

Effect of Fire on Structural Behavior of Normal and High Strength Concrete Beams

Authors : Alaa I. Arafa, Hemdan O. A. Said. Marwa A. M. Ali

Abstract : This paper investigates and evaluates experimentally the structural behavior of high strength concrete (HSC) beams under fire and compares it with that of Normal strength concrete (NSC) beams. The main investigated parameters are: concrete compressive strength (300 or 600 kg/cm²); the concrete cover thickness (3 or 5 cm); the degree of temperature (room temperature or 600 °C); the type of cooling (air or water); and the fire exposure time (3 or 5 hours). Test results showed that the concrete compressive strength decreases significantly as the exposure time to fire increases.

Keywords : experimental, fire, high strength concrete beams, monotonic loading

Conference Title : ICCET 2016 : International Conference on Concrete Engineering and Technology

Conference Location : San Francisco, USA

Conference Dates : September 26-27, 2016