied.

Solid Plaster:

If applying solid plaster over cured Ultratuff Epoxy, prepare a slurry coat of cement and **ARAPLEX 2000** and prime the wall with this mixture prior to full plastering.

Green Concrete:

Ultratuff Epoxy can be laid on green concrete. Normally the age of the concrete should be 7 or more days. It is expected that laying in this situation, the concrete will have been protected from rain since laying. Green/saturated concrete is not a suitable base. In all instances normal preparation (shotblasting or grinding) is still required prior to laying Ultratuff Epoxy.

Floor Coating (Trafficable)

If Ultratuff Epoxy is to be used as a floor coating, it then requires overcoating with two coats of AQUACOLOUR waterproofing. (**NB:** Ensure the Epoxy is cured 48hrs prior to the application of Aquacolour). Terratuff may also be used over fully cured Ultratuff Epoxy. Both these topcoats will convey trafficability.

Packaging:

4 litres: 2 litres A 2 litres B (handyman kit) 8 litres, 4 litres A, 4 litres B (boxed kit) 20 litres:10 litres A, 10 litres B (pails)

Application Method:

Brush, roller or spray (if sprayed then follow-on with roller).

Mix Ratios:

Either by volume or weight, 1:1 part A and B. Mix the two parts with a paint mixer bit and a power drill.

Product Requirements:

Total requirement (2 coats) is worked out on 1.5m²/litre or 3m²/Lt/coat

Examples: A 12m² floor requires 8 litres (4Lts A plus 4 Lts B). Or a 20lt kit (10A + 10B) will finish 30m² (2 full coats).

Thinning:

Not recommended, but may be thinned up to 10% with clean potable water.

Dry Times:

(25°C 50% RH), Surface dry 4 hours, Hard dry 24 hours, Full cure 7 days, Pot life (mixed) 2 hours, Do not use beyond pot life. If overcoating with solvent based products allow at least 4 days to cure.

Clean Up:

Warm water and detergent.

For safety see the Material Safety Data Sheets:

All information is given in good faith without warranty. Users are encouraged to assess the product under their own conditions and for their own applications

ULTRATUFF

WATERPROOF MEMBRANE

FIXING REQUIREMENTS FOR UTRATUFF MEMBRANE ON PLYWOOD DECKS & ROOFS

Last Updated 5th APRIL 2006

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- 1) "ULTRATUFF Coatings Ltd" requires 17.5mm or thicker CD grade plywood flooring as a structural underlay for general usage. (Refer plywood manufacturers manual).
- 2) Priming of the underside of the plywood is required before installation only if the underside of the ply is going to be left open to the elements, or if it is built over a wet area. The underside and edges of the ply should be primed with a good quality alkyd primer.
- 3) Joist spacing for 17.5mm plywood is 400mm, nogs 400mm to 600mm.
Roofs only maximum joist spacing for 17.5mm plywood is 600mm joist, nogs 400mm to 600mm. (not subject to foot traffic & not being tiled). Maximum joist spacing for 20mm plywood shall be 600mm, nogs 400mm to 600mm.
Framing which deflects when walked over is not rigid enough. Lay sheets to minimise joints.
- 4) Remember to allow for 100mm step from floor to finished height of deck inc. Tiles & 300mm width for gutters. Open type handrails can not be fixed through top of deck. Ref. your local Territorial Authority.
- 5) Ensure supporting framing is built to adequate falls, generally 1.4 degrees for roofs & 1.3 degrees for Decks and gutters must be constructed to 1.0° minimum falls before installing plywood (falls cannot be readily created later). Drainage must comply with Paragraph 8.5.6 of NZBC Acceptable Solution E2/AS1 February 2005.
- 6) Use CD H3-treated grade plywood to provide a smooth surface to adhere the membrane to. Note that T&G plywood still requires support under tongue.
- 7) Glue (Bostic) and Screw fixing at 150mm centres to the perimeter of sheets and 200mm centres down the middle. Ensure all screws are countersunk just below the surface of the plywood 10 x 60 stainless steel screws.
- 8) Lay sheets in a brick bond pattern with the face grain (long ways) across the joist. The plywood must be continuous across at least two spans at right angles to the main supports.
- 9) Ensure sheets are close butted but not forced together with nil to 1mm gap, except where the sheets come up against a solid wall a 3mm gap needs to be left to allow for movement. This can then be hidden with the fillet. (see 11) Sand sheet joints to remove any differences in level. Chip out delaminations and fill any gaps with construction grade epoxy filler.
- 10) Form gutters out of ply or overlay solid nogs with compressed fiber cement sheet and fit outlets (ensure lip of outlet is either level with, or below the ply) and check falls. Chamfer all sharp edges. Fit Aluminium folded L flashings to form drip edge when gutter is external type (refer roof & Deck detailed drawings). Allproof wastes are recommended as a waste & for overflows also.
- 11) Install 18mm x 18mm timber fillets to all right angles. Important that the angle fillets are fixed at 100mm centres firmly to the deck (not the wall) and glued to avoid buckling.
- 12) Contact membrane applicator as soon as possible to enable your job to be started promptly. Prime the area with a suitable primer (check with applicator) if the area to be waterproofed is going to be exposed to the elements for more than two weeks.
- 13) Posts should not pass through the substrate unless they are going to be clad over. (Water can penetrate posts which are left natural or rely on stain or paint for protection. Don't build tunnels. (They can't be waterproofed properly). Down pipes should not pass through substrate. Fit Allproof waste at penetration point & seal the downpipe into it after waterproofing is finished

