A Moving-Boundary Problem: Modeling, Analysis and Simulation of Concrete Carbonation



Filesize: 6.11 MB

Reviews

I just started reading this article ebook. It really is writter in easy phrases and not difficult to understand. I am just very happy to tell you that here is the very best pdf we have read during my individual life and might be he very best ebook for actually.

(Camren Kuvalis)

A MOVING-BOUNDARY PROBLEM: MODELING, ANALYSIS AND SIMULATION OF CONCRETE CARBONATION



Cuvillier Verlag Mai 2006, 2006. Taschenbuch. Book Condition: Neu. 207x147x12 mm. Neuware - Environmental impact on concrete parts of buildings results in a variety of unwanted chemical and chemically-induced mechanical changes. The bulk of these changes leads to damaging and destabilization of the concrete itself or of the reinforcement embedded in the concrete. One important destabilization factor is the drop in pH near the steel bars induced by carbonation of the alkaline constituents. This is caused by atmospheric carbon dioxide diffusing in the dry parts and reacting in the wet parts of the concrete pores. The phenomenon is considered as one of the major processes inducing corrosion in concrete. A particular feature of carbonation is the formation of macroscopic sharp reaction interfaces or thin reaction layers that progress into the unsaturated concretebased materials. The deeper cause for the formation of these patterns is not quite clear, although the major chemical and physical reasons seem to be known. The main objective of this work is to understand the movement of internal reaction layers in order to be able to predict the carbonation penetration. We describe several relevant settings of the carbonation process by means of moving-reaction interface formulations. Nonlocal dynamic laws are used to model the advancement of the internal layers, which separate different modeling zones. We derive them via first principles for simple geometries using the physics and chemistry of the problem. The moving-boundary methodology essentially relies on these laws, which are usually descriptions of the velocity of the reaction front position. Specifically, the accuracy of the prediction is based on these supplementary relations and on a proper definition of the reaction front position. We investigate the competition between the non-linear carbonation kinetics effects, molecular diffusion and dissolutionprecipitation mechanisms, which take place in the unsaturated concrete fabrics. Mathematically, the proposed...

- Read A Moving-Boundary Problem: Modeling, Analysis and Simulation of Concrete Carbonation Online
- Download PDF A Moving-Boundary Problem: Modeling, Analysis and Simulation of Concrete Carbonation

See Also



Psychologisches Testverfahren

Reference Series Books LLC Nov 2011, 2011. Taschenbuch. Book Condition: Neu. 249x191x7 mm. This item is printed on demand - Print on Demand Neuware - Quelle: Wikipedia. Seiten: 100. Kapitel: Myers-Briggs-Typindikator, Keirsey Temperament Sorter, DISG,...

Save PDF »



Programming in D

Ali Cehreli Dez 2015, 2015. Buch. Book Condition: Neu. 264x182x53 mm. This item is printed on demand - Print on Demand Neuware - The main aim of this book is to teach D to readers...

Save PDF »



The Monster Next Door - Read it Yourself with Ladybird: Level 2

Penguin Books Ltd. Paperback. Book Condition: new. BRAND NEW, The Monster Next Door-Read it Yourself with Ladybird: Level 2, The Monster Next Door, George wants to be a monster, just like his neighbour...

Save PDF »



Adobe Indesign CS/Cs2 Breakthroughs

Peachpit Press, 2005. Softcover. Book Condition: Neu. Gebraucht - Sehr gut Unbenutzt. Schnelle Lieferung, Kartonverpackung. Abzugsfähige Rechnung. Bei Mehrfachbestellung werden die Versandkosten anteilig erstattet. - Adobe InDesign is taking the publishing world by storm and...

Save PDF »



Have You Locked the Castle Gate?

Addison-Wesley Professional. Softcover. Book Condition: Neu. Gebraucht - Sehr gut Unbenutzt. Schnelle Lieferung, Kartonverpackung. Abzugsfähige Rechnung. Bei Mehrfachbestellung werden die Versandkosten anteilig erstattet. - Is your computer safe Could an intruder sneak in and steal...

Save PDF »