



Effect of Fire on Concrete and Concrete Structures

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Message from the Guest Editors

This Special Issue (SI) of “*Buildings*” intends to publish experimental and numerical studies on RC members with thermally-damaged concrete considering new concrete generations. Submissions in the fields of both experimental and numerical studies are welcome. The addressed areas of research include, but are not limited to:

- Studying the effect of concrete composition on the structural performance of RC structures exposed to high temperatures.
- Determine the effect of nanomaterials (within concrete mixtures or used as coating agents) on improving the residual strength of concrete.
- Investigate the effect of new aggregates (industrial or recycled waste aggregates) on affecting the thermal expansion of hardened concrete.
- Numerically study the effect of high temperatures on large-scale RC members and multistory buildings.
- Finding efficient materials to repair thermally damaged concrete.
- Using different non-destructive techniques (NDT) to determine the internal damage to RC members exposed to fire.
- Presenting practical approaches for fire safety design of RC structures.





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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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