For more detailed explanations or confirmation of requirements refer to your local plywood supplier's installation procedures, the building code & your local Territorial Authority. Extracts of the "Fixing Requirements for Ultratuff Membrane" have been taken from the BRANZ publication, "Good membrane roofing practice", B.I.A web site proposed changes to building code & the building code. Additional information contained in these two pages is based on our experience & testing & represents the latest information available at the date of production. Contact Ultratuff coatings if further information or clarification is required.

ULTRATUFF

WATERPROOF MEMBRANE

FIXING REQUIREMENTS FOR UTRATUFF MEMBRANE ON PLYWOOD DECKS & ROOFS

Last Updated 5th APRIL 2008

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Common Misconceptions:

Will the membrane have a perfectly smooth finish? No. As it is gel coating it does not self-level & will dry with a texture to it also helps reduce slip.

The joints in the plywood are still visible through the membrane. This can happen, once waterproof, the timber dries out shrinkage & movement occur. To reduce this it is important to make sure any raised joints are sanded smooth prior to membrane application. If a higher standard of finish is required the joints can be rebated & filled with construction grade epoxy filler. Not builders bog.

Will the membrane hide imperfections? No as it's a gel coating it doesn't self-level and has a dry-film thickness of between 1.2-1.5mm.

Can it be built up thicker to fix ponding problems? No. For reasons above and also the system would need drying between the multiple layers required.

If the substrate is wet, can you torch it dry? No, not if it is wet through as the torch will only dry the surface. The moisture can slow the curing time and will get trapped in, only to re-appear as bubbles later.

Can I tile it tomorrow? Only if tomorrow is 48 hours after the final coat without rain at 18-23° C and 60-70% R.H. Cooler and/or more humid conditions may prolong dry times.

Can you waterproof under the door when it's in? No, not properly unless the door is properly flashed & the flashing is suitable to waterproof onto. This is a critical area.

Can you waterproof onto the cladding? No. It is very important to apply the waterproofing before the cladding is fitted. Most cladding is designed to drain moisture and breathe at the Roof/Deck junction. There are some exceptions e.g. parapet caps, concrete walls (if they are to be painted) etc.

