

Scaling The Acne of Concrete

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Why are we here?

- Millions of dollars in damage due to scaling each year
- Who pays for the damage
 - Contractors
 - Concrete Producers
 - Owners
 - Tax Payers





**WHY SHOULD
ANYONE LISTEN
TO ME?**



WHAT CAUSES SCALING?

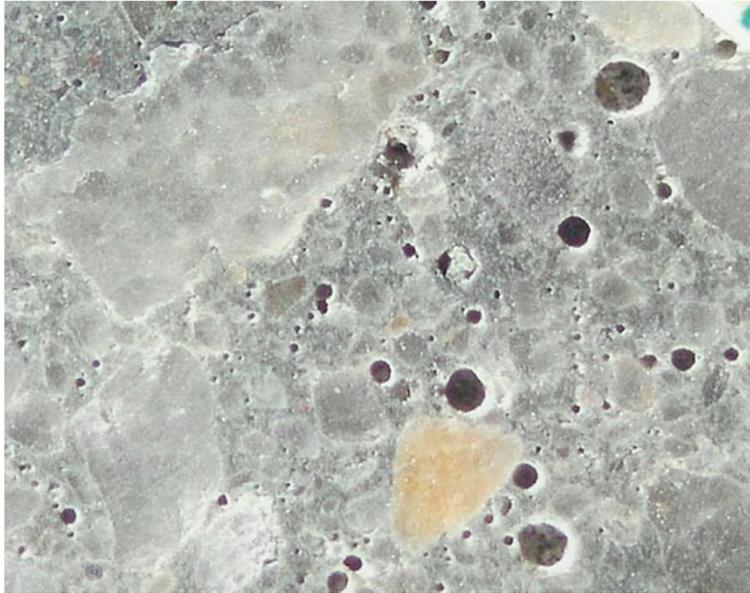


Mix Design

Concrete Property	Requirement
Minimum Strength	4000 psi
Coarse Aggregate Size	No. 57
Max Water/Cementitious Ratio	0.45
Air Content	5-8%
Max Slump (Normal Water Reducer)	5 inches
Max Slump (HRWR)	8 inches
Concrete Temperature	50-95 °F
Slag Cement	25-50%*
Fly Ash	15-25%*

*Slag cement and fly ash is used as a percent by weight of total cementitious material. Use lower end of range in cold weather (or straight cement) unless otherwise required by specification.

Air Entrainment



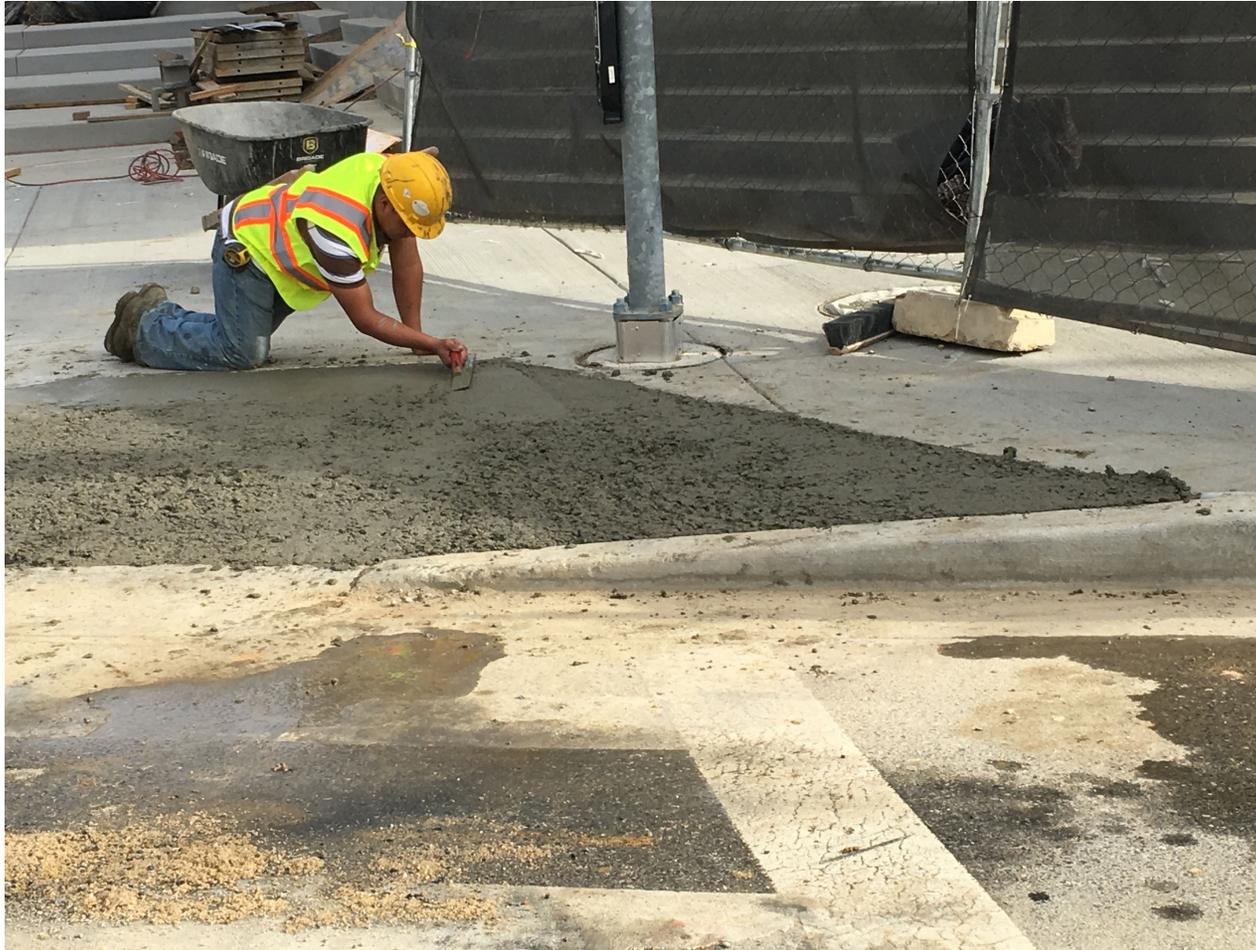
Slump



Finishing Concrete is Hard Work



Low Slump



High Slump





Rest



On dry windy days, there will be little bleed water on the surface and evaporation retarders should be used.





Finishing Bleed Water into the Surface of the Concrete Will Cause the Concrete to Scale





Blessing



Blessing will cause scaling!



Avoid Using Steel Trowels



DO NOT LOAD UP THE BROOM WITH WATER. IT WILL CAUSE THE CONCRETE TO SCALE.



Curing Compound



IMPROPER CURING WILL CAUSE THE CONCRETE TO SCALE





Can Scaling be Prevented

- In most cases, yes
- In all cases, proper finishing, a good mix design, and proper curing will make concrete more resistant to scaling, even under extreme conditions
- Extreme weather, early and aggressive use of de-icing salts, and the use of certain types of de-icing salts may cause surface deterioration in good concrete

Final Notes



Un-certifiable



