

1. Record Nr.	UNINA9910784350803321
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Titolo	Materials [[electronic resource]] : engineering, science, processing and design / / Michael Ashby, Hugh Shercliff and David Cebon
Pubbl/distr/stampa	Oxford, : Elsevier Butterworth-Heinemann, 2007
ISBN	1-280-96251-8 9786610962518 0-08-047149-8
Descrizione fisica	1 online resource (527 p.)
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Disciplina	620.11
Soggetti	Materials science Materials - Design Materials
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	2.5 Material property charts2.6 Computer-aided information management for materials and processes; 2.7 Summary and conclusions; 2.8 Further reading; 2.9 Exercises; 2.10 Exploring design using CES; 2.11 Exploring the science with CES Elements; Chapter 3 Strategic thinking: matching material to design; 3.1 Introduction and synopsis; 3.2 The design process; 3.3 Material and process information for design; 3.4 The strategy: translation, screening, ranking and documentation; 3.5 Examples of translation; 3.6 Summary and conclusions; 3.7 Further reading; 3.8 Exercises; 3.9 Exploring design using CES Chapter 4 Stiffness and weight: density and elastic moduli4.1 Introduction and synopsis; 4.2 Density, stress, strain and moduli; 4.3 The big picture: material property charts; 4.4 The science: what determines density and stiffness?; 4.5 Manipulating the modulus and density; 4.6 Summary and conclusions; 4.7 Further reading; 4.8 Exercises; 4.9 Exploring design with CES; 4.10 Exploring the science with CES Elements; Chapter 5 Flex, sag and wobble: stiffness-limited design; 5.1 Introduction and synopsis; 5.2 Standard solutions to elastic

problems; 5.3 Material indices for elastic design
 5.4 Plotting limits and indices on charts 5.5 Case studies; 5.6 Summary and conclusions; 5.7 Further reading; 5.8 Exercises; 5.9 Exploring design with CES; 5.10 Exploring the science with CES Elements; Chapter 6 Beyond elasticity: plasticity, yielding and ductility; 6.1 Introduction and synopsis; 6.2 Strength, plastic work and ductility: definition and measurement; 6.3 The big picture: charts for yield strength; 6.4 Drilling down: the origins of strength and ductility; 6.5 Manipulating strength; 6.6 Summary and conclusions; 6.7 Further reading; 6.8 Exercises; 6.9 Exploring design with CES
 6.10 Exploring the science with CES Elements Chapter 7 Bend and crush: strength-limited design; 7.1 Introduction and synopsis; 7.2 Standard solutions to plastic problems; 7.3 Material indices for yield-limited design; 7.4 Case studies; 7.5 Summary and conclusions; 7.6 Further reading; 7.7 Exercises; 7.8 Exploring design with CES; Chapter 8 Fracture and fracture toughness; 8.1 Introduction and synopsis; 8.2 Strength and toughness; 8.3 The mechanics of fracture; 8.4 Material property charts for toughness; 8.5 Drilling down: the origins of toughness
 8.6 Manipulating properties: the strength-toughness trade-off

Sommario/riassunto

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