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4423EB EQUUS SOPREMA DUO WATERPROOFING MEMBRANE

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1 GENERAL

NOTE: Formally known as *Equus De Boer Duo Waterproofing Membrane*

This section relates to the supply and installation of **Equus Industries Ltd - Equus Soprema Duo** range of bitumen based flexible roll roofing membrane systems, in a single or two-layer configuration applied on concrete or plywood, used to waterproof flat roofs, decks, podium decks, balconies and terraces.

It includes:

- underlays and accessories necessary for adhering the bituminous waterproofing membrane system.

1.1 RELATED WORK

Refer to 4337 PLYWOOD ROOFING AND DECKING for plywood substrate

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:

Equus	Equus Industries Limited
PIR	Polyisocyanurate
SBS	Styrene-Butadiene-Styrene
APP	Atactic polypropylene
CRA	Condensation risk analysis
ODP	Ozone Depletion Potential
GWP	Global Warming Potential
TPO	Thermo Plastic Poly-Olefin
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The following definitions apply specifically to this section:

SBS modified bitumen	Elastomer modified bitumen which are more elastic and have a better adhesion compared to APP modified bitumen. Ideal for colder climate application.
APP modified bitumen	Plastomer modified bitumen which have a higher melting point and are harder compared to SBS modified bitumen. Ideal for warmer climate application
TPO modified bitumen membrane	Thermoplastic Polyolefin modified bitumen which have an excellent UV-resistance.
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Documents

1.3 DOCUMENTS

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

NZBC B1/AS1	Structure
NZBC B1/VM1	Structure
NZBC B2/AS1	Durability
NZBC E1/AS1	Surface water
NZBC E1/AS2	Surface water
NZBC E2/AS1	External moisture
AS/NZS 2269	Plywood - Structural
AS/NZS 3500.3: 2018	Plumbing and drainage - Stormwater drainage
NZS 3114	Specification for concrete surface finishes

1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:
Equus - The Waterproofing Manual

Equus Soprema DeboPlast 2.5 T/F C175 or DeboFlex 2.5 T/F C175 Technical Data Sheet and specification
 Equus Soprema DeboPlast 2.5 T/F C175 or DeboFlex 2.5 T/F C175 Safety Data Sheet
 Equus Soprema DeboTack 2.5 T/F C175 Technical Data Sheet and specification
 Equus Soprema DeboTack 2.5 T/F C175 Safety Data Sheet
 Equus Soprema DeboTack 2.5 T/F C175 Aero Technical Data Sheet and specification
 Equus Soprema DeboTack 2.5 T/F C175 Aero Safety Data Sheet
 Equus Soprema Duo HT 4 Slates/F C180 Firecare (FC) Technical Data Sheets and specifications
 Equus Soprema Duo HT 4 Slates/F C180 Firecare (FC) Safety Data Sheets
 Equus Soprema Easy Foam PU adhesive Technical Data Sheet and specification
 Equus Soprema Easy Foam PU adhesive Safety Data Sheet
[BRANZ Appraisal 685](#) - Soprema Duo Roof and Deck Membrane Systems
[BRANZ Appraisal 1169](#) - Equus Soprema Warm Roof System
 BBA Appraisal 20/5843 - Soprema Modified Bitumen Membranes: Duo High Tech Waterproofing Membranes

Manufacturer/supplier contact details
 Company: Equus Industries Ltd
 Web: <https://equus.nz/>
 Email: tech.support@equus.co.nz
 Telephone: +64 (0)3 353 2434

Warranties

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

20 years For **Equus Soprema Duo** range of two-layer membranes and proprietary products. It includes an appropriate Maintenance Statement and schedule.

- Provide this warranty on the **Equus Industries Ltd** standard form (if unavailable use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Note: **Soprema** provides an additional material manufacturer warranty to the above. Refer to **Equus Industries Ltd** and **Soprema** for details.

1.6 WARRANTY - INSTALLER/APPLICATOR

Provide an **Equus** certified applicator warranty:

10 years For application of **Equus Soprema Duo** membrane systems

- Provide this warranty on the applicator standard form (if unavailable use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of Practical Completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **Equus** system, or associated components and products.

