1.	Record Nr.	UNINA9910734865003321
	Autore	Follansbee Paul
	Titolo	Fundamentals of strength : principles, experiments, and applications of an internal state variable constitutive formulation / / Paul Follansbee
	Pubbl/distr/stampa	Cham, Switzerland : , : Springer International Publishing, , [2022] ©2022
	ISBN	9783031045561 9783031045554
	Edizione	[2nd edition.]
	Descrizione fisica	1 online resource (546 pages)
	Collana	The Minerals, Metals and Materials Series.
	Disciplina	620.112
	Soggetti	Strength of materials - Mathematical models Strains and stresses
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Intro -- Foreword to the Second Edition -- Preface to the First Edition -- Preface to the Second Edition -- Acknowledgment -- How to Use This Textbook -- Contents -- About the Author -- Symbols -- Chapter 1: Measuring the Strength of Metals -- 1.1 How Is Strength Measured? -- 1.2 The Tensile Test -- 1.3 Stress in a Test Specimen -- 1.4 Strain in a Test Specimen -- 1.5 The Elastic Stress Versus Strain Curve -- 1.6 The Elastic Modulus -- 1.7 Lateral Strains and Poisson´s Ratio -- 1.8 Defining Strength -- 1.9 Stress-Strain Curve -- 1.10 The True Stress-True Strain Conversion -- 1.11 Example Tension Tests -- 1.12 Accounting for Strain Measurement Errors -- 1.13 Formation of a Neck in a Tensile Specimen -- 1.14 Strain Rate -- 1.15 Summary -- Exercises -- References -- Chapter 2: Structure and Bonding -- 2.1 Forces and Resultant Energies Associated with an Ionic Bond -- 2.2 Elastic Straining and the Force Versus Separation Diagram -- 2.3 Crystal Structure -- 2.4 Plastic Deformation -- 2.5 Dislocations -- 2.6 Summary -- Exercises -- References -- Chapter 3: Contributions to Strength -- 3.1 Strength of a Single Crystal -- 3.2 The Peierls Stress -- 3.3 The Importance of Available Slip Systems and Geometry of HCP Metals -- 3.4 Contributions from Grain Boundaries -- 3.5 Contributions from Impurity Atoms -- 3.6 Contributions from Stored Dislocations -- 3.7 Contributions from Precipitates -- 3.8 Summary --

Sommario/riassunto

This second edition updates and expands on the class-tested first edition text, augmenting discussion of dynamic strain aging and austenitic stainless steels and adding a section on analysis of nickel-base superalloys that shows how the mechanical threshold stress (MTS) model, an internal state variable constitutive formulation, can be used to de-convolute synergistic effects. The new edition retains a clear and rigorous presentation of the theory, mechanistic basis, and application of the MTS model.

2. Record Nr. UNINA9910709890103321

Autore	Grubb Michael A.
Titolo	Load and Resistance Factor Design (LRFD) for highway bridge superstructures - reference manual / / Michael A. Grubb [and three others]
Pubbl/distr/stampa	[Washington, D.C.] : , : U.S. Department of Transportation, Federal Highway Administration, National Highway Institute, , July 2015
Edizione	[Revised July 2015.]
Descrizione fisica	1 online resource (1694 unnumbered pages) : illustrations
Soggetti	Prestressed concrete bridges Reinforced concrete construction Handbooks and manuals.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"April 2007." "Publication no. FHWA-NHI-15-047." "Performing organization: Michael Baker International"--Technical report documentation page. Includes tables and appendixes.
Nota di bibliografia	Includes bibliographical references.