

Technical Bulletin

Dry Shake Hardeners on Exterior Concrete Surfaces



The Concrete Floor Contractors Association of Ontario was founded in 1971 to represent 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

The application of pigmented dry-shake surface hardeners is commonly used to colour both interior and exterior concrete surfaces. Unlike integral colouring (colour mixed into the concrete), dry shake surface hardeners are more economical and can significantly increase surface wear resistance.

Concern:

Exterior concrete mixes are specially designed to withstand freeze-thaw cycles common to our northern climate. In addition to the lower water:cement ratio and minimum compressive strength requirements specified in CSA A23.1 (max. 0.45 w/c and min. 32 MPa for driveways and sidewalks), these concrete mixes also incorporate special air-entraining admixtures that create very small, very closely spaced, voids in the cement paste. This air-void system permits water to freeze without damaging the concrete.

If the surface of air-entrained concrete is over-worked, then the quality of the air-void system may be reduced such that surface scaling may result. The application of pigmented dry shake hardeners on exterior air-entrained concrete requires special care.

The plastic concrete surface should not be over-worked or hard troweled whether a dry shake hardener is installed or not.

Recommendations:

Follow the manufacturers instructions at all times.

Further References:

- CSA A23.1 Concrete Materials and Methods of Concrete Construction.
- Materials suppliers recommendations.

