

## Behavior of Reinforced Concrete Structures Subjected to Multiple Floor Fire Loads

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**Abstract :** Assessment of behavior of reinforced concrete structures subjected to fire load, and its behavior for the multi-floor fire have been presented in this paper. This research is the part of the study to evaluate the performance of ten storied RC structure when it is subjected to fire loads at multiple floors and to evaluate the post-fire effects on structure such as deflection and stresses occurring due to combined effect of static and thermal loading. Thermal loading has been assigned to different floor levels to estimate the critical floors that initiate the collapse of the structure. The structure has been modeled and analyzed in Solid Works and commercially available Finite Element Software ABAQUS. Results are analyzed, and particular design solution has been suggested.

**Keywords :** collapse mechanism, fire analysis, RC structure, stress vs temperature

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