1. Record Nr. UNINA9910686773603321

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Titolo	Mechanics of classical sandwich structures / / Andreas Ochsner
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	9783031251061 9783031251054
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (150 pages)
Disciplina	635
Soggetti	Sandwich construction Structural analysis (Engineering)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction and Motivation -- Basic Mechanical Load Cases -- Limit Load -- Optimization -- Short Solutions to the Supplementary Problems -- Appendix.
Sommario/riassunto	This book treats the mechanical behavior of one-dimensional sandwich structures, a typical concept in the context of lightweight design. Such structures are composed of different constituent (e.g., layers) in order to achieve overall properties, which are better than for a single component alone. This book covers the basic mechanical load cases, i. e., tension/compression, bending, and shear. Based on this knowledge, different failure modes, i.e., plastic yielding, and global and local instabilities are investigated. In addition, an introduction to classic optimization problems, i.e., the formulation of an objective function (e. g., the weight of a structure) and corresponding restrictions, is included. The consideration here is limited to one- or two-dimensional design spaces, i.e., with a maximum of two design variables. For such simple cases, the minimum of the objective function can often be determined using analytical or graphical methods.