1.8 QUALIFICATIONS

Waterproofing work to be carried out by certified applicators approved by **Equus Industries Ltd**.

Approved applicators may be found at:

Web: <https://equus.nz/>
 Telephone: +64 (0)3 578 0214

1.9 PRE-INSTALLATION MEETING

Convene a meeting between the applicator, contractor, all associated consultants and **Equus Industries Ltd** where appropriate to ensure all parties know what is required for effective performance of the system.

1.10 PROJECT NOTIFICATION

Prior to installation of **Equus Soprema Duo** membrane, approved applicators to return project notification on the standard Project Notification Form to **Equus Industries Limited**.

1.11 SPECIAL DETAILS

Where a standard **Equus Soprema Duo** detail does not exist, or if a standard detail cannot be applied, an approved alternative must be obtained from **Equus Industries Ltd** before proceeding with the installation.

1.12 INFORMATION FOR OPERATION AND MAINTENANCE

Provide **Equus Industries Ltd** inspection, maintenance and cleaning instructions to the owner at completion of the work.

Refer to the general section 1239 OPERATION & MAINTENANCE for provision of the following general operation and maintenance information as electronic PDF format documents:

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Provide this information prior to Practical Completion.

1.13 MAINTENANCE CONTRACT PROPOSAL (OPTIONAL)

Provide a proposed contract for the annual inspection of the waterproofing membrane by **Equus Certified Applicator** to ensure weather tightness and to comply with **NZBC B2/AS1**, 'Durability'. In particular:

- Ensure the roof and all outlets are free of blockages and are clear of unwanted debris, all associated flashings and capping are sound, the general condition of the membrane, and the membrane is free of surface moss, mould or lichen.
- Check all associated building elements that can impact the durability of the membrane.
- In higher risk areas such as sheet joints, substrate movement, edging, gutters, penetrations, corners, upstands, outlets and overflows, carry out a thorough weather tight inspection.

Compliance information

1.14 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -

- Applicator's approval certificate from the manufacturer / importer / distributor
- Manufacturer's, importer's or distributors warranty
- Applicator's warranty
- Producer Statement - Construction from the applicator / installer
- Other information required by the BCA in the Building Consent Approval documents.

Performance

1.15 TESTING - FLOOD

Where practical flood test horizontal applications with a minimum 50mm depth of water for 48 hours. Make good any lack of water tightness when the surface is completely dry. Repeat water test process after making any necessary repairs.

1.16 TESTING - ALTERNATIVE FORMS OF LEAK DETECTION

Contact **Equus Industries Ltd** +64 (0)3 578 0214 for appropriate methods of leak detection.

1.17 PERFORMANCE

Accept responsibility for the weather-tight performance of the completed membrane roofing system, including all penetrations through the roof and junctions with walls and parapets. All penetrations to comply with **NZBC E2/AS1** clause 8.5.9 - 'Penetrations' and **Equus** recommendations.

Quality control and assurance

1.18 QUALITY CONTROL

Maintain quality necessary to assure that work is performed in accordance with this specification and the qualifying requirements of **Equus Industries Ltd**.

1.19 INSPECTIONS

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2 PRODUCTS

Materials

2.1 BASE SHEET - COLD CLIMATE, FULLY BONDED

Equus Soprema DeboFlex 2.5mm T/F C175 is a flexible waterproofing membrane consisting of elastomer (SBS) modified bitumen and reinforced with a layer of 175g/m² non-woven polyester with glass scrim. The membrane has an overlap of 80mm. It is used as a base sheet on plywood and concrete substrates. Installed by torch-on application. Supplied in 1m x 10m rolls.

2.2 BASE SHEET – WARM CLIMATE, FULLY BONDED

Equus Soprema DeboPlast 2.5mm T/F C175 is a flexible waterproofing membrane consisting of a plastomer (APP) modified bitumen and reinforced with a layer of 175g/m² non-woven polyester with glass scrim. The membrane has an overlap of 80mm. It is used as a base sheet on plywood and concrete substrates. Installed by torch-on application. Supplied in 1m x 10m rolls.

