

4422WT WPS ECOTUFF® TPO WATERPROOFING MEMBRANE

1. GENERAL

This section relates to **Waterproofing Systems Ltd ecoTUFF®** membrane roofing, bonded to:

- construction plywood, including all underlays and accessories
- concrete, including all underlays and accessories.

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:

TPO Thermoplastic Polyolefin (reinforced rubber sheet)

Documents

1.3 DOCUMENTS

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

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

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

epiTUFF® Product Manual
Standard detailed drawings

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, Gisborne	021 - 457 953
Hawkes Bay, Manawatu	021 - 402 434
Wanganui, Taranaki, Wellington, Wairarapa	021 - 402 434
Marlborough, Nelson, Christchurch, Dunedin, Otago	0275 - 445 534
Southland, Central Otago	0275 - 445 532

Manufacturer/supplier contact details

Company: **Waterproofing Systems Ltd**
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 - APPLICATOR
Installer's warranty for the system under normal environmental and use conditions against failure.
5 years: Execution warranty

- Provide this warranty on the installer's standard form.

Refer to the general section 1237 WARRANTIES for additional requirements.

- 1.6 WARRANTY - MANUFACTURER/SUPPLIER
Provide a material manufacturer/supplier warranty.
20 years: for materials

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of completion of application.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

- 1.7 QUALIFICATIONS
Roofing 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: www.waterproofing.co.nz/register
Telephone: 03-366 9495 or 0508 (2WATER) 292837
If the project has not been registered, telephone and provide all required details.

Performance

- 1.10 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.
- 1.11 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.
- 1.12 TEST
Flood test horizontal applications with a minimum 50mm depth of water for 24 hours. Make good any lack of watertightness when the surface is completely dry.
- 1.13 PERFORMANCE
Accept responsibility for the weather-tight performance of the completed roofing system, including all penetrations through the roof and junctions with walls and



parapets. All penetrations to comply with [NZBC E2/AS1](#) and **Waterproofing Systems Ltd** recommendations.

1.14 **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 **ECOTUFF® TPO SHEET**

Single ply TPO reinforced rubber membrane bearing the manufacturer's mark. Refer to SELECTIONS for type and thickness.

Components

2.2 **PRIME**

Prime with 50/50 mixture of solvent and ecoTUFF® adhesive

2.3 **ECOTUFF® Sealant**

Waterproofing Systems Ltd specially formulated TPO sealant for general purpose flashing and 3 - way laps.

2.4 **ECOTUFF® TPO FLASHING**

Waterproofing Systems Ltd unreinforced flashing for use in corners, heat welded to ecoTUFF TPO. Unreinforced T joint covers used to seal T joint sections in ecoTUFF® TPO sheet.

2.5 **ECOTUFF® PIPE BOOTS**

Waterproofing Systems Ltd TPO moulded unreinforced pipe boots designed to fit 20mm-150mm penetrations. Boots are welded to substrate and mechanically clamped and sealed around pipes.

2.6 **EPIBOND 3000 ADHESIVE**

Waterproofing Systems Ltd TPO contact adhesive system.

Accessories

2.7 **EDGE TRIM**

Aluminium drip edge trim 3.0m and 5.0m lengths **Waterproofing Systems Ltd** details to suit the specific location.

2.8 **ROOFING ACCESSORIES**

Waterproofing Systems Ltd moulded Polyethylene rain water outlets, overflow, scuppers and vents designed for TPO membranes. Air vents are polyethylene or spun aluminium one way vents installed approximately 45sqm per vent.



3. EXECUTION

Conditions

3.1 STORAGE

Take delivery of **Waterproofing Systems Ltd** ecoTUFF® branded rolls, undamaged and allow for site handling facilities where required. Store membranes and accessory materials under conditions that ensure no deterioration of damage. Ensure all tapes and adhesives are within their expiry dates. Note: Some of the ecoTUFF® materials are Class 3 flammable goods.

3.2 CONFIRM LAYOUT

Confirm layout as detailed on drawings. If not detailed on the drawings, confirm the layout to suit site conditions, and **Waterproofing Systems Ltd** specification.

3.3 WEATHER

Apply ecoTUFF® membrane system in dry atmospheric conditions and only when the air or substrate temperature is 6 degrees Celsius and above.

Application - preparation

3.4 PRELIMINARY WORK

Ensure that preliminary work, including formation of falls, flashing rebates, grooves, ducts, provision of battens and fillets and fixing of vents and outlets to levels, is complete and properly constructed to enable the system to work as intended. No timber fillets are required. This work and the substrate to be smooth, clean and dry.

3.5 ACCEPTANCE OF SUBSTRATE

Confirm that the substrate complies with the [NZBC E2/AS1](#) for the relevant substrates and **Waterproofing Systems Ltd** documents, including fillets, sumps, outlets and projections, and ensure work is of the required standard.

