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Materials; 2.1.5 Corrosion Testing of Refractories and Ceramic Materials; 2.1.6 Testing of Corrosion Inhibitors; 2.2 Corrosion Detection and Monitoring; 2.2.1 Visual Examination; 2.2.2 Laser Methods
 2.2.3 Replication Microscopy 2.2.4 Radiographic Methods; 2.2.5 Liquid Penetrant Testing Method; 2.2.6 Magnetic Particle Testing; 2.2.7 Eddy Current Inspection Method; 2.2.8 Ultrasonic Inspection Method; 2.2.9 Acoustic Emission Technique; 2.2.10 Other Nondestructive Methods; 2.2.11 Thermal Methods of Inspection; 2.3 Failure Analysis; 2.3.1 Visual or Macroscopic Examination; 2.3.2 Metallography; 2.3.3 Microfractography; 2.3.4 Fracture Mechanics in Failure Analysis; 2.3.5 Determination of Residual Stress by X-ray Diffraction; 2.3.6 Mechanical Properties; 2.3.7 Corrosion and Wear-related Failures
 2.3.8 Failure Analysis of Polymeric Materials 2.3.9 Failure Analysis of Ceramic Materials; References; 3 Regulations, Specifications and Safety; 3.1 Regulations and Specifications; 3.2 Safety Considerations; 3.2.1 Safety in the Corrosion Laboratory; 3.2.2 General Outline for a Model Chemical Hygiene Plan; 3.2.3 Safety Guidelines for Radiation Sources; 3.2.4 Nonionizing Radiation Sources; 3.2.5 Safety at the Design Stage; 3.2.6 Safety in Field Plant Inspection; 3.2.7 Safety in Storage and Transport; References; 4 Materials: Metals, Alloys, Steels and Plastics; 4.1 Cast Irons
 4.2 Carbon and Low-alloy Steels 4.2.1 Corrosion of Carbon Steels in Fresh Waters; 4.2.2 Corrosion of Carbon Steels in Seawater; 4.2.3 Corrosion of Carbon Steels in Soils; 4.3 Stainless Steels; 4.3.1 Duplex Stainless Steels; 4.3.2 Martensitic Stainless Steels; 4.4 Aluminum and Aluminum Alloys; 4.4.1 Corrosion Behavior of Aluminum and its Alloys; 4.5 Copper and Copper Alloys; 4.5.1 Atmospheric Corrosion; 4.5.2 Soil Corrosion; 4.5.3 General Corrosion in Aqueous Media; 4.5.4 Pitting Corrosion; 4.5.5 Dealloying; 4.5.6 Flow-induced Corrosion; 4.5.7 Behavior in Chemical Environments; 4.5.8 Biofouling
 4.5.9 Stress-Corrosion Cracking

Sommario/riassunto

Corrosion Prevention and Protection: Practical Solutions presents a functional approach to the various forms of corrosion, such as uniform corrosion, pitting corrosion, crevice corrosion, galvanic corrosion, stress corrosion, hydrogen-induced damage, sulphide stress cracking, erosion-corrosion, and corrosion fatigue in various industrial environments. The book is split into two parts. The first, consisting of five chapters: Introduction and Principles (Fundamentals) of Corrosion Corrosion Testing, Detection, Monitoring and Failure Analysis Regul
