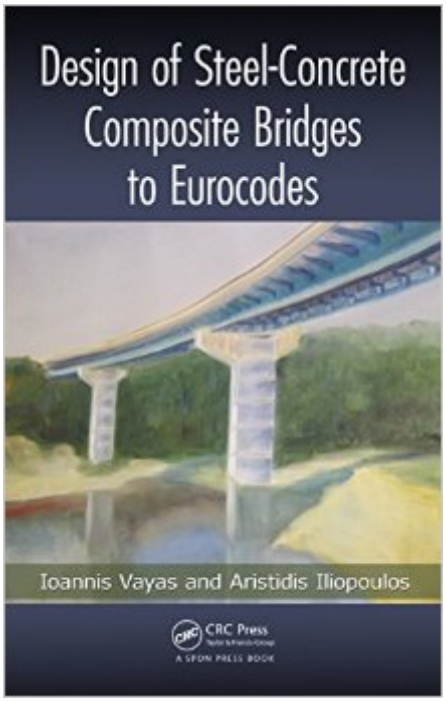
Design Of Steel-Concrete Composite Bridges To Eurocodes



Synopsis

Combining a theoretical background with engineering practice, Design of Steel-Concrete Composite Bridges to Eurocodes covers the conceptual and detailed design of composite bridges in accordance with the Eurocodes. Bridge design is strongly based on prescriptive normative rules regarding loads and their combinations, safety factors, material properties, analysis methods, required verifications, and other issues that are included in the codes. Composite bridges may be designed in accordance with the Eurocodes, which have recently been adopted across the European Union. This book centers on the new design rules incorporated in the EN-versions of the Eurocodes. The book addresses the design for a majority of composite bridge superstructures and guides readers through the selection of appropriate structural bridge systems. It introduces the loads on bridges and their combinations, proposes software supported analysis models, and outlines the required verifications for sections and members at ultimate and serviceability limit states, including fatigue and plate buckling, as well as seismic design of the deck and the bearings. It presents the main types of common composite bridges, discusses structural forms and systems, and describes preliminary design aids and erection methods. It provides information on railway bridges, but through the design examples makes road bridges the focal point.This text includes several design examples within the chapters, explores the structural details, summarizes the relevant design codes, discusses durability issues, presents the properties for structural materials, concentrates on modeling for global analysis, and lays down the rules for the shear connection. It presents fatigue analysis and design, fatigue load models, detail categories, and fatigue verifications for structural steel, reinforcement, concrete, and shear connectors. It also covers structural bearings and dampers, with an emphasis on reinforced elastomeric bearings. The book is appropriate for structural engineering students, bridge designers or practicing engineers converting from other codes to Eurocodes.

Book Information

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Customer Reviews

A very detailed review of Steel Concrete composite bridges discussing all the updates included on the new Eurocode. Abundant examples that will be very helpful to new and expereinced designers of this type of bridge structures. Altogether , a very good reference to have on your library.

Structures Design and Analysis of Composite Structures (AIAA Education) Introduction to Composite Materials Design, Second Edition Concrete Mix Design (Mix Design Methods Book 1) Creative Plans for Yard and Garden Structures: 42 Easy-To-Build Designs for Gazebos, Sheds, Pool Houses, Playsets, Bridges and More!