MITEQ

PENETRATING SEALERS:

WATER REPELANCEY, STAIN RESISTANCE AND MYTHS

Penetrating sealers can help repel water and stains from a treated masonry surface, making the substrates more tolerable in a domestic/commercial environment. This summary is to give a better understanding of how penetrating sealers work and what the sealers are manufactured to achieve.

Masonry substrates of either natural stone or man-made building materials are permeable to water and vapour due to having capillaries in their structures. Masonry capillaries are hydrophilic in nature, which are liable for water and other material to penetrate.
When a penetrating sealer is applied to a substrate surface, it penetrates the capillaries. The sealer is unlikely to block the capillaries but line the capillary walls forming a penetration zone within the substrate surface.

Sealer in the penetration zone lowers the surface tension of the capillary walls and turns the hydrophilic capillaries into hydrophobic, effectively forming a water repellent zone within the substrate surface. This water repellent zone within the treated surface makes it harder for water or other staining materials to penetrate or to stain the substrate surface. It is vital, that when applying a penetrating sealer, a high penetration depth or a deep-water repellent zone is achieved to ensure better and durable protection.

The reason we seal masonry substrates with a penetrating sealer is to make it easier to clean and maintain over a longer period compared to that of an un-sealed surface.
As discussed above, penetrating sealers penetrate capillaries and line capillary walls making capillary water repellent. It may make the capillary smaller but unlikely to block the capillaries. In fact, penetrating sealers developed by Miteq allow the substrate to breath. It is important that sealers allow moisture vapour to breath from the inside of masonry substrates or vice versa.

It is understandable that, due to open capillaries, water can penetrate a treated surface particularly under hydrostatic pressure (e.g. on horizontal positions such as showers or pools or sub-water situations). Water can also penetrate a treated surface if there is a heavy down pour of rain. The treated surface may also allow a small amount of water and material to penetrate due to natural weathering or wear and tear over time.

Beading of water on a treated surface is also a temporary effect after the treatment. Surface beading may gradually disappear over time after the treatment. This does not mean that the sealer is faulty nor does it mean that you need another treatment. Surface beading effect is due to a very thin film of sealer left on the surface from the treatment.

Such thin film can be easily destroyed by UV or natural weathering or simply wear and tear. However, the sealer inside of capillaries is intact, continuously providing prolonged water repellent effect to the treated surface.
In summary, we believe:

1. The purpose to apply a penetrating sealer is to make the masonry substrate surface water repellent and stain resistant but not water-proof or stain-proof.

2. Any water or stains left on the treated surface should be removed as soon as possible to avoid prolonged contact with the surface causing permanent water or stain penetration due to open capillaries under hydrostatic pressure.

3. Surface beading of a treated surface by sealer is a temporary effect which will gradually disappear over time but this does not mean a faulty sealer is applied or a repeated treatment is required.

4. The key issue to applying penetrating sealers is to ensure a high penetration depth or a deep-water repellent zone is achieved to obtain better and durable protection.

5. When choosing and applying a sealer, a test is recommended before application to make sure that substrate, sealer and application technique is adequate to ensure high penetration depth which is the key to success for a sealer treatment.

We hope the above has cleared up any misconceptions when it comes to sealers.

Please feel free to contact us for further information if required.