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Altri autori (Persone)	BaeckmannW. von (Walter) BaeckmannW. von (Walter) PrinzW SchwenkW (Wilhelm)
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1.4 Development of Stray Current Protection; 1.5 Corrosion Protection by Information; 1.6 References; Chapter 2. Fundamentals and Concepts of Corrosion and Electrochemical Corrosion Protection; 2.1 Corrosion Processes, Corrosion Damage, and Protective Countermeasures; 2.2 Electrochemical Corrosion; 2.3 Potential Dependence of Corrosion Extent; 2.4 Critical Protection Potentials and Ranges; 2.5 References; Chapter 3. Fundamentals and Practice of Electrical Measurements 3.1 The Electrical Parameters: Current, Voltage, and Resistance 3.2 Reference Electrodes; 3.3 Potential Measurement; 3.4 Current Measurement; 3.5 Resistivity Measurement; 3.6 Location of Faults; 3.7 Intensive Measurement Technique; 3.8 References; Chapter 4. Corrosion in Aqueous Solutions and Soil; 4.1 Action of Corrosion Products and Types of Corrosion; 4.2 Determining the Corrosion Likelihood of Uncoated Metals; 4.3 Enhancement of Anodic Corrosion by Cell Formation or Stray Currents from dc Installations; 4.4 Corrosion Due to ac Interference; 4.5 References Chapter 5. Coatings for Corrosion Protection 5.1 Objectives and Types of Corrosion Protection by Coatings; 5.2 Properties of Organic Coatings; 5.3 Properties of Cement Mortar and Concrete; 5.4 Properties of Enamel Coatings; 5.5 Properties of Metallic Coatings; 5.6 References; Chapter 6. Galvanic (Sacrificial) Anodes; 6.1 General Information; 6.2 Anode Materials; 6.3 Backfill Materials; 6.4 Supports; 6.5 Forms of Anodes; 6.6 Quality Control and Performance Testing; 6.7 Advantages and Disadvantages of Galvanic Anodes; 6.8 References; Chapter 7. Impressed Current Anodes; 7.1 General Comments 7.2 Anode Materials 7.3 Insulating Materials; 7.4 Cables; 7.5 Forms of Anode; 7.6 References; Chapter 8. Impressed Current Equipment and Transformer-Rectifiers; 8.1 Site and Electrical Protection Measures; 8.2 Design and Circuitry of Impressed Current; 8.3 Rectifier Circuit; 8.4 Adjustable Transformer-Rectifiers; 8.5 Rectifiers Resistant to High Voltage; 8.6 Control Rectifiers; 8.7 Transformer-Rectifiers without Mains Connections; 8.8 Equipment and Control of Transformer-Rectifiers; 8.9 References; Chapter 9. Impressed Current Ground Beds and Interference Problems 9.1 Impressed Current Ground Beds

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Sommario/riassunto

This comprehensive handbook covers all aspects of cathodic protection in terms of both practice and theory.

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