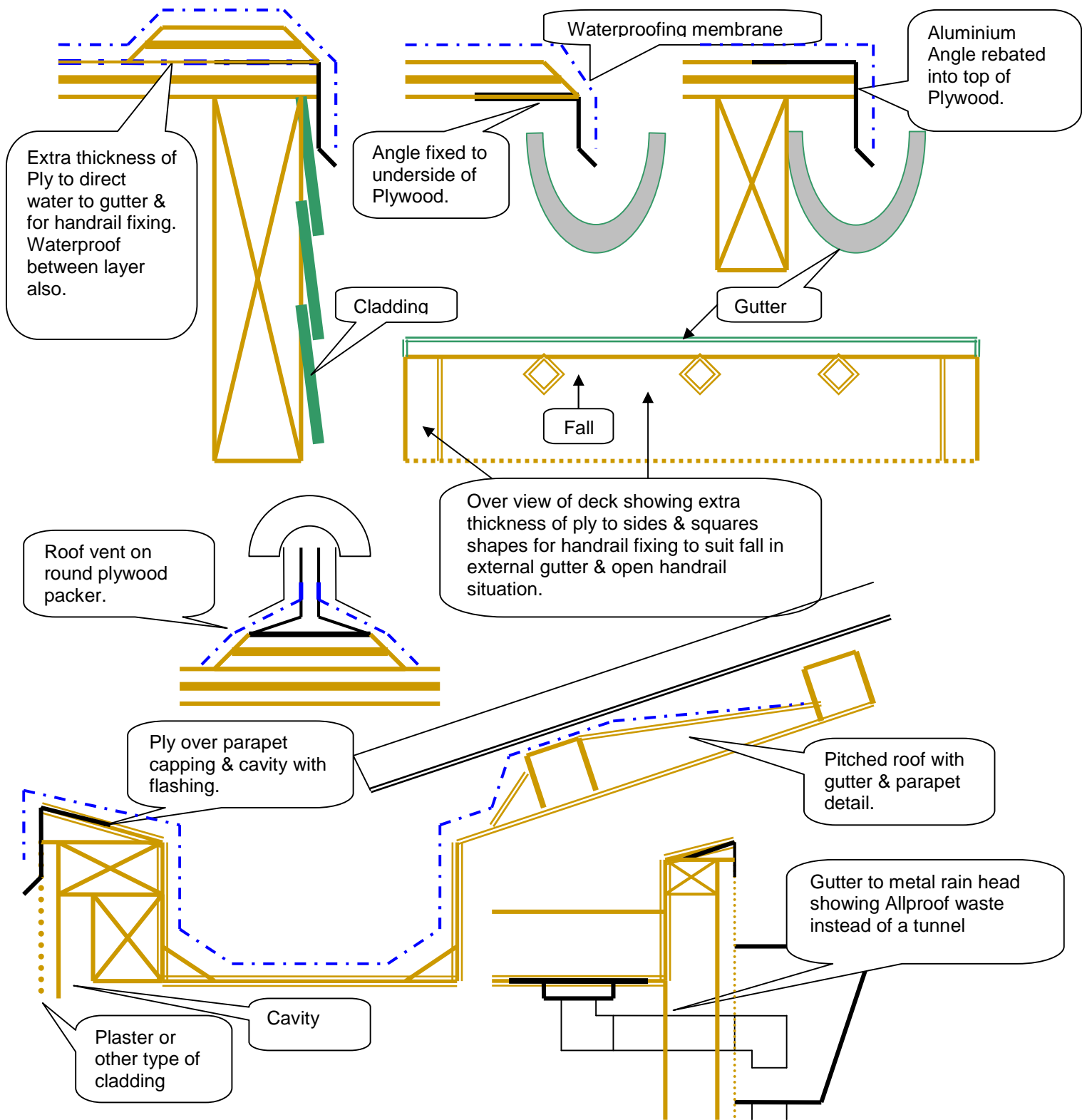
The handrail cap doesn't need waterproofing. Yes it does plaster or a timber cap & paint will not keep water out of a handrail cap. If it fails it could cause the deck to fail also.

Can you waterproof onto the Faisha board? No as excessive shrinkage may occur. Fit an L flashing that can be waterproofed onto.

For more detailed explanations or confirmation of requirements refer to your local plywood supplier's installation procedures, the building code & your local Territorial Authority. Extracts of the "Fixing Requirements For Ultratuff Membranes" have been taken from the BRANZ publication "Good membrane roofing practice", B.I.A web site proposed changes to building code & the building code. Additional information contained in these two pages is based on our experience & testing & represents the latest information available at the date of production. Contact Ultratuff coatings if further information or clarification is required.

