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Pürotehnilised tooted. Kategooria 1, 2 ja 3 ilutulestik. Osa 5: Ehitus- ja toimivusnõuded

Pyrotechnic articles - Fireworks, Categories 1, 2, and 3 - Part 5: Requirements for construction and performance

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

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Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
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English Version

Pyrotechnic articles - Fireworks, Categories 1, 2, and 3 - Part 5: Requirements for construction and performance

Articles pyrotechniques - Artifices de divertissement, Catégories 1, 2, et 3 - Partie 5: Exigences de construction et de performances

Pyrotechnische Gegenstände - Feuerwerkskörper, Kategorien 1, 2 und 3 - Teil 5: Anforderungen an Konstruktion und Funktion

This European Standard was approved by CEN on 21 August 2010.

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Contents

Page

Foreword 4

1 Scope 6

2 Normative references 7

3 Terms and definitions 8

4 Construction 8
4.1 Construction materials (type test and batch test) 8
4.1.1 General requirements 8
4.1.2 Specific requirements 8
4.2 Length of handle (type test and batch test) 9
4.3 Permitted elements in batteries and combinations (type test and batch test) 9
4.4 Dimensions for mini rockets (type test and batch test) 10

5 Pyrotechnic composition (type test) 10

6 Means of ignition 12
6.1 Permitted means of ignition (type test and batch test) 12
6.2 Protection of initial fuse (type test and batch test) 14
6.3 Attachment of means of ignition (type test and batch test) 14
6.4 Fuse requirements (type test and batch test) 14
6.4.1 General requirements 14
6.4.2 Specific requirements 14

7 Performance 15
7.1 Properties to be checked before functioning tests 15
7.1.1 Loose pyrotechnic composition after mechanical conditioning (type test) 15
7.1.2 Integrity (type test and batch test) 15
7.1.3 Stabilisation of flight (type test and batch test) 16
7.1.4 Other requirements (type test) 16
7.2 Properties to be checked during functioning tests (type test and batch test) 16
7.2.1 Principal effects 16
7.2.2 Functioning 16
7.2.3 Angle of ascent or flight 16
7.2.4 Motion 16
7.2.5 Stability during functioning 17
7.2.6 Height of explosion 17
7.2.7 Sound pressure level 17
7.2.8 Explosions and other failures 17
7.2.9 Burning or incandescent matter 18
7.2.10 Extinguishing of flames 18
7.2.11 Projected debris 19
7.2.12 Burning rate of pyrotechnic composition 20
7.2.13 Pull-string or -strip 20
7.3 Properties to be checked after functioning tests (type test and batch test) 20
7.3.1 Droop 20
7.3.2 Plastics body 20
7.3.3 Rocket motor 20
7.3.4 Integrity after functioning 20

8 Primary pack or selection pack (type test and batch test) 21

9 Type testing 21
9.1 General 21

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9.2 Number of items to be tested **22**
9.3 Number of primary packs to be examined **22**
9.4 Test report **22**

10 Batch testing **23**
10.1 General **23**
10.2 Sampling plans **23**
10.3 Unit of product **23**
10.4 Nonconformities **23**
10.5 Test report **24**
10.6 Acceptance or rejection of a batch **25**
10.6.1 Nonconforming units **25**
10.6.2 Critical nonconforming units **25**
10.6.3 Major nonconforming units **25**
10.6.4 Minor nonconforming units **25**
10.6.5 Fireworks supplied in primary packs or selection packs **25**

Annex A (informative) **26**

Annex ZA (informative) **Relationship between this European Standard and the Essential Requirements of EU Directive 2007/23/EC on the placing on the market of pyrotechnic articles** **27**

Bibliography **28**

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Foreword

This document (EN 15947-5:2010) has been prepared by Technical Committee CEN/TC 212 “Pyrotechnic articles”, the secretariat of which is held by NEN.

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 2011, and conflicting national standards shall be withdrawn at the latest by March 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 supersedes EN 14035-7:2004, EN 14035-31:2005, EN 14035-35:2004, EN 14035-28:2004, EN 14035-36:2004, EN 14035-6:2004, EN 14035-24:2004, EN 14035-9:2004, EN 14035-23:2003, EN 14035-15:2003, EN 14035-12:2003, EN 14035-34:2003, EN 14035-29:2004, EN 14035-27:2003, EN 14035-38:2006, EN 14035-33:2005, EN 14035-20:2005, EN 14035-8:2004, EN 14035-10:2004, EN 14035-3:2004, EN 14035-22:2004, EN 14035-18:2004, EN 14035-13:2004, EN 14035-5:2006, EN 14035-4:2003, EN 14035-25:2005, EN 14035-17:2004, EN 14035-19:2003, EN 14035-21:2005.

