

4432WD WPS DURO™ DECK & WET AREA MEMBRANE

1. GENERAL

This section relates to the application of **Waterproofing Systems Ltd** products:

- duroSET® membrane, for internal wet areas and tiled/covered decks
- duroQIK® liquid membrane, for internal wet areas and tiled/covered decks
- duroTUF® exposed trafficable deck membrane

1.1 RELATED WORK

Refer to ~ for ~

1.2 ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:

DFT Dry Film Thickness

Documents

1.3 DOCUMENTS REFERRED TO

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1 External moisture
AS/NZS 2269 Plywood - structural - Specifications

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Waterproofing Systems Ltd documents relating to work in this section are:

duro Product Manual (3rd Edition October 2007)

Standard detailed drawings

[BRANZ Appraisal 469](#) - DuroSet™ and DuroQik™ External Waterproofing Membranes

[BRANZ Appraisal 470](#) - DuroSet™ and DuroQik™ Wet Area Membranes

For copies of the above documents, or for technical assistance, contact your local **Waterproofing Systems Ltd** representative:

Northland, Auckland	021 - 917 773
Waikato, Bay of Plenty	021 - 457 953
Gisborne	021 - 457 953
Hawkes Bay, Manawatu	021 - 402 434
Wanganui, Taranaki	021 - 402 434
Wairarapa, Wellington	021 - 402 434
Marlborough, Nelson	027 - 544 5534
Christchurch, Dunedin	027 - 544 5534
Southland, Central Otago	027 - 544 5532

Web: www.waterproofing.co.nz

Telephone: 03 - 366 9495 (Head office) or 0508 (2WATER) 292837

Facsimile: 03 - 366 9496 (Head office)



Warranties

- 1.5 WARRANTY - INSTALLER/APPLICATOR
Installer's warranty for the system under normal environmental and use conditions against failure.

Execution warranty: 3 years

Provide this warranty on the installer's standard form.

- 1.6 WARRANTY - MANUFACTURER/SUPPLIER
Manufacturer's material warranty for the system under normal environmental and use conditions against failure.

Material Warranty: 15 years for duroSET® and duroQIK® in tiled applications
15 years for duroTUF® in exposed trafficable applications
(with recoating)

From: Date of completion of the application

Requirements

- 1.7 QUALIFICATIONS
Waterproofing work to be carried out by licensed applicators approved by **Waterproofing Systems Ltd**. Approved applicators may be found at:
Web: www.waterproofing.co.nz
Telephone: 03 - 366 9495 or 0508 (2WATER) 292837

- 1.8 NO SUBSTITUTIONS
Substitutions are not permitted to any specified **Waterproofing Systems Ltd** system, or associated components and products.

- 1.9 PROJECT REGISTRATION
Contact **Waterproofing Systems Ltd** to confirm that the project has been registered.
Web: <http://www.waterproofing.co.nz/project-registration.html>
Telephone: 03 - 366 9495 or 0508 (2WATER) 292837
If the project has not been registered, telephone and provide all required details.

Performance

- 1.10 PERFORMANCE
Accept responsibility for the weather-tight performance of the completed membrane system.

- 1.11 PRE INSTALLATION MEETING
Convene a meeting between the applicator, contractor, all associated consultants and **Waterproofing Systems Ltd** to ensure all parties know what is required for effective performance of the system.

- 1.12 SPECIAL DETAILS
Where a standard detail does not exist, or if a standard detail cannot be applied, an approved alternative must be obtained from **Waterproofing Systems Ltd** before proceeding with the installation.

- 1.13 QUALITY ASSURANCE
Maintain quality necessary to assure that work is performed in accordance with this specification and the qualifying requirements of **Waterproofing Systems Ltd**.



Ensure that **Waterproofing Systems Ltd's** Quality Control sheets are completed fully and faithfully for each installation area.

