

DIN EN 14983:2007-06 (E)

Explosion prevention and protection in underground mines - Equipment and protective systems for firedamp drainage

| Contents | | Page |
|-----------------------|---|-------------|
| Foreword | | 4 |
| Introduction | | 5 |
| 1 | Scope | 6 |
| 2 | Normative references | 6 |
| 3 | Terms and definitions | 6 |
| 4 | Equipment and protective systems for firedamp drainage | 8 |
| 4.1 | General | 8 |
| 4.2 | Borehole standpipes | 8 |
| 4.3 | Drainage pipes for seals and stoppings | 12 |
| 4.4 | Water separators at drainage points | 12 |
| 4.5 | Firedamp pipes | 12 |
| 4.5.1 | General requirements for firedamp pipes | 12 |
| 4.5.2 | Measuring points for measuring equipment in firedamp drainage pipes | 13 |
| 4.6 | Pressure vessels in firedamp drainage plant | 13 |
| 4.7 | Exhausters | 13 |
| 4.7.1 | Requirements for exhausters | 13 |
| 4.7.2 | Reserve exhausters | 14 |
| 4.7.3 | Location of exhausters | 14 |
| 4.8 | Venting of the drained firedamp | 14 |
| 4.9 | Explosion prevention systems for pipelines | 15 |
| 4.9.1 | Explosion barriers | 15 |
| 4.9.2 | Non-flammable firedamp vent pipe outlets and flame arrester outlets | 15 |
| 4.9.3 | Reserve container and operating state | 16 |
| 4.10 | Requirements for the design of electrical safety devices | 16 |
| 4.11 | Electrostatic ignition risks | 16 |
| 5 | Instructions for installation and use | 17 |
| Annex A (informative) | Installation and use of firedamp drainage system | 18 |
| A.1 | General | 18 |
| A.2 | Work on firedamp pipes | 18 |
| A.3 | Measures to be taken when gas levels fall below or exceed limit values during firedamp drainage | 19 |
| A.4 | Failure or shutdown of exhausters | 19 |
| Annex B (informative) | Monitoring of firedamp drainage system | 20 |
| B.1 | Examination and inspection by competent persons | 20 |
| B.2 | Measurement of the drained firedamp mixture and pressure | 20 |
| B.2.1 | Measurements taken by hand | 20 |
| B.2.2 | Fixed monitoring equipment | 20 |
| B.3 | Documentation | 21 |
| B.4 | Firedamp circuit plan | 21 |
| Annex C (informative) | Requirements for location of exhausters | 22 |

| | |
|--|-----------|
| Annex D (informative) Requirements for gas removal equipment for abandoned surface outlets | 23 |
| Annex E (informative) Example for calculation of t90 path | 27 |
| E.1 General | 27 |
| E.2 Example for calculation of t90-path | 27 |
| Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC | 29 |
| Bibliography | 31 |
| Figures Figure 1 -- Example of connection of roof borehole to collector pipe when measurement and control are accessible | 9 |
| Figure 2 -- Example of connection of roof borehole to collector pipe when measurement and control are not accessible | 10 |
| Figure 3 -- Example of connection of floor borehole to collector pipe when measurement and control are accessible | 11 |
| Figure 4 -- Example of connection of floor borehole to collector pipe when measurement and control are not accessible | 12 |
| Figure 5 -- Example of explosion prevention system for pipelines with one firedamp vent pipe | 15 |
| Figure D.1 -- Passive gas removal equipment (Type II) | 25 |
| Figure D.2 -- Passive gas removal equipment (Type III) | 26 |
| Figure E.1 -- Schematic arrangement of a t90-path | 28 |
| Tables Table D.1 -- Requirements for gas removal equipment for abandoned surface outlets | 24 |
| Table ZA.1 -- Correspondence between the European Standard and Directive 94/9/EC | 29 |