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

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

— EN 15947-1, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 1: Terminology*

— EN 15947-2, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 2: Categories and types of firework*

— EN 15947-3, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 3: Minimum labelling requirements*

— EN 15947-4, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 4: Test methods*

— EN 15947-5, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 5: Requirements for construction and performance*

CEN/TC 212 is currently also developing European Standards for:

— Pyrotechnic articles — Fireworks Category 4;

— Pyrotechnic articles — Theatrical pyrotechnic articles;

— Pyrotechnic articles — Pyrotechnic articles for vehicles;

— Pyrotechnic articles — Other pyrotechnic articles.

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 the United Kingdom.

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1 Scope

This European Standard specifies requirements for the construction, performance and primary packaging of fireworks of category 1, 2 and 3 of the following types:

— aerial wheels;

— bangers;

— batteries and combinations;

— Bengal flames;

— Bengal matches;

— Bengal sticks;

— Christmas crackers;

— crackling granules;

— double bangers;

— flash bangers;

— flash pellets;

— fountains;

— ground movers;

— ground spinners;

— hand-held sparklers;

— jumping crackers;

— jumping ground spinners;

— mines;

— mini rockets;

— non-hand-held sparklers;

— novelty matches;

— party poppers;

— rockets;

— Roman candles;

— serpents;

— shot tubes;

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— snaps;

— spinners;

— table bombs;

— throwdowns;

— wheels.

This European Standard does not apply for articles containing military explosives or commercial blasting agents except for black powder or flash composition. This European Standard does not apply for articles containing pyrotechnic composition that includes any of the following substances:

— arsenic or arsenic compounds;

— hexachlorobenzene;

— mixtures containing a mass fraction of chlorates greater than 80 %;

— mixtures of chlorates with metals;

— mixtures of chlorates with red phosphorus (except when used in Christmas crackers, party poppers or snaps);

— mixtures of chlorates with potassium hexacyanoferrate(II);

— mixtures of chlorates with sulfur (these mixtures are allowed for friction heads only);

— mixtures of chlorates with sulfides;

— lead or lead compounds;

— mercury compounds;

— white phosphorus;

— picrates or picric acid;

— potassium chlorate with a mass fraction of bromates greater than 0,15 %;

— sulfur with an acidity, expressed in mass fraction of sulphuric acid, greater than 0,002 %;

— zirconium with a particle size of less than 40 µm.

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 15947-1:2010, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 1: Terminology*

EN 15947-2, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 2: Categories and types of firework*

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EN 15947-3, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 3: Minimum labelling requirements*

EN 15947-4:2010, *Pyrotechnic articles — Fireworks, Categories 1, 2 and 3 — Part 4: Test Methods*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15947-1:2010 apply.

4 Construction

4.1 Construction materials (type test and batch test)

4.1.1 General requirements

— The body of the firework case shall be made of paper, cardboard or plastics. The base (end closures) or means of fixing shall be made of non-metallic material. Where technically necessary, wood, staples, nails, aluminium coated foil or binding wires may be used. Conformity to this requirement shall be verified by visual examination.

— For articles fitted with a friction head: the primary pack shall be fitted with a striking surface for safety matches. Conformity to this requirement shall be verified by visual examination.

— The striking surface shall be resistant enough to allow ignition of all the articles included within the primary pack when tested in accordance with 6.16 of EN 15947-4:2010. The striking surface on the pack shall be covered or the pack shall be sealed, verified by visual examination.

4.1.2 Specific requirements

— For bangers and flash bangers: cardboard wrapped in cord is permitted as construction material.

— For batteries of mines, Roman candles or shot tubes: the tubes shall have a maximum angle of 30° to the vertical, when tested in accordance with 6.18 of EN 15947-4:2010. For combinations this requirement applies to the tubes of mines, Roman candles and shot tubes.

— For Bengal matches and Bengal sticks: the stick shall be made of wood.

— For Christmas crackers and snaps: the overlapping strips shall be made of cardboard, paper or string.

— For jumping crackers: the firework case shall be made of paper only.

— For mini rockets: the tube containing the propellant charge shall be made of cardboard or, when no report charge is present, plastics.

— For novelty matches: the stick shall be made of cardboard or wood.

— For party poppers: the shape shall not be confused with a gun.

— For rockets: the tube containing the propellant charge shall be made of cardboard, plastics or sheathed aluminium.

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