2. PRODUCTS

Materials

- 2.1 WATERPROOFING MEMBRANE
duroSET® single component light beige coloured liquid water based flexible rubber membrane in pails marked with the manufacturer's mark.
- 2.2 QUICK CURING WATERPROOFING MEMBRANE
duroQIK® two-part water based flexible waterproofing membrane comprising duroQIK® liquid component plus the duroMIX® curing compound in pails/bags marked with the manufacturer's mark.
- 2.3 CURING ADDITIVE
duroMIX® cementitious curing additive, (used with duroQIK® liquid), and supplied in bags marked with the manufacturer's mark.
- 2.4 TILE ADHESIVE
duroFIX® flexi ceramic tile adhesive for tiling over duroSET® or duroQIK® membranes in bags marked with the manufacturer's mark.
- 2.5 TILE ADHESIVE FOR CONTINUOUSLY IMMERSED APPLICATIONS
duroBOND™ flexi ceramic tile adhesive for tiling over duroQIK® membranes in continuously immersed applications.
- 2.6 HI-BUILD ACRYLIC TRAFFICABLE MEMBRANE
duroTUF® liquid applied acrylic membrane for exposed deck applications, with high elastomeric properties in pails marked with the manufacturer's mark and reinforced with polyester fleece approximately 50 - 60 gsm.
- 2.7 TINTING PASTE
A pigment paste to tint duroTUF® to the desired colour.
- 2.8 PRIMER
duroPRIME™ general purpose primer, duroPRIME™ Sand/Cement Primer additive or duroPRIMER PU a moisture vapour primer in pails marked with the manufacturer's mark, and used in accordance with **Waterproofing Systems Ltd** technical literature.

Accessories

- 2.9 REINFORCEMENT
RF fabric tapes, butylFLASH™ tapes or pre-formed Elastofabric tapes and preformed internal and external corners.
- 2.10 SEALANT
EF polyurethane sealant.
- 2.11 SUBSTRATE FILLER
duroPRIME™ Sand/Cement Primer combined with duroMIX® to form a repair mortar.
- 2.12 RAINWATER AND FLOOR WASTE FITTINGS
Use only proprietary fittings.



3. EXECUTION

Conditions

3.1 GENERALLY

Comply with the requirements and instructions of **Waterproofing Systems Ltd** and the manufacturer's requirements.

3.2 STORAGE

Take delivery of pails of liquid membrane and accessories undamaged. Include for site handling facilities where required. Store, on a level surface, off concrete floors, out of direct sunlight or freezing conditions and with the required accessories under conditions that ensure no deterioration or damage.

3.3 CHECK SUBSTRATE

Check that the substrate will allow work of the required standard and will comply with the requirements of the NZBC. Complete any remedial work identified before commencing any work.

3.4 CURING OF NEW CONCRETE

Allow concrete to fully cure before applying membranes. Maximum moisture content of concrete 75% RH.

3.5 FILM THICKNESS

Ensure that the dry film thickness specified in the **Waterproofing Systems Ltd** installation documents is achieved. Film thickness is an important factor to the waterproofing performance of the membrane and its long term durability.

Application - Preparation - duroSET®/duroQIK®

3.6 SUBSTRATE CONDITION

Ensure that the substrate is in a suitable condition to allow work of the required standard and will comply with the requirements of the **NZBC E2/AS1** for the relevant substrate and **Waterproofing Systems Ltd** requirements.

Ensure that the substrate construction is well braced against movement and deflection and structurally sound. Ensure that the substrate falls to the rainwater/water outlets and water must not pond. Ensure all surfaces are clean, dry and free from dust and dirt, oils or grease with no projections of sharp materials.

Acid etch and/or diamond grid concrete surfaces as required to achieve a suitable surface.

