

## CHAPTER 8

## FINISHING AND CURING

## 8-1. Finishing.

a. Equipment and methods. Types of finishing equipment other than conventional equipment may be used on a trial basis when capable of finishing concrete of the quality and consistency required.

b. Surface finishing and testing. Finishing operations are pointed toward obtaining a dense, smooth surface true to the required grade. Since the surface receives the greatest exposure to weathering and traffic, every precaution will be taken to obtain a high-quality concrete at the surface. The finishing operations will be kept to the minimum necessary to obtain the required surface finish. Excessive surface manipulation will not be permitted as it tends to bring a surplus of mortar, water, and undesirable soft materials to the surface, which contributes to scaling and surface deterioration. Finishing should leave the surface at the proper grade. If the mechanical finishing operations are properly controlled, very little hand finishing will be necessary. Short floats will be used only as necessary to correct local surface unevenness. Straightedges of the required length will be used primarily to smooth and check the surface. To avoid later costly corrections of hardened pavement, which fails to conform with specific surface tolerances, the surface will be thoroughly checked during the mechanical floating and necessary corrections will be made.

c. Hand finishing and edging. Machine finishing is required, but hand finishing will be permitted for odd widths and shapes of slabs, areas adjacent to headers, and areas around outlets in the pavements. Hand-finished areas will have the same quality and the same surface characteristics as those areas finished by machine.

d. Surface texture. The final surface texture of the pavement will be provided by means of a burlap drag, wire comb, or broom.

## 8-2. Curing.

a. Control of cracking. Shrinkage (craze) cracking is caused by a combination of high ambient air temperature, high concrete temperature, low relative humidity, and wind velocity. These conditions need to be controlled when placing and protecting young concrete. It is essential that concrete be protected against loss of moisture and rapid temperature change for the specified period of protection. Equipment, material, and supplies for adequate curing and protection of the concrete must be on hand and ready to install before actual concrete placement begins. In general, curing will be accomplished by using a

9 Apr 84

membrane curing compound. However, other methods may be specified if indicated by local conditions.

b. Membrane curing. The curing compound will be applied by means of a power-driven machine straddling the newly paved lane and operated so that the spray will cover the pavement surface completely and uniformly. Spray nozzles should be surrounded by a hood to prevent wind from blowing the curing-compound spray. The rate of advance of the spraying machine will be controlled so that a two-coat overlapping coverage will be provided. Hand-operated pressure sprayers will be permitted only on indicated odd widths and shapes of slabs and on concrete surfaces exposed by removal or forms or when machines are not available. The curing compound must form a continuous void-free membrane and be maintained in this condition throughout the curing period. Unsatisfactory or damaged areas will be resprayed. Any damage to the membrane during the sawing operation will be corrected by respraying.

c. Substitute curing provisions. Where it has been established from past experience in an area that membrane curing alone does not adequately protect pavement from shrinkage cracking, a combination of moist curing and membrane curing may be specified.

d. Selection of curing material for pavements to be painted. In selecting curing material for pavement surfaces to be painted, consideration will be given to the necessity of sandblasting to remove coatings and deposits that interfere with the bonding of paint. Curing compounds of the low-melting-point wax-base type tend to penetrate concrete and should not be used in the areas to be painted.