2.3 BASE SHEET – SELF ADHERED, FULLY BONDED

Equus Soprema DeboTack T/F C175 is a flexible waterproofing membrane consisting of elastomer (SBS) modified, self-adhesive bitumen and reinforced with a layer of 175g/m² non-woven polyester with glass scrim. The membrane has an overlap of 80mm. It is used as a base sheet on plywood and concrete substrates. Supplied in 1m x 10m rolls.

2.4 BASE SHEET – SELF ADHERED, PARTIALLY BONDED

Equus Soprema DeboTack T/F C175 Aero is a flexible waterproofing membrane consisting of elastomer (SBS) modified, self-adhesive bitumen and reinforced with a layer of 175g/m² non-woven polyester with glass scrim. The membrane has a pattern of self-adhesive stripes at the back. The membrane is partially bonded to the concrete substrate and allows vapor distribution under the waterproofing membrane system. Supplied in 1m x 11.25m rolls.

2.5 CAP SHEET - STANDARD TWO-LAYER SYSTEM, FIRE RETARDANT

Equus Soprema Duo HT 4 Slates/F C180 Firecare (FC), a 4mm thick flexible waterproofing membrane system in a two-layer configuration, comprised of a cap sheet with a TPO modified bitumen upper coating with mechanically pressed-in coloured slates, a SBS modified bitumen under coating and a composite reinforcement of 180 g/m² polyester and glass scrim. The membrane has an overlap of 80mm. This cap sheet is installed on top of the base sheet by fully bonded torch-on application. Laps of base and cap sheet shall be staggered for optimal, two-layer security. Supplied in 1m x 8m rolls. Standard colours available are Grey/White (GW), White/Green/Grey (WGG) and Black (AGR). Brown Oxide (BO) available on request. Refer to SELECTIONS for options.

2.6 CAP SHEET - MECHANICALLY FASTENED

Equus Soprema Duo HT 4 Slates/F C180 Firecare Mecano, a 4mm thick flexible, single-layer waterproofing membrane comprised of a TPO modified bitumen upper coating with mechanically pressed-in coloured slates, a SBS modified bitumen under coating and a composite reinforcement of 180 g/m² polyester and glass scrim. The membrane has an overlap of 130mm. This membrane is mechanically fastened to the substrate with all laps heat welded. Supplied in 1m x 8m rolls. Standard colours available are White/Green/Grey (WGG) and Black (AGR). Brown Oxide (BO) available on request. Refer to SELECTIONS for options.

2.7 CAP SHEET - COLD ADHESION WITH DUO COLD GLUE

Equus Soprema Duo HT 4 Slates/F C180 Firecare No Flame, a 4mm thick flexible, single-layer waterproofing membrane comprised of TPO modified bitumen upper coating with mechanically pressed-in coloured slates, a SBS modified bitumen under coating and a composite reinforcement of 180 g/m² polyester and glass scrim. The back of the membrane is finished with polypropylene fleece for adhesion by cold glue to the substrate. This membrane has an overlap of 80mm. Supplied in 1m x 8m rolls. Standard colour available is Black (AGR). Refer to SELECTIONS for options.

2.8 CAP SHEET - ROOT RESISTANT FOR GREEN ROOFS AND PLANTERS

Equus Soprema Duo HT 4 Slates/F C180 Firecare Landscape (FC LC), a 4mm thick flexible waterproofing membrane system in a two-layer configuration, comprised of a cap sheet with a TPO modified bitumen upper coating with mechanically pressed-in coloured slates, a SBS modified bitumen under coating and a composite reinforcement of 180g/m² polyester and glass scrim. The membrane has an overlap of 80mm. This cap sheet is installed on top of the base sheet by fully bonded torch-on application. The membrane is root-resistant according to European Norm EN13948. Supplied in 1m x 8m rolls. Standard colour available is White/Grey/Green (WGG). Refer to SELECTIONS for options.