3.7 SUBSTRATE PREPARATION

Remove projections and all debris, leaving the surface dust-free, oil-free and clean, with nothing that could diminish the adhesion of primers. Grind off steps or sharp protrusions caused by formwork joints. Ensure there are no concrete additions or release agents that could diminish adhesion of membrane. Vacuum when preparation is complete to remove all dust.

3.8 PRIME SUBSTRATES

Prime substrates thoroughly with duroPRIME™ Primer, duroPRIME™ Sand/Cement PRIMER or duroPRIMER PU ensuring a good even coverage and penetration as recommended by **Waterproofing Systems Ltd**. Where an existing coating is present on the substrate confirm with **Waterproofing Systems Ltd** technical specification that duroPRIME™ Primer is the most appropriate primer to use for the specific substrate.

- 3.9 PRIME METAL SUBSTRATES
Prime metal substrates thoroughly with metal primer ensuring a good even coverage as recommended by **Waterproofing Systems Ltd.**
- 3.10 PRIME ASPHALT AND BITUMEN SUBSTRATES
Prime with a solution of 1 part Gripset 51 to 1 part water. Ensure a good adhesion and even coverage and penetration as recommended by **Waterproofing Systems Ltd.**
- 3.11 ALLOW PRIMER TO DRY
Allow the primer to fully dry as recommended by **Waterproofing Systems Ltd.**
Prevent contamination of the primed surface prior to application of the membrane.
- 3.12 FILL VOIDS
Voids and gaps to be filled with mortar incorporating duroPRIME™ Sand/Cement Primer and duroMIX® or EF polyurethane sealant.
- Installation - duroSET®**
- 3.13 WEATHER CONDITIONS
Install duroSET® liquid membrane only in fair weather with surface temperature above 10°C and below 35°C
- 3.14 INSTALL EF POLYURETHANE SEALANT
Install a 12mm fillet of EF polyurethane sealant at junctions or substrate abutments before the application of RF fabric reinforcement
- 3.15 REINFORCEMENT
Provide reinforcement to the duroSET® membrane with RF tapes, butylFLASH™ or Elastofabric tapes to **Waterproofing Systems Ltd** specifications. Embed the tapes into a wet coat of the duroSET® and ensure that the reinforcing is completely covered with subsequent coatings of the liquid membrane.
- 3.16 JUNCTIONS IN SUBSTRATE
Ensure that all junctions in substrate i.e. wall/floor and wall/wall and substrate abutments are reinforced to **Waterproofing Systems Ltd** specifications. Reinforce over cracks up to 2mm maximum. Reinforce to enhance seals around penetrations and pipes through the membrane.
- 3.17 INSTALL duroSET®
Install the duroSET® membrane to the substrate to **Waterproofing Systems Ltd** installation specifications. A minimum of two coats to apply a total minimum of 1.5 litres/m² giving a DFT of 1.2mm is recommended by Waterproofing Systems Ltd. Apply subsequent coats at different directions to the preceding coat. Apply with roller (medium/long nap), long bristle brush or spray.
- 3.18 PROTECTION
Do not leave membrane exposed for prolonged periods to UV light and the possibility of mechanical damage. Cover with protection sheeting if required. Apply tiling and/or surface toppings once the duroSET® membrane is fully cured according to **Waterproofing Systems Ltd** specifications.
- 3.19 TILING
duroFIX® ceramic tile adhesive to be used according to **Waterproofing Systems Ltd** specification.