ULTRATUFF

WATERPROOF MEMBRANE

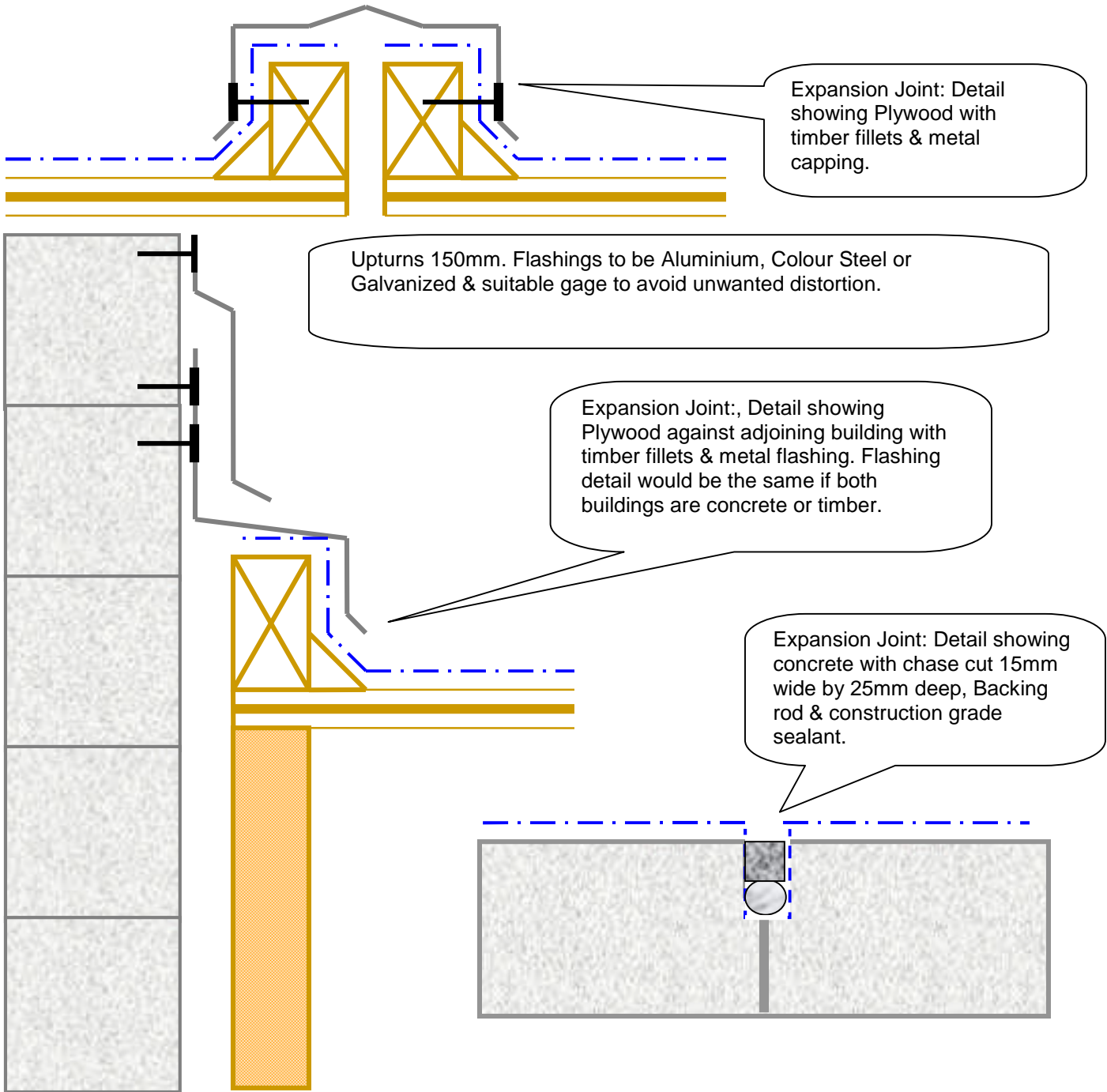


Roof & Deck Detail Using Plywood

Above are ideas for detailing of roofs & decks. They are not to scale & are a guide only based on our experience. Please refer to the building code & your Territorial Authority for design acceptance.

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Roof & Deck Detail For Expansion Joints

Above are ideas for detailing of roof & deck expansion joints. They are not to scale & are a guide only based on our experience. Please also refer to the building code & your Territorial Authority for design acceptance. The Engineer or Architect should have calculated & detailed the expansion joints on the plans.

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FIXING REQUIREMENTS FOR UTRATUFF MEMBRANE TO BATHROOM & INTERNAL WET AREAS

