

Readymix Concrete

Concrete In Hot Weather Guidelines

During hot weather conditions, fresh and hardened concrete can be damaged by certain environmental factors.

When concrete is mixed, transported, and placed under hot weather conditions such as high ambient temperatures, low humidity, solar radiation, or strong wind, it is important to know what effects these environmental factors can have on the fresh and hardened concrete properties and what precautionary measures are required in the construction operations to prevent damage occurring to the concrete.

Definition of Hot Weather



High Ambient Temperature



Solar Radiation



Low Relative Humidity



Wind Velocity



High Concrete Temperature

Hot weather is any combination of the above which impair the quality of the fresh or hardened concrete and/or cause detrimental results.

- Hot weather concrete problems generally occur during the summer season.
- When air temperatures are identical, a calm, humid day is less severe than a dry, windy, sunny day.

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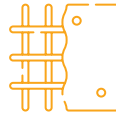
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Potential Problems in Hot Weather

Fresh Concrete

- Increased water demand
- Increased loss of workability with the tendency to add water at the job site
- Increased rate of setting and hardening, resulting in difficult handling and finishing
- Increased potential for plastic shrinkage cracking



Potential Problems in Hot Weather

Hardened Concrete

- Potential decrease in compressive strength development
- Increase in drying shrinkage
- Increase in permeability
- Reduction in durability

Avoiding Potential Problems



Protect concrete against moisture loss during placement and particularly curing period



Always cure concrete immediately and fully



Order the correct concrete mix at adequate workability for the job in hand



Dampen sub-grade before concreting begins



Plan the work to avoid peak temperatures
