HAHN READY MIX

Sealing Concrete Flatwork

Technical Bulletin #20 - August 2023

Why Seal Concrete?

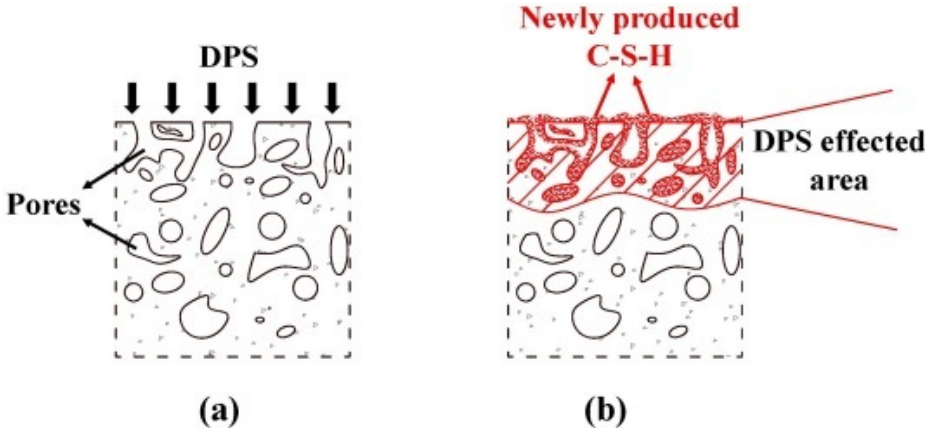
Sealing concrete flatwork is an important step to protect your concrete from external materials or forces that can damage, weaken or discolor an otherwise quality product. In this Tech Bulletin, we'll discuss the different types of sealers, how and when to apply them, and what benefit they provide.

Types of Sealers

There are thousands of sealers out there under a bunch of different brand names. Nobody has tested them all for efficacy and performance, but we can group them by the mechanism they use to seal concrete and the base materials they use. At a high level, sealers come in two forms: Topical and penetrating.

Topical Sealers tend to be made from acrylic polymers. They work by adhering to the surface of the concrete and forming a barrier that protects the concrete from salts, oils, and moisture penetration. Topical sealers often add a highly glossy look to the concrete, which can be desirable in decorative concrete. The downside of the topical sealers is they wear off, and they dissipate quicker in high traffic areas. Topical sealers should be reapplied every 1 to 3 years, depending on product, in-use environment and wear.

Penetrating Sealers can be made from a multitude of compounds, but often are silanes, siloxanes, colloidal silica, fluorinated water, or crystalline based. The mechanisms of each of these are slightly different, but they penetrate into the surface of the concrete and bond with leftover calcium hyrdoxide (remember the C-H from Tech Bulletin #3) to form a densified barrier in the surface of the concrete. Some of these sealers imbue a hydrophobic effect on the surface of the concrete which prevents any moisture (and the salts, oils, or other undesirable materials they might be carrying) from entering the concrete. Penetrating sealers are typically breathable, allowing vapors to escape the slab. They also tend to be permanent if applied correctly and at the proper dosage, eliminating the need for re-application. For normal slab on grade concrete, we would normally recommend a silane or crystalline penetrating sealer as the optimal choice for exterior slabs in this climate.



Densifying Penetrating Sealer creating an impermeable surface

Application Tips

Application instructions should be followed for the specific product you might be using, as different products can have slightly different application instructions. Most of the time, sealers are rolled or sprayed on. All curing compounds or past topical sealers need to be removed, the surface clean, and within proper application temperatures (often 40°-95° F). Some sealers require a moist surface, while others require a completely dry surface. Some sealers require two coats, and it is critical to make sure proper coverage rates are followed.

Interior Flatwork & Decorative Concrete

Sealing interior floors can also be a good idea for a number of reasons. Concrete is naturally porous and somewhat absorbent. A sealer can help prevent your mountain dew spill from forever staining your concrete, as well as protect against mold and mildew. A sealer will help harden the surface against abrasion and some will brighten the finish of decorative floors such as concrete that has been acid-stained or stamped and colored exterior concrete.

Click for Previous Tech Bulletins

Hahn Ready Mix

3636 West River Drive, Davenport, IA 52802