Accessories

- 2.9 CONCRETE SUBSTRATE FILLER - MINOR REPAIR
Equus Thermexx Binder / Premix M1, filler for 1-3mm deep repairs.
- 2.10 CONCRETE SUBSTRATE FILLER - MAJOR REPAIR
Equus Chevacyrl Admix/ patch plaster, filler for 3-10mm deep repairs.
- 2.11 PLYWOOD SUBSTRATE FILLER
Equus Epar Epoxy filler 802.
- 2.12 PRIMER - CONCRETE & PLYWOOD
Equus Soprema Duo primer or **Equus Soprema Sopradere Quick** primer
- 2.13 BITUMINOUS SEALANT
Equus Soprema Duo Kit bitumen sealant
- 2.14 MINERAL CHIP DRESSING
Equus Duo Mineral Chip scattered as needed to form uniform appearance.
- 2.15 EQUUS SOPREMA TERMINATION PROFILE
Equus Soprema C-profile to terminate the cap sheet to the wall or upstand.
- 2.16 EQUUS SOPREMA ROOF EDGE PROFILE
Equus Soprema roof edge profile to terminate the cap sheet at roof edges.
- 2.17 EQUUS LIQUID WATERPROOFING
Equus Matacryl liquid applied waterproofing for penetrations and other details as per detail drawings.
- 2.18 BITUMEN ANGLE FILLET
Equus Bitumen Angle Fillet is used instead of plywood angle fillet for increased flexibility and compatibility with bituminous waterproofing membranes.
- 2.19 PEDESTALS
Equus Fixplus range of pedestals and tile supports. Pedestals are customisable to be compatible with a range of flooring materials.

3 EXECUTION

Conditions

- 3.1 GENERALLY
All work and materials to comply with **Equus Industries Ltd** Waterproofing Manual and [NZBC E2/AS1](#) - 'External moisture', [BRANZ Appraisal 685](#), and [BRANZ Appraisal 1169](#)
- 3.2 ROUTINE MATTERS
Refer to the general section 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.
- 3.3 PRE-INSTALLATION REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for this part of the work.
Moisture content: Timber substrate - 18% maximum
Concrete substrate - 75% RH
Confirm that the substrate, including sumps, outlets and projections, will ensure work of the required standard. Ensure the falls are the correct falls to rainwater outlets to avoid ponding.
- 3.4 PRE-COATING/FINISHING REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for specified finish.
Carry out such additional preparatory work as required bringing the substrate to suitable condition.
- 3.5 STORAGE

Refer to the general section 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of **Equus Industries Limited** product. Take delivery of rolls of **Equus Soprema Duo** membrane and accessories undamaged. Include for site handling facilities where required. Store, on a level surface, off floors, out of direct sunlight and with the required accessories under conditions that ensure no deterioration or damage. Rolls should be stored upright to maintain roll shape.

3.6 WEATHER

Lay membrane in fair weather, with ambient air temperature no less than 8°C or when surface temperature is more than 4°C. Normal conditions are 18-23°C. Cooler/ humid conditions may prolong primer dry times.

3.7 EQUIPMENT

Equus Industries Limited requires the approved applicator to use the following equipment:

- Detail gas torch for application of modified bitumen membrane
- Round tipped trowel
- Knife for bitumen membrane with hook blade
- Primer brush or roller
- Lap pressure roller

3.8 STANDARDS AND TOLERANCES

Refer to the general section 1270 CONSTRUCTION for general requirements.

Application

3.9 PRELIMINARY WORK

Ensure that preliminary work, including formation of falls, flashing rebates, grooves, ducts, penetrations, 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. This work and the substrate to be smooth, clean, dry and stable.

3.10 ACCEPTANCE OF SUBSTRATE - GENERAL

Confirm that the substrate, including fillets, sumps, outlets and projections, will ensure work of the required standard. Ensure the substrate fall complies with [NZBC E2/AS1, 8.5.6](#) - 'Roof and deck drainage', including correct fall to rainwater outlets to avoid ponding.

Ensure that the substrate is well braced against movement and deflection and structurally sound. Ensure all surfaces are clean, dry and free from dust and dirt, oils or grease with no projections of sharp materials. Complete any remedial work identified before commencing any work.

Application - plywood substrate

3.11 PLYWOOD SUBSTRATE - GENERAL

Plywood to be minimum 17mm C-D structural plywood to comply with AS/NZS 2269, with the sanded 'C' face upwards. Plywood to be treated to a minimum grade of H3 CCA treated. Do not use LOSP treated plywood. Inspect existing substrates and structures to ensure they will not affect the performance of the membrane when applied. The moisture content of the plywood and the timber substructure must not exceed 20% when the membrane is adhered to [NZBC E2/AS1, 8.5.5.1](#), 'Plywood'.

