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Engineering : Building Materials

Little, D.N., Allen, D.H., Bhasin, A.

Modeling and Design of Flexible Pavements and Materials

- Covers advanced continuum mechanics in a way accessible to roadway designers
- Relates the fundamentals of materials science to the fundamentals of continuum mechanics in the context of roadway design and explains how each are utilized to design better roadways
- Provides a rigorous methodology for designing roadway materials in such a way as to optimize performance for any given conditions
- Details the established state of the art in experimental analysis and characterization of roadway material properties required for designing roadways
- Stands as a self-contained reference for understanding modern roadway computational algorithms

This textbook lays out the state of the art for modeling of asphalt concrete as the major structural component of flexible pavements. The text adopts a pedagogy in which a scientific approach, based on materials science and continuum mechanics, predicts the performance of any configuration of flexible roadways subjected to cyclic loadings. The authors incorporate state-of-the-art computational mechanics to predict the evolution of material properties, stresses and strains, and roadway deterioration. Designed specifically for both students and practitioners, the book presents fundamentally complex concepts in a clear and concise way that aids the roadway design community to assimilate the tools for designing sustainable roadways using both traditional and innovative technologies.

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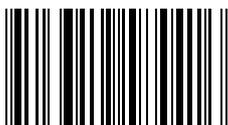
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