

Standard Specification for the application of Equus DeboFlex 3.5 Special below-ground waterproofing by SOPREMA.

For areas with risk of hydrostatic water pressure

Project:
Specification: P5200
Date: August 2021
Page 1 of 4

1.0 PREAMBLE:

This specification is for the application of **Equus DeboFlex 3.5 Special by SOPREMA** waterproofing membrane to below-ground concrete structures and screed-protected areas in construction. The membrane can be pre-applied or post-applied providing installation options crucial for below-ground waterproofing systems.

DeboFlex 3.5 CS/F K180 Special has been especially designed to resist underground soil settlement and is designed for use in areas where a risk of hydrostatic water pressure is present.

The system is applicable on moist and dusty areas. After installation the system is not dependent on the weak lean concrete but forms one part with the reinforced concrete floor slab.

The **DeboFlex 3.5 CS/F K180 Special** membrane can be loose laid on lean site concrete or compacted hardfill and all overlaps are welded by gas torch. The membrane is torched fully bonded at all vertical parts and corners.

For walls with lower risk of hydrostatic water pressure, a self-adhesive vertical membrane option Equus COLPHENE 3000 by SOPREMA is available. Please refer to specification **P5300**.

2.0 SURFACE PREPARATION:

2.1 General - Responsibility:

Unless expressly agreed otherwise at time of contract pricing, all work in this section shall be the responsibility of the main contractor, whether carried out by their own staff, other sub-trades or the roofing membrane sub-contractor.

2.2 Concrete Preparation:

Concrete structures must be specifically engineered to meet the requirements of the New Zealand Building Code.

When applying to existing substrates and structures, they must be thoroughly inspected to ensure that they will not affect the performance of the membrane when applied.

Curing times may vary dependent on location, mixes and climate conditions. After the slab has been poured allow sufficient drying time, generally between 14 – 28 days. To verify concrete has sufficiently dried, a measurement can be taken using a hygrometer. A maximum relative humidity of 75% is required, measured at the time of membrane application.

It is recommended that concrete curing compounds are not used. Consult Equus Industries Ltd for a recommendation prior to use if specified by others. Any traces of such compound must be gone or removed before membrane work begins.

The concrete shall be finished to NZS3114:1987 U3, with a light trowel texture.
The concrete shall have all ridges and protrusions stoned flush.

3.0 MEMBRANE APPLICATION:

Note: Install **DeboFlex 3.5 CS/F K180 Special** only in fair weather with an air temperature above 7°C.

3.1 Tanking – Torched Applications:

The following process is recommended when the **DeboFlex 3.5 CS/F K180 Special** membrane is post-applied by torch-on application to the foundation wall.

All vertical areas such as foundation walls receive a coat of **Sopradere Quick** bitumen primer, applied by brush or roller to a dried and prepared surface at a spreading rate of 5 m²/litre. Allow to dry for 4-24 hours depending upon prevailing weather conditions.

DeboFlex 2.5 T/F C175 sand-finished membrane is used as a reinforcement strip in all internal and external corners and connections between floor and wall. The reinforcement strip is fully adhered by torch-on application. Then the **DeboFlex 3.5 CS/F K180 Special** membrane is torched fully bonded against the wall. Ensure all laps are well sealed with a minimum cover of 130mm.

Piles shall be finished using a non-shrink mortar. Waterproof detailing of pile heads shall follow the manufacturer standard detail drawings. In some cases the liquid detail membrane Matacryl Thix can be used.

3.2 Tanking – Self-Adhesive Applications (optional dependent on site conditions):

Once under slab is completed and boxing (in Insitu situation) is removed **Deboflex 2.5 T/F C175** Bandages are installed at the wall/floor junction. Walls are fully primed with **Sopradere Quick** at a spreading rate of 5 m²/litre. Allow to dry for 4-24 hours depending upon prevailing weather conditions. Followed by application of **DeboTack 2.5 T/F C175** Self-adhesive membrane. Heat is used on all connections and laps to ensure full bond. Ensure all joints are well sealed with a minimum lap of 130mm.

Pile edges are finished by means of a non-shrink mortar. The vertical areas and corners of beams, piles and pillar-caps receive a solvent based **Sopradere Quick**. All corners (internal and external) are reinforced with a complementary strip of **Deboflex 2.5 T/F C175** sand finished membrane torched into place.

