

HAHN

READY MIX

Evaporation Reducers vs Finishing Aids

Technical Bulletin #40 - April 2025



**Evaporation Reducers & Finishing
Aids...**

Aren't those the same thing?

Nope.

Today we'll discuss these VERY different materials and the proper circumstances and methods for each of their uses.

Evaporation Reducers

Evaporation Reducers, also called Evaporation Retarders, are emulsified fatty alcohols such as n-hexadecanol or cetylalcohol that form a film over the concrete and prevents water from evaporating. Some common evaporation reducers include Specfilm, Masterkure (formerly Confilm), and Monofilm. Evaporation reducers are useful on hot, windy dry days to help prevent [plastic shrinkage cracking](#) and early age moisture loss on the surface of the concrete.

Evaporation reducers should be applied after screeding or floating. After application, the concrete should **NOT** be finished or moved until the evaporation reducer has completely evaporated, and all sheen is gone from the surface of the concrete. We all know that adding water to the surface of concrete and then finishing it in is a bad idea. Well, evaporation reducers are 90-99% water. The remainder alcohols are not in any way beneficial to be finished into a concrete mix. Even if the technical literature from your evaporation reducer says it's fine to finish into the concrete, it is not, and you should not. Finishing evaporation reducers into your slab will raise the local water/cementitious ratio on the surface and may cause cracking, crazing, scaling, dusting and/or discoloration.

Used correctly, however, evaporation reducers are a powerful tool to keep the concrete surface from drying out. This is important for not only prevention of plastic shrinkage cracking, but all sorts of durability concerns related to early-age drying of the surface such as scaling, mortar flaking, and drying shrinkage cracking.

Finishing Aids

Finishing Aids are typically colloidal silica, and are used to improve concrete workability and finishability. Common products include Day1 and Stage1. The material is fine to be floated, trowelled, or otherwise worked in to the concrete. If you recall our Tech Bulletins [#5](#) & [#8](#), where we discussed the pozzolanic effect of supplementary cementitious materials, the same mechanism is happening here. Colloidal silica is essentially nano-sized silica particles suspended in water, and those silica particles will react with residual calcium hydroxide molecules, growing C-S-H crystals, and improving the strength, porosity, abrasion resistance and durability of the slab.

Some things to note, however. If you are using a mix with a high amount of SCMs like fly ash or slag already in the mix, there will be less calcium hydroxide available to react with the finishing aid, and therefore diminishing returns on benefits, with all of the downside of the water in the material. Similarly, over-use of the finishing aid will result in the same locally high water/cementitious ratios at the surface. Proper coverage ratios are important to follow. A finishing aid also doesn't serve as an evaporation reducer. While there is water in the material, there is no film preventing evaporation, meaning finishing aids are not as effective at preventing plastic shrinkage cracking or many other early-age drying issues.

Two tools, two uses.

Evaporation reducers and finishing aids both have their place, and both can be very beneficial. Just remember they are not substitutes for each other, do not provide the same functions or benefits.

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