Computational Methods for Reinforced Concrete Structures

By Ulrich Haubetaler-Combe

Wiley-VCH Verlag GmbH. Paperback. Book Condition: new. BRAND NEW, Computational Methods for Reinforced Concrete Structures, Ulrich Haubetaler-Combe, The book covers the application of numerical methods to reinforced concrete structures. To analyze reinforced concrete structures linear elastic theories are inadequate because of cracking, bond and the nonlinear and time dependent behavior of both concrete and reinforcement. These effects have to be considered for a realistic assessment of the behavior of reinforced concrete structures with respect to ultimate limit states and serviceability limit states. The book gives a compact review of finite element and other numerical methods. The key to these methods is through a proper description of material behavior. Thus, the book summarizes the essential material properties of concrete and reinforcement and their interaction through bond. These basics are applied to different structural types such as bars, beams, strut and tie models, plates, slabs and shells. This includes prestressing of structures, cracking, nonlinear stress? strain relations, creeping, shrinkage and temperature changes. Appropriate methods are developed for each structural type. Dynamic problems are treated as well as short-term quasi-static problems and long-term transient problems like creep and shrinkage. Most problems are illustrated by examples which are solved by the program package ConFem, based...

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