

Curing Guidelines

Curing is the maintenance of a satisfactory moisture content and temperature in concrete for a period of time immediately following placing and finishing so that the desired properties may develop. With proper curing, concrete becomes stronger, more impermeable, and more resistant to stress, abrasion, and freezing and thawing.

Curing can be provided by two methods

WET CURING Applying additional water

- Soaker hoses
- Ponding and immersion
- Saturated covering (wet burlap)

MEMBRANE CURING Sealing in the existing mix water

- Plastic sheets
- Curing compounds

Wet curing is preferred and should be no shorter than 7 days, and may need to be longer if the temperature is below 50°F. With today's construction schedules, membrane curing using a curing compound is the most practical method. Apply an appropriate curing compound as soon as possible and no later than one hour after the final finishing is completed. In hot weather, flush the surface with water before curing to minimize any potential alkali-silica pop outs. The water should be no more than 20° cooler than the concrete.

There are two main curing compounds that are commonly used and the type is dependent on the

selection of the sealing compound that will be placed after 28 days.

- Membrane forming curing and sealing compound
- Dissipating curing compound

SEALING

Sealing compounds (sealers) are liquids applied to the surface of hardened concrete to reduce the penetration of liquids or gases such as water, deicing solutions, and carbon dioxide that cause freeze-thaw damage, corrosion of reinforcing steel and acid attack. Sealing compounds differ in purpose from curing compounds. The primary purpose of curing a curing compound is to retard the loss of water from newly placed concrete and it is applied immediately after finishing. Surface sealing compounds on the other hand retard the penetration of harmful substances into hardened concrete and are typically not applied until the concrete is 28 days old.

Sealers are generally classified as either membrane forming or penetrating. Penetrating sealers, such as siloxanes and silanes are preferred. They chemically bond to the concrete, and prevent moisture from entering the concrete.

SPECIAL NOTE

Typically a curing and sealing compound will need two applications. The first application is the curing portion applied immediately after finishing procedures. The second application is the sealing portion applied after 28 days.