3.3 Tanking – Loose Laid Applications – Formwork:

DeboFlex 3.5 CS/F K180 Special can be installed inside tilt slab or other types of pre-cast formwork prior to the concrete being poured.

Loose lay **DeboFlex 3.5 CS/F K180 Special** to fit inside the formwork with the granular surface facing upwards. Fully heat-weld all sheet joints with a gas torch. Ensure all joints are well sealed, with a minimum lap of 130mm. This is indicated by the presence of a thin bead of melted bitumen at all sheet joints after torching.

This process can be done off site if required. The membrane is then installed immediately prior to steelwork and concrete placement to prevent damage to the membrane during the

construction process. Tilt slabs or pre-cast concrete elements must be left to cure for a minimum 4-day period before lifting. This enables the chemical bond of the surface of the membrane to the concrete to take place. This is critical to the success of the waterproofing system.

3.4 Tanking Membrane – Loose Laid Applications:

In applications where **DeboFlex 3.5 CS/F K180 Special** is installed as a loose laid waterproofing membrane under concrete floor slabs, curing times are not applicable.

The maximum non-specific design of hardfill shall be up to 600mm in depth. Granular fill, sand blinding and compaction shall comply with the requirements of NZS 3604-99.

Granular fill buildups greater than 600mm will require specific design by the Geotechnical Engineer.

Special attention must be paid when placing reinforcing steel to avoid unnecessary puncture or damage to the **DeboFlex 3.5 CS/F K180 Special**. While the membrane is tough and resistant, care is necessary.

Note: The main contractor shall immediately notify the waterproofing contractor if any such damage occurs.

3.5 Tanking – General Application:

.1 Sheet Joints:

Decide the most suitable direction to follow. Unroll and discard packaging. Align the first roll, cut to length as required and re-roll both ends to the middle. Torch evenly as the membrane is unrolled into place.

Ensure even heat application. Repeat in sequence with all rolls, maintaining minimum laps of 130mm. Each lap automatically closes during the torching process. Offset end laps in adjacent runs.

.2 Repairs to damaged areas:

Should the **DeboFlex 3.5 CS/F K180 Special** be damaged or perforated so that its waterproofing qualities are affected, repairs can be made by heat-welding a piece of **DeboFlex 3.5 CS/F K180 Special** membrane of suitable size to cover the damaged area with a minimum overlap of 130mm on all sides of the damaged area.

.3 Backfilling:

Drainage is required to prevent excessive hydrostatic pressure against the membrane. Provide a drain coil with a minimum diameter of 100mm (incorporating a filter material) to the base of the foundation. The outlet must discharge to an approved outlet. Installation shall be in accordance with E2/AS1 External Moisture of the New Zealand Building Code with provision for cleaning.

The membrane must be protected from being damaged by abrasive materials, expansive soils and during backfilling. This can be achieved by installing a protection and drainage barrier such as an **Equus drainage layer**.

The drainage layer shall be kept in place by the **Equus Termination Bar**.

Free-draining granular backfill is required behind the tanked wall and around the drain coil. An impervious top coating is required above the free draining granular backfill to manage the surface water away from the building with a minimum fall of 1:30.

Equus Industries Limited must be consulted regarding the design and suitability of membrane barriers.

4.0 MAINTENANCE AND WARRANTY:

4.1 Maintenance:

Equus Industries Limited recommends, as normal maintenance, that a certified installer inspect annually to ensure weathertightness and durability of the following areas:

- The top edge of the membrane sheet
- Sheet protection at that top edge
- The subsoil drainage is not blocked and is free draining to an approved outlet.

Check all associated building elements that can impact on the durability of the membrane.

4.2 Warranty:

The **Equus SOPREMA DeboFlex 3.5 Special** waterproofing membrane, as detailed in this specification, may be warranted as waterproof for a period of up to twenty (20) years provided that:

- (a) All work is carried out by a Certified Equus Applicator.
- (b) The **DeboFlex 3.5 Special membrane by SOPREMA** is installed in accordance with the manufacturer's technical literature and the Application Manual current at the time of design, use, installation and maintenance.
- (c) The Warranty is issued in conjunction with an appropriate Maintenance Statement.

The period of warranty is determined by the situation of the installation. The warranty period shall be determined for any contract in consultation with the Manufacturer or his representative.

The warranty is provided to the client by the Equus Certified Applicator carrying out the work and is backed by the Manufacturer as to the fitness for the purpose of the materials supplied for the contract.

--oo0oo--