

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