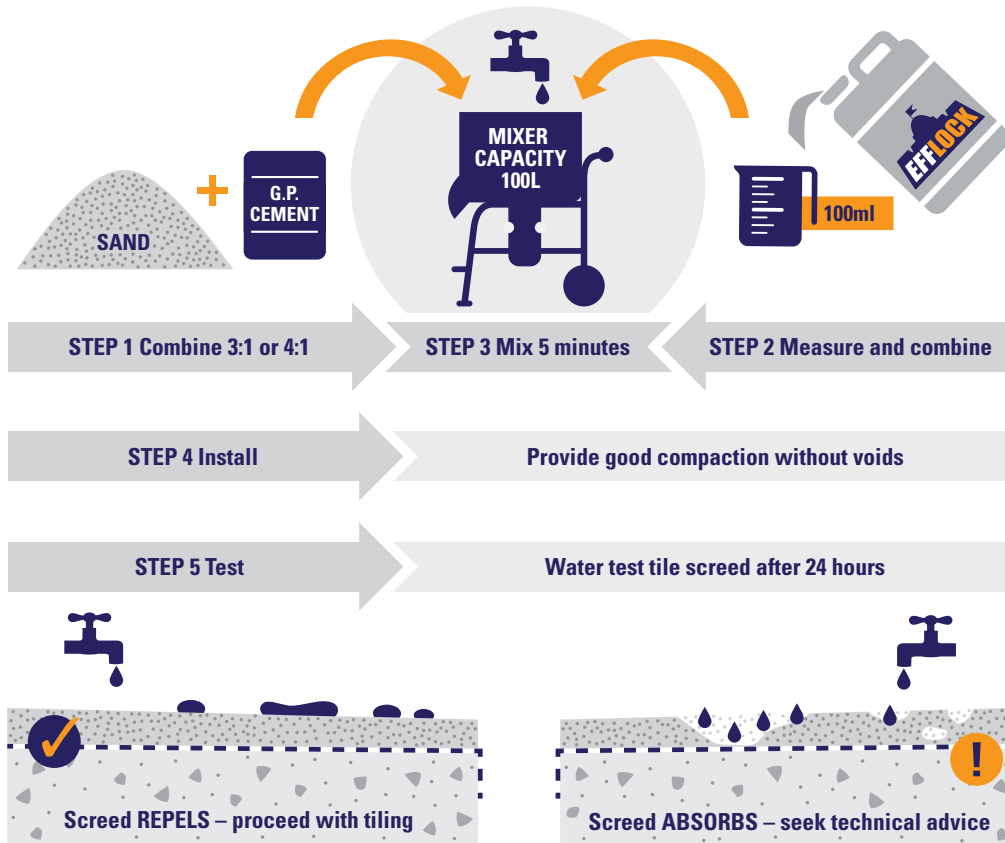


# TECHNICAL DATA SHEET

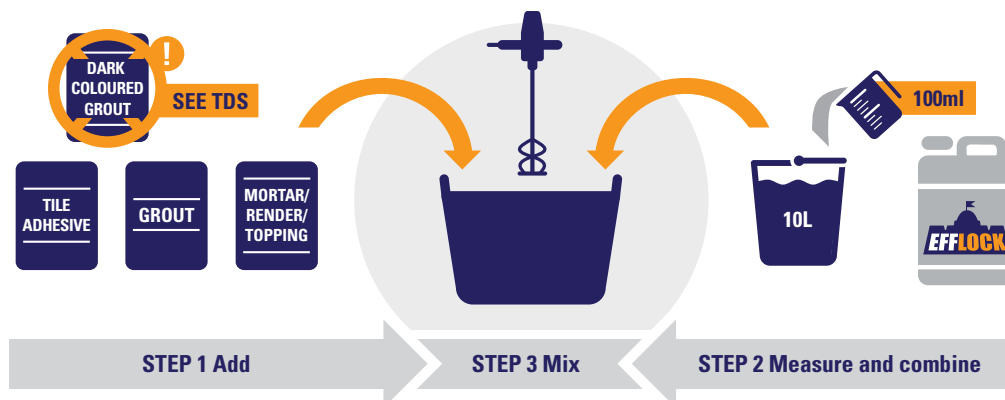
# QUICK REFERENCE INSTRUCTION SHEET

## Mixing tile screed

Sand from the building yard has unknown moisture content. To not exceed 1:100 dilution, add Efflock neat, and water to desired consistency as per this guide:

