



BluSeal TF05

CEMENT POLYMER MEMBRANE



BluSeal TF05 is a two component cementitious powder and EVA polymer liquid kit which requires only mixing to form a flexible and durable high strength membrane.

BluSeal TF05 is designed to form a flexible and durable membrane suitable for sealing and consolidating shotcrete, concrete linings, rock excavations and brickwork. BluSeal TF05 is used for lining bored and driven tunnels, cut and cover tunnels, cross passages, shafts and underground structures. BluSeal TF05 can be applied in a range of thicknesses for various performance applications. The membrane liner is applied to structures to prevent water inflow and provide asset protection.

Application Advantages

- Easily applied by roller, brush or spray methods
- EVA based polymers with low VOC for safe tunnel application
- Fast application with negligible dust emissions
- Can be applied to internal exposed tunnel surfaces or between shotcrete layers

Lifecycle Advantages

- High bond and tear resistance producing very high crack bridging characteristics
- 100 year design life
- Fire rated for use in underground applications
- Low maintenance and easily repairable
- Potable water use approved in accordance with AS/NZS 4020:2005

About the Product

BluSeal TF05 is a robust and flexible membrane system with a proven track record in underground applications. The installed system has been specifically designed to provide a combination of benefits including water infiltration management, strata support and aesthetic final lining. The spray liner can be applied between shotcrete layers or otherwise on the internal surface. Its high tensile strength has the added advantage of being able to offer strata support, while accommodating the stresses associated with structural movement and providing a barrier to moisture degradation. Under the supervision of Blueey Engineers and trained installers, BluSeal TF05 can be applied to tunnels, basements and other structures as either a tanked or drained lining system. The spray application allows easy application in complex areas providing cost savings on installation around structures with complex geometry. BluSeal TF05 is designed and installed in accordance with International Standards.

Application Solutions

- Lining bored and driven tunnels
- Cut and cover tunnels
- Green roofs
- Cross passages
- Underground structures
- Flat and insulated roof structures

Project Specification Clause

HIGH PERFORMANCE TUNNEL SPRAY MEMBRANE - The spray membrane used for this project shall be a two component latex cement which requires mixing to form a durable water infiltration resistant and robust consolidation liner. It shall be a product that has independent testing to validate the performance outlined in the technical data table on the following pages. BluSeal TF05 manufactured by Blueey Technologies or equivalent shall be accepted.

Project Examples

Tunnel waterproofing, basements, green roofs, rail bridges, land bridges.



BluSeal TF05

CEMENT POLYMER MEMBRANE

Application Specification

CONCRETE PREPARATION

- 1.1 All defective host substrate must be removed prior to application. Defective material includes cracked or structurally weakened surfaces and also chloride contaminated and carbonated surfaces. For rock cuttings/faces all loose rock, debris, dust and all other surface contaminants must be removed. High-pressure water blasting or mechanical scaling of the surface is recommended for this purpose.
- 1.2 Host concrete must be roughened and aggregate exposed to ensure good bond. High pressure water blasting may be required where application is to aged structures. For steel surfaces all rust, dirt and contamination must be removed to achieve Sa 2.5 surface finish.
- 1.3 All surfaces must be free of dust, oils and surface contaminants.
- 1.4 Priming by saturation of the surface using water prior to application may be required. Priming with epoxy primers or other products, which prevent vapour transmission, is not recommended

MIXING

- 2.1 Measure and place the specified volume of BluSeal TF05 liquid to the high shear mixing vessel. Start mixer and slowly add BluSeal TF05 powder. If powder addition is too fast then large lumps will form and final mix will be slow reaching uniform consistency. Following addition of all powder, mix for 1 - 2 minutes or until uniform consistency. More or less BluSeal TF05 liquid may be added within the ratio limits specified on this data sheet. Do not mix more material than can be placed in 10 - 20 minutes. Do not add water at any stage to the mix.

PUMPING

- 3.1 Special pumping and mixing equipment is required for BluSeal TF05 which is applied as a wet spray. Various models of mixers are available for use. It is important to match your application's specifics with the capabilities of the mixer and pump. Bluey Technologies are able to recommend the right mixer for your project.
- 3.2 For wet spraying applications rinse the mixer and charge the pump hopper with sufficient water to flush and cool the pump and all grout lines thoroughly. Check to ensure that all lines and hoses are clear and unobstructed. Once the liner is mixed, it is important to keep it agitated continuously prior to pumping. Although this product has a long pot life, if the liner is allowed to sit then it will 'gel' and may become more difficult to pump.
- 3.3 Following completion, dispose of excess production material in consideration of the environment. Carefully wash out machinery and surrounding areas.

APPLICATION TEMPERATURES

- 4.1 The higher the air temperature the more quickly the membrane will cure and set. Bluey Technologies specify mixing times and set times at an ambient temperature of 20°C. These times vary with temperature fluctuations, and adjustments will be required to compensate for this. Exposing the pumping hoses to the sun on a hot day accelerates the product's set time. In some cases it may be necessary to cool the material, the mix water, or even the hose itself during the process and pre-planning the storage of all materials to keep the temperature as low as possible.

