CONCRETE CURING

YOU DICTATE THE LIFE OF YOUR CONCRETE BY CURING OR NOT CURING. REQUEST THAT ALL EXTERIOR CONCRETE BE CURED!!!

CURING is the maintenance of a satisfactory moisture content and temperature in concrete for a period immediately following the placing and finishing so that the desired properties may develop.

50% OF SURFACE STRENGTH CAN BE LOST IF CONCRETE IS NOT CURED. Concrete most likely to scale has been weakened at the surface during the finishing and/or curing process. Curing assures the proper hydration, which allows the concrete to reach its highest potential strength.

ADVANTAGES FOR PROPER CURING

- It retains moisture in the slab so that the concrete continues to gain strength.
- It delays drying shrinkage until the concrete is strong enough to resist shrinkage cracking.
- A less permeable, watertight concrete. Reduced permeability means the concrete will be more resistant to freezing, salt scaling, and attack by chemicals.
- Curtails formation of plastic shrinkage cracks caused by rapid surface drying.
- Increased abrasion resistance, as the surface of the concrete will have a higher strength.
- Significant reduction in scaling problems.
- Promotes uniform surface color.

HOW TO CURE CONCRETE

- **Membrane Cure:** Spray curing compound immediately after finishing. 100% coverage is important.
- **Water Cur**e: The concrete is flooded, ponded or mist sprayed. It is the most effective curing method of preventing mix water evaporation.
- **Water Retaining Methods:** Use coverings such as canvas, burlap, or straw that is kept continuously wet. The material used must be kept damp during the curing period.

THE OTHER IMPORTANT ASPECT OF CURING IS TEMPERATURE—the concrete cannot be too cold or too hot. As fresh concrete gets cooler, the hydration reaction slows down. The temperature of the concrete is what is important here, not necessarily the air temperature. Below about 50 degrees Fahrenheit, hydration slows down a lot; below about 40 degrees Fahrenheit, it virtually stops. Hot concrete has the opposite problem: the reaction goes too fast, and since the reaction is exothermic (produces heat), it can quickly cause temperature differentials within the concrete that can lead to cracking. In addition, cement that reacts too quickly does not have time for the crystals to grow properly so it does not develop as much strength as it should.

DES MOINES METRO CONCRETE COUNCIL