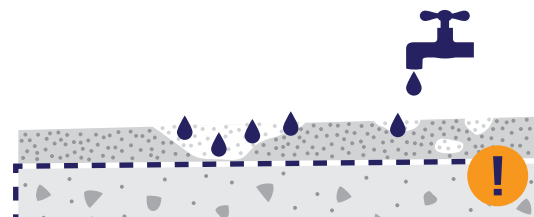
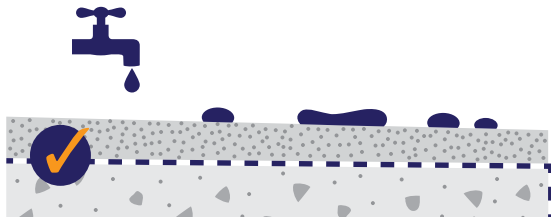


## Mixing adhesive, grout & other bagged products



Efflock is a high performance, water based, VOC free, liquid additive designed for the bulk impregnation of cement based building materials to prevent efflorescence and damp.

In addition to efflorescence protection, Efflock transforms normally porous concrete and mortar into hydrophobic materials to provide a barrier against water ingress that can lead to waterproofing failure.



### The hydrophobic effect of Efflock:

- Prevents capillary action that can lead to waterproofing failure.
- Repels waterborne contaminants like dirt and salt, resulting in a cleaner appearance with excellent resistance to salt attack, and concrete cancer.
- Provides fast evaporative function to inhibit moss and mould growth.
- Provides unique protection against picture framing or crypto-florescence (see *Glossary* on page 8).

Efflock can also be used as a high performance surface applied impregnating water repellent sealer for concrete, brick and sandstone (see *Hydrophobic Sealer for Masonry*, page 7).

### The Efflock Technology

The Efflock additive creates a hydrophobic molecular structure within the pores of cured concrete without filling the pores of the material. This unique technology provides a hydrophobic effect to dramatically reduce water absorption whilst remaining permeable to allow the controlled release of any moisture. Efflock provides bulk impregnation to protect concrete throughout the entire mass, so that performance is not affected by traffic wear or movement cracks.

## WHERE TO USE EFFLOCK?

- Bathroom tiling
- Balconies, patios and stairs tiling
- Stone and concrete paving
- Stonemasonry
- Brickwork
- Pool surrounds
- Render
- Off-form concrete
- Construction in saline soils
- Protection against freeze / thaw damage
- Concrete pavers and blocks manufacturing
- Post tension concrete reinforcement pockets
- Surface-applied impregnating sealer for concrete, brick and sandstone

## WHY USE EFFLOCK?

- Excellent additional barrier to a waterproofing system to promote drier, healthier wet areas.
- Complete efflorescence protection for a tiling system – compatible with tile beds, tile adhesive and grout.
- Negates the practice of installing a secondary membrane, saving around 80% cost and faster construction.
- Prevents picture-framing (crypto-florescence) in stone, brick and concrete.
- Water based, environmentally friendly, VOC free.
- Concentrated formula dilutes 100 times for convenience, minimal plastic waste and minimal transport impacts.
- Prevents absorption of damp, salt attack and frost attack.
- Invisible bulk impregnation of the entire concrete mass.
- No detrimental affect to adhesion of paint, adhesives and other finishes.
- Good workability.
- Improves curing.
- Permeable to vapour and UV stable.

## TILING

Efflorescence is known to discharge from cement based tile adhesive and grout. For that reason we strongly advise the use of Efflock in the gauging water of proprietary cement based tile adhesives and tile grouts for complete efflorescence and crypto-florescence protection of the tiling system.

The hydrophobic effect of Efflock creates a primary water barrier for tiling in both internal and external wet areas such as bathrooms and balconies. Absorbent materials are made water repellent and capillary action is eliminated, meaning that waterproofing membranes are no longer under duress with heavy saturation. The potential for waterproofing failure is dramatically reduced.