Installation - duroQIK®

- 3.20 WEATHER CONDITIONS
Install duroQIK® liquid membrane only in fair weather with surface temperatures above 5°C and below 25°C.
- 3.21 INSTALL EF POLYURETHANE SEALANT
Install a 12mm fillet of EF polyurethane sealant at junctions or substrate abutments before the application of RF fabric reinforcement.
- 3.22 REINFORCEMENT
Provide reinforcement to the duroQIK® membrane with RF, butylFLASH™ or Elastofabric tapes to **Waterproofing Systems Ltd** specifications. Embed the tapes into a wet coat of the duroQIK® and ensure that the reinforcing is completely covered with subsequent coatings of the liquid membrane. Identify any live cracks in concrete, plywood substrates and reinforce with elastofabric joint tapes.
- 3.23 JUNCTIONS IN SUBSTRATE
Ensure that all junctions in substrate i.e. wall/floor and wall/wall and substrate abutments are reinforced to **Waterproofing Systems Ltd** specifications. Reinforce over cracks up to 2mm maximum. Reinforce to enhance seals around penetrations and pipes through the membrane.
- 3.24 INSTALL duroQIK®
Install the duroQIK® membrane to the substrate to Waterproofing Systems Ltd installation specifications. Ensure the duroMIX® curing additive is fully dispersed through the duroQIK® liquid before installation. A minimum of two coats to apply a total minimum of 1.5 litres/m² giving a DFT of 1.2mm is recommended by **Waterproofing Systems Ltd**. Apply subsequent coats at different directions to the preceding coat. Apply with roller (medium/long nap), long bristle brush or spray.
- 3.25 PROTECTION
Do not leave membrane exposed for prolonged periods to UV light and the possibility of mechanical damage. Cover with protection sheeting if required. Apply tiling and/or surface toppings once the duroQIK® membrane is fully cured according to **Waterproofing Systems Ltd** specifications.
- 3.26 TILING
duroFIX® or duroBOND™ ceramic tile flexible adhesive to be used according to **Waterproofing Systems Ltd** specification.

Application - Preparation - duroTUF®

- 3.27 SUBSTRATE CONDITION
Ensure that the substrate is in a suitable condition to allow work of the required standard and will comply with the requirements of [NZBC E2/AS1](#) for relevant substrate and **Waterproofing Systems Ltd** requirements.

Ensure that substrate is well braced against movement and deflection. Ensure that the substrate falls to the outlets and water must not pond. Ensure all surfaces are smooth, clean, dry and free from dust and dirt with no projections of sharp materials that will cause damage to the membrane. Ensure metal surfaces are free from rust. Clean and treat any substrates affected by mould or fungus with a suitable fungicide. Identify any live concrete cracks or designed movement joints for elastofabric reinforcement.



Acid etch and/or diamond grid concrete surfaces as required to achieve a suitable surface. Ensure all substrates are clean, dry and fully cured.

3.28 SUBSTRATE PREPARATION

Remove projections, remove all debris, leaving the surface dust-free, oil-free and clean, with nothing that could diminish the adhesion of primers. Grind off steps and sharp protrusions caused by formwork joints. Vacuum when preparation is complete to remove all dust.

3.29 PLYWOOD SUBSTRATE

Lay plywood sheets with staggered joints (brick bond), and laid tight-butted, with all edges fully supported. Ensure sheets are rigid, with joints flush, no lumps or hollows, smooth, clean, dry (20% maximum moisture content) and free of debris. Plywood to be minimum 17mm, H3 CCA treated and conform to AS/NZS 2269. Sheets to be fixed with glue and stainless steel screws counter sunk, chamfered edges, coving fillets to all up-stands and installed to **Waterproofing Systems Ltd** specification. Do not use LOSP treated plywood.

3.30 PRIME PLYWOOD SUBSTRATES

Prime plywood substrate thoroughly with duroPRIME™ Primer or duroPRIME™ Sand/Cement Primer ensuring a good even coverage and penetration as recommended by **Waterproofing Systems Ltd**.

3.31 PRIME CONCRETE SUBSTRATES

Prime concrete substrates thoroughly with duroPRIME™ Primer, duroPRIME™ Sand/Cement Primer or duroPRIMER PU ensuring a good even coverage and penetration as recommended by Waterproofing Systems Ltd. Ensure the concrete substrate is fully aired and dry prior to priming.

3.32 PRIME METAL SUBSTRATES

Prime metal substrates thoroughly with metal primer ensuring a good even coverage as recommended by **Waterproofing Systems Ltd**.