Last Updated 5th APRIL 2006

Page 1 of 2

- 1) "ULTRATUFF Coatings Ltd" requires compressed fibre cement sheet as an underlay over particle board & T&G substraights or CD H3-treated plywood as an alternative option (minimum 17.5mm thick). Other suitable water resistant board designed for use in wet areas may also be used as an underlay.
- 2) Shower floors: for a level access shower on a concrete floor, drop shower floor by 30mm. On a timber floor drop shower floor 50mm. alternatively install a concrete hob (usually available from waterproofer) approximately 65x65mm. The fall for the shower tray should be formed before waterproofing. The waterproofer or tiler is the best person to form shower floors. Normally done with sand cement and admix. You should leave to cure 5- 7 days depending on admix used. The alternative is to use a 24 hour full cure screed such as rapid 45 from Flooring Wholesale. Timber hobs are no longer acceptable as they sweat, swell & rot.
- 3) Wastes need to be set in the middle of the shower & packed up to allow for the thickness of the screed approx. 10mm (confirm with your waterproofer or tiler). The screed can then finish level with the flange of the waste. Englefield type wastes cause ponding/seepage problems as they won't let the water flow away from under tiles. Also they cannot be waterproofed properly in some applications. Recommend Allproof, Metal craft & McAlpine wastes only.
- 4) Baths (that are not checked in to walls because they have a ledge) should be out until box is waterproofed. It is not possible to waterproof the ledge at the back wall once bath is fitted. If bath is to be checked into wall you need to check out studs as well to insure that the tile won't hit curves in bath before it gets to the point it sits on bath. (Bath will need to be fitted & sealed as per manufacturer's specifications before waterproofing in this situation.) If your pencil will go through a gap around your bath so will any sealant. (Refer to our detailed drawings or Gib book.)
- 5) Plastic shower trays should be fitted after waterproofing as waterproofing will not hold on shower tray. Solid nog around perimeter 150mm. If tray is in leave a 5mm gap between bottom of compressed sheet on wall & flat of shower tray for sealant work. Note wall sheet must overlap upturn on shower tray. Also leave 5mm gap where fibre cement sheet meets shower tray. Butt joint all other joints & lay sheets to minimise joints.
- 6) Door Frames, Skirting, Architraves, Vanities & Toilets to be left out until waterproofing is completed.
- 7) All waterproofing to finish with an upturn or downturn of no less than 100mm, 150mm is recommended
- 8) Note that T&G plywood still requires support under tongue. Ensure sheets are close butted with no gaps. Sand sheet joints to remove any differences in levels. Fill any gaps with construction grade epoxy filler.
- 9) Schedule us before the stopper; if stopper is in first base coat only to wall joints to be waterproofed but not corner joint of shower. This is a two day application over a 3 day period. There is a minimum of 48 hours after final coat is applied before areas can be tiled.
- 10) Recommended joist spacing for 18mm plywood is 400mm, with nogs up to 600mm. Maximum joist spacing recommended for 18mm plywood is 600mm joist, and nogs up to 400mm. Note if using T.N.G plywood joint still needs to be fixed & supported by joist. Glue and Screw fixing is recommended at 150mm centres to the perimeter of sheets and 200mm centres down the middle or closer as per suppliers instructions. Rib shank galvanized nails are acceptable when glue is also used. Ensure all screws/nails are countersunk just below the surface.
- 11) Underfloor heating when used must be installed on top of waterproofing, not underneath once waterproofing is fully cured.

For more detailed explanations or confirmation of requirements refer to your local plywood supplier's installation procedures, the building code & your local Territorial Authority. Extracts of the "Fixing Requirements for Ultratuff Membranes" have been taken from the BRANZ publication "Good membrane roofing practice", B.I.A web site proposed changes to building code & the building code. Additional information contained in these two pages is based on our experience & testing & represents the latest information available at the date of production. Contact Ultratuff coatings if further information or clarification is required.

ULTRATUFF

WATERPROOF MEMBRANE

FIXING REQUIREMENTS FOR UTRATUFF MEMBRANE TO BATHROOM & INTERNAL WET AREAS

Last Updated 5th APRIL 2006
Common Questions

Page 2

Can you waterproof up to skirting & Vanity? No. Skirting & Vanity must be left off/out until waterproofing is completed.

Will the membrane hide imperfections? No. As it is gel coating it does not self-level and has a dry-film thickness of between 1-1.5mm.

Can it be built up thicker to fix levelling problems? No. For reasons above and also the system would need drying between the multiple layers required.

When my shower is running there is water getting under the screen onto the floor. This is a common problem if the wrong waister is used or screen is fitted after tiling & no flashings or sealant work was done prior to tiling to contain any water running under tiles. Very hard to fix.

My plumber says he has a better waister. Check with applicator first what might be good for him to fit may not be good to waterproof or drain water trapped under tiles properly.

My Tiler has a membrane which can be applied in one coat & tiled the next day. Most membranes are applied in two coats & although may be dry the next day are still curing. Check the product data sheet & make sure it is an approved system & the applicator is also approved with correct compliance papers.

Can I tile it tomorrow? Only if tomorrow is 48 hours after the final coat without rain. Cooler and/or more humid conditions may prolong dry times.

