

Rain, Rain Stay Away from Fresh Concrete!

When rain falls on fresh concrete, concrete contractors get blamed for not checking the weather conditions and not planning the concrete placement to avoid rain. But tell that to concrete contractors in Seattle or Miami. The rainy season in Seattle includes six months, October through March, with 15 days of rain or more, plus two months that have about 20 days of rain. Miami has a rainy season from June through October with rain averaging more than 15 days a month. Avoiding rain is easy – but that costs time and money, which then makes avoiding rain not so easy.

Concrete pavements and many flatwork pours are open to the rain. Yes, concrete contractors know about using plastic to protect fresh concrete from the rain, removing rain water from fresh concrete dragging a hose or using a squeegee, and yes, they know not to intermix the rain water into the concrete or surface finish. Every concrete contractor in business for more than five years has at least one rain story to tell.

Concrete contractors understand that remedial work may be needed for a rain-damaged slab; however, most are not prepared for owners who insist that the concrete be removed and replaced. In some areas, such as Seattle and Miami, the replacement slab may have to be placed in the rain! Thus, engineers and owners in Seattle and Miami who have to deal with rain-damaged slabs and their repair, are less likely to order remove and replace. They understand the issue of rain and the schedule constraints.

However, the industry has not done a good job at sharing the information about the effect of rain on fresh concrete and the repair options. I've found and cited the following literature on rain-damaged concrete to help when advising contractors who face the problem.

Rain References

American Concrete Pavement Association, "How to Handle Rained-on Concrete Pavements", Concrete Pavement Research & Technology, R & T Update, April 2003.

Seegebrecht, George W., "When it Rains, it Can Pour...on Flatwork Projects", *Concrete International*, American Concrete Institute, August 2012.

Barnes, R., "Rain damaged concrete", Concrete Advice No. 38, The Concrete Society, April 2010.

These three articles discuss the use of grinding or removing a thin surface layer to restore most rain-damaged slabs. Some engineers and owners question the durability of rain-damaged slabs that have a thin layer removed. But the American Concrete Pavement Association (ACPA) indicates that diamond grinding has been successfully used to repair rain-damaged surfaces exposed to winter conditions and many years of truck traffic.

ASCC's Technical Committee will be looking into this issue. Please let me know of any articles, reports or repairs that you have used successfully, or unsuccessfully, on rain-damaged slabs. And of course, we always love to listen to everyone's rain story!