

TamSeal 800

Spray Applied Waterproof Membrane System



TAMSEAL 800



TamSeal 800 is a high performance, single component VacE polymer, flexible waterproofing membrane. In large applications, TamSeal 800 can be spray applied using a dry rotor machine by hand or robotic spraying. For smaller applications it can be applied by brush. TamSeal 800 provides a tough, durable, seamless, waterproofing membrane for many structures including tunnels, shafts, deep boxes and caverns.

KEY BENEFITS

- Fast and easy application particularly for complex underground geometries.
- Waterproof: zero penetration beyond membrane when tested in accordance with BS EN 12390-8:2000.
- TamSeal 800 is safe, non-toxic, and should be handled as per other cementitious construction materials.
- Excellent adhesion, bond to concrete and steel of 1.5 MPa or greater when tested in accordance with BS EN ISO 4624:2003.
- When sandwiched between layers of concrete, the double bond (for example to the primary concrete) substrate and overlying secondary concrete enhances the waterproofing performance.
- Tough and flexible and suitable for use with steel fibre sprayed concrete.
- Fast initial curing time, tack free in 2 to 3 hours.
- Fast complete curing time, can be over-coated with concrete after 24 h.
- Exhibits excellent crack bridging capabilities when tested in accordance with BS EN 1062-7: 2004, with capacity proportional to thickness and 150 % elongation when tested against ASTM D412-06a.
- TamSeal 800 is non-ignitable: Class E when fire tested against BS EN ISO 11925-2, Single-flame source test.
- Can be connected to other waterproofing materials with standardised joint details.
- Produced in accordance with ISO9001 and ISO14001.

TECHNICAL DATA

Form	Powder
Colour	Grey and orange versions
Application thickness	2 mm / min*
Bond strength to concrete	1.5 N / mm ²
Bond strength to steel	2 N / mm ²
Elongation	150 %
Consumption	1.0 kg / m ² / mm thickness

*Depending on crack bridging requirements

TYPICAL APPLICATIONS

TamSeal 800 can be applied to a multitude of substrates and works most efficiently between two layers of structural concrete lining, in such situations as:

- Sprayed concrete tunnels, caverns and shafts.
- Underground structures with complex geometry.
- In rock tunnels where there are numerous permanent anchors in primary linings.
- As an effective waterproofing to promote the use of permanent spray concrete secondary linings.
- Diaphragm wall and contiguous pile boxes.
- Underground basements.
- Sprayed concrete caverns.
- Protecting concrete against aggressive water ingress in mines and excavations.
- Water retaining structures.



APPLICATION GUIDELINES

- > All surfaces must be thoroughly cleaned and free from laitance, loose material, dust, dirt, oil, grease and all contaminants.
- > TamSeal 800 should be applied onto a damp surface.
- > If the receiving surface is rough, it is advisable to apply a 20 mm layer of regulating material such as TamCrete TopShot to maximise the quality and efficiency of the membrane application.
- > If active water ingress is visible a managed drainage system shall be installed or localised injection to control water ingress.
- > Normet recommend the application should be carried out in two layers, with the orange TamSeal 800 1st coat applied onto the concrete substrate, followed by the grey 2nd coat in order to enhance quality control processes. Nevertheless, a single coat to the required thickness is also possible.



Hand spraying application



Normet Minimec robotic application



Managed drainage system installed prior to TamSeal 800 application

- > Due to its sprayed nature and bonding to steel, TamSeal 800 is ideal for spraying around insertions and starter bars for reinforcement in the secondary lining for example. Ensure all insertions, bolts, anchors are fully encapsulated.



- > TamSeal 800 is capable of being combined with other waterproofing systems such as sheet membranes and watertight concrete designed sections of underground structures.



TamSeal 800 connection detail with a sheet waterproof membrane

APPLICATION EQUIPMENT

TamSeal 800 can be applied by using the Normet DSM dry spray rotor machine and hand held nozzle system. For larger applications, robotic spraying equipment can be used such as the Normet Minimec mini spraying robot, or the larger Spraymec 8100.

FUTURE DEVELOPMENTS

Normet are supporting PhD research into spray membrane technology and how a membrane such as TamSeal 800 can be used to form composite tunnel linings.



The key research is focused on further understanding the interfaces between membranes and primary and secondary concrete linings. This then allows more accurate finite element models to be created that will provide design teams a valuable, reliable tool to design thinner tunnel linings.

PROJECT EXAMPLES

Toronto Transit Shepard Line Extension, Canada



The project is being constructed by the McNally / Kiewit / Aecon JV (MKA JV). It was decided to use TamSeal 800 spray applied waterproofing membranes in the cross passages connecting the running tunnels.

MTRC West Island Extension C708, Hong Kong



On Contract 708, the West Island Extension TamSeal 800 was used to waterproof magazine caverns where explosives could be stored. TamSeal 800 was used in several locations across the project, by both Gammon Construction and by Super Rich Engineering.

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