



4150 Smiley Road • North Las Vegas, NV 89081
702.644.3000 • Fax 702.644.1736

For All Your Ready Mix Needs

Hot Weather Concrete Tips

Here we are in mid-April enjoying near 80-degree temperatures. Soon we will be in the 100-degree range so we need to start thinking about hot weather concrete practices. The definition of "Hot Weather" is anytime the concrete temperature is at or above 90 degrees. You must take precautions when expecting concrete in this temperature range. Here is a list of the effects of hot weather on concrete:

- The concrete's water demand increases
- The concrete's setting time to initial and final set is decreased, in other words it sets faster!
- The concrete's compressive strength is reduced
- The potential for cracking increases (especially when hot weather is combined with sustained winds)

What does Sierra Ready Mix do to improve quality in hot weather conditions?

- Keeping aggregates cool by using water sprinklers
- Using chilled water in our batching process
- Offering ice for use in concrete
- We use retarding or set controlling admixtures to help increase set time
- We use higher percentages of flyash to help increase set time, and aid in placement and finishing

What can you do to improve quality in hot weather conditions?

- Plan the pour so that concrete is in the truck for the least amount of time
- Order a slump that will aid in a quick placement of the concrete
- Keep the sub grade moist
- Build wind-breaks or sun shades to protect the concrete
- Use proper curing techniques such as a curing compound or evaporation reducer
- Pour at night or early morning

As you can see there are many factors that can effect concrete's performance in hot weather. Many of these factors become compounded by each other. For instance, concrete's tendency to demand more water at higher temperatures would cause you to want to add more water at the jobsite. So now you have an increased water to cement ratio. Combine this increased water to cement ratio with concrete's tendency to have lower strength at higher temperatures and now you may have a situation where your concrete doesn't meet strength specifications. When you allow a load to become over 90 minutes old, every one of the factors becomes much worse. At a point in time where concrete is in excess of 95-degrees and over 90 minutes old, you

may be further ahead to not place this concrete and just order another truck for the sake of quality.

The purpose of this article is simply to outline the factors that you should be considering when pouring concrete in hot weather. I would suggest further reading such as "Design and Control of Concrete Mixtures" published by PCA, or "The Practitioners Guide to Slabs on Ground" published by ACI to learn more about hot weather concrete.