Technical Bulletin

Silicate Densifiers as Curing Agents

The Concrete Floor Contractors Association of Canada represents the concrete finishing industry.

Technical Bulletins are designed to provide state of the art information to owners, specifiers and contractors to both improve quality and reduce problems.

We hope that this information will assist you in this goal.

If you have any questions, or comments, please feel free to contact us at 905-582-9825 or by e-mail at info@concretefloors.ca

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Background

Curing is the process of providing sufficient moisture for new concrete to develop its optimal strength and durability. Traditional curing for concrete floors is based on applying a film forming cure & seal membrane or by continuous wet curing for a minimum of 3 days (minimum of 10ºC for each method).

Liquid chemical densifiers have been employed extensively to harden and densify new and old concrete surfaces. These materials react chemically with the hydrated cement to chemically densify concrete surfaces to resist dusting, spills and wear.

Concern:

Some liquid densifier manufacturers represent that their materials can chemically cure fresh concrete without the need for traditional curing regimes. Liquid densifiers applied in this fashion do not retain or provide sufficient moisture for the cement to hydrate fully.

Liquid densifiers chemically react with calcium hydroxide which develops gradually as the concrete gains strength. The available calcium hydroxide at the time of slab finishing is minimal.

Recommendations:

The CFCA does not recommend the application of a liquid densifier at the time of slab finishing. The optimum time for the application of a liquid densifier is after 28 days of normal concrete strength gain so that the maximum amount of calcium hydroxide is available to optimize this chemical densification process.

Should the need arise to apply a liquid densifier at the time of slab finishing for schedule reasons, it should be accompanied by the application of a conventional cure and seal membrane as well.

Further References:

- Materials suppliers written instructions.
- CSA Standard A23.1 Methods of Concrete Construction

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