Can you waterproof when bathroom fittings are already fitted. No, not properly, unless we can waterproof up onto them at least 70mm (not a good look)

Do you need to waterproof the whole floor? Yes. It is very important to apply the waterproofing to entire floor area to ensure complete protection of the wet area. There are some exceptions e.g. ground floor concrete floors. However, water can track into/under walls & along saw cuts. So recommend these areas also be waterproofed particularly if a tiled walk in shower is required.

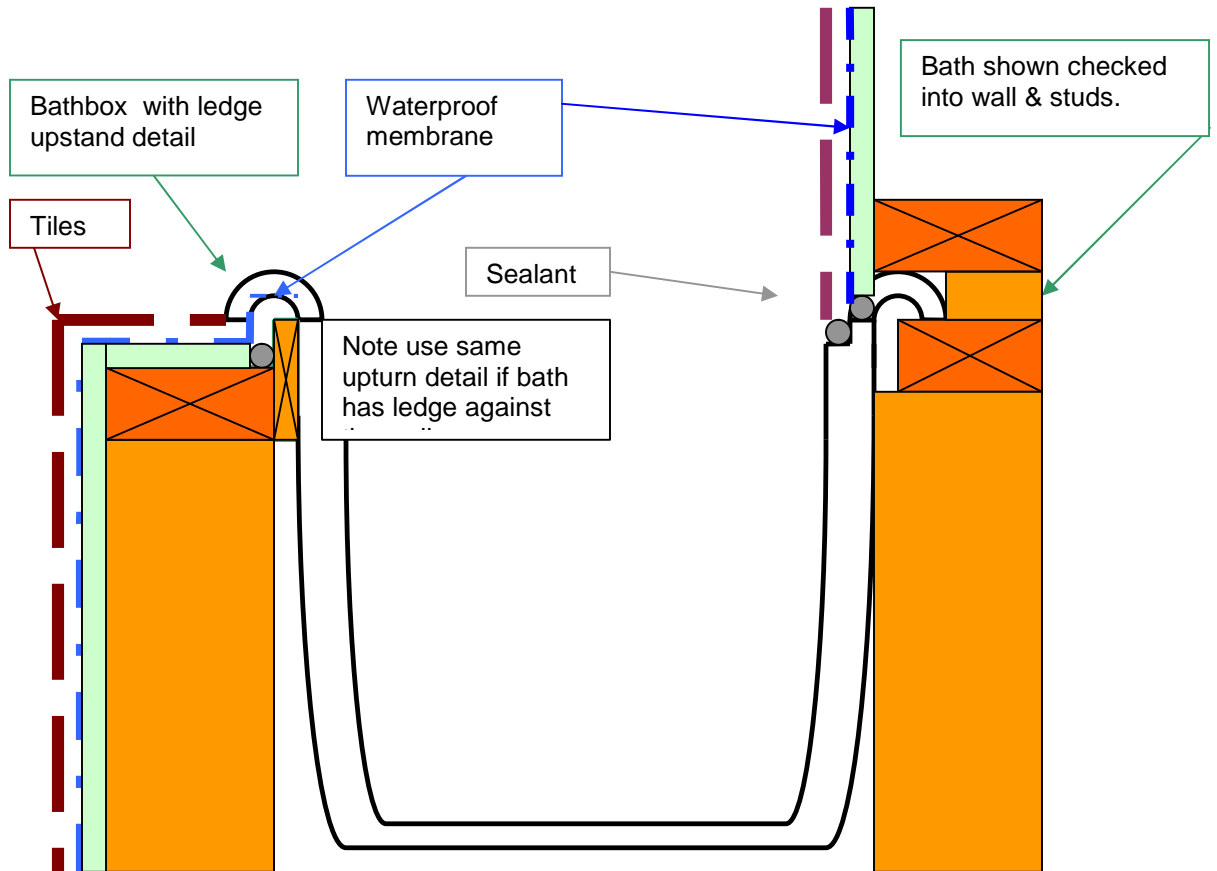
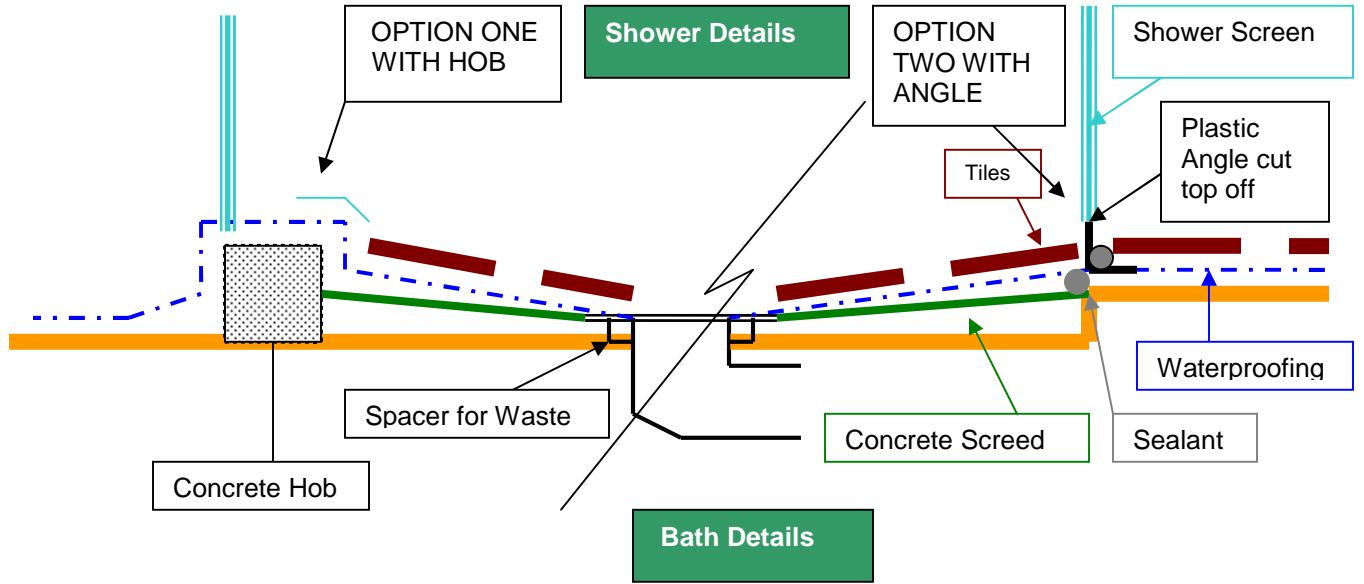
Do you need to flood test bathroom or shower tray? Yes. If practical this should be done by builder/ owner before tiling. Check for damage by other trades, e.g. cuts, pinholes etc in membrane. Tiler should also inspect and accept waterproofing as satisfactory before tiling.

