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| Descrizione fisica      | 1 online resource (423 p.)  |
| Collana                 | Practical professional books from Elsevier  |
| Altri autori (Persone)  | CheyneDerek<br>VijayaraghavanG  |
| Disciplina              | 621.310420289   |
| Soggetti                | Electric apparatus and appliances - Installation - Safety measures<br>Electrical engineering - Safety measures  |
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| Note generali           | Includes index.   |
| Nota di contenuto       | Cover; Front matter; Half Title Page; Other titles in the series; Title Page; Copyright; Contents; Preface; 1. Introduction; 1.1 Introduction; 1.2 Approach; 1.3 Historical development; 1.5 The certification; 1.6 Conclusion; 2. Electrical energy, ignition and flammability; 2.1 Electrical energy and ignition; 2.2 The basics of electricity; 2.3 Electrical heat energy; 2.4 Sources of ignition; 2.5 Flammability; 2.6 Flammability principles; 3. Area classification; 3.1 General; 3.2 Principles of safety; 3.3 Hazards and hazardous areas; 3.4 Basic properties of combustible and ignitable material<br>3.5 Basis of area classification 3.6 Zonal classification; 3.10 Classification procedure; 3.11 Responsibility and personnel involved; 3.12 Documentation; 3.13 Policy and guidelines for implementation; 3.14 Area classification examples; 3.15 Summary of area classification; 3.16 A case study; 4. Design philosophy and selection of |

equipment/apparatus; 4.1 General; 4.2 Risks . . . history; 4.3 Classification concepts; 4.4 Equipment . . . a definition; 4.5 Apparatus grouping; 4.6 Surface temperature classification; 4.7 Concepts and techniques of explosion protection  
4.8 Methods of explosion protection 4.9 Typical applications of methods of protection; 4.10 Mixed techniques; 4.11 Dust explosion-protection methods; 4.12 Selection of explosion-protection technique for safeguarding; 4.13 Conclusion; 5. Protection concept 'd'; 5.1 General; 5.2 Definitions; 5.3 Certification in brief; 5.4 Construction requirements; 5.5 Flameproof theory; 5.6 Other general requirements for explosive atmospheres; 5.7 Testing; 5.8 Grouping and effect of temperature classification; 5.9 Conditions of use; 5.10 Illustrations of mechanical construction types; 5.11 Summary  
6. Protection concept 'e' 6.1 General; 6.2 Definitions; 6.3 Principles of design for increased safety; 6.4 Certification (components); 6.5 Construction requirements; 6.6 Principles of testing; 6.7 Periodic testing and repair of electrical apparatus; 6.8 Conditions of use; 7. Protection concept 'n'; 7.1 General; 7.2 Definitions; 7.3 Principles of design; 7.4 Certification; 7.5 Construction requirements; 7.6 Conditions of use; 7.7 Illustrations; 8. Protection concept 'i' principles; 8.1 Origins of intrinsic safety; 8.2 Principles of IS; 8.3 Electrical theory to explain IS  
8.4 Implementation of IS 8.5 The shunt diode safety barrier; 8.6 Associated apparatus; 8.7 Electrical apparatus in the hazardous area; 8.8 Enclosures; 8.9 Temperature; 8.10 The IS systems concept; 8.12 System documentation; 8.13 Assessment of safety; 8.14 Simple apparatus; 8.15 Safety parameters; 8.16 Temperature classification of systems; 8.17 Systems concepts in other standards; 9. Protection concept 'p'; 9.1 General; 9.2 Definitions; 9.4 Construction requirements; 9.5 Principles of application; 9.6 Other design requirements; 9.8 Testing; 9.9 Summary; 10. Other concepts; 10.1 General  
10.5 Component certification

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## Sommario/riassunto

This book provides the reader with an understanding of the hazards involved in using electrical equipment in Potentially Explosive Atmospheres. It is based on the newly adopted international IEC79 Series of Standards that are now harmonizing and replacing older national Standards. Explosion-proof installations can be expensive to design, install and operate. The strategies and techniques described in this book can significantly reduce costs whilst maintaining plant safety. The book explains the associated terminology and its correct use - from Area Classification through to the selection of

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