

საქართველოს სტანდარტი

მტვრის ღრუბელის ფეთქებადობის მახასიათებლის განსაზღვრა - ნაწილი 2:
მტვრის ღრუბელში აფეთქების წნევის ზრდის მაქსიმუმი მოცულობის
განსაზღვრა

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

საინფორმაციო მონაცემები

1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს 2015 წლის 27 მარტის № 21 და 2015 წლის 10 თებერვლის № 9 განკარგულებებით

2 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 14034-2:2006 +A1:2011 „ მტვრის ღრუბელის ფეთქებადობის მახასიათებლის განსაზღვრა - ნაწილი 2: მტვრის ღრუბელში აფეთქების წნევის ზრდის მაქსიმუმი მოცულობის განსაზღვრა“

3 პირველად

4 რეგისტრირებულია საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2015 წლის 27 მარტი №268-1.3-6983

აკრძალულია ამ სტანდარტის გადაცემა მესამე პირებისათვის ან/და მისი სხვა ფორმით გავრცელება

English Version

Determination of explosion characteristics of dust clouds - Part
2: Determination of the maximum rate of explosion pressure rise
(dp/dt)_{max} of dust clouds

Détermination des caractéristiques d'explosion des nuages
de poussière - Partie 2: Détermination de la vitesse
maximale de montée en pression d'explosion (dp/dt)_{max} des
nuages de poussière

Bestimmung der Explosionskenngrößen von Staub/Luft-
Gemischen - Teil 2: Bestimmung des maximalen zeitlichen
Druckanstiegs (dp/dt)_{max} von Staub/Luft-Gemischen

This European Standard was approved by CEN on 20 April 2006 and includes Amendment 1 approved by CEN on 13 November 2010.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....4

Introduction5

1 Scope6

2 Normative references6

3 Terms and definitions6

4 Test apparatus7

4.1 General.....7

4.2 Explosion vessel.....8

4.3 Dust dispersion system (dust container, fast acting valve, connecting tube, dust disperser)..... 10

4.4 Ignition source 13

4.5 Control unit..... 13

4.6 Pressure measuring system..... 13

5 Dust sample..... 13

6 Test procedure 13

7 Calibration and verification 16

7.1 Calibration 16

7.2 Verification 16

8 Safety precautions / instructions 17

9 Alternative test equipment / procedures 17

10 Test report 18

Annex A (normative) Electro Pneumatic Valve 19

Annex B (normative) Dust dispenser with 5 mm holes 22

Annex C (normative) 20 l sphere 25

C.1 General..... 25

C.2 Test apparatus 25

C.3 Test conditions 26

C.4 Test procedure 26

C.5 Calculation of $(dp/dt)_{max, 20 l}$, K_{max} and K_{St} 27

Annex ZA (informative) **ZA** Relationship between this European Standard and the Essential Requirements of EU Directive 94/9/EC **ZA** 28

Bibliography 29

Figures

Figure 1 — 1 m³ vessel (schematic)..... 9

Figure 2 — Dust container with blasting cap activated valve as commonly used for explosion suppression (schematic; it is commercially available) 10

Figure 3 — Location of the 6 mm holes in the dust disperser 12

Figure 4 — Dust dispersion and pressure-time curve 15

Figure 5 — Determination of the maximum rate of explosion pressure rise $(dp/dt)_{max}$ 16

Figure A.1 — Electro Pneumatic Valve (schematic)..... 20

საინფორმაციო ნაწილი. სრული ტექსტის სახასიათო შეიქმნეო სტანდარტი.

Figure A.2 — Discharge characteristic of dust dispersers (without dust)21
 Figure B.1 — Location of the 5 mm holes in the dust disperser23
 Figure B.2 — Rebound nozzle.....24
 Figure B.3 — Dispersion cup24
 Figure C.1 — Test equipment 20 l sphere (schematic).....26

Tables

Table 1 — Maximum permissible deviations SEQ17

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

Foreword

This document (EN 14034-2:2006+A1:2011) 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 July 2011, and conflicting national standards shall be withdrawn at the latest by July 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2010-11-13.

This document supersedes EN 14034-2:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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 Directives.

For relationship with the EU Directive 94/9/EC, see informative Annex ZA, which is an integral part of this document.

This European Standard is one of a series of standards as listed below:

EN 14034 "Determination of explosion characteristics of dust clouds"

- Part 1: Determination of the maximum explosion pressure p_{max} of dust clouds;
- Part 2: Determination of the maximum rate of explosion pressure rise $(dp/dt)_{max}$ of dust clouds;
- Part 3: Determination of the lower explosion limit LEL of dust clouds;
- Part 4: Determination of the limiting oxygen concentration LOC of dust clouds.

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, Croatia, 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 United Kingdom.

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

Introduction

This European Standard specifies a method for experimental determination of the maximum rate of explosion pressure rise of dust clouds. The maximum rate of explosion pressure rise is the maximum value of the pressure rise per unit time during explosions of explosive atmospheres in the explosion range of a combustible dust in a closed vessel. The measurement of the maximum rate of explosion pressure rise forms the basis for explosion protection by design and construction of equipment, protective systems and components to reduce the explosion effects.

A1 *deleted text* A1