



Mechanical Behaviour and Durability Performance of Concrete Materials

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Message from the Guest Editor

It is widely acknowledged that the deficiencies in ductility and tensile strength of plain concrete material yield numerous difficulties in engineering practice. Considerable attempts have been made over decades to improve the mechanical properties of concrete. The need for repair and rehabilitation of existing concrete structures is rising around the globe, in large part due to the vast built environment inherited from the 20th century, with continually reducing functionality. Moreover, recent constructions tend to deteriorate more rapidly under the negative influence of mechanical loads and current changes in the atmospheric conditions, increasing the need for early maintenance operations. These can come with additional economic burdens and safety concerns if suitable renovation and strengthening solutions are not applied. Thus, the development and widespread use of enabling technologies that can offer reliable and durable rehabilitation of built infrastructures constitutes an important challenge currently facing civil engineers.





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