The Influence of Elevated Temperature on the Strength of Concrete

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ABSTRACT

Fire accident is the most frequently occurring accident that could happen to any service structures in unexpected times. A repeated and hazardous fire accidents causing loss of valuable human life, failure of structures and the difficulty to control fire within a shorter time, increases an interest in design of structures for fire. Properties of concrete under normal temperatures are mostly well understood and those properties have been used for the design of concrete structures. However, under higher temperature, our knowledge of these properties is not enough. This paper focused on studying the effect of fire in the form of elevated temperature on concrete strength. Experimental investigation was carried out on cylindrical concrete specimens by taking different concrete grades to see the effect of fire on the properties of concrete. It has been found that temperature reduces much compressive strength of concrete. Higher concrete grade shows better resistance for elevated temperature.

Keywords: *Concrete, Compressive strength, Concrete grade, Fire resistance, Temperature, Stress, Strain*