For more detailed explanations or confirmation of requirements refer to your local plywood supplier's installation procedures, the building code & your local Territorial Authority. Extracts of the "Fixing Requirements For Ultra Flex Membranes" have been taken from the BRANZ publication "Good membrane roofing practice", B.I.A web site proposed changes to building code & the building code. Additional information contained in these two pages is based on our experience & testing & represents the latest information available at the date of production. Contact Ultratuff coatings if further information or clarification is required.

ULTRATUFF

WATERPROOF MEMBRANE

Bathrooms



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WATERPROOF MEMBRANE

WARRANTY CONDITIONS

Page One of Two

ULTRATUFF WATERPROOFING MEMBRANE FOR DOMESTIC, LIGHT COMMERCIAL & UNDER TILE
APPLICATIONS
(Standard Specification)

To: _____ Completion Date: _____
(Owners name)

Site Address: _____

1. **Limitations of Cover:** The terms and conditions of Warranty as set out in this letter refer specifically to materials supplied by Ultratuff Coatings Limited, to your Company as **Our Approved Applicator** for this contract.
2. **Warranty Cover:** The Warranty covers quality and suitability for use of materials supplied for interior & exterior applications & relates to film integrity in the sense that it covers waterproofing integrity of the applied membrane, provided that normal regular topcoat maintenance (to areas that are not protected by tiles) is carried out in accordance with recommendations as detailed in the product data sheet and producer statement provided by Ultratuff Coatings Limited.
3. **Warranty Period:** The maximum period for which such materials are covered by a materials warranty is fifteen (15) years from such date stipulated in any form of warranty entered into by **The Approved Applicator**.
4. **General Terms and Conditions:**
 - (a) This warranty is applicable only to materials manufactured by Ultratuff Coatings Limited, and applied by **The Approved Applicator**.
 - (b) This warranty is supplied to **The Approved Applicator** as the purchaser of the materials. It is not an application or Process Performance Warranty and may not replace or supplant any warranty required of **The Approved Applicator** for application/process performance.
 - (c) The Warranty is valid only for the satisfactory performance of materials which are applied to this contract strictly in accordance with specifications supplied for this contract, information contained in relevant Know Hows, and any other specific written instructions supplied by Ultratuff Coatings Limited, or amendments there to.
 - (d) For areas that are not protected by tiles or other acceptable covering validity of the Warranty for the stipulated period shall only be maintained by application of a further top coat as preventive maintenance of the system. This application shall be carried out between the beginning of the ninth year and end of the tenth year of the Warranty term, and shall be the owner's responsibility.