3.12 LAY PLYWOOD SUBSTRATE

Lay sheets to maximise the use of whole sheets. Lay sheet joints over framing members in a staggered brick bond pattern running across the fall in roof to [NZBC E2/AS1, 8.5.5.1](#) - 'Plywood'. All plywood sheets to be tight butted. Back-prime sheets used over non vented spaces with **Equus Chevaline Dexx** primer where required.

3.13 FIX PLYWOOD SUBSTRATE

Fix plywood to plywood manufacturer's instructions and to [NZBC E2/AS1, 8.5.5.1](#) - 'Plywood', taking into account wind loading, frame spacing and ply thickness. Screw-fix using countersunk stainless steel screws, gauge 10 with length 3 times the thickness of the plywood to [NZBC E2/AS1, 8.5.5.1](#) - 'Plywood'. Lay sheets in a bead of construction adhesive along all framing members. For two-layer plywood surfaces the first layer can be power-nailed but the second layer must be screw-fixed with all joints offset from the first layer. Recess all fastener heads below level of sheet face. Fix screws at 150mm centres on sheet perimeter and 200mm through the body of the sheet.

Ensure substrate framing supports plywood at a maximum 600mm centres each way for roofs and 400mm each way for decks. Fully support all sheet joints.

3.14 PLYWOOD FALLS

Construct membrane seams parallel with the fall to minimise ponding and flow restriction where possible. Ensure plywood is laid across falls.

Generally:

- Lay roofs to a minimum fall of 1:30 (2°) to [NZBC E2/AS1, 8.5.1 a.](#)
- Lay decks to a minimum of 1:40 (1.5°) to [NZBC E2/AS1, 8.5.1 b.](#)
- Lay gutters to a minimum fall of 1:100 (0.57°) to [NZBC E2/AS1, 8.5.1 c.](#)

3.15 PLYWOOD CORNERS

Chamfer all leading edges of plywood with a 5mm radius corner. Install to all internal corners **Equus** bitumen angle fillet or H3.2 treated timber fillet of minimum 25mm x 25mm.

3.16 PLYWOOD OUTLETS - NZBC E1/AS1

Install roof and deck outlets to [NZBC E2/AS1, 8.5.6](#) - 'Roof and deck drainage'. Size outlets in accordance with [NZBC E1/AS1](#).

3.17 PLYWOOD OUTLETS - AS/NZS 3500.3: 2018 & NZBC E1/AS2

Install roof and deck outlets to [NZBC E2/AS1, 8.5.6](#) - 'Roof and deck drainage'. Size outlets in accordance with [AS/NZS 3500.3: 2018](#) as modified by [NZBC E1/AS2](#).

3.18 SURFACE PREPARATION

Remove projections and all debris, leaving the surface dust-free, oil-free and clean, with nothing that could diminish the adhesion of primers. All surface defects and fasteners to be flushed out with an approved filler such as **Equus Epar Epoxy 802** and allowed to dry before membrane application. Include any gaps due to irregularities in sheet edges at tight-butt joints.

3.19 CONTROL AND EXPANSION JOINTS

For control and expansion joints refer to details on the drawings.

3.20 PRIME SUBSTRATE - PLYWOOD

Prime all dried and prepared plywood surfaces with **Equus Soprema Duo Primer**, by brush or roller at a spreading rate of 5m² per litre, before membrane application. A double-prime system may be needed in certain cases.

3.21 ALLOW PRIMER TO DRY

Allow the primer to fully dry for 4 to 24 hours depending on prevailing weather conditions. Prevent contamination of the primed surface prior to application of the membrane.

3.22 APPLY BASE SHEET - TORCH-ON APPLICATION TO PLYWOOD

Unroll and align **Equus Soprema DeboPlast 2.5mm T/F C175** or **DeboFlex 2.5mm T/F C175** base sheet in the most suitable direction. Cut to length as required. Discard all packaging prior to installation. Re-roll both ends to the middle and torch evenly overall to both base sheet and primed substrate as this is unrolled. Ensure even heat application. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 150mm. The lap automatically closes during the torching process. Offset end laps of minimum 500mm in adjacent runs.

