



Virginia Ready-Mixed Concrete Association

Finishing Procedures

Here are standard placing and finishing procedures for concrete:

The sub-base (bare ground) needs to be moistened to a depth of 4 to 5 inches about an hour before placing concrete. The soil should form a ball when squeezed, but break apart readily and not leave a wet outline on your hand. This serves to cool the ground and minimize the loss of workability through moisture loss. Manpower and tools need to be available before the ready-mix truck arrives. The concrete should be in place about 90 minutes after batching at the ready-mix plant.

Concreting tools commonly required are:

- wheelbarrows
- square nose shovels
- straight strike-off board (screed)
- bull float
- wood float
- edger
- groover or jointer
- steel trowel, broom.

Place concrete as close to its final position as possible, not in large piles. Avoid excess movement and raking of fresh concrete, since separation of the aggregate and cement paste can occur.

Using a sawing action, a screed board moved along the forms strikes the concrete to the top of the forms. For reduced labor, mechanically vibrated screeds can be used. Always maintain a small amount of concrete ahead of the screed.

One of the most common mistakes at the jobsite is adding water to the concrete mix. This is done to change the consistency of the concrete, but should be avoided. The extra water increases the water-to-cement ratio, which substantially reduces strength and durability. The excess water must also evaporate from the concrete, leading to the formation of shrinkage cracks. Concrete, which flows like a thick soup or "pours" probably has too much water.

Bullfloating is the last step in placement. Large aggregates are pushed below the surface and major surface irregularities are removed. NEVER bullfloat when free water or a "sheen" of water is seen on the surface. This changes the water-to-cement ratio at the surface and creates a weak layer where strength and durability are needed most.

Finishing After bullfloating, allow concrete to stiffen and the water sheen to disappear from the surface. This is usually in about 15 minutes to an hour. A simple test is to step on the concrete. Footprints more than 1/4 inch deep indicate more setting time is required. At this point, finish floating can begin, and joints and edges can be tooled.

Finish floating uses a wooden or metal float to remove slight imperfections. Floating is frequently used as a final finish. It provides a good slip resistant texture. Floating also prepares the surface for subsequent finishing operations. Troweling follows floating when a smooth, dense surface is desired. Timing is important in this operation. If delayed too long, the surface becomes too hard to trowel. Early troweling will produce a nondurable surface. The surface stiffens with each successive troweling, so smaller trowels and increased tilt of blade are necessary. Transverse brooming following floating is a finishing operation that produces a gritty, slip resistant surface, especially useful in exterior concrete such as driveways or leadwalks.

It should be timed so the concrete is sufficiently hard to maintain the rough scoring. Special brooms are available for this operation. Burlap, tined and grooved finishes can also be used to provide slip resistant surfaces.