Sealing Natural Stone

Should natural stone be sealed? In some cases it makes perfect sense to seal the stone. Once properly sealed, the stone will be protected against everyday dirt and spills. In other cases, it is best to leave the stone untreated. Topical sealers can alter the surface texture and finish, as well as build up on the surface creating a layer that is less durable than the stone. The following are recommendations for sealers courtesy of **Marble Institute of America**.

Factors to Consider prior to determining if the stone should be protected:

- What are the hardness, density and durability of the stone?
- How porous is the stone and how fast will it absorb a liquid (also referred to as the absorption coefficient)?
- What type of finish was applied to the surface? For example, a polished surface is more resistant to staining than a honed surface.
- Will the sealant affect the color or other aesthetics of the stone?
- If a resin was applied to the stone, how will the sealant react with the resin?
- Where is the stone located (e.g. countertop, floor, wall, foyer, bathroom, etc.)? Residential or Commercial?
- What type of maintenance program will the stone or has it been subject to?

The type of stone, its finish, its location and how it is maintained all need to be considered when determining how to protect the stone. The MIA recommends that these factors be reviewed with the end-user during the decision making process.

Different Types of Products

Make sure you understand the differences between the common product types available on the market. The products typically fall into two major categories: Topical Sealers or Coatings and Impregnators.

Topical Sealers or Coatings are coatings (film formers) designed to protect the surface of stone against water, oil and other contaminants. They are formulated from natural wax, acrylic and other plastic compounds. Coatings are classified into two general types: strippable and permanent.

> **Strippable coatings** are formulated to be easily stripped or removed from the stone. These coatings are made of polymers such as acrylics, styrene and polyethylene and are usually water based. Many of the janitorial coatings available on the market are water based, polymer-type products designed for resilient tile floors and not for stone. Read the label carefully and / or consult with the manufacturer prior to application.
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> **Permanent coatings**, once applied, are very difficult to remove. They are made of solvent-based or water-based polymers such as polyurethane and epoxies. These are not normally recommended for stone.

When a topical sealer is applied, the maintenance program often shifts from a program focused on the stone care to a program focused on the maintenance of the sealer (i.e. stripping and reapplying).

If a coating is used on a countertop where food is to be used, verify the coating is approved for food use.

Impregnators, water or solvent-based, penetrate below the surface and become repellents. Impregnators keep contaminants out, but do not stop the interior moisture from escaping. These products are considered "breathable" - meaning they allow for vapor transmission. They are generally hydrophobic (water repelling) and may also be olio phobic (oil repelling).

> **Hydrophobic impregnators** are formulated to repel only water and water-based chemicals. Fruit drinks, coffee, tea and soda, for example, would be repelled by a hydrophobic impregnator.
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> **Olio phobic impregnators** are designed to repel water and oil-based liquids. Cooking oil, grease and body oils are examples of substances that would be repelled by an olio phobic impregnator.

An important distinction between olio phobic and hydrophobic impregnators is that an olio phobic impregnator is ***always*** hydrophobic but a hydrophobic impregnator ***may not*** be olio phobic. Be sure to read sealer product labels carefully or contact the manufacturer to determine if they are hydrophobic, olio phobic or both.

Some products are also labeled as "oil resistant," but "oil resistant" and "oil repellent" are entirely different. An oil resistant impregnator will only slow down the absorption of oil into the stone. An oil repellent impregnator will prevent oil from entering the stone. Make certain that you're buying the appropriate product for your particular application.

Topical Sealers vs. Impregnators

How do you decide whether to use a coating or an impregnator to protect the stone? Both have advantages and disadvantages. The following summary should be studied carefully to help you choose the right product.

Topical Sealers – Advantages

1. Topical sealers are generally economical. The initial application cost is relatively small.
2. They're usually easy to apply. Unskilled laborers can learn to apply them with a reasonable amount of training and practice.
3. Topical sealers typically provide a sacrificial layer on the stone. This layer will take most of the wear on the stone.
4. Certain topical sealers may provide added slip resistance.
5. Some topical sealers can be applied below grade.
6. These products provide various degrees of luster.

Topical Sealers – Disadvantages

1. Since most topical sealers are typically softer than the stone itself, they will usually scratch, mar and scuff very easily, showing traffic patterns soon after application. This will require frequent buffing, burnishing or reapplication.
2. Topical sealers can build up and cause an unsightly appearance, giving an unnatural, wavy, plastic look to the stone.
3. Poor quality topical sealers can turn yellow. This is especially true if the stone is exposed to UV light.
4. Some topical sealers require frequent stripping and reapplication. The chemicals and abrasives used in the stripping process may cause damage to the stone. Certain stripping pads and brushes can scratch softer stones. Some wax strippers can harm agglomerate stones by eating through the polyester resin binders they contain. Certain topical sealers may block the "breathing" capability of a stone. Moisture can become trapped below the surface and may lead to spalling.

Impregnators – Advantages

1. Most impregnators won't change the appearance of the stone.
2. Impregnators typically don't require frequent applications. Since the impregnator is below the surface, it will generally last several years before reapplication is necessary.
3. Most impregnators aren't affected by UV light because they're absorbed below the surface where light can't penetrate.
4. Impregnators are typically hydrophobic and some of them are olio phobic as well.

Impregnators – Disadvantages

1. Impregnators that are solvent-based products produce vapors during application. In some cases these vapors can be noxious and flammable.
2. Some varieties of solvent-based impregnators are harmful to the environments, releasing large amounts of volatile organic compounds (VOCs). For this reason, the use of these impregnators is restricted in certain states. Also some water-based impregnators may also contain harmful or toxic chemicals. Always check the material safety data sheet (MSDS) of the product before deciding whether to use it.
3. Proper application of impregnators is generally more difficult than that of coatings. In may cases, training or professional consultation is recommended.

4. The initial cost of most impregnators is relatively high.
5. Generally, impregnators cannot be used below grade to resist hydrostatic pressure. Because the stone is still capable of breathing, water can be forced through the stone by pressure.