

SEALING TANKS, TROUGHS & PONDS

BACKGROUND

Concrete structures such as water tanks, water troughs and ponds will often develop leaks over time. Small or seeping leaks can be difficult to detect, especially when the structure is underground. Dark patches in the concrete or algae growth often identifies problem areas.

Care and quality in construction alone cannot always prevent leaking or cracking. Temperature changes, water level changes, and movement of the base supporting the concrete structure creates tensile strain on the concrete and can lead to hairline cracking. The quality of the concrete (permeability, strength and porosity) will also influence the propensity of the tank to develop cracks and leak over time.

Slow leaks are often not serious enough to warrant immediate action, however over the longer term, if left untreated these may become more troublesome. During dry periods, slow leaks may result in significant water loss.

A number of leak repair products are available and these each have advantages and disadvantages. They fall into three broad categories, caulks, cement based powders and membranes & liners.

CEMENT BASED POWDERS

Cement based powders can be effective in stopping a leak when there is a small flow of water. They can also be used to repair chips, divots or pack out larger cracks. The problem with these types of products is they cure hard and cannot flex with the structure. They do not provide for movement at the interface between the repair compound and the structure and may be prone to future leaking at the same point.

Hairline cracks and porous sections of concrete are also very difficult to repair with cement based repair products. These products 'spot' treat your problem – they don't provide any insurance against future leaks caused by movement and cracking.

CAULKS

Viscous caulks (silicones, acrylics, polyurethanes and epoxies) are effective on larger cracks, around fittings, at seams and joints. Some types of caulks are also able to cure underwater and stem a flow. While these products are generally flexible and accommodate some movement, it is not practical to apply these over larger areas. These products are also typically expensive.

MEMBRANES & LINERS

Membranes and liners can effectively provide a solution to leaks but typically require the concrete structure to be emptied in order to fit or apply.

Sheet membranes can provide very heavy duty protection against leaks but are typically expensive and require expertise when installing to ensure seams and joints are welded correctly.

Continuous or seamless membranes are typically applied with a brush, roller or sprayer. These products can be made from a number of materials including Bitumen, Polyurethane, and Acrylics. They are generally easier to install and at lower cost than sheet membranes. These flexible membranes provide insurance against future cracking.

WHY USE SEALIT MULTIPURPOSE

Sealit Multipurpose has been used to effectively repair leaks in concrete tanks and is recommended by Australia's largest concrete tank manufacturer – Economy Concrete Tanks. Visit their website at www.economytanks.com.au

Sealit Multipurpose is an acrylic rubber based compound that penetrates into the pores of the concrete to provide a permanently flexible waterproof membrane. It conforms with the requirements of a class III waterproofing membrane in that it exceeds 300% elongation at break when stretched.

Often leaks warrant repair, however the cost of doing so can be high. Sealit Multipurpose

TECHNICAL DATA

No. of Coats:	2 – 3
Coverage:	10m ² per Ltr (Soak In Mix) – 1st Coat 5m ² per Ltr 2nd Coat (Dependant on Substrate)
As a guide	1 x 15ltr pail covers 75m ² (2 Coats)
Recoat:	1 – 2 hrs
Drying Time:	2 – 4 hrs
Fully Cured:	7 days
Cleanup:	when wet: water when dry: solvent
Shelf Life:	12 – 18mths
Store Below:	35°C
Application Temperature:	5°C – 35°C
Application	Low pressure sprayer, brush or roller

Note: Sealit is dry when it becomes clear, but may remain tacky for longer periods.

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is a simple, easy to apply compound and one of the most economical membrane solutions available.

While a number of membranes require a dry substrate Sealit can be applied to damp concrete. Sealit is water based for applicator safety, is low odour, low VOC and suitable for use with potable water.

Sealit has been successful in repairing leaks following application to the outside surface of water tanks only - most membranes need to be applied to the inside of the tank.



Fig 1. Sealit Multipurpose being applied to the outside of a large water tank.

Sealit Multipurpose is an economical sealer that has a wide number of uses. It is long lasting and if you don't use it all fixing your leak, it can be put to good use on a wide range of other projects around the home eg as a sealer before painting, waterproofing porous bricks, sealing concrete slabs, etc.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION:

- All surfaces should be clean, sound and free from dry or loose material. Tanks, Troughs and Ponds will accumulate a layer of detritus and silt over time. This should be removed with a light pressure wash if possible.
- Masonry should be flush pointed. Make good any defects in surfaces. Remove any dags, high points or protrusions prior to application. Any laitance in concrete surfaces should be removed with wire brush or by grit blasting.
- If concrete repairs are required complete these first and apply caulks and or sealants to seams and around fittings prior to application of Sealit. Masking non porous surfaces such as pumps, pipes and fittings is advised as Sealit will leave a tacky residue on non porous surfaces.
- Application on interior and exterior surfaces will provide the best results. Any large cracks should be filled with a suitable caulking compound such as epoxy putties or polyurethane caulks prior to application. Sealit is not designed to fill gaps.
- Where possible the concrete should be dry prior to application of Sealit – this generally means emptying the tank, trough or pond, however application over damp surfaces may be successful if the product is able to cure before being diluted or washed away. The use of a heat gun or hairdryer will assist in curing Sealit and drying out the surface as much as possible prior to and after application.

