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INVESTIGATION ON ASTM C882 TEST PROCEDURE OF SLANT SHEAR BOND STRENGTH OF CONCRETE REPAIR MATERIAL

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ABSTRACT

The slant shear test method, ASTM C882, is widely employed test procedure to determine the bond strength of repair materials for selection of repair material for durable concrete repair. In this test procedure, the repair material is bonded to a substrate mortar specimen on a slant elliptical plane inclined at an angle 30^o from vertical. It assumes that the failure of the composite cylinder occurs preferentially on slant surface to calculate the bond strength. However, it was observed through experimental studies that the failure on the slant surface is not necessarily the case with all the repair materials. This paper investigates the influence of compressive strength of repair materials and substrate mortar on the failure pattern of the composite cylinders and observed that compressive strength of repair materials influence the failure pattern and bond strength of repair materials. ASTM C882 test procedure does not adequately characterize the true bond strength of the repair materials.

KEYWORDS: Concrete Repair, Repair Material, Bond Strength, Slant Shear