Crystoflex

2 Pack (Cementious + Polymer)
Waterproofing Membrane

PRODUCT DESCRIPTION

Crystoflex is a Class 1 flexibility, two part waterproofing membrane comprising of a liquid component of selected polymers and a powder component of selected cements, fillers and aggregates. When mixed together to form a brush-able or roll-able slurry, it provides a strong, hydrostatic pressure resistant, flexible waterproofing membrane.

Crystoflex meets the criteria of the following standards, ensuring it meets the requirements of the National Construction Code of Australia:

- ❑ AS4654.1 Class 1
- ❑ AS/NZS 4020:2002 Testing of Products for Use in Contact with Drinking Water - Australian Water Quality Centre Report Number 4007/92.1595.
- ❑ AS4858 Class 1.
- ❑ Meets the 'Green Star' environmental criteria.

USAGE/PURPOSE

- ❑ Water retaining structures such as concrete tanks, ponds, pools, fountains, and water features.
- ❑ Crystoflex is suitable for contact with drinking water
- ❑ Wet area above screed/secondary membrane.
- ❑ Balconies and Terraces - Class 1 membrane.
- ❑ Retaining walls, planter boxes.
- ❑ Roofs (top coated with Azcothane as recommended).
- ❑ Under tile waterproofing on balconies, terraces, podiums and decks.
- ❑ Patching blowholes and honey-combed areas.

PACKAGING

30kg Kit.

COLOUR

Grey.

SHELF LIFE

12 months.

STORAGE

Product should be stored in cool, dry areas. Do not use if bag is damaged.

FEATURES & BENEFITS

- ❑ Suitable for contact with drinking water.
- ❑ Meets the 'Green Star' environmental criteria.
- ❑ Designed for applications where hydrostatic pressure resistance is required.
- ❑ Suitable for immersion in water.
- ❑ Can be applied to damp surfaces.
- ❑ Can be topped, tiled, or coated.
- ❑ Compatible with most tile adhesives.
- ❑ Suitable for use in confined areas.
- ❑ Can be rendered with a polymer render or standard render with bonding additive.

LIMITATIONS

- ❑ Crystoflex is flexible and can withstand normal building movement but it has limited elongation and hence will not tolerate excessive movement or cracking of the substrate. Cracks and gaps must be independently sealed and waterproofed.
- ❑ If the water is to be treated with chlorine, ensure that chlorine levels are maintained below swimming pool concentrations, recommended range 60-160PPM. High doses of chlorine may 'burn' and degrade the membrane.

TYPICAL PHYSICAL PERFORMANCE

PERFORMANCE TEST	TEST METHOD	TYPICAL VALUES
Abrasion Resistance	AS1580.403.2	Light foot traffic only
Bond Strength (average peel strength)	ASTM C794	60 N Concrete masonry, 39 N plywood
Cyclic Movement	Moving Joint Test	Pass
Elongation at Break	AS4654.1 Appendix A	0.48MPa 10% Elongation Class I
Heat Ageing	AS/NZS4858	0.79 MPa 8% Elongation Pass
Temperature Resistance	AS4654.1 clause 2.6	Pass
Tensile Strength	AS4654.1 table A4	0.48 MPa 10% Elongation
Thickness	Various methods	2.43mm (mean sample supplied) See Note 1
Durability	AS4654.1 Table A4	Pass, See note 2
Water Vapour Transmission Rate	ASTM E96	10.50g/m²/24 hours

COVERAGE/YIELD

Coverage rate varies depending upon type, condition, porosity, texture of the surface and application technique.

- ❑ Usually 1kg per m^2 per coat applied in a minimum of 2 coats and 3 for demanding applications.