ULTRATUFF

WATERPROOF MEMBRANE

WARRANTY CONDITIONS

ULTRATUFF WATERPROOFING MEMBRANE FOR DOMESTIC, LIGHT COMMERCIAL & UNDER TILE APPLICATIONS

5. **Limitation of Liability:** No responsibility is taken by Ultratuff Coatings Limited, for any failure of the applicator to apply materials in the correct manner to correctly nominated, prepared and designed surfaces. No responsibility is taken by Ultratuff Coatings Limited, for any alteration to performance of the materials caused by work carried out on the coated surfaces without prior written approval of Ultratuff, or any change in use of the coated structure from that pertaining at the time coating work was completed. There shall be no liability for Ultratuff in respect of damage to or deterioration in performance of the coatings caused by Act of God, exceptional weather conditions, fire or riot civil commotion, vandalism, nuclear explosions or fall out, damage caused by objects dropped from above, bursting or other forms of destruction or failure of gas or fluid carrying pipes or other vessels, electrical faults, negligence or wilful damage by the main contractor, owner and/or occupier of the building and/or any visitors to the building on which the coatings are applied, or any criminal act, or any consequential damage, or any physical damage from mechanical causes, spillage of any substance or disruption of the surface to which the coatings are applied by any natural disturbance of the structure.
6. **Indemnity:** If it is established that faulty materials have been supplied to **The Approved Applicator**, for this contract and the Terms and Conditions set out above have been satisfied, Ultratuff Coatings Limited, will thereby indemnify **The Approved Applicator**, against the costs of rectification or upgrading of any coated surfaces where such materials have been used, so that the original warranty period and performance are met.
7. **Payment for Materials:** This Warranty shall not be binding on Ultratuff Coatings Limited until payment in full is received by Ultratuff Coatings Limited for materials supplied to **The Approved Applicator** for the contract described above.
8. **Disputes:** Should there be any dispute in regard to any provisions of this Warranty or the manner in which it is exercised or interpreted, the decision of any independently appointed arbitrator will be accepted as final and binding.

ULTRATUFF

WATERPROOF MEMBRANE

PRODUCER STATEMENT ULTRATUFF WATERPROOFING MEMBRANE FOR DOMESTIC, LIGHTCOMMERCIAL & UNDER TILE APPLICATIONS

To Whom It May Concern

The Ultratuff Waterproofing Membrane system when used as in accordance with our Product Data Sheets & Specifications is in compliance with E2 External Moisture, E3 Internal Moisture, & B2- Durability, of the New Zealand Building Code. In particular, Clause B2.3.1 calls for membranes such as Ultratuff to have satisfactory performance with normal maintenance, (to exposed areas) as recommended by the Manufacturer in the specification, for either the specified intended life of the building, or 15 (fifteen) years, whichever is the lesser. This is further defined in Table 1 of Acceptable Solutions B2/AS1. Normal maintenance would involve cleaning (at a maximum of six month intervals) & inspection of the membrane & an application of a further top coat as preventive maintenance of the system. This application shall be carried out between the beginning of the ninth year and end of the tenth year of the Warranty term, and shall be the owner's responsibility. Areas subject to regular foot traffic may require recoating at 4 to 5 year intervals or when the top coat is showing signs of wear.

To: _____ Completion Date: _____
(Owners name)

Site Address: _____

Waterproofing Company: _____

Applicator Warranty Number: _____ Applicator Licence Number _____

The ULTRATUFF Coatings Ltd licensed applicator certifies that this project has been carried out in accordance with the relevant ULTRATUFF Coatings Ltd "Application Instructions" and Specifications. ULTRATUFF Coatings Ltd warranty is invalidated by any non compliance with ULTRATUFF Coatings Ltd "Warranty Conditions" or "Application Instructions" and methods.

Signed: _____ (Applicator) Date: _____

Signed: **SAMPLE** _____ (Manufacturer) Date: 18/5/04 _____