

PLASTIC SHRINKAGE CRACKING

Plastic shrinkage cracks are caused by a rapid loss of water from the surface of concrete before it has set. Conditions that cause high evaporation rates from the concrete surface, and thereby increase the possibility of plastic shrinkage cracking include:

- Wind velocity in excess of 10 mph
- Low relative humidity
- High ambient and/or concrete temperatures
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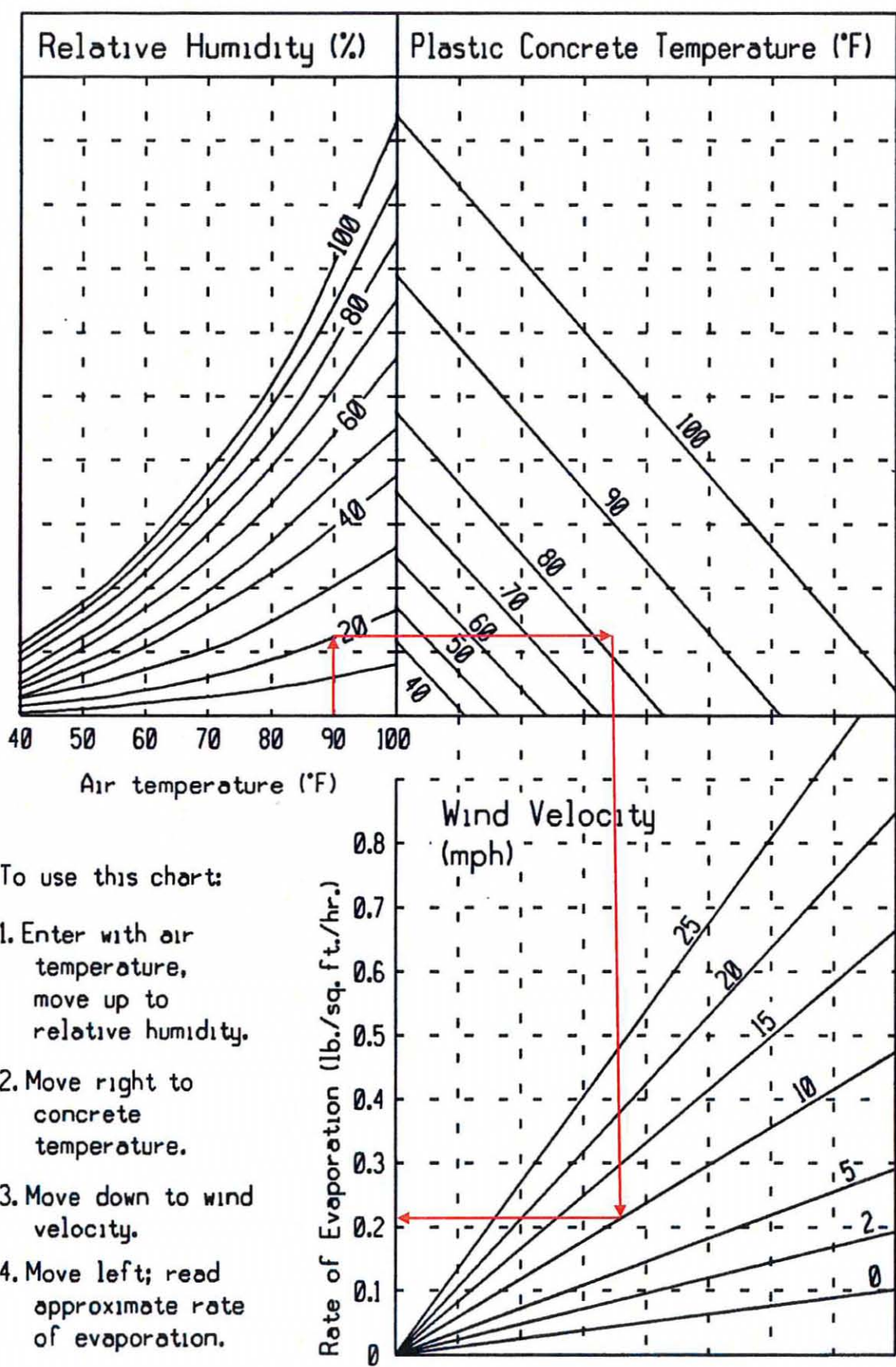
The following are suggestions that when utilized, will decrease the potential for plastic shrinkage cracking to occur:

How the Ready Mix Supplier Can Help Minimize Plastic Shrinkage Cracking

- Produce concrete mixtures that provide ample bleeding
- Use clean hard aggregate maintained at or above SSD
- Use non-air entrained mixes when possible
- Establish good communication with contractor to ensure that cool fresh concrete is being timely supplied to project

How the Contractor Can Minimize Plastic Shrinkage Cracking In the Field

- Have proper manpower, equipment, and supplies on hand so concrete can be finished promptly
- Use chilled water and ice to reduce concrete temperature when ambient temperatures are high
- Dampen the subgrade / formwork but do not have freestanding water
- Use a surface protecting finishing aid such as Eucobar
- Consider using synthetic fibers to resist plastic shrinkage cracking
- Apply a curing compound



To use this chart:

1. Enter with air temperature, move up to relative humidity.
2. Move right to concrete temperature.
3. Move down to wind velocity.
4. Move left; read approximate rate of evaporation.

When the evaporation rate exceeds 0.2 lb./sq.ft./hr, measures shall be taken to prevent excessive moisture loss from the surface of unhardened concrete. When excessive moisture loss is not prevented, plastic shrinkage cracking will occur.