

1. Record Nr.	UNINA9911006572803321
Titolo	Comprehensive structural integrity // editors-in-chief, I. Milne, R.O. Ritchie, B. Karihaloo
Pubbl/distr/stampa	Boston, : Pergamon Amsterdam, : Elsevier, 2003
ISBN	1-281-18928-6 0-08-049073-5
Descrizione fisica	1 online resource (4647 p.)
Altri autori (Persone)	Milnel RitchieR. O (Robert O.) KarihalooB. L
Disciplina	624.1/71 624.171
Soggetti	Structural analysis (Engineering) Strength of materials Fracture mechanics Materials - Fatigue Structural failures - Investigation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part1; e9780080437491v01; Front Cover; Comprehensive Structural Integrity; Contents; Preface; Contributors to Volume 1; Chapter 1.01. Structural Integrity Assurance; Chapter 1.02. Historic Masonry Structures; Chapter 1.03. Railways: Structural Integrity, Past, Present, and Future; Chapter 1.04. Milestone Case Histories in Aircraft Structural Integrity; Chapter 1.05. Case Histories in the Application of Structural Integrity Analysis in the Oil Industry; Chapter 1.06. The Structural Integrity of Oil and Gas Transmission Pipelines; Chapter 1.07. Structural Integrity in the Petrochemical Industry Chapter 1.08. Structural Integrity Issues in the Electricity Generating IndustryChapter 1.09. Structural Integrity Issues in the Nuclear Industry; Chapter 1.10. Corrosion in the Power Industry; Chapter 1.11. Structural Integrity Issues Associated with Soils and Rock in Civil Engineering Industries; Chapter 1.12. Failure of Concrete Structures;

Chapter 1.13. Earthquake Resistant Structures; Chapter 1.14. Structural Integrity Issues in the Mining Industry: Learning from Failures-Instructive Case Studies; Chapter 1.15. Structural Integrity Issues Associated with Bridges
 Chapter 1.16. Lessons from a Quarry: Failure of the Rotor of an Impact Rock CrusherChapter 1.17. Thin Sheet Fracture; Chapter 1.18. Castings; Chapter 1.19. Risk Assessment and Management; e9780080437491v02; Front Cover; Comprehensive Structural Integrity; Contents; Preface; Contributors to Volume 2; Chapter 2.01. Strength Theories; Chapter 2.02. Stability of Elastic, Anelastic, and Disintegrating Structures, and Finite Strain Effect; Chapter 2.03. Linear and Nonlinear Fracture Mechanics; Chapter 2.04. Damage Mechanics; Chapter 2.05. Dynamic Fracture
 Chapter 2.06. Failure Mechanisms of Steels and Aluminum AlloysChapter 2.07. Viscoelasticity and the Time-dependent Fracture of Polymers; Chapter 2.08. Structural Behavior of Ceramics; Chapter 2.09. Failure of Ceramic Composites; Chapter 2.10. Failure of Concrete; Chapter 2.11. Failure of Discontinuously Reinforced Al-based Metal-Matrix Composites; Chapter 2.12. Shape-memory Alloys; Chapter 2.13. Failure of Functionally Graded Materials; Chapter 2.14. Fracture and Fatigue of Ferroelectrics; e9780080437491v03; Front Cover; Numerical and Computational Methods; Copyright Page; Contents; Preface Contributors to Volume 3Chapter 3.01 Finite Element Methods for Linear Elastic Fracture Mechanics; Chapter 3.02 Boundary Element Methods in Linear Elastic Fracture Mechanics; Chapter 3.03 Computational Aspects of Nonlinear Fracture Mechanics; Chapter 3.04 Computational Aspects of Dynamic Fracture; Chapter 3.05 Nonlinear Finite Element Analysis and Applications to Welded Structures; Chapter 3.06 Computational Damage Mechanics: Application to Metal Forming Simulation; Chapter 3.07 Novel Discretization Concepts; Chapter 3.08 Fragmentation and Discrete Element Methods
 Chapter 3.09 Damage and Fracture Mechanics Techniques for Composite Structures

Sommario/riassunto

The aim of this major reference work is to provide a first point of entry to the literature for the researchers in any field relating to structural integrity in the form of a definitive research/reference tool which links the various sub-disciplines that comprise the whole of structural integrity. Special emphasis will be given to the interaction between mechanics and materials and structural integrity applications. Because of the interdisciplinary and applied nature of the work, it will be of interest to mechanical engineers and materials scientists from both academic and industrial ba