

A Review on Concrete Structures in Fire

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Abstract : Concrete as a construction material is versatile because it displays high degree of fire-resistance. Concrete's inherent ability to combat one of the most devastating disaster that a structure can endure in its lifetime, can be attributed to its constituent materials which make it inert and have relatively poor thermal conductivity. However, concrete structures must be designed for fire effects. Structural components should be able to withstand dead and live loads without undergoing collapse. The properties of high-strength concrete must be weighed against concerns about its fire resistance and susceptibility to spalling at elevated temperatures. In this paper, the causes, effects and some remedy of deterioration in concrete due to fire hazard will be discussed. Some cost effective solutions to produce a fire resistant concrete will be conversed through this paper.

Keywords : concrete, fire, spalling, temperature, compressive strength, density

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