3.23 APPLY BASE SHEET – SELF-ADHESIVE APPLICATION TO PLYWOOD

Unroll and align **Equus Soprema DeboTack 2.5mm T/F C175** base sheet in the most suitable direction. Cut to length as required. Discard all packaging prior to installation. Remove back covering, self-adhere evenly to the primed substrate and use light heat on side- and end laps with a detail torch or with hot-air welding equipment. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 150mm. Offset end laps of minimum 500mm in adjacent runs.

3.24 APPLY CAP SHEET - PLYWOOD

Unroll and align **Equus Soprema Duo HT 4 Slates/F C180 Firecare** (FC) cap sheet, offsetting half sheet from base sheet to create staggered laps. Cut to length as required, discard all packaging prior to installation, re-roll both ends to the middle and torch evenly overall to both base- and cap sheet as this is unrolled. Ensure even heat application. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 150mm. Ensure all laps are offset to prevent coincidence with the base-sheet laps. Following application of the cap sheet, back seal all joints separately to ensure they are neatly and correctly closed.

Where required during the back-sealing operation, scatter **Equus Duo Mineral Chip** carefully over the joint to provide a uniform appearance. Scatter **Equus Duo Mineral Chip** where detailing of the cap sheet has been carried out to provide protection and uniformity of finish where required.

3.25 DETAILING - PLYWOOD

Detail all outlets, pipe penetrations, gutter stop ends, parapet upstands, machinery plinths and anything above or below the roof surface. Detailing is carried out before, during or in some cases after the membrane is laid depending on the detail type. All detailing to be done in accordance with the manufacturer's technical literature and application manual current at the time of design, use, installation and maintenance.

Finishing - to plywood surfaces

3.26 COMPLETION INSPECTION - PLYWOOD

Inspect the system upon completion and leave up to 2-3 weeks to stabilise. Recheck the entire system prior to any warranties being issued. Carry out a pond test where possible, especially on deck areas, for 48 hours. Have a pond test certified/signed off.

Main contractor to arrange appropriate protection for the completed installation. Damage caused to the completed installation, by other trades working over the membrane after the initial inspection, to be the responsibility of the main contractor.

3.27 INSTALL PEDESTALS

For balconies, walkways and roofing applications with raised floors, install **Equus Fixplus Pedestals** as per manufacturer's instructions.

Application - to concrete surfaces

3.28 CONCRETE SUBSTRATE - GENERALLY

Confirm concrete structures are specifically engineered to meet the requirements of the [NZBC B1/VM1, 3.0](#) - 'Concrete'. Inspect the existing substrate and structure to ensure that they will not affect the performance of the membrane when applied.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application to [NZBC E2/AS1, 11.0](#) - 'Construction moisture'. **Equus** do not recommend the use of curing compounds; however, when used ensure all traces of compound are gone or removed. Concrete to be finished to [NZS 3114, U3](#) with a light trowel texture.

3.29 SURFACE PREPARATION - CONCRETE

Remove projections and all debris, leaving the surface dust-free, oil-free and clean, with nothing that could diminish the adhesion of primers. All ridges and protrusions to be stoned flush.

Flush depressions with an **Equus Thermexx** or **Equus Chevacyrl** Admix-gauged patch mix and allow curing at least 48 hours before over-coating. Water blast clean all surfaces to remove all detritus and allow to dry.

3.30 CONCRETE FALL

Construct membrane seams parallel with the fall to minimize ponding and flow restriction where possible.

Note that compliance with [NZBC E2/AS1](#) for falls and drainage on concrete roofs and decks is achieved using specific design criteria to suit the project. Assistance is available from **Equus**. Generally, default criteria are as follows:

- Lay roofs to a minimum fall of 1:30 (2°) to [NZBC E2/AS1, 8.5.1 a](#).
- Lay decks to a minimum of 1:40 (1.5°) to [NZBC E2/AS1, 8.5.1 b](#).
- Lay gutters to a minimum fall of 1:100 (0.57°) to [NZBC E2/AS1, 8.5.1 c](#).