For external tiling, Efflock creates a hydrophobic tile bed that will not release efflorescence, negating the need for a secondary membrane for efflorescence control. This saves around 80% cost, eliminates extra labour processes and reduces rain delays for faster construction time. If a cement slurry is to be used in the case of wet bedding tiles or stone, ensure the slurry is also mixed using Efflock in the gauging water.

The workability of mortar changes with the addition of Efflock in a mix. Efflock can have a water reducing effect, so generally the amount of gauging water in a mix will need to be reduced to maintain a desired consistency.



Efflock maintains good workability in tile adhesives and grouts, but will produce a lubricating effect in tile screed. If a tile screed mix begins to stick to tools or is dragging and difficult to work, try reducing the water.

Please email [info@efflock.com.au](mailto:info@efflock.com.au) or telephone +61 414 730 736 for further guidance and for advice on tile adhesive brands who have tested and endorse Efflock.

## BRICKWORK AND STONEMASONRY

Efflock is ideal to bulk impregnate mortar and prevent efflorescence, crypto-florescence and other water related problems. The hydrophobic effect repels dirt and moss growth to keep mortar joints cleaner. The long-term appearance of face brickwork is dramatically improved and passively maintained – this is especially an advantage when using off white cement mortar.

Efflock also provides an effective Damp Proof Course (DPC) at each mortar joint, preventing rising damp and destructive salt attack of the masonry in saline soils. In combination with salt resistant bricks or stone, Efflock provides the most durable specification available against rising damp and salt attack.

For further guidance please email [info@efflock.com.au](mailto:info@efflock.com.au) or telephone +61 414 730 736.



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## CLASS 1 (OFF FORM FINISH) CONCRETE

Efflock forms a permanent hydrophobic function for concrete. Long term durability is achieved by repelling contaminants such as chloride ions that are normally absorbed into the concrete with the ingress of water. The same water repellency provides excellent protection against freeze / thaw damage in cold climates.

With Efflock, a clean appearance is passively maintained by repelling dirt absorption, and fast evaporation of the surface after rain ensures moss growth is suppressed. Unlike crystalline additives, Efflock is inert and will not discolour, craze or grow crystals from the finished surface of the concrete.

Structural concrete can either be protected with Efflock as an additive or by the method of surface application (see Hydrophobic Sealer for Masonry, page 7).



Source: <http://architizer.com>

# PREPARATION AND MIXING

For use in tiling, please refer to the full size info-graphic instruction sheet on page 1 of this Technical Data Sheet.

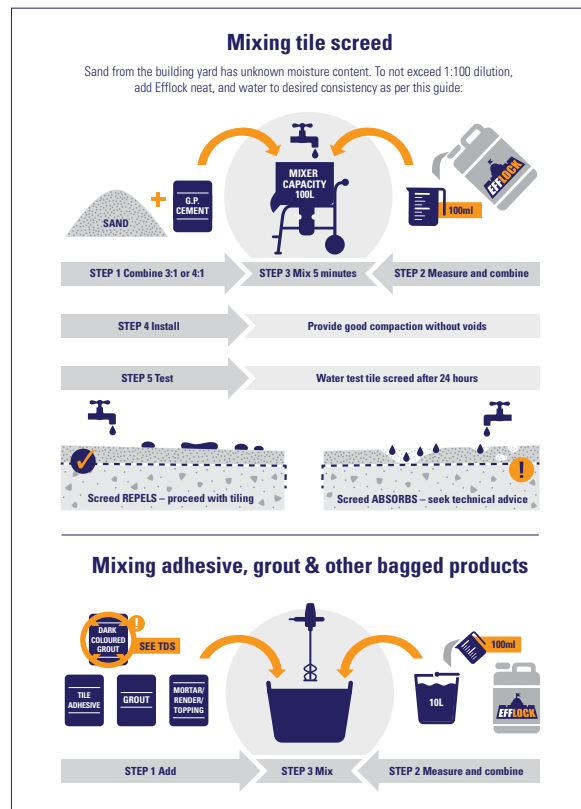
## General notes

Ensure all containers are clean, free of residual solvents and tin-containing materials. We strongly recommend the use of a measuring jug for accuracy and optimum economy. To ensure uniform dispersion, Efflock should be combined with gauging water first before mixing with dry ingredients. In cases where the sand to be used in a mix is already damp, the addition of 0.001% of Efflock per the mixer capacity is recommended, and the mix must be combined thoroughly with a mechanical mixer to ensure uniform dispersion.

