

DIN EN 1710:2006-01 (E)

Equipment and components intended for use in potentially explosive atmospheres in underground mines

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	8
4	Requirements for equipment (machines) and components	8
4.1	General	8
4.2	Non-electrical equipment and components	9
4.3	Electrical equipment and components	9
4.3.1	General	9
4.3.2	Electrical equipment protection	10
4.3.3	Overcurrent protection	10
4.3.4	Earth-fault protection	11
4.3.5	Mechanical protection of live parts	11
4.3.6	Electric cables that are part of the equipment	11
5	Additional requirements for specific equipment and components	12
5.1	Cutting and stripping equipment	12
5.1.1	General	12
5.1.2	Machines with cutting picks	12
5.1.3	Stripping machines	13
5.2	Rope haulages for level and inclined transport	13
5.3	Fans	13
5.3.1	Ventilating fans for use underground	13
5.3.2	Other fans	15
5.4	Diesel engines	16
5.5	Air compressors	16
5.6	Drilling equipment and components	16
5.7	Brakes	16
5.8	Traction batteries, starter batteries and vehicle lighting batteries	17
5.9	Optical fibres used on machines and electromagnetic radiation from components on machines	17
6	Fire protection	17
6.1	General	17
6.2	Non-metallic materials	18
6.3	Internal combustion engines fitted to machines	18
6.4	Hydraulic and pneumatic equipment	18
6.5	Additional requirements for cable-reeled machines	18
6.6	Fire prevention on electric cables that are part of the machine	19
6.7	Conveyor belting	19
7	Information for use	19
7.1	Signals and warning notices	19
7.2	User instructions	19
7.2.1	General	19

7.2.2	Information on use	20
7.2.3	Information on maintenance and repair	20
7.3	Marking	20
Annex A	(informative) Example of an ignition hazard assessment for a conveyor belt intended for use in a coal mine	21
A.1	General	21
A.2	Category and intended use of the equipment	21
A.3	Construction/description of the equipment	21
A.4	Assessment	22
Annex B	(informative) Example of an ignition hazard assessment for a shearer loader intended for use in a potentially explosive atmosphere of a coal mine	26
B.1	General	26
B.2	Category and intended use of equipment	26
B.3	Construction/description of the equipment with regard to ignition protection	27
B.4	Ignition control and monitoring system	27
B.5	Compliance with the basic methodology and requirements in EN 13463-1	28
B.6	Ignition hazard assessment of the electrical parts of the equipment	28
B.7	Ignition hazard assessment of non-electrical ignition sources	28
B.8	Equipment marking	28
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC	35
Annex ZB	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC	38
Bibliography	39