Special Issue

Reinforced Concrete: Engineering Structure and Mechanical Behavior

Message from the Guest Editors

Building objects, reinforced concrete structures should be designed in accordance with the regulations so that in the expected period of use they meet the basic requirements set for them. In addition, throughout the entire period of operation, they should be maintained in a proper technical condition, preventing excessive deterioration of their technical efficiency and functional properties. Built-in materials—reinforced concrete—are subject to aging processes over time, and their performance properties deteriorate. The level of degradation of performance should therefore be frequently checked, and damaged products should be repaired, overhauled or replaced. Damage to reinforced concrete structures resulting from the conditions of use is caused by chemical and physical factors that act simultaneously or separately. The most common causes of damage to the concrete surface and concrete cover of reinforcement caused by the conditions of use, include chemical factors: aggressive substances, soft water, and alkaline aggregate reaction, while the physical factors are: erosion, thermal interactions, salt crystallization, freezing–thawing, and wear.

Guest Editors

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