The user must determine the suitability of this product for any intended purpose. Efflock is intended for use by qualified professionals. Installation must be in compliance with relevant building standards.

## General instructions

1. Use General Purpose Cement when making onsite concrete and mortar.
2. Shake container well.
3. Prepare the required amount of gauging water in a clean bucket at a ratio of;  
**1 part Efflock : 100 parts clean tap water.**
4. Add pre-mixed gauging water to dry concrete ingredients and proceed as usual.
5. Any additional water added to the mix must also contain Efflock.
6. During application and curing the concrete should be protected from inclement weather for 24 hours, and the air temperature should not drop below 4°C or exceed 35°C.
7. Clean tools normally with water.
8. Project supervisors should conduct a water test after 24 hours. Mortar and concrete that has been satisfactorily impregnated with Efflock should exhibit a strong beading effect.



For further guidance please email [info@efflock.com.au](mailto:info@efflock.com.au) or telephone +61 414 730 736.

# CAUTIONS AND LIMITATIONS

## Which cement is best?

The mineral additions and constituents included in the manufacture of modern cement is suspected to contribute to the problem of efflorescence. Therefore we recommend the use of General Purpose Cement (Type GP) wherever efflorescence is a risk. Both grey and Off White Cement is available as Type GP Cement. Australian Standard AS 3972-2010 stipulates that GP Cement must contain no less than 92.5% Ordinary Portland Cement. In the case of "Builders Cement" (Type GB), the use of alternative cementitious materials is mostly unrestricted, and popular trade opinion suggests this category of cement is more problematic for efflorescence.

## Accuracy of dilution

The use of a measuring jug for accurate batching is recommended. Be aware that damp building sand will further dilute the correct dilution ratio of Efflock. This can be a problem for 'dry' mixes (such as tile screed) which have very little gauging water added to the mix, in which case the 5 step method titled "Mixing Tile Screed" on the info graphic instructions on page 1 of this document should be adopted. A water test after a minimum of 24 hours should be conducted to test the hydrophobic beading effect. A strong beading effect will confirm there is adequate Efflock in the finished concrete. This test must be conducted prior to commencing the next step in construction.

## Uniform dispersion

Uniform dispersion of Efflock in a concrete mix is essential. When all aggregates are 100% dry, uniform dispersion is easily achieved by combining 1 part Efflock with 100 parts water before adding to the dry ingredients. When sand already contains any moisture, thorough mechanical mixing is required and as a guide, the addition of 0.001% of Efflock per the mixer's capacity is recommended.

## Sand and cement ratio

For Efflock to perform correctly, screeds and toppings require good compaction without voids during placement. Sand should be free of salt, clay or fine sediment. A minimum cement ratio of not less than 1 part cement : 4 parts sand is required.

## Other additives

Efflock is broadly compatible with any type of cement based mix and is compatible with commonly used additives and plasticisers. The need for other additives may not be necessary with Efflock in the mix, and for best performance, hygroscopic additives (i.e. water absorbing additives such as clay and lime) should be avoided or reduced wherever possible.

## Weather

Efflock requires 24 hours to cure with concrete before exposure to rain.

## Workability

The workability of mortar can be altered with the addition of Efflock in a mix. Efflock can have a water reducing effect, consequently the gauging water ratio of a mix will generally need to be reduced to maintain a desired consistency. Efflock maintains good workability in tile adhesives and grouts, and exhibits a lubricating effect with tile screed. If a tile screed mix sticks to tools or is dragging and difficult to work, try reducing the water.

## Natural Stone

We recommend pre-sealing the face side of natural stone prior to installation. (For very porous stone, consider the use of Hydrophobic Sealer for Masonry, page 7).

