CIP 14 - Finishing Concrete Flatwork

WHAT is Finishing?
Finishing is the operation of creating a concrete surface of a desired texture, smoothness and durability. The finish can be strictly functional or decorative.

WHY Finish Concrete?
Finishing makes concrete attractive and serviceable. The final texture, hardness, and joint pattern on slabs, floors, sidewalks, patios, and driveways depend on the concrete’s end use. Warehouse or industrial floors usually have greater durability requirements and need to be flat and level, while other interior floors that are covered with floor coverings do not have to be as smooth and durable. Exterior slabs must be sloped to carry away water and must provide a texture that will not be slippery when wet.

HOW to Place Concrete?
Prior to the finishing operation, concrete is placed, consolidated and leveled. These operations should be carefully planned. Skill, knowledge and experience are required to deal with a variety of concrete mixtures and field conditions. Having the proper manpower and equipment available, and timing the operations properly for existing conditions is critical. A slope is necessary to avoid low spots and to drain water away from buildings.

1. Complete all subgrade excavation and compaction, formwork, and placement of mesh, rebars or other embedments as required prior to concrete delivery. Delays after the concrete arrives create problems and can reduce the final quality of flatwork.
2. General guidelines for placing and consolidating concrete are:
   a. A successful job depends on selecting the correct concrete mixture for the job. Consult your Ready Mixed Concrete Producer. Deposit concrete as near as possible to its final location, either directly in place from the truck chute or use wheelbarrows, buggies or pumps. Avoid adding excessive water to increase the concrete’s slump. Start at the far end placing concrete into previously placed concrete and work towards the near end. On a slope, use concrete with a stiffer consistency (lower slump) and work up the slope.
   b. Spread the concrete using a short-handled, square-ended shovel, or a come-along. Never use a garden rake to move concrete horizontally. This type of rake causes segregation.
   c. All concrete should be well consolidated. For small flatwork jobs, pay particular attention to the edges of the forms by tamping the concrete with a spade or piece of wood. For large flatwork jobs, consolidation is usually accomplished by using a vibrating screed or internal vibrator.
   d. When manually striking off and leveling the concrete, use a lumber or metal straightedge (called a screed). Rest the screed on edge on the top of the forms, tilt it forward and draw it across the concrete with a slight sawing motion. Keep a little concrete in front of the screed to fill in any low spots. Do not use a jitterbug or vibrating screed with concrete slump exceeding 3 inches (75mm). Vibrating screeds should be moved rapidly to ensure consolidation but avoid working up an excessive layer of mortar on the surface.
Follow These Rules to Finish Concrete

1. Place and move concrete to its final location using procedures that avoid segregation.
2. Strike off and obtain an initial level surface without sealing the surface.
3. Wait until the bleed water disappears from the surface before starting finishing operations.
4. Use the appropriate surface texture as required for the application.
5. Avoid steel troweling air-entrained concrete.
6. Cure the concrete to ensure it achieves the desired strength and durability.