

Prepared on behalf of the Task Group 1 on Life-Cycle Performance of Structural Systems Under Uncertainty of the Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems, Structural Engineering Institute of the American Society of Civil Engineers

Structural engineering is facing a profound change toward a life-cycle oriented design philosophy in order to address the continuously increasing societal, political, economic, and environmental demand for sustainable structural and infrastructural facilities that minimize risks arising from aging, deterioration, and natural and human-made hazards.

Life-Cycle Design, Assessment, and Maintenance of Structures and Infrastructure Systems is a state-of-the-art comprehensive report outlining the current status and research needs in life-cycle of civil structure and infrastructure systems. This book examines

- Physical, chemical, and mechanical processes involved in the deterioration mechanisms of concrete and steel structures located in severe environments;
- Methods and strategies for life-cycle design and assessment of deteriorating structural systems under uncertainty;
- Life-cycle management concepts for structures and infrastructure networks under uncertainty and the application of such concepts in management process; and
- Principles and implications associated with the scheduling and application of maintenance policies for deteriorating structures and infrastructure networks.

This book serves as a valuable resource to engineers, managers, and government agencies concerned with life-cycle design, assessment, and maintenance of civil structures and infrastructure systems.

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