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NSAI Standards

Irish Standard
I.S. EN 14591-1:2004

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

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I.S. EN 14591-1:2004

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14591-1:2004/AC

January 2006
Janvier 2006
Januar 2006

ICS 13.230; 73.100.20

English version
Version Française
Deutsche Fassung

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 corrigendum becomes effective on 25 January 2006 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 25 janvier 2006 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 25.Januar 2006 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No.:EN 14591-1:2004/AC:2006 D/E/F

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English version

The Annex ZA has to be modified as follows:

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 94/9/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative Clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Relationship between Directive 94/9/EC and clauses of this standard

Essential health and safety requirements		Reference in this Standard
1 Common requirements		
1.0.4	Surrounding area conditions	5.3
1.0.5	Marking	6
1.2	**Design and construction**	
1.2.5	Additional means of protection for external stresses	5.2.3
3	**Supplementary requirements in respect of protective systems**	
3.0	**General requirements**	
3.0.1	Dimensioning	5 Annexes B and C
3.1	**Planning and design**	
3.1.1	Characteristics of materials	5.2.1 Annexes B and C
3.1.2	Withstanding the shock wave	5.3
3.1.5	Pressure-relief systems	5.3.2

WARNING: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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Version française

L'Annexe ZA doit être modifiée comme suit:

Annexe ZA
(informative)

Relation de la présente Norme européenne et les exigences essentielles de la Directive UE 94/9/CE

La présente Norme européenne a été préparée dans le cadre d'un mandat donné au CEN par la Commission Européenne et l'Association Européenne de Libre Échange et vient à l'appui des exigences essentielles de la Directive Nouvelle Approche 94/9/CE.

Après publication de la référence de la présente norme au Journal Officiel des Communautés européennes en vertu de cette Directive et mise en application en tant que norme nationale au sein d'au moins un État membre, la conformité aux articles de la présente norme donnés dans le Tableau ZA.1 confère, dans les limites du domaine d'application de la présente norme, une présomption de conformité aux Exigences Essentielles de cette Directive et aux règlements correspondants de l'Association Européenne de Libre Échange.

Tableau ZA.1 — Correspondance entre la Directive 94/9/CE et les articles de la présente norme

Exigences essentielles de santé et de sécurité		Article de la présente norme
1	**Exigences générales**	
1.0.4	Conditions de l'espace environnant	5.3
1.0.5	Marquage	6
1.2	**Conception et fabrication**	
1.2.5	Moyens de protection supplémentaires	5.2.3
3	**Exigences supplémentaires pour les systèmes de protection**	
3.0	**Exigences générales**	
3.0.1	Dimensions	5 Annexes B et C
3.1	**Études et conception**	
3.1.1	Caractéristiques des matériaux	5.2.1 Annexes B et C
3.1.2	Résistance à la pression	5.3
3.1.5	Dispositifs de décharge	5.3.2

AVERTISSEMENT : D'autres exigences et d'autres Directives UE peuvent être applicables aux produits relevant du domaine d'application de la présente norme.

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Deutsche Fassung

Der Anhang ZA ist wie folgt zu modifizieren:

Anhang ZA
(informativ)

Zusammenhang zwischen dieser Europäischen Norm und den grundlegenden Anforderungen der EU-Richtlinie 94/9/EG

Diese Europäische Norm wurde im Rahmen eines Mandates, das dem CEN von der Europäischen Kommission und der Europäischen Freihandelszone erteilt wurde, erarbeitet, um ein Mittel zur Erfüllung der grundlegenden Anforderungen der Richtlinie nach der neuen Konzeption 94/9/EG bereitzustellen.

Sobald diese Norm im Amtsblatt der Europäischen Gemeinschaften im Rahmen der betreffenden Richtlinie in Bezug genommen und in mindestens einem der Mitgliedstaaten als nationale Norm umgesetzt worden ist, berechtigt die Übereinstimmung mit den in Tabelle ZA.1 aufgeführten Abschnitten dieser Norm innerhalb der Grenzen des Anwendungsbereichs dieser Norm zu der Annahme, dass eine Übereinstimmung mit den entsprechenden grundlegenden Anforderungen der Richtlinie und der zugehörigen EFTA-Vorschriften gegeben ist.

Tabelle ZA.1 — Zusammenhang zwischen der Richtlinie 94/9/EG und Abschnitten dieser Norm

Grundlegende Sicherheits- und Gesundheitsanorderungen		Verweis in dieser Norm
1 Grundsätzliche Anforderungen		
1.0.4	Umgebungsbedingungen	5.3
1.0.5	Kennzeichnung	6
1.2	**Konstruktion und Bau**	
1.2.5	Zusätzliche Schutzmaßnahmen für äußere Belastungen	5.2.3
3	**Weitergehende Anforderungen an Schutzsysteme**	
3.0	**Grundsätzliche Anforderungen**	
3.0.1	Dimensionierung	5, Anhänge B und C
3.1	**Projektierung und Planung**	
3.1.1	Materialeigenschaften	5.2.1, Anhänge B und C
3.1.2	Widerstand gegen Druckstöße	5.3
3.1.5	Entlastungseinrichtungen	5.3.2

WARNHINWEIS — Für Produkte, die in den Anwendungsbereich dieser Norm fallen, können weitere Anforderungen und weitere EU-Richtlinien anwendbar sein.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14591-1

September 2004

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English version

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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.

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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

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