



CEMSTONE®

Curing and Sealing Guidelines



CURING CONCRETE MATTERS

Curing is Critical

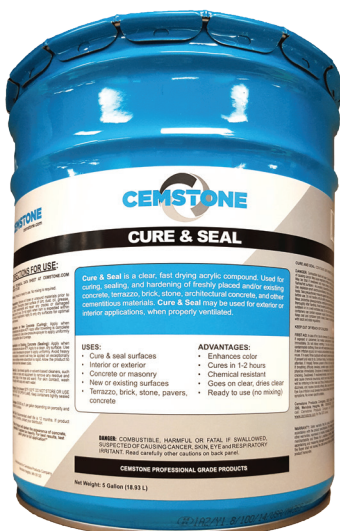
Curing is a critical procedure aimed at enhancing the surface durability and lifespan of concrete flatwork. ACI 308 Guide to External Curing of Concrete, describes curing as an action taken to maintain moisture and temperature conditions of freshly placed concrete.

Proper curing techniques are essential to shield freshly finished concrete from adverse environmental factors such as low humidity, drying winds, and drastic temperature fluctuations. Improper curing may cause shrinkage cracking, scaling, mortar flaking, and other surface defects.

There are numerous methods of curing concrete. Wet curing and the application of curing compounds are two predominant methods. Select the most suitable curing method for the specific application and intended use of the concrete.

The Benefits of Properly Cured Concrete are Significant

- **Maximized Hydration Process:** Proper curing leads to improved strength and abrasion resistance. Adequate moisture retention during curing ensures optimal cement hydration, resulting in a denser and stronger concrete matrix.
- **Enhanced Durability and Service Life:** By maintaining adequate moisture levels, curing minimizes the risk of surface deterioration and surface degradation over time. This results in concrete that withstands environmental stresses.
- **Decreased Permeability:** Curing is crucial for enhancing concrete's resistance to water penetration and chemical ingress.
- **Surface Defect Prevention:** By preventing rapid moisture loss and temperature differentials, proper curing significantly reduces the potential for surface defects such as scaling and mortar flaking.



Cure & Seal



Dissipating Cure 1315 WB



Cure & Seal WB 1315



Ultimate Barrier

Types of Curing

Curing Compounds (most commonly used)

When job conditions are not favorable for wet curing, the most practical method of curing is with liquid membrane-forming compounds. When applied to concrete, these compounds form a membrane that prevents the internal moisture from evaporating, allowing the cement hydration to continue. Cemstone recommends the following when curing concrete with liquid membrane-forming curing compounds:

- **Curing compounds** should meet ASTM C309 or C1315 and be used per the manufacturer's instructions to prevent surface moisture loss and continue the cement hydration process.
- **Curing compounds** should not be used on any surface of which additional concrete or other materials are to be bonded.
- **Application** of the curing compound should immediately follow the final finishing pass.
- **Spray nozzle(s)** should be positioned sufficiently close to the surface to ensure a consistent film application and proper application rate per the manufacturer's instructions.

Other Curing Methods

- **Ponding:** This involves creating a shallow pond or reservoir of water on the concrete surface, maintaining continuous moisture contact to facilitate proper cement hydration.
- **Wet Burlap or Mats:** Covering the concrete with impermeable sheeting or fabric mats, which are kept consistently wet, helps retain moisture and promotes thorough curing.
- **Sprinkling or Fog Spraying:** Continuously sprinkle water on the concrete surface to sustain moisture levels.
- **Reinforced Paper or Plastic Film:** This method minimizes moisture loss from the surface due to evaporation (discoloration/mottling warning).

Cemstone Cure & Seal Plus “ASR Sand Pop-Out Minimizer” is designed to reduce the potential of ASR sand pop-outs.

ASR (Alkali-Silica Reactivity) occurs when alkalis (potassium and sodium) from Portland cement react with certain siliceous aggregates. When this reaction occurs, a gel is formed. In the presence of moisture, the gel expands causing internal pressure which often leads to surficial sand pop-outs. These sand pop-outs predominately occur in high evaporation rate conditions. When ACI 305 hot weather conditions exist and there is the possibility of ASR sand pop-outs, apply Cemstone Cure & Seal Plus “ASR Sand Pop-Out Minimizer” immediately after final finishing is completed.



Cure & Seal Plus

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SEALING YOUR CONCRETE

28 Days After the Concrete is Cured, We Recommend Sealing

Properly sealed concrete helps maintain the appearance and durability of the concrete after it has had adequate time to cure, which is a minimum of **28 days after placement**. Sealing is designed to keep moisture and contaminants, like deicing chemicals, from penetrating into the concrete. Since sealers eventually degrade from wear and environmental exposure and thus no longer function as intended, concrete should be sealed regularly following the sealer manufacturer's instructions or as needed. Cemstone recommends the following when sealing your concrete:

- Always follow the manufacturer's installation instructions.
- Prior to sealing or resealing, an aggressive power wash or power brooming may be required to remove any dirt, stains, or dissipating curing compounds from the concrete surface.
- Allow the concrete to adequately dry before applying sealer.
- For stubborn stains that are difficult to remove, contact your Cemstone Account Representative for assistance. They can provide a list of specialized products and methods tailored to effectively remove stains without damaging the surface.

Caring for and Maintaining Your Investment

Acrylic Based Concrete Sealers

The recommended acrylic based concrete sealers (right) are solvent based, non-yellowing, and fast-drying. Easy to apply with a sprayer and a roller. Each product offers a different finish and surface effect.



Cure and Seal



Super Clear Coat



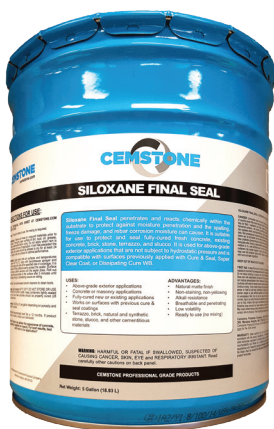
Super Diamond Glaze LV

Penetrating Sealers

Penetrating sealers (below) create a barrier on the concrete. These sealers saturate and absorb into the surface providing lasting protection against moisture and deicing chemicals. These recommended penetrating sealers are breathable, and result in a non-yellowing, natural finish. Easy to apply with a sprayer and a roller. **Penetrating sealers are not be used when a liquid membrane-forming curing compound or sealer is still present on the concrete surface.**



Siloxane Sealer



Siloxane Final Seal



Salt Barrier



100% Silane Sealer

