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Soggetti	Building materials Sustainable development Mechanics Mechanics, Applied Ceramics Glass Composite materials Building Materials Structural Materials Sustainable Development Solid Mechanics Ceramics, Glass, Composites, Natural Materials
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction (contains glossary and terminology) -- Concrete with recycled aggregates: material concept and experimental characterization -- Concrete with recycled fibers: material concept and experimental characterization -- Advanced cementitious composites with natural fibers: material concept and experimental characterization -- Predictive modeling tools for concrete with recycled aggregates -- Predictive modeling tools for cementitious composites with recycled and natural fibers -- Engineering applications of recycled aggregate concrete: guidelines for production and design -- Engineering

applications of cementitious composites with recycled and natural fibers: guidelines for production and design -- Conclusions.

Sommario/riassunto

This book is mainly based on the results of the EU-funded UE-FP7 Project EnCoRe, which aimed to characterize the key physical and mechanical properties of a novel class of advanced cement-based materials incorporating recycled powders and aggregates and/or natural ingredients in order to allow partial or even total replacement of conventional constituents. More specifically, the project objectives were to predict the physical and mechanical performance of concrete with recycled aggregates; to understand the potential contribution of recycled fibers as a dispersed reinforcement in concrete matrices; and to demonstrate the feasibility and possible applications of natural fibers as a reinforcement in cementitious composites. All of these aspects are fully covered in the book. The opening chapters explain the material concept and design and discuss the experimental characterization of the physical, chemical, and mechanical properties of the recycled raw constituents, as well as of the cementitious composite incorporating them. The numerical models with potentialities for describing the behavior at material and structural level of constructions systems made by these composites are presented. Finally, engineering applications and guidelines for production and design are proposed.