SUITABLE SURFACES

- ❑ Concrete
- ❑ Cement and Cement Render
- ❑ Polymer Render
- ❑ Block Work (preferably filled and vibrated to ensure the absence of voids)
- ❑ Brick
- ❑ FC and CFC sheeting
- ❑ Blue Board
- ❑ Timber
- ❑ Masonry

SURFACE PREPARATION

Good preparation is essential. Surfaces must be sound, stable, dry, clean, and free of dust, loose, flaking, friable material and substances that may diminish adhesion, therefore please see the points below:

- ❑ Exposed reinforcing steel must be treated for rust and coated with suitable anti-corrosive and anti-rust treatments (as for concrete spalling).
- ❑ Concrete surface that is rough, pitted, contains blowholes and honey-combed areas must be suitably filled with high tensile strength, non-shrink mortar and allowed to fully cure.
- ❑ Block work, which should have been properly filled with concrete and vibrated to ensure that no voids are present within the block work, must be properly pointed up.
- ❑ Metal sheeting should be treated for rust and coated with a suitable metal primer.
- ❑ Blowholes in concrete should be coated with Duram Primeseal MC and then filled with a mix of Primeseal MC with 30% added clean water and a high tensile strength, non-shrink mortar.

PRIMING

- ❑ Surfaces should ideally be primed with Duram Primeseal MC applied at no less than 1 Lt per 4m² and allowed to dry.
- ❑ Excessively porous, friable, and dusty surfaces may require an additional priming coat.
- ❑ Allow the primer to fully dry.
- ❑ Alternatively, Crystoflex liquid diluted 10% with clean water may be used as a primer for non-critical or undemanding applications (although Primeseal MC is preferred for increased Hydrostatic performance) applied at 3 to 4 m² per Lt and allowed to dry. Note that this method does not provide hydrostatic or evaporation of entrapped moisture from the substrate protection.
- ❑ Timber (particularly particle board which should receive two priming coats), roofs, and negative surfaces must be primed with Duram Primeseal MC.
- ❑ Note: In ideal circumstances, Duram Crystoflex may be applied directly to pre-dampened cementitious substrates. Please keep in mind that this method does not provide hydrostatic or evaporation of entrapped moisture from the substrate protection.
- ❑ Application to damp surface is not recommended as it will extend the curing process (Ideal if the product was applied on fully dry surface).

DETAILING PREPARATION

Corners: Prime as required.

General:

- ❑ Apply Resiflex Hybrid polyurethane sealant, in accordance the manufacture's instruction and tool off to form a solid, coved 45° fillet extending at least 10mm on to the adjacent surfaces. Apply the Crystoflex directly over the sealant and on the adjacent surfaces.
- ❑ Alternatively, to corners of large cementitious tanks a high tensile strength, non-shrink mortar or Crystoflex should be applied to form a fillet thereby eliminating 90-degree angles

JOINTS, GAPS, AND CRACKS

General:

- ❑ Joints, gaps and cracks and around penetration should be filled and sealed with Duram Resiflex Hybrid and allowed to cure.
- ❑ Recommendation: The movement of small cracks should not be underestimated and must be covered with a flexible polyurethane sealant and an additional coat of membrane.

Large or Live Cracks:

- ❑ Large cracks should be routed out to form a 'V' and then filled and sealed with Duram Resiflex Hybrid, as per the TDS. The sealant should be finished slightly proud of the surface and allowed to cure.
- ❑ After priming, as required, lay a strip of Duram Leak-Seal Tape over the joint or crack pressing it firmly on to the substrate. Apply the membrane directly to the Duram Leak-Seal Tape and extending at least 75mm on to the adjacent surfaces.

Joints - Particularly in CFC Sheeting and Timber sheeting:

- ❑ The sheets should be fully coated with Duram Resiflex Hybrid. Butter the edges of each sheet prior to butting the sheets together. Alternatively, the joints should be suitably filled and sealed with Duram Resiflex Hybrid and finished slightly proud of the surface and allowed to cure.
- ❑ After priming as required, lay a strip of Duram Leak-Seal Tape over the joint, pressing it firmly on to the substrate. Apply membrane directly to the Duram Leak-Seal Tape extending at least 75mm on to the adjacent surfaces. If the Duram Leak-Seal is not used, then follow the procedure as described under 'Large or Live Cracks'.
- ❑ Blowholes and surface imperfections must be must sound and filled with a construction grade, non-shrink mortar, finished flush with the surface. Allow to cure and dry.

