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Case study on High-Performance-Fiber-Reinforced-Concrete manufactures made with recycled steel fibers from End-Life-Tires

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Abstract

In order to reduce the release of CO₂ into the atmosphere, significant changes are necessary within the construction industry. One possible approach to modify the sustainability of construction industry manufactures is to substitute, partially or completely, the traditional components with recycled materials. Given the substantial quantity of recycled steel fibers (RSF) generated from end-of-life tires (ELTs) worldwide each year, it is crucial to recover their constituent materials and utilize them as raw materials in various technologies, thereby promoting sustainable development. This paper presents a case study of High-Performance-Fiber-Reinforced-Concrete (HPFRC) as a replacement of current industrial component material. As a result, by applying a linear relation we tried to evaluate the suitable volume of fiber to be used in such manufactures.