EESTI STANDARD EVS-EN 14983:2007

Plahvatuse vältimine ja kaitse allamaakaevanduses. Seadmed ja kaitsesüsteemid kaevandusgaasidest põhjustatud kahjustuste puhuks

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

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 14983:2007 sisaldab Euroopa standardi EN 14983:2007 ingliskeelset teksti. Käesolev dokument on jõustatud 20.04.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14983:2007 consists of the English text of the European standard EN 14983:2007. This document is endorsed on 20.04.2007 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard specifies the requirements for equipment and protective systems for firedamp drainage in mines. It also contains requirements for the construction and monitoring of this equipment and protective systems (see EN 1127-2).	**Scope:** This standard specifies the requirements for equipment and protective systems for firedamp drainage in mines. It also contains requirements for the construction and monitoring of this equipment and protective systems (see EN 1127-2).

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

Protection contre l'explosion dans les mines souterraines - Appareils et systèmes de protection destinés au captage du grisou

Explosionsschutz in untertägigen Bergwerken - Geräte und Schutzsysteme zur Absaugung von Grubengas

This European Standard was approved by CEN on 13 January 2007.

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Foreword

This document (EN 14983:2007) has been prepared by Technical Committee CEN/TC 305 “Potentially explosive atmospheres - Explosion prevention and protection”, the secretariat of which is held by DIN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Firedamp drainage is a technical process for selected gas removal, the purpose of which is to reduce the risks presented by inflammable gas and air mixtures. Firedamp drainage is therefore a measure for preventive explosion protection.

In the mining industry, firedamp is drained from the underground workings of gassy mines, from boreholes and abandoned mine workings to ensure that mine workers are not exposed to the risks associated with the occurrence of an explosive atmosphere at their place of work. In this case, the explosion risk results from unacceptable accumulations of firedamp occurring in the waste areas and cavities left in the in the rock strata after the coal has been extracted from the coal seam. In such cases, the need to drain these accumulations, and the complexity of the drainage system, depends on the amount of firedamp produced by the coal and the likelihood of it occurring in explosive quantities in the mine roadways and coal face. Examples of situations that might cause firedamp to move in dangerous concentrations from the waste area or cavities into the mine roadways: a breakdown of the mine ventilation system or a sudden reduction in the underground atmospheric pressure. National legislation in EU coal mining member countries requires workers to be withdrawn to a safe place if firedamp levels attain a specific nationally defined value in the general body of mine air. Firedamp drainage is therefore often used in gassy mines in an attempt to ensure that the concentration of firedamp in the general body of mine air is kept well below this critical level, even during abnormal situations such as those described above.

Once the accumulations of firedamp have been drained from the affected areas, it is usually discharged to the mine surface, but in some cases it is discharged into the mine return ventilation system. In systems where the firedamp is brought to the mine surface, it is discharged to the atmosphere through an earthed metallic discharge stack or pressurized and delivered to a utilisation system, such as a gas-fired boiler.

In abandoned mines, firedamp drainage is used

— to prevent gas pressure building up and gas issuing at the surface in an uncontrolled manner, and

— to protect workers at an adjacent nearby mine or

— to allow it to be utilized, for example by burning it in a gas-fired boiler to produce heat or to generate electricity.

1 Scope

This standard specifies the requirements for equipment and protective systems for firedamp drainage at mines. It also contains requirements for the construction and monitoring of this equipment and protective systems (see EN 1127-2).

This standard does not apply to firedamp utilization systems beyond the utilization shut-off device.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1127-2:2002, *Explosive atmospheres — Explosion prevention and protection — Part 2: Basic concepts and methodology for mining*

EN 1710:2005, *Equipment and components intended for use in potentially explosive atmospheres in underground mines*

EN 1333, *Flanges and their joints — Pipework components — Definition and selection of PN*

EN 12874, *Flame arresters — Performance requirements, test methods and limits for use*

EN 13237:2003, *Potentially explosive atmospheres — Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres*

prEN 15089, *Explosion isolation systems*

prEN 61024-1, *Protection of structures against fire, explosion and life hazards*

EN 61508 (all parts), *Functional safety of electrical/electronic/programmable electronic safety-related systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1127-2:2002 and EN 13237:2003 and the following apply:

3.1
electrostatic leakage resistance
electrical resistance measured between an object and earth

3.2
active explosion isolation system
system which is designed to be activated by a detector and control and indicating equipment (CIE) which are inherent parts of the system and stop explosions from travelling through pipelines or limit destructive effects of the explosion

[prEN 15089:2004, 3.12.1]

3.3
starting by-pass
temporary and specific by-passing of a safety device when starting the exhauster of a firedamp drainage plant