3.33 ALLOW PRIMER TO DRY

Allow the primer to fully dry as recommended by **Waterproofing Systems Ltd**. Prevent contamination of the primed surface prior to application of the membrane.

Installation - duroTUF®

3.34 WEATHER CONDITIONS

Install duroTUF® membranes only in fair weather with air temperature above 10°C and below 25°C. Ensure substrate is dry at time of laying and has maximum moisture content of 20%. Do not lay in hot or humid conditions as this will affect the curing of the membrane.

3.35 UPSTANDS

Install fillets, minimum 20mm to all upstands and ensure a tight neat fit.

3.36 JOINT, CORNER AND UPSTAND REINFORCEMENT

Install RF, butylFLASH™ or Elastofabric tape reinforced membrane system across all plywood sheet joints, internal and external corners and upstands prior to installing the first body coat of the membrane system. Allow to dry.

3.37 INSTALL REINFORCED DUROTUF® BODY COAT

Install LS base coat of the duroTUF® membranes to enable the installation of the polyester fleece reinforcement generally over the total substrate, ensuring no air entrapment or bridging, to **Waterproofing Systems Ltd** installation specifications, at

a rate of 0.8 - 1.0 kg/m². Install the membrane system to the specified DFT. Refer to SELECTIONS for thickness. Ensure the base coat is fully dry before installation of the following application. Live cracks in concrete or designed movement joints in substrates must be reinforced with elastofabric reinforcement tapes.

- 3.38 **INSTALL DUROTUF[®] TOP COAT**
Apply the top coat of the duroTUF[®] to **Waterproofing Systems Ltd** installation specifications at a rate of 0.8 -1.0 kg/m² per coat. Ensure good even coverage and film thickness.
- 3.39 **INSTALL WEAR COAT FINISH**
Apply the top coat of the duroTUF[®] to **Waterproofing Systems Ltd** installation specifications at a rate of 0.8 -1.0 kg/m² per coat. Ensure good even coverage and film thickness. The duroTUF top coat comes with the fine sand particles required for the wear coat immersed in the duroTUF liquid
- 3.40 **TINTING DUROTUF[®]**
Add tinting paste to duroTUF[®] and disperse thoroughly using a mechanical stirrer. Minimise any air entrapment. Tinting to be light colours only with a light reflectance value of 40% or more.
- 3.41 **INSTALL DUROCLEAR PROTECTION COAT**
Apply duroCLEAR finish coat to protect duroTUF from stains; (e.g. pot plant leaf stains and spillages). Coverage 1.0 litres / m² wet film thickness applied evenly by roller, brush or sprayer.

Completion - generally

- 3.42 **CLEAN UP**
Clean up as the work proceeds.
- 3.43 **ACCEPTANCE**
- Arrange for an inspection of the completed work.
 - Complete **Waterproofing Systems Ltd** Quality Control sheets and provide to them for the issuing of the Materials Warranty.
 - Protect the membrane until completion of the contract works.
- 3.44 **LEAVE**
Leave this work in a sound and waterproof condition and free of any defect.
- 3.45 **REMOVE**
Remove debris, unused materials and elements from the site.



4. SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

4.1 DUROSET®

Location: ~
Supplier: **Waterproofing Systems Ltd**
Brand: duroSET®
DFT: 1.2mm
Tile Adhesive: duroFIX flexi

4.2 DUROQIK®

Location: ~
Supplier: **Waterproofing Systems Ltd**
Brand: duroQIK®
DFT: 1.2mm
Tile adhesive: duroFIX flexi

4.3 DUROTUF®

Location: ~
Supplier: **Waterproofing Systems Ltd**
Brand: duroTUF®
DFT: 1.5 - 2.0mm
Finish: ~
DuroCLEAR: ~
Tint colour: ~

5. DISCLAIMER

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

