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Titolo	Design of Adhesive Joints Under Humid Conditions [[electronic resource] /] / edited by Lucas F. M. da Silva, Chiaki Sato
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ISBN	3-642-37614-2
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (185 p.)
Collana	Advanced Structured Materials, , 1869-8433 ; ; 25
Disciplina	660.293
Soggetti	Materials—Surfaces Thin films Mechanics Mechanics, Applied Polymers Aerospace engineering Astronautics Surfaces and Interfaces, Thin Films Solid Mechanics Polymer Sciences Aerospace Technology and Astronautics
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.
Nota di contenuto	Diffusion of moisture in adhesives -- Diffusion of moisture in interfaces -- Surface treatments for moisture resistance -- Influence of moisture on the adhesive properties -- Influence of water on the interface properties -- Prediction of joint strength under humid conditions: Continuum mechanics approach -- Prediction of joint strength under humid conditions: Fracture mechanics approach -- Prediction of joint strength under humid conditions: Damage mechanics approach.
Sommario/riassunto	This book describes most recent advances and limitations concerning design of adhesive joints under humid conditions and discusses future trends. It presents new approaches to predict the failure load after

exposure to load, temperature and humidity over a long period of time. With the rapid increase in numerical computing power there have been attempts to formalize the different environmental contributions in order to provide a procedure to predict assembly durability, based on an initial identification of diffusion coefficients and mechanical parameters for both the adhesive and the interface. A coupled numerical model for the joint of interest is then constructed and this allows local water content to be defined and resulting changes in adhesive and interface properties to be predicted.