

**Plahvatuse vältimine ja kaitse
allamaakaevanduses. Kaitsesüsteemid.
Osa 1: 2-baarist plahvatust taluv
ventilatsioonikonstruktsioon**

Explosion prevention and protection in underground
mines - Protective systems - Part 1: 2-bar explosion-
proof ventilation structure

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14591-1:2004 sisaldab Euroopa standardi EN 14591-1:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.12.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14591-1:2004 consists of the English text of the European standard EN 14591-1:2004.</p> <p>This document is endorsed on 21.12.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard applies to air shutter frames and air doors for ventilation structures which are to remain functional after the passage of explosions with overpressures of up to 2 bar. Ventilation structures of this type serve to provide a stable ventilation flow after the occurrence of an explosion such that the effects of an explosion on the ventilation system can be limited and adequate possibilities remain for escape and rescue</p>	<p>Scope:</p> <p>This standard applies to air shutter frames and air doors for ventilation structures which are to remain functional after the passage of explosions with overpressures of up to 2 bar. Ventilation structures of this type serve to provide a stable ventilation flow after the occurrence of an explosion such that the effects of an explosion on the ventilation system can be limited and adequate possibilities remain for escape and rescue</p>
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ICS 13.230, 73.100.20

Võtmesõnad:

ICS 13.230; 73.100.20

English version

**Explosion prevention and protection in underground mines -
Protective systems - Part 1: 2-bar explosion proof ventilation
structure**

Protection contre l'explosion dans les mines souterraines -
Systèmes de protection - Partie 1 : Sas d'aérage résistant à
2 bar

Explosionsschutz in untertägigen Bergwerken -
Schutzsysteme - Teil 1: 2-bar-Wetterbauwerk

This European Standard was approved by CEN on 30 July 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document EN 14591-1:2004 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 European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

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 Directives, see informative Annex ZA, which is an integral part of this document.

This European Standard consists of the following parts:

EN 14591-1, *Explosion prevention and protection in underground mines – Protective systems – Part 1: 2-bar explosion proof ventilation structure.*

prEN 14591-2, *Explosion prevention and protection in underground mines – Protective systems – Part 2: Water trough barriers.*

prEN 14591-3, *Explosion prevention and protection in underground mines – Protective systems – Part 3: Water troughs for explosion barriers.*

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

1 Scope

This document applies to air shutter frames and air doors for ventilation structures which are to remain functional after the passage of explosions with overpressures of up to 2 bar.

Ventilation structures are protective systems to provide the ventilation flow after the occurrence of an explosion such that the effects of an explosion on the ventilation system can be limited and adequate possibilities remain for escape and rescue.

NOTE These structures may be used when ventilation studies indicate that the air flow in the work place would be reduced considerably providing no safe escape for workers in cases where the structure is destroyed. Explosion proof ventilation structures will be individually evaluated for directional stability of ventilation flows and in order to ensure adequate ventilation flows.

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 10025, *Hot rolled products of non-alloy structural steels — Technical delivery conditions.*

EN 13463-1, *Non-electrical equipment for potentially explosive atmospheres — Part 1: Basic method and requirements.*

EN 13478, *Safety of machinery — Fire prevention and protection.*

ISO 2768-1, *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications.*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

air shutter frame

shutter frame that shuts off a working section except for those openings for haulage way, travel way, conveyor, cables and pipes as well as openings necessary to ensure the required air flow according to existing pressure conditions

3.2

pressure-relief air door

air door with leaves opening and closing in opposite directions

NOTE The forces are balanced by design measures, e.g. connecting rod or turning chain so that only the friction and readjustment forces of the opening and closing device remain to be overcome.

3.3

non-pressure-relief air door

air door that normally opens against the air flow direction with mechanical devices for opening and closing