

Reduction in bond and the strength of slabs due to corrosion of reinforcement

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Abstract

This study was divided into four major phases.

In phase I, an attempt has been made to evaluate the effect of different degrees of corrosion on bond strength, slip, and mode of failure of the specimens during testing in precracking, cracking and post cracking stages. The effects of corrosion crack width and rib profile degradation on the bond strength have also been studied.

Phase II is related to the effect of different degrees of corrosion on flexural strength, deformational behavior, mode of failure, and ductility of one way simply supported slabs, tested under uniformly distributed load.

In phase III, an attempt has been made to investigate the effect of different degrees of corrosion on the tensile strength and mode of failure of the reinforcing bars.

Finally, repair of corroded slabs has been carried out in phase IV to evaluate the efficacy of some commonly used repair methods.