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Technical Bulletin #7

Problems Resulting From a Vapor Barrier Placed Under a Three Inch Sand Layer Below a Concrete Slab on or Below Grade

The American Concrete Institute in Committee 302.1 (Floor and Slab Construction) recommends:

> "the use of a three (3) inch layer of approved granular, self-draining compactible (sic) fill over an approved vapor barrier under the concrete slab. The fill should be compacted before concrete is placed. Wetting and properly rolling the fill the day before is a simple way to compact it; however, the fill should be free of self-draining water at the time of concrete placement so that the fill can act as a blotter....If the filler is too wet, floor coatings such as tile and resin coatings can debond (sic) when water vapor from the concrete condenses below the coverings."

Whenever a resin based system (usually epoxy) is to be installed on an on grade slab, a sand layer as explained above MUST NOT be used. Cases of loss of bond of the epoxy have become common.

Contractors are advised, when possible, to carefully examine the concrete specifications and the architectural details. If the sand bed system is specified, the contractor should **immediately** advise the architect of the potential problem of latent moisture being retained in the sand bed. With temperature changes, when the building is heated or cooled, the moisture in the sand will migrate to the surface and cause blistering and loss of bond of the resinous system.

An efficient vapor barrier must be placed immediately below the concrete slab, the concrete should be placed with a low water to cement ration, and it should be allowed to cure a minimum of thirty (30) days prior to placement of a non breathing floor system. A test for moisture vapor transmission will dictate that the slab is acceptable.