Because Efflock is itself a high performance water repellent sealer, pre-sealing of all sides (dip-sealing) may be required on porous stone prior to installation. This is to prevent potential absorption of the Efflock additive migrating from adhesive and grout into the stone, which even at 1:100 dilution, may affect the finished appearance of the stone when it gets wet. Stone can vary enormously in porosity, so careful research followed by on-site testing to determine the suitability of any sealer is essential. Particular attention should be paid towards the suitability of any sealer (and its method of application) to ensure that bonding of the stone to the substrate will not be affected.

## Dark coloured tile grout

Dark coloured cement based tile grout is known to be problematic either with or without the use of additives. Even after the initial cure, colour consistency of the grout joints is often reported as patchy, and the colour generally fades in a short space of time (i.e. black fades to grey). Efflock has not shown to either prevent or worsen the problem of colour consistency or retention, however it will still provide a hydrophobic function and prevent efflorescence.

According to the experience of many tilers, certain brands of dark coloured grout appear to perform better than others. Epoxy grout is gaining popularity

in the industry and may be a suitable alternative to avoid colour problems.

## Constant immersion:

Efflock is not a waterproofer to repel water under constant immersion. However, it can be used at the waterline of a swimming pool within render, adhesive and grout to control rising damp, salt attack and efflorescence at the evaporation point immediately above the waterline. There is no detrimental problem (i.e. re-emulsification) in having cured concrete containing Efflock submerged.

For further guidance please email [info@efflock.com.au](mailto:info@efflock.com.au) or telephone +61 414 730 736.

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## HYDROPHOBIC SEALER FOR MASONRY

Efflock's sister product is called Hydrophobic Sealer for Masonry. This sealer is the same chemical as Efflock, but is diluted differently at **1 part Efflock : 9 parts water** for use as a water repellent impregnating sealer. By diluting 9 times, this sealer reduces the usual packaging waste by 90% and is very cost effective.

It is suitable for use as a surface applied sealer for porous masonry such as sandstone, concrete and brick, or any masonry with a minimum of 1.8% water absorption rate. The treated surface will help prevent efflorescence by reducing water ingress, reduce dirt, moss growth and protect against salt attack for 10 years on pavements and 15 years on walls. It is an ideal product for use on pool surrounds.

As the pore structure of materials can vary substantially (particularly with stone), suitability for use on any material should always be tested across a few samples in a small area first. The sealer should be observed for any potential problems once the test areas have dried before proceeding with a large area.

### General instructions

1. Surfaces must be clean and dry.
2. Shake container well.
3. Prepare the required amount of sealer in a clean bucket at a ratio of;  
**1 part Efflock : 9 parts clean tap water.**



4. **Surface Application:** Apply using a bucket and soft bristle broom for horizontal surfaces. Use a manual air pressure sprayer for walls, beginning from the bottom, working upwards in a horizontal motion. The product needs to be applied 'wet on wet' or 'flood coated' to promote deep absorption.
5. **Dip sealing:** Dip masonry units into a bucket or tray for pre-sealing.
6. Re disperse any excess puddles with a brush before the sealer dries on the surface.
7. Allow to dry for a minimum of 4 hours, prior to rain. The air temperature must be between 4°C and 35°C.

**Limitation:** Limited protection against oil based stains.

For further guidance please email [info@efflock.com.au](mailto:info@efflock.com.au) or telephone +61 414 730 736.



## HANDLING AND STORAGE

- Efflock and Hydrophobic Sealer for Masonry is available in 1 litre, 5 litre and 20 litre jerry cans. Larger drums available on request.
- **Please refer to the Material Safety Data Sheet (MSDS) for safety instructions and safe handling. (Available at [www.efflock.com.au/pages/faqs](http://www.efflock.com.au/pages/faqs))**
- Not classified as dangerous goods.
- Safe for postage, and air freight.
- Store away from direct sunlight in a cool place above 4°C.
- For shelf life, please refer to the best before date located on the container. Efflock already diluted with tap water can be stored for a short time for future use. Algae and contaminants within tap water may begin to visibly affect diluted mixture within a couple of weeks.
- Dispose of any waste chemicals at an authorised chemical disposal facility.