3.6 CONCRETE SUBSTRATE

Ensure concrete substrate has been allowed to cure for at least 28 days and has a moisture content of less than 75% RH before commencing application. Prepare the surface, including vacuum cleaning and acid etching as necessary to leave smooth, clean, dry and free of debris. Install grid tapes in 600x600mm grid for venting that lead to one-way vents or other suitable approved venting outlet. No mortar fillets are required.

3.7 PLYWOOD SUBSTRATE

Plywood to be minimum 18mm thick square-edged sheets and complying to AS/NZS 2269, minimum CD structural grade with the sanded C side upwards. Treated H3 with waterborne CCA treatment and kiln dried after treatment. Lay with staggered joints (brick bond) with all edges of the sheets fully supported. Chamfer all external edges with a minimum radius of 5mm. Fix with glue and 10 gauge x 50mm stainless steel countersunk head screws, with all sheets tight butted. Fix at 150mm centres on edges and 200mm in the body of the sheets. Plywood and the timber substructure to have a maximum moisture content of 20% when the membrane is installed. Plywood must not be LOSP treated.

Application - laying ecoTUFF®

3.8 GENERAL

Tape plywood joints using a polyethylene bond-breaker 25mm tape. Run out the ecoTUFF® membrane and allow to relax for 20 minutes before laying. Do not stretch sheets or tapes when laying.



- 3.9 SET-OUT
Neatly set out rolls starting at the lowest point of the roof and run perpendicular to the roof pitch. Allow for 50mm side laps and end laps. Pre-plan the work to keep the number of membrane laps to a minimum. ecoTUFF® rolls to be relaxed prior to installation.
- 3.10 APPLY ADHESIVE
Apply epiBOND 3000 TPO adhesive to the substrate at a rate of 2sqm per litre by brush or roller ensuring good even coverage. and Leave to tack dry before bonding the two surfaces together.
- 3.11 BONDING LAPS
Clean laps where required with weathered lap cleaner, form all laps at 40mm cover using the Leister heat welder carefully heat both mating surfaces at the back of the lap evenly at the same time whilst firmly rolling the on top of the sheet with the hand roller. Using the Leister heat welder make your final run by placing the nozzle between the sheets at the front lap area, heat both surfaces (to the point of melting the mating surfaces) and creating a bonded lap of 40mm. Firmly roll the lap with a lap roller immediately and test the lap joint on completion with a lap probe.
- 3.12 MINOR MOVEMENT JOINTS
Lay membrane across joint but leave unbonded underneath ecoTUFF® on both sides of the joint. Refer to Waterproofing Systems technical dept for a specially designed movement joint detail.
Unbonded width: ~mm
- 3.13 INSPECT
Inspect and test lap joints on completion with lap probe ensuring the lap is fully bonded
- 3.14 PENETRATIONS
Use a heat gun (Leister) to form and finish upstands, downturns, penetrations, sumps and vents to conform to the ecoTUFF® Product Manual and NZBC E2/AS1. Use the gun to form and heat weld flashing patches to the exterior of the ecoTUFF membrane.
- 3.15 PENETRATIONS AND JUNCTIONS
Check that adjoining walls and parapets are prepared ready for the installation of the roofing. Confirm that openings have been prepared ready for the installation of skylights and other penetrations through the roof.
Required work includes the following:
- roofing installation neatly finished to all sides of openings and to all wall and parapet junctions.
- installation of flashings (those required to be installed prior to installation of penetrating elements and/or wall linings).
- Finishing**
- 3.16 FOOT TRAFFIC
Foot traffic is to be limited during and after laying. Providing access boards for later operations and remove when no longer needed. Protect and maintain roofing until completion of the contract works.
- 3.17 ECOTUFF® TPO WALKWAY PADS
Walkway pads and rolls for direct fix to ecoTUFF® for high trafficable areas.



- 3.18 **ACCEPTANCE**
Sign off acceptance of completed areas using the **Waterproofing Systems Ltd** Quality Control sheets.
- 3.19 **SUBSEQUENT WORK**
Make good any damage by other trades by welding an ecoTUFF patch to the installed membrane neatly to maintain the appearance of the covering as originally laid.

Completion

- 3.20 **ROUTINE CLEANING**
Carry out routine trade cleaning of this part of the work including periodic removal all debris, unused materials and elements from the site.
- 3.21 **DEFECTIVE OR DAMAGED WORK**
Repair damaged or marked elements. Replace damaged or marked elements where repair is not possible or will not be acceptable. Leave work to the standard required for following procedures.

4. SELECTIONS

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

- 4.1 **ECOTUFF® TPO ROOFING MEMBRANE**
Location: ~
Brand: ecoTUFF®
Thickness: ~
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.

