

1. Record Nr.	UNINA9910964899303321
Titolo	Handbook of residual stress and deformation of steel // edited by G. Totten, M. Howes, T. Inoue
Pubbl/distr/stampa	Materials Park, OH, : ASM International, c2002
ISBN	1-62198-372-2 1-61503-227-4
Edizione	[1st ed.]
Descrizione fisica	1 online resource (495 p.)
Altri autori (Persone)	TottenGeorge E HowesMaurice A. H InoueTatsuo <1939->
Disciplina	620.1/76
Soggetti	Steel - Fatigue Residual stresses
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	<p>""Contributors""; ""Contents""; ""Preface""; ""Material Factors""; ""Prestress Engineering of Structural Material: A Global Design Approach to the Residual Stress Problem""; ""Residual Stresses and Fatigue Behavior""; ""Stability of Residual Stresses""; ""Effect of Residual Stress on Hydrogen Embrittlement and Stress Corrosion Cracking""; ""Deflection Methods to Estimate Residual Stress""; ""Measurement of Residual Stresses""; ""Stress Determination in Coatings""; ""Methods for Determination of Inhomogeneous Residual Stress Fields""; ""Residual Stress in the Forming of Materials""</p> <p>""The Effect of Final Shaping Prior to Heat Treatment""""Factors Affecting Final Part Shaping""; ""Effects of Process Equipment Design""; ""Residual Stresses in Carburized, Carbonitrided, and Case-Hardened Components""; ""Residual Stresses in Nitriding""; ""Induction Hardening""; ""Hardening by Reheating and Quenching""; ""Metallo-Thermo-Mechanicsa€?Application to Quenching""; ""Control of Residual Stress Formation and Steel Deformation during Rapid Heating and Cooling""; ""Effect of Cryogenic Cooling of Residual Stresses, Structure, and Substructure""</p> <p>""Inducing Compressive Stresses through Controlled Shot Peening""""</p>

Residual Stress Formation during Casting""; ""Residual Stress Formation during Casting: Continuous and Centrifugal Casting Processes""; ""Residual Stress Formation Processes during Welding and Joining""; ""Residual Stresses in Powder-Metal Processing""; ""Residual Stress Formation and Distortion of Rail Steel""; ""Residual Stresses during Gear Manufacture""; ""Metric Conversion Guide""; ""Index""

Sommario/riassunto

Distortion, cracking, and residual stresses are among the most important concerns for heat treaters, manufacturing engineers, and design engineers. This work includes practical information and data to help minimize and control the effects of residual stresses and distortion. Topics covered include recommended heat treating practices, methods for maintaining temperature uniformity during heating, tips for preventing oxide formation, and techniques for measuring residual stresses, to name but a few. Designed as both a practical and theoretical reference, this book features contributions from recognized experts from around the world. Much of this data has been unavailable in the United States until now. Contents: Introduction to residual stress formation and distortion; Effects of materials and processing on residual stress formation; Design considerations, and much more.