3.31 CONCRETE CORNERS

Chamfer all leading edges to 5mm radius and add **Equus** bitumen angle fillet, minimum 25mm x 25mm cement mortar or 25mm x 25mm H3.2 treated timber fillet installed in internal corners.

3.32 CONCRETE OUTLETS - NZBC E1/AS1

Install roof and deck outlets to [NZBC E2/AS1, 8.5.6](#) - 'Roof and deck drainage'. Size outlets in accordance with [NZBC E1/AS1](#). Ensure outlets are level or below the substrate to prevent water from ponding around outlets.

- 3.33 CONCRETE OUTLETS - AS/NZS 3500.3: 2018 & NZBC E1/AS2
Install roof and deck outlets to [NZBC E2/AS1](#), 8.5.6 - 'Roof and deck drainage'. Size outlets in accordance with [AS/NZS 3500.3: 2018](#) as modified by [NZBC E1/AS2](#). Ensure outlets are level or below the substrate to prevent water from ponding around outlets.
- 3.34 CONCRETE AND PLYWOOD AS SUBSTRATE
Equus recommend a specifically designed expansion joint be installed between dissimilar materials.
- 3.35 EXPANSION/ MOVEMENT JOINTS
For expansion/ movement joints refer to details on the drawings.
- 3.36 SHRINKAGE/ SETTLEMENT CRACKING AND CONSTRUCTION JOINTS
For concrete/ solid plaster surfaces; ensure any regular cracks greater than 1mm width, which appear likely to move regularly, be saw cut or chased to 5mm width and 8 - 15mm depth. Prime with **Equus Soprema Duo Primer** and seal with **Equus Duo Kit** sealant.
- 3.37 PRIME SUBSTRATE
Prime the dried and prepared surface with **Equus Soprema Duo Primer** by roller or brush, at a spreading rate of 5m² per litre, ensuring a good even coverage and penetration as recommended by **Equus Industries Ltd**. Application to include upstands to a minimum height of 150mm adjacent to all horizontal surfaces being coated. Consumption rates will depend on surface profile and porosity.
- 3.38 ALLOW PRIMER TO DRY
Allow the primer to fully dry for 4 to 24 hours depending on prevailing weather conditions. Prevent contamination of the primed surface prior to application of the membrane.
- 3.39 APPLY BASE SHEET - TORCH-ON APPLICATION TO CONCRETE
Unroll and align **Equus Soprema DeboPlast 2.5mm T/F C175** or **DeboFlex 2.5mm T/F C175** base sheet in the most suitable direction. Cut to length as required. Discard all packaging prior to installation. Re-roll both ends to the middle and torch evenly overall to both base sheet and primed substrate as this is unrolled. Ensure even heat application. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 150mm. The lap automatically closes during the torching process. Offset end laps of minimum 500mm in adjacent runs.
- 3.40 APPLY BASE SHEET - SELF-ADHESIVE APPLICATION TO CONCRETE
Unroll and align **Equus Soprema DeboTack 2.5mm T/F C175 Aero** partially bonded, self-adhesive base sheet in the most suitable direction. Cut to length as required. Discard all packaging prior to installation. Remove back covering, self-adhere evenly to the substrate and use light heat on side- and end lap with a detail torch or with hot-air welding equipment. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 200mm. The lap automatically closes during the torching process. Offset end laps of minimum 500mm in adjacent runs.
- 3.41 APPLY CAP SHEET - CONCRETE
Unroll and align **Equus Soprema Duo HT 4 Slates/F C180 Firecare** (FC) cap sheet, offsetting half sheet from base sheet to create staggered laps. Cut to length as required, discard all packaging prior to installation, re-roll both ends to the middle and torch evenly overall to both base- and cap sheet as this is unrolled. Ensure even heat application. Repeat in sequence with all rolls, maintaining side laps of 80mm and end laps of 100mm. Ensure all laps are offset to prevent coincidence with the base-sheet laps. Following application of the cap sheet, back seal all joints separately to ensure they are neatly and correctly closed.
- Where required during the back-sealing operation, scatter **Equus Duo Mineral Chip** carefully over the joint to provide a uniform appearance, protection and uniformity of finish.
- 3.42 DETAILING - CONCRETE
Detail all outlets, pipe penetrations, gutter stop ends, parapet upstands, machinery plinths and anything above or below the roof surface. Detailing is carried out before, during or in some cases after the membrane is laid depending on the detail type. All detailing to be done in accordance with **Equus** technical literature and the **Equus Duo** Application Manual current at the time of design, use, installation and maintenance.

