

Concrete Floors – Laitance

Water is an essential component of the concrete mix; good curing of concrete depends on complete hydration of the cement portion of the concrete mix. Adding excess water to the mix, or inadequate curing are two factors that can contribute to excessive laitance.

The occurrence and the appearance of laitance are associated with how much the concrete is worked during placement. If the concrete is worked too much, laitance will appear as a shiny layer. If the concrete is not worked enough, laitance will be a dull surface layer of residual concrete constituents, commonly referred to in the field as “scum”.

Good concrete curing involves slowing down the evaporation of water from the fresh, wet concrete, to allow sufficient time for complete hydration to take place, and thus allow the concrete to achieve its maximum strength.

Good concrete curing practice takes into account the environmental conditions during curing, while also covering the newly trowelled or formed concrete with wet hessian, wet sand or a curing membrane (such as a liquid applied wax emulsion), or, at the very least, a plastic sheet weighed down at the edges to prevent displacement by gusts of wind.

Removing laitance

The life of a protective coating is dependent on adhesion to sound concrete. If a coating is applied to loose, friable laitance, then impact from trolleys, forklifts, etc. will cause the laitance layer to delaminate, along with the coating.

If laitance on concrete is present, and moisture ingress is not at issue, you can proceed directly to removing the laitance.

Suitable mechanical methods include wet or dry abrasive blasting, steel shot blasting, ultra-high-pressure water jetting, diamond grinding, and scabbling.

Coating over laitance

Laitance should not be coated over. The presence of laitance will provide a poor, friable base for coatings, preventing effective adhesion from occurring.

Laitance can be removed using diamond grinding, shot blasting or other mechanical methods, and the resultant sound concrete surface can be painted with confidence.

For more information on removing laitance and preparing concrete floors for the application of a protective coating, please refer to the Dulux® Protective Coatings Tech Note 1.3.2 Concrete Floors – Surface Preparation Methods.

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