

MOISTURE MANAGEMENT TIPS TO ACCELERATE CONCRETE SLAB DRYING TIME

As the material of choice for items like industrial floors, walls and decks, concrete can be a durable and attractive surface when allowed to dry properly. With the help of temporary humidity control, you can feel confident about meeting your project's deadlines, even when humidity, moisture and temperatures are an obstacle.

Concrete Curing and Drying Times

Concrete requires the ideal environment after it's freshly cast to cure well and maintain adequate levels of hydration. Promoting hydration during the curing process allows the chemical reactions that bind aggregates and cement particles into hardened concrete. An optimal climate aims to keep the environment adequately humid and at a temperature between 50° to 90°F when using conventional curing methods; moreover, temperatures of up to 140°F when using low-pressure steam curing methods.

After the concrete cures and the presence of water is eliminated at the exposed surface, the drying process begins. It is very common for a concrete slab to be cured, but not dry. Ideally, when you dry concrete, it is exposed to conditions that allow it achieve the appropriate moisture levels for its intended use.

As concrete dries, liquid water at the surface evaporates. Ambient conditions can prolong drying times at a construction site. While curing concrete requires moisture, an excess of humidity in an environment can extend drying times. Other factors that can affect drying times include:

- Cement type
- Concrete slab thickness
- Aggregate type and amount
- The use of curing compounds.
- Water-to-cement ratio

The Negative Effects of Prolonged Drying Times

- **Delayed construction schedules:** When the installation of building materials depend on concrete slabs to reach a certain level of dryness, drying-related delays may draw out construction schedules and reduce productivity.
- **Budget:** The longer it takes concrete slabs to dry, the longer it takes to complete a project. This results in longer equipment rentals and payroll periods. In addition, slabs with moisture problems may require the use of expensive moisture barriers and floor coverings, or future repairs.
- **Flooring installation:** It is common for flooring installers to require that concrete slabs have relative humidity levels below 80 to 75%. When humidity levels don't meet the required standards, contractors cannot guarantee the successful application of flooring materials or the prevention of future expansion in the flooring and underlayment.
- **Microbial growth:** High humidity levels in concrete slabs may promote the growth of mold and mildew, compromising its strength and durability. Microbial growth may also spread from the slabs into the flooring, causing it to deteriorate or pose potential health risks.



The Benefits of Temporary Humidity Control

- Create the ideal drying conditions by controlling the temperature and moisture levels
- Achieve relative humidity levels more quickly
- Improve productivity and complete projects on time
- Prevent health risks and improve indoor air quality
- Save money by eliminating the need to use moisture-sensitive floor coverings or moisture barriers
- Ensure the success of flooring applications
- Prevent the need to repair or replace floor coverings
- Successfully dry concrete and other building materials regardless of the weather or time of year.

Prolonged concrete drying times can be solved with temporary humidity control services, ultimately helping construction work stay on schedule. The use of desiccant drying and dehumidification allows material to dry and work to continue without hindering other projects within the construction scope. Before you reserve any temporary equipment to help with the drying process, make sure your work site is properly evaluated by a professional who can help determine your specific drying needs. With fall approaching, make sure you have a construction drying plan in place to keep projects rolling throughout the wet fall and winter months.

Talk to a specialist at Polygon today to learn how temporary climate control equipment can improve your construction project.

Contact Us for a Complimentary Consultation

1-800-422-6379 or email us_info@polygongroup.com

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