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## GLOSSARY

**Crypto-florescence** – is a visible darkening defect that occurs around the perimeter of a masonry unit (i.e. stone paving, bricks, pre-cast concrete paving and blocks), which is caused by the migration of salts from mortar, adhesive and grout.

**Gauging water** – is a trade term referring to water that is put into a concrete mix.

**Hydrophobic** – meaning water repellent.

**Hygroscopic** – meaning moisture absorbent.

**Proprietary** – meaning branded.

**VOC** – Volatile Organic Compounds are environmentally unfriendly, toxic and dangerous chemicals that have a high vapor pressure at ordinary room temperature. Their high vapour pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air.

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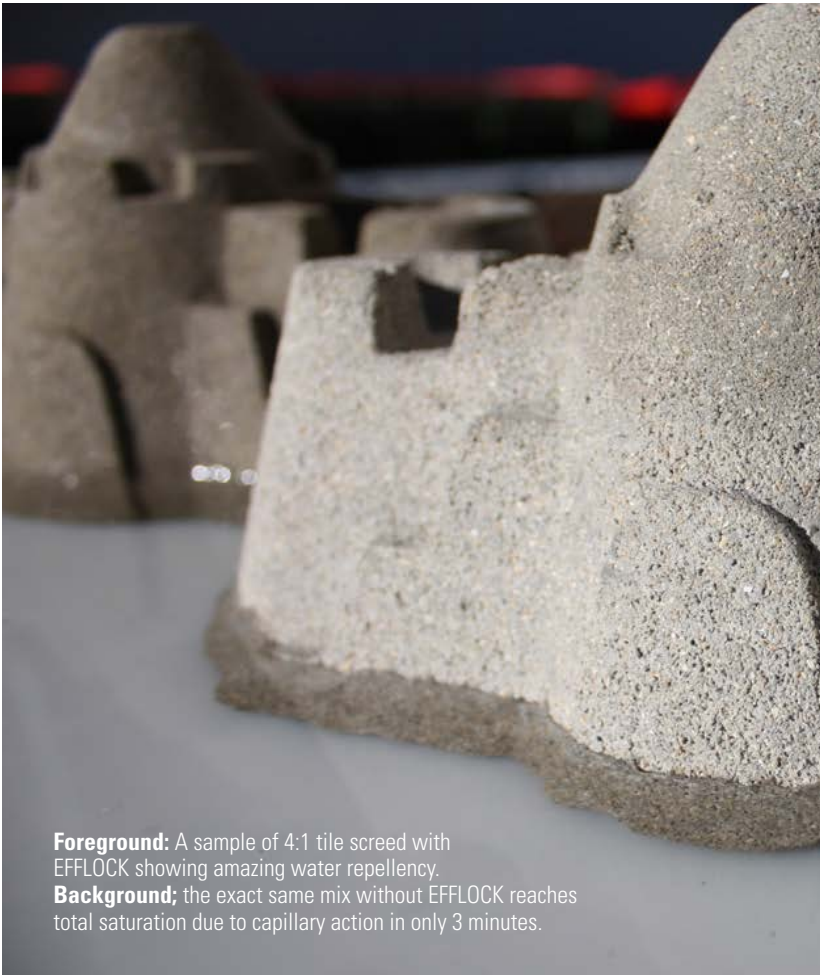
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Eco Liquids Pty Ltd reserves the right to update product literature without notice as required. It is the responsibility of the user to ensure the latest product literature is in their possession.



**Foreground:** A sample of 4:1 tile screed with EFFLOCK showing amazing water repellency.  
**Background:** the exact same mix without EFFLOCK reaches total saturation due to capillary action in only 3 minutes.

## MAKE YOUR BATHROOM BULLET-PROOF

Add EFFLOCK to render, tile beds, tile adhesive and tile grout. With only 1% Efflock added to water at the time of mixing, the results are amazing.



## A CAT AMONG THE PIGEONS

Concentrate dilutes 9 times with tap water. Superior technology at less than half the cost of other sealers.

Photo courtesy: [www.flickr.com/mark\\_robinson](http://www.flickr.com/mark_robinson)