PRODUCT FEATURES

- Tested to ASTM E514.74 – Rated 'E' for Excellent on water permeance
- Excellent Adhesion
- Cost Effective & Gives Long Lasting Protection
- Highly flexible
- Waterborne for easy application and cleanup
- Safe to use with minimal vapour
- Dries to a clear low sheen finish
- May be painted over with any acrylic based paint

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APPLICATION METHOD:

Priming (IMPORTANT – This Step Must Be Followed)

This step provides 80% of the waterproofing and must be followed with care.

Dilute 1 part Sealit with 1 part clean water. Apply liberally, flooding the surface working from top to bottom on vertical surfaces. The aim is to totally soak the surface in Sealit so that it can penetrate into the concrete.

We recommend starting on a small section to determine how quickly Sealit is absorbed. If Sealit is absorbed quickly apply more to the same area. If the product runs off, apply more sparingly and wait longer before working back over same area.

HELPFUL TIPS!

Work back over the same area multiple times (ie 4-5 times or more) while still damp – do not allow to dry out. When the concrete will not absorb any more Sealit move on to the next section.

Sealit should not be applied like a paint – you must work back over the same area wet on wet to ensure sufficient product is absorbed into the concrete.

Note some concrete will absorb Sealit quickly and some will not. Vary the speed of application and amount of product to suit – you need to ‘wet out’ the surface and slowly add more product. Applying too much too quickly will result in run off and unnecessary waste.

Application with a backpack style low pressure sprayer (eg pesticide sprayer) allows a constant stream of Sealit to be applied at a consistent rate across the substrate.

Pressure setting should be low – do not mist Sealit, aim for a fine steady stream.

Brush or rollers may be used for smaller areas but users should ensure liberal application with frequent brush or roller re-loading.

Back rolling in an upwards motion with a long nap roller, moving very slowly, ensures a puddle of Sealit is in contact with the surface for as long as possible. On larger areas working in pairs (one with sprayer, one with roller) is most efficient.

For smaller projects such as troughs and ponds pouring puddles of Sealit into the structure and spreading with a roller is particularly effective.

Once the surface is totally soaked, allow the surface to dry clear (2 hours to 24 hours, depending on conditions) before applying the second neat coat. As the surface will be mostly sealed following the primer coat it is not necessary to work back wet on wet with the second coat. Allow to dry clear before filling with water. Both temperature and airflow assist in curing. Use of a heater and/or fan can be used to speed up drying. A third coat is not generally required but may be applied over problem spots and visible cracks.

While Sealit Multipurpose is suitable for potable water we suggest a quick rinse with a hose prior to re-filling.

PRECAUTIONS

While Sealit Multipurpose is a water based waterproofing agent **we recommend the use of gloves when using this product.** The superior adhesion and water repellent properties of Sealit Multipurpose may cause ‘sticky hands’ even after washing well with soap and water.

Application on hot masonry or windy days may cause premature drying without giving Sealit an opportunity to penetrate. In these cases application of a fine mist of water prior to application of Sealit will assist in absorption. Note – the walls should be just damp – not wet.

The presence of dust may interfere with absorption of Sealit into the masonry. All surfaces should be free from dust. Washing the walls prior to application will minimise the risk of poor absorption.

Application of Sealit with a sprayer may result in beading on some masonry. It is important Sealit be given sufficient time to soak into the masonry. A brush or roller may be required to reduce surface tension and ensure the masonry is fully ‘wet out’ and will minimise the risk of unsealed areas.

You can estimate approx surface area of your tank using the following formula:

Curved Area (ie Walls)
= $2 \times 3.14 \times \text{Radius} \times \text{Height}$.

Base Area (ie floor)
= $3.14 \times \text{Radius} \times \text{Radius}$

Radius is measured from the centre to the edge (or half the overall tank width).

Eg. A tank 5m wide by 3m high.

Wall area = $2 \times 3.14 \times 2.5\text{m} \times 3\text{m}$
= 47.1m²

Floor area = $3.14 \times 2.5\text{m} \times 2.5\text{m}$
= 19.6m².

Total area = 66.6m²

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LIMITATIONS

Sealit is designed to penetrate the concrete and block the passageway of water through fine cracks and porous sections. Sealit is not able to withstand hydrostatic pressure until cured. Best results are obtained by sealing the positive side of the structure – ie the side in contact with water or inside.

Sealit is unlikely to be effective on larger leaks where a constant stream of water is visible. Sealit cures through evaporation of water from the membrane and must be allowed to cure to achieve maximum performance – drying times may be extended in humid or damp conditions.

Sealit acts to waterproof the concrete. It does not restore structural integrity and will not prevent future cracking, however it will accommodate minor movement.

Absorption into the concrete is required for Sealit to be effective. Check for the presence of water repellents and previously applied membranes to ensure the surface is porous prior to application of Sealit. **If the surface does not absorb water do not apply Sealit.** A simple test is to place a drop of water on the dry surface – if it is absorbed you can apply Sealit.

TRANSPORT / STORAGE	
Pail Sizes	125ml Trial Pack, 1Ltr, 5Ltr, 15Ltr, 200Ltr, 1000Ltr
Weights	150g, 1.1kg, 5.5kg, 16.5kg, 224kg, 1060Kg
Dangerous Goods Class	N/A

DISCLAIMER

Customers are advised to consider the information in this data sheet in the context of how the product will be used, including surfaces and any other products used. The information provided in this data sheet represents our best scientific and practical knowledge. Any advice, information or assistance provided by Shalex in relation to its products is given in good faith, however is provided without liability or responsibility. Due to the wide variety of site conditions we are unable to assume liability for any loss that may arise from the use of our products. The user is responsible for checking the suitability of products for their intended use.

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