1. Record Nr. UNINA9910377821603321

Autore	Drass Michael
Titolo	Constitutive Modelling and Failure Prediction for Silicone Adhesives in Facade Design / / by Michael Drass
Pubbl/distr/stampa	Wiesbaden : , : Springer Fachmedien Wiesbaden : , : Imprint : Springer Vieweg, , 2020
ISBN	3-658-29255-5
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XX, 291 p. 1 illus.)
Collana	Mechanik, Werkstoffe und Konstruktion im Bauwesen, , 2512-3246 ; ; 55
Disciplina	660.293
Soggetti	Construction industry—Management Buildings—Design and construction Construction Management Building Construction and Design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Sommario/riassunto	This book provides readers with an elementary understanding of the material behavior of structural silicones in façades. Based on extensive experimental investigations on a transparent structural silicone adhesive (TSSA), the material behavior, failure, and microscopic effects such as stress whitening, cavitation failure, and the Mullins effect are analyzed. In turn, novel hyperelastic material models are developed to account for nonlinear material behavior under arbitrary deformations. The development of a volumetric hyperelastic model makes it possible for the first time to approximate the structural behavior of TSSA under constrained tensile load and cavitation. The material models discussed here were implemented in a finite element code for validation, and their quality was confirmed by three-dimensional numerical simulations, in which an additional stretch-based failure criterion was evaluated for failure prediction. The numerical studies are in good agreement with the experimental results.

2. Record Nr. UNINA9910372786703321

Autore	Dos Santos Elizaldo Domingues
Titolo	Engineering Mathematics in Ship Design
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2020
ISBN	3-03921-805-0
Descrizione fisica	1 online resource (168 p.)
Soggetti	History of engineering and technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Engineering mathematics is a branch of applied mathematics where mathematical methods and techniques are implemented for solving problems related to the engineering and industry. It also represents a multidisciplinary approach where theoretical and practical aspects are deeply merged with the aim at obtaining optimized solutions. In line with that, the present Special Issue, 'Engineering Mathematics in Ship Design', is focused, in particular, with the use of this sort of engineering science in the design of ships and vessels. Articles are welcome when applied science or computation science in ship design represent the core of the discussion.