



**HAWAIIAN  
CEMENT**

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## concrete curing tips from hawaiian cement

When most people think of curing, they think only of maintaining moisture on the surface of the concrete. But curing is more than that—it is giving the concrete what it needs to gain strength properly. Concrete strength depends on the growth of crystals within the matrix of the concrete. These crystals grow from a reaction between Portland cement and water—a reaction known as hydration. If there isn't enough water, the crystals can't grow and the concrete doesn't develop the strength it should. If there is enough water, the crystals grow out like tiny rock-hard fingers wrapping around the sand and gravel in the mix and intertwining with one another.

Curing enables concrete to become stronger and more durable. Proper curing requires:

- Sufficient moisture content--use curing methods to supply or retain moisture
- Favorable temperatures: 50 degrees F to 90 degrees F
- Time--minimum of seven days or until concrete reached 70% of its specified strength

Cure concrete immediately after finishing by:

### **Ponding**

- Build a dike, then fill with water to cover the entire concrete slab.
- Avoid water or dike material that can stain the concrete.
- Use curing water at a temperature within 20 degrees F of the concrete temperature.
- Avoid premature or sudden release of ponded water, which can damage the surrounding environment

### **Sprinkling or fog spraying**

- Keep surface continuously wet; alternate wetting and drying causes craze cracking.
- Use low water pressure and flow to avoid washing away the fresh concrete surface.
- Use a water temperature within 20 degrees F of the concrete temperature.
- Avoid if water runoff can damage the surrounding environment

### **Using wet materials**

- Cover the concrete with wet burlap, straw, sawdust, or sand.
- Wet continuously, or cover with plastic sheets and wet frequently.
- Avoid materials that discolor concrete.
- Prevent materials from blowing away.

### **Using plastic sheets or waterproof paper**

- Lay flat, lap edges 6 inches, and cover exposed concrete edges
- Use minimum 4-mil-thick plastic sheet: white in hot weather and black in cold weather
- Don't use on architectural concrete
- Secure covering to prevent concrete exposure

### **Using curing compounds**

- Apply after finishing when bleedwater disappears.
- Apply in two applications, at right angles, to form a continuous film.
- Typical coverage rates are 150-200 square feet per gallon.
- Avoid using on surfaces to be covered with paint or toppings, unless approved by the manufacturer.