Finishing- to concrete surface

- 3.43 COMPLETION INSPECTION - CONCRETE

Inspect the system upon completion and leave up to 2-3 weeks to stabilise. Re-check the entire system prior to any warranties being issued. Carry out a pond test where possible, especially on deck areas for 24 hours. Have a pond test certified/signed off.
Main Contractor to arrange appropriate protection for the completed installation. Damage caused to the completed installation, by other trades working over the membrane after the initial inspection, to be the responsibility of the Main Contractor.

3.44 INSTALL PEDESTALS

For balconies, walkways and roofing applications with raised floors, install **Equus Fixplus Pedestals** as per manufacturer's instructions.

Testing Procedure

3.45 FLOOD TESTING

Where practical, flood test all horizontal applications with a minimum 50mm depth of water for 48 hours. Make good any lack of water tightness when the surface is completely dry. Ensure that an overflow is incorporated during the flood testing and that there are no load limitations that might prevent testing.

3.46 ALTERNATIVE TESTING

Inspect and test all joints in **Equus Soprema Duo** membrane on completion. Contact **Equus Industries Ltd** or **Soprema** for approved alternative testing methods

Completion - general

3.47 CLEAN UP

Clean up as the work proceeds.

3.48 ACCEPTANCE

- Arrange for an inspection of the completed work.
- Protect the membrane until completion of the contract works.

Refer to the general section 1270 CONSTRUCTION for completion requirements and if required, commissioning requirements.

3.49 LEAVE

Leave this work in a sound and waterproof condition and free of any defect.

3.50 REMOVE

Remove debris, unused materials and elements from the site.

4 SELECTIONS

For further details on selections go to <https://equus.nz/>

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

Materials

4.1 EQUUS SOPREMA DUO MEMBRANE - STANDARD TWO-LAYER, FIRE RETARDANT

Location:	~
Supplier:	Equus Industries Ltd
Substrate:	~
Type:	Soprema Duo Firecare
Base sheet:	
Cap sheet:	Duo HT4 Slates/F C180 Firecare (FC)
Colour:	~

4.2 EQUUS SOPREMA DUO MEMBRANE - SINGLE LAYER MECHANICALLY FASTENED FOR RENOVATION

Location:	~
Supplier:	Equus Industries Ltd
Substrate:	Concrete
Type:	Soprema Duo Firecare Mecano

Base sheet: No base sheet (single layer system)
 Cap sheet: Duo HT4 Slates/F C180 Firecare Mecano
 Colour: ~

4.3 EQUUS SOPREMA DUO MEMBRANE - DOUBLE LAYER MECHANICALLY FASTENED

Location: ~
 Supplier: Equus Industries Ltd.
 Substrate: ~
 Type: Soprema Duo
 Base sheet: ~
 Cap sheet: Duo HT 4 Slates/F C180 Mecano
 Colour: ~

4.4 EQUUS SOPREMA DUO MEMBRANE - COLD ADHESION, SINGLE LAYER

Location: ~
 Supplier: Equus Industries Ltd.
 Substrate: Concrete
 Type: Soprema Duo Firecare No Flame
 Base sheet: No base sheet (single layer system)
 Cap sheet: Duo HT4 Slates/F C180 Firecare No Flame
 Colour: Anthracite Black (AGR)

4.5 EQUUS SOPREMA DUO MEMBRANE - TWO-LAYER, ROOT RESISTANT

Location: ~
 Supplier: Equus Industries Ltd.
 Substrate: ~
 Type: Soprema Duo Firecare Landscape (FC LC)
 Base sheet: ~
 Cap sheet: Duo HT4 WGG/F C180 Firecare Landscape (FC LC)
 Colour: White/Green/Grey (WGG)