



**SLOVENSKI STANDARD**  
**SIST EN 14035-18:2005**  
**01-februar-2005**

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Fireworks - Part 18: Hand-held fountains - Specification and test methods

Feuerwerkskörper - Teil 18: Handfontänen - Anforderungen und Prüfverfahren

Artifices de divertissement - Partie 18: Fontaines a main - Spécifications et méthodes d'essai

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**Ta slovenski standard je istoveten z: EN 14035-18:2004**

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English version

## Fireworks - Part 18: Hand-held fountains - Specification and test methods

Artifices de divertissement - Partie 18: Fontaines à main -  
Spécifications et méthodes d'essai

Feuerwerkskörper - Teil 18: Handfontänen - Anforderungen  
und Prüfverfahren

This European Standard was approved by CEN on 15 November 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 14035-18:2004) has been prepared by Technical Committee CEN/TC 212 "Fireworks", 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of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

This document is one of a series of documents as listed below.

EN 14035-1, *Fireworks - Part 1: Terminology*

EN 14035-2, *Fireworks - Part 2: Categorisation*

EN 14035-3, *Fireworks - Part 3: Aerial wheels - Specification and test methods*

EN 14035-4, *Fireworks - Part 4: Bangers and banger batteries - Specification and test methods*

prEN 14035-5, *Fireworks - Part 5: Batteries and combinations - Specification and test methods*

EN 14035-6, *Fireworks - Part 6: Bengal flames - Specification and test methods*

EN 14035-7, *Fireworks - Part 7: Bengal matches - Specification and test methods*

EN 14035-8, *Fireworks - Part 8: Bengal sticks - Specification and test methods*

EN 14035-9, *Fireworks - Part 9: Crackling granules - Specification and test methods*

EN 14035-10, *Fireworks - Part 10: Double Bangers - Specification and test methods*

EN 14035-12, *Fireworks - Part 12: Flash bangers and flash banger batteries - Specification and test methods*

EN 14035-13, *Fireworks - Part 13: Flash pellets - Specification and test methods*

EN 14035-15, *Fireworks - Part 15: Fountains - Specification and test methods*

EN 14035-17, *Fireworks - Part 17: Ground spinners - Specification and test methods*

EN 14035-18, *Fireworks - Part 18: Hand-held fountains - Specification and test methods*

EN 14035-19, *Fireworks - Part 19: Hand-held sparklers - Specification and test methods*

prEN 14035-20, *Fireworks - Part 20: Jumping crackers - Specification and test methods*

prEN 14035-21, *Fireworks - Part 21: Jumping ground spinners - Specification and test methods*

EN 14035-22, *Fireworks - Part 22: Mines - Specification and test methods*

EN 14035-23, *Fireworks - Part 23: Non-hand-held sparklers - Specification and test methods*

EN 14035-24, *Fireworks - Part 24: Novelty matches - Specification and test methods*

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prEN 14035-25, *Fireworks - Part 25: Party poppers - Specification and test methods*

EN 14035-27, *Fireworks - Part 27: Rockets - Specification and test methods*

EN 14035-28, *Fireworks - Part 28: Roman candles - Specification and test methods*

EN 14035-29, *Fireworks - Part 29: Serpents - Specification and test methods*

prEN 14035-31, *Fireworks - Part 31: Shell-in-mortars - Specification and test methods*

prEN 14035-33, *Fireworks - Part 33: Spinners - Specification and test methods*

EN 14035-34, *Fireworks - Part 34: Table bombs - Specification and test methods*

EN 14035-35, *Fireworks - Part 35: Throwdowns - Specification and test methods*

EN 14035-36, *Fireworks - Part 36: Wheels - Specification and test methods*

prEN 14035-37, *Fireworks - Part 37: Whistlers - Specification and test methods*

prEN 14035-38, *Fireworks - Part 38: Shot tubes - Specification and test methods*

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 United Kingdom.

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## 1 Scope

This document specifies requirements for the construction, performance, primary packaging and labelling of hand-held fountains and the corresponding test methods. It is applicable to fireworks which are classified as hand-held fountains for outdoor use in Category 1 in EN 14035-2 and which are contained in a primary pack.

It is applicable to hand-held fountains for indoor use which are classified in Category 1 in EN 14035-2 and which contain pyrotechnic composition that is based on nitrocellulose with a mass fraction of not more than 12,6 % of nitrogen.

It is not applicable to hand-held fountains containing pyrotechnic composition that includes any of the following substances:

- arsenic or arsenic compounds;
- mixtures containing a mass fraction of chlorates greater than 80 %;
- mixtures of chlorates with metals;
- mixtures of chlorates with red phosphorus;
- mixtures of chlorates with potassium hexacyanoferrate(II);
- mixtures of chlorates with sulfur;
- 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 as mass fraction of sulfuric acid, greater than 0,002 %;
- zirconium with a particle size of less than 40  $\mu\text{m}$ .

NOTE In EN 14035-2, hand-held fountains are classified as follows:

- brief description: non-metallic case containing sparks and flame producing pyrotechnic composition and designed to be held in the hand;
- principal effects: emission of sparks and flames with or without aural effect other than report or whistle.

Schemes for type testing of hand-held fountains and batch testing of hand-held fountains are specified in Annex A and Annex B respectively.

## 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 14035-1:2003, *Fireworks — Part 1: Terminology*

EN 14035-2, *Fireworks — Part 2: Categorisation*

EN 20187, *Paper, board and pulps - Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples (ISO 187:1990)*

EN ISO 536, *Paper and board - Determination of grammage (ISO 536:1995)*

EN ISO 845, *Cellular plastics and rubbers — Determination of apparent (bulk) density (ISO 845:1988)*

EN ISO 868, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)*

EN ISO 2439, *Flexible cellular polymeric materials — Determination of hardness (indentation technique) (ISO 2439:1997, including Technical Corrigendum 1:1998)*

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

ISO 3599, *Vernier callipers reading to 0,1 and 0,05 mm*

ISO 6344-3, *Coated abrasives - Grain size analysis - Part 3: Determination of grain size distribution of microgrits P 240 to P 2500* <https://standards.iteh.ai/catalog/standards/sist/3d801fe5-f48a-4e89-aca4-4503a975a6c/sist-en-14035-18-2005>

ISO 21948, *Coated abrasives – Plain sheets*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14035-1:2003 apply.

## 4 Construction

### 4.1 Means of ignition

#### 4.1.1 Hand-held fountains for indoor use

NOTE Small hand-held fountains with a net explosive content of not more than 3,0 g do not usually have an initial fuse (producing the principal effects immediately after ignition).

The means of ignition shall be identified by a protruding fuse, a sealing paper or an ignition head.

Conformity to this requirement shall be verified by visual examination.

#### 4.1.2 Hand-held fountains for outdoor use

The means of ignition shall be identified by a protruding fuse, an ignition head or a friction head.



Conformity to this requirement shall be verified by visual examination.

#### **4.2 Resistance of friction head to ignition by an abