HAHN READY MIX

The Case Against the Fresno

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Fresno trowels are a common tool for finishing...

Throw them in the dumpster.

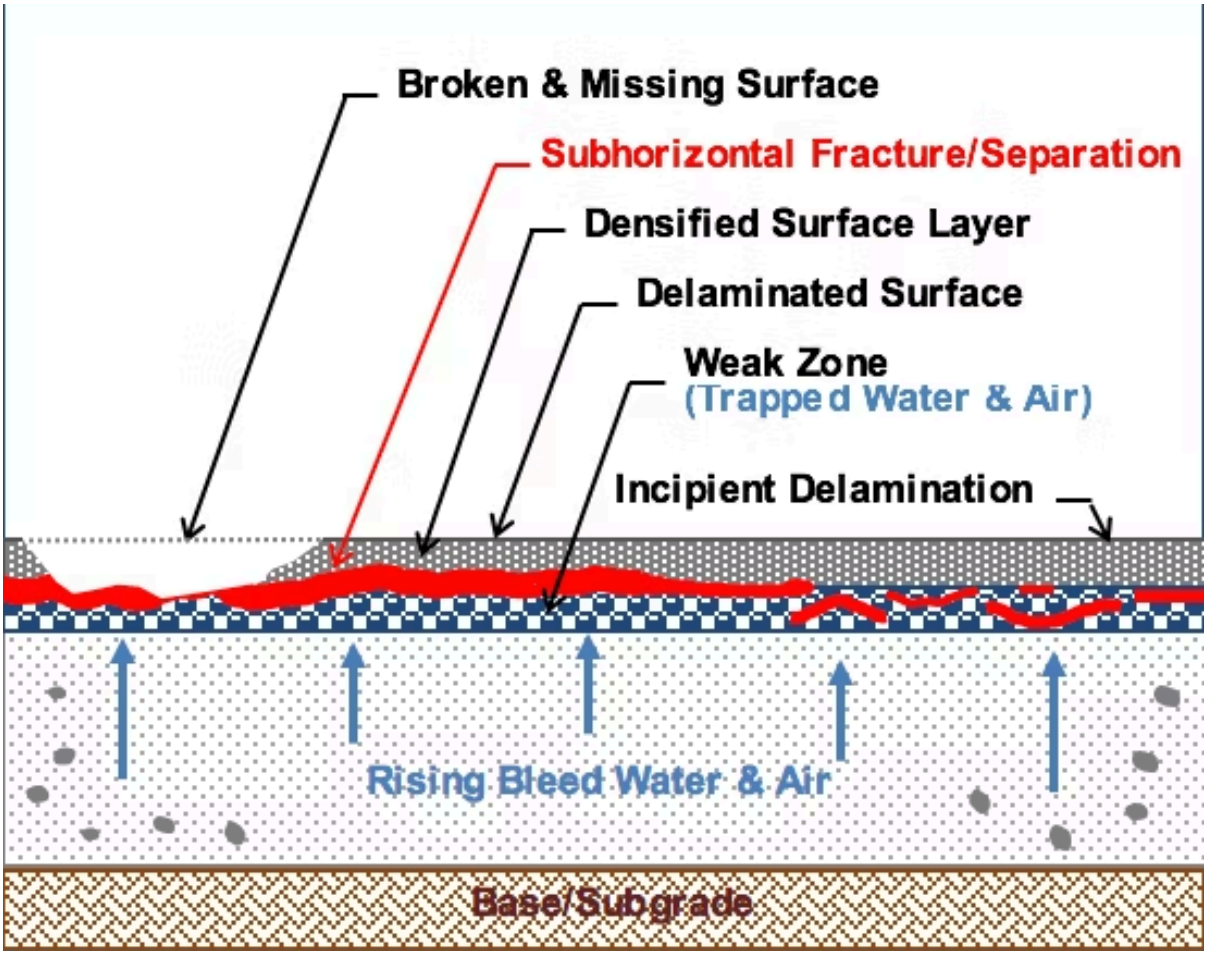
We all love that look of pristine, unblemished, and finely broomed exterior concrete. It takes real skill and timing to make such a slab and is a point of pride for many a finisher. They might boast at their attention to detail and how many passes they made with the trowel or fresno to remove each and every imperfection.

In the process, they have likely compromised the quality of the surface of the concrete.

The use of a fresno on exterior concrete substantially increases the probabilities of delaminations, scaling, crazing and aggregate popouts; reduces wear resistance and generally creates a lower quality surface concrete.... Even if it looks nicer that first day.

Delaminations

One of the major risks of using a fresno is causing delaminations. This happens because a fresno, particularly if used with multiple passes or at a sharp angle, seals up the surface of the concrete. If this action is completed before the concrete is finished bleeding, bleed water trying to evacuate the slab cannot escape the closed surface and forms a layer underneath the surface, preventing bond between the surface and the rest of the concrete. Over time, with traffic wear or freeze-thaw actions, the surface will de-bond and flake off in large chunks.



Scaling, Crazing, Popouts and Wear Resistance

If a finisher is cautious, and waits to use a fresno until the concrete is done bleeding, the risk of delamination decreases, but surface problems can still occur. Any bleed water still present on the surface will be incorporated into the surface paste creating a locally high w/cm ratio. This will cause a weakened surface layer more prone to excessive shrinkage (causing crazing), decreased deicer salt resistance (causing scaling), higher permeability and water intrusion (again scaling), and lower surface strength (decreasing wear resistance, increasing likelihood of popouts).

If a finisher is REALLY patient, and allows the bleed water to fully evaporate before utilizing a fresno, they are still physically pushing aggregates down into the slab and working air out of the surface, decreasing surface strength and reducing freeze-thaw resistance.

Finishing Challenges

As many finishers are reliant on the fresno to create the smooth surface so often desired, we get asked "How else can we remove imperfections without using a fresno?" We would recommend extra passes with a bull float **before** bleed water appears to remove most of the imperfections left behind by screeding. If this results in excessive ridges from the bullfloat ends, try pouring at a slightly lower slump. Use the broom at the end to hide or fix most remaining blemishes. Of course, as always, don't forget to cure!

Less is More.

When it comes to exterior concrete, the less we can touch it, the better. Overworking the surface is a major concern with concrete durability, and fresnos are a major culprit of overworking. Many contractors have made the switch to running a bull float over a screeded surface and then simply brooming the surface after the bleed water sheen dissipates. This practice may not produce as beautiful a concrete slab on day one, but will provide one that has the strength and durability that concrete is known for.

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