

Finishing Concrete Slabs Webinar – Questions and Answers (8/9/2023)

The questions submitted during the webinar follow with answers that our speaker has provided.

Key resources for concrete pavements available include:

[Revisiting Concrete Scaling MAP Brief \(2023\)](#)

Questions and Answers:

From tests we have very good results from using linseed oil to minimize scaling for airport concrete pavement with de-icing chemicals. Do you have experience with linseed oil for concrete pavements? Any comments? Latvia

We have had good luck with (cure & seal) products that comply with ASTM C 1315. (MaCAPA)

Linseed oil has been used for a long time as a concrete sealer. However, newer technologies such as silane-based products seem to provide better performance over time. (CPTech)

1. I always thought magnesium chloride was better than sodium chloride as a deicer, New York

Magnesium and calcium chloride are better for melting ice at very cold temperatures and are less damaging to plants, but they are far more aggressive to concrete than sodium chloride. (CPTech)

2. If you do use a steel trowel and seal up the concrete, won't you open it back up when you broom it? South Dakota

What about a Fresno with a broom right after it? Minnesota

Yes, you will reopen the surface during the brooming process, but not enough. Also, there will still be bleed water trapped under the surface during the setting process if you use steel, which will lead to early finishing (MaCAPA).

The use of a trowel (or Fresno trowel) may lead to dusting, scaling, blisters, delaminations, or staining on air-entrained concrete. (CPTech)

3. Why shouldn't you use a vibratory screed on high slump concrete? Minnesota

Use of a vibratory screed can increase the risk of segregation and loss of air from the concrete surface if used on high slump mixtures. (MaCAPA)

If the concrete segregates it brings more mortar and lightweight aggregate particles to the surface. This can result in reduced wear resistance and an increased number of pop-outs. ACI documents from committees 302 and 330 address the effects of excess vibration. (CPTech)

4. Why raise the water/cement (in spec) rather than using admix? Iowa

Too much cement adds to heat, faster set times, and faster surface drying. For hand finished concrete 0.45 is a good choice. (MaCAPA)

A finisher does need a certain amount of water in the mix for finishing. If the slump is mostly from water reducers and not from water in the mix, it becomes rubbery and may exhibit crusting at the surface from a lack of bleed water. (CPTech)

5. Would you really need curing compound during cold weather concreting? Minnesota

Curing is the practice of keeping concrete moist and warm during hydration. In cold weather, curing compound is even more important to prevent drying than in moderate weather. In addition, the lower temperatures mean that hydration is slower, while drying continues at the same rate – markedly increasing the risk of surface distress if curing is not provided. (CPTech)

6. One of the “Do Not Do” lines on concrete was to never place concrete on a vapor barrier. Was that for only exterior concrete because vapor barriers are needed on interior concrete slabs? Missouri

This topic is a little outside the scope of this webinar. We are not aware of a need to place a vapor barrier under outdoor slabs. More information is available in “Concrete Floors on Ground by Scott M. Tarr and James A. Farny, PCA, 2008.” (CPTech)

7. Please comment on the use of joint material when replacing sections of concrete where the new slab butts up to existing slab. Missouri

I would use a felt (flexible) board material (full depth), so the slabs move independently and there is the capacity for expansion and contraction. (Craig)

8. Maine DOT requires 50% slag. Maine

Indeed, some RM Producers need to go that high to meet ASR specifications. (MaCAPA)

9. Our region has gravitated towards type IL cement and Class F ash. Nebraska

Have you noticed any surface issues coming about from the use of PLC versus PC cements? Minnesota

How has the change to Type 1L cement effected flat slab work? What recommendations do you have for adjusting mix designs when switching to Type 1L cement? Florida

In our area, it's all going to type IL; are you seeing that as a trend elsewhere? Type IL is replacing I/II on a 1:1 basis with hardly any changes to the specs. South Dakota

Is Type I cement unavailable everywhere nowadays? South Dakota

Our area has recently switched to type L "green" cement and there appears to be a greater incidence of scaling. Are there studies reviewing this and are there any mitigation measures to improve performance? South Dakota

Portland Limestone Cements (PLC) or Type IL (TIL) cements are rapidly replacing TI or TII cements in many areas across the US. It is not possible to make generic statements about how these products change characteristics of any given mixture due to the variability between products from different plants and manufacturers. It is valid to say that bleeding, setting and strength gain rates will likely be different, meaning that finishing crews have to pay attention to when bleeding ends and when the surface is stiff enough to finish. (CPTech)