

EXPERIMENTAL STUDY ON ULTIMATE FLEXURAL STRENGTH OF COMPOSITE BEAM IN FIRE

The paper is intended to summarize findings from fire resistance tests on simply supported beams conducted as part of a study on the fire resistance of steel-concrete composite beams. The specimens were comprised of H-shaped steel beam and overlying composite slab with profiled steel decks, with studs at the interface. The composite beams were designed to be partial composite. A total of six models were tested. The test parameters included the level of load, cross section of steel beam and presence of fire protection. Based on the test results, a new formulation is proposed to calculate with a good accuracy the flexural strength of composite beam on the basis of the plastic theory taking account of the heat-induced degradation of steel / concrete materials and shear capacity of studs.