APPLICATION

Mixing:

- ❑ Mixing should be done with a mechanical stirrer mixed at slow speed - hand mixing may not be sufficient. Whilst stirring, the powder should be slowly added to the liquid. Stir until the mix is smooth, lump free and homogenous. The product's viscosity should be suitable for horizontal and vertical surfaces but the thickness can be increased by the addition of no more than 5% of Crystoflex powder by weight.
- ❑ If mixture sets before use, do not try to reconstitute by adding water or more liquid. This product should be discarded.
- ❑ Application is usually by brush or roller. The final dry film thickness 1.5mm to 2.5mm depending upon the waterproofing requirement applied. Each coat should be applied at approximately 1 kg per m² or 1mm wet film thickness in 2 to 3 coats. Allow previous coat to cure / dry before applying the next. In confined areas such as tanks, the humidity in the tank may inhibit proper curing and artificial ventilation (preferably warm air) should be blown into the tank.

Application:

- ❑ Small ponds, fountains, retaining wall, roofs, concrete slabs: Apply a minimum of two coats to give a dry film thickness of 1.5mm.

- Large tanks: Apply a minimum of three coats to give a dry film thickness of 2mm.
- Swimming pools: Apply a minimum of three coats to give a dry film thickness of 2.5mm. The membrane should be suitably rendered with a suitable bonding agent incorporated in the render then tiled with a tile adhesive designed for immersion.

CURING

Drying and curing of the product is affected by type, dryness and porosity of the surface, temperature, humidity, ventilation, climate conditions and application technique and therefore drying and curing can only be given as a guide.

Typically, at 25°C at 50% RH:

- Touch Dry: 2 - 4 hours.
- Set: 4 - 6 hours.
- Full Cure: 12 - 24 hours.

In confined areas such as tanks, the humidity in the tank may inhibit proper curing and artificial ventilation (preferably warm air) should be blown into the tank.

TILING, TOPPING OR TOP COATING

Crystoflex can be tiled. topped or coated.

- Tiled: It is compatible with most tile adhesives, preferably two pack mixes or polymer enhanced adhesives.
- Topped: Can be topped with sand: cement topping, preferably with an added bonding agent.
- Coated: Prime with Primeseal MC and then paint or coat.

In swimming pools:

- Apply a suitable cementitious bonding layer before laying Quarzon, Pebblecrete and Blue Glass Pebble or similar.
- If rendering (prior to laying tiles), either apply a suitable cementitious bonding layer or apply a coat of an acrylic bonding agent (Maxibond or similar) and allow to it dry. Add Maxibond to the render mix then apply. For tiling use a suitable immersible tile glue (as per the manufacturer's instructions and grout using a suitable epoxy grout.

CLEAN UP

Avoid spills. Wet spills can be cleaned with water. They are difficult to clean particularly on porous surfaces. On concrete and non-porous surfaces for wet spills use a cloth and water. Do not clean off carpets as it is better to allow product to cure and then shave the carpet. Equipment should be immediately cleaned with water.

SPECIFICATION

The information contained in this product data sheet is typical but does not constitute a full specification as conditions and specific requirements may vary from project to project. The instructions should be considered as a minimum requirement. The applicator or contractor must use their skill, knowledge, and experience to carry out additional works as may be necessary to meet the requirements of the project. Specification for specific projects should be sought from the company in writing.

HEALTH & SAFETY PRECAUTIONS

Powder contains cement and until fully wet the inhalation of powder dust should be avoided. The use of a suitable high grade mask is recommended along with, cement resistant gloves, protective clothing and goggles is advised.

The Safety Data Sheet (SDS) must be read and understood prior to use.

CONDITIONS OF USE AND DISCLAIMER

The information contained in this TDS is given in good faith based upon our current knowledge and does not imply warranty, express or implied. The information is provided and the product is sold on the basis that the product is used for its intended purpose and is used in a proper workmanlike manner in accordance with the instructions of the TDS in suitable and safe working conditions. Under no circumstances will the Company be liable for loss, consequential or otherwise, arising from the use of the product.

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