APPLICATION

- 5.1 Apply the first coat of BluSeal TF05 using a brush, roller, trowel or spray at a coverage rate of 1kg/m² making sure that it is evenly coated to at least 1mm thick. Allow to tack dry before over-coating. Apply the second coat at right angles to the first coat to ensure coverage at a rate of 1kg/m². Allow the BluSeal TF05 coating to completely dry before service. For heavier usage protect with BluCem RF20. Do not apply to bitumen. If the total application thickness is to exceed 4mm then multiple coats should be applied with each coat not exceeding 4mm to avoid cracking or splitting of the coating.

CURING

- 6.1 No special curing techniques are required for this product.



BluSeal TF05

CEMENT POLYMER MEMBRANE

Product Data

Please refer to Important Notice on following page

Packaging	20kg powder, 20kg liquid Supplied as a 80kg kit for waterproofing applications (1 powder : 3 liquid) Supplied as a 60kg kit for strata support or waterproofing applications (1 powder : 2 liquid)
Ratio	1 part powder : 2 - 3 parts liquid by weight
Thickness	Minimum 2mm for waterproofing, 4mm for strata support
Application Rates	1kg/m ² /mm
Pot/Pump Life	25 - 30 minutes @ 20°C
Conditions	Mix only the amount that can be applied in 25 - 30 minutes Do not add water Can be painted over after final cure

TESTED CHARACTERISTIC	STANDARD	RESULT
Tensile Strength	DIN 53504-S2	5MPa @ 28 days
Elongation	DIN 53504-S2	50% @ 28 days
Bond Strength	EN 1542:2000	1.5MPa
Set Time		Initial set - 50 - 60 minutes
Curing Time		14 - 28 days



BluSeal TF05

CEMENT POLYMER MEMBRANE

Contact Bluey

BRISBANE (HEAD OFFICE)

Bluey Technologies Pty Ltd
Unit 8, 53 Metroplex Avenue, Murarrie Qld 4172 Australia
Ph +61 7 3399 3635 Fax +61 7 3899 9822 brisbane@bluey.com.au

SYDNEY

Bluey Technologies Pty Ltd
Unit 3, 35 Higginbotham Road, Gladesville NSW 2111 Australia
Ph +61 2 9807 2207 sydney@bluey.com.au

MELBOURNE

Bluey Technologies Pty Ltd
PO Box 170, Tullamarine VIC 3043 Australia
Ph +61 3 9826 5570 melbourne@bluey.com.au

PERTH

Bluey Technologies Pty Ltd
Ph +61 402 372 308 perth@bluey.com.au

AUCKLAND

Bluey Technologies
Ph +64 21 102 4797 nz@bluey.com.au

www.bluey.com.au

BLUEY ASIA PACIFIC DISTRIBUTOR

QUICSEAL CONSTRUCTION CHEMICALS PTE LTD

No.7 Eunos Avenue 8A, Eunos Industrial Estate, (S)409460 Singapore
Ph +65 6742 4466 Fax +65 6741 4666
www.quicseal.com

IMPORTANT NOTICE

This Technical Data Sheet is provided for general information and instruction only. Bluey does not warrant that the information it contains is accurate, reliable or complete. Bluey does not warrant that the product (or any related services) will achieve any of the characteristics set out herein in any particular application in the field, nor that it will be suitable for any specific use or purpose. The properties and characteristics set out herein represent typical testing results under laboratory conditions only. Results of actual product implementation may vary. Site-specific and project-specific criteria will affect product performance, including without limitation: surfaces, materials or products used with the product or to which the product is applied; and weather, climatic or seasonal conditions. The user must take into account all such criteria relevant to the project concerned when considering any desired results, including by undertaking trial mixing and application under site conditions. Not all product parameters are batch tested as part of the manufacturing quality control process, and performance may vary between batches.

If Bluey gives any express written product warranty in relation to the product, that warranty is subject to the foregoing qualifications, despite anything to the contrary in any other document. All other representations, advice, suggestions or promises regarding the product's performance or its implementation, whether verbal or in writing, and whenever given, including in the course of any field services, are expressly disclaimed. Without limiting the foregoing, Bluey will have no liability for loss or damage of any kind if any application specifications are not followed.

The foregoing is not intended to exclude any warranties or guarantees which by law cannot be excluded. Subject only to the foregoing provisions of this Notice, and to the extent permitted by law, Bluey disclaims all liability for loss or damage of any kind suffered as a result of or in connection with the product or its implementation. If such liability cannot be wholly excluded, Bluey's liability will, to the extent permitted by law, be limited to the replacement of the product itself or the direct cost of replacement of the product itself (not including any collateral or consequential loss or damage of any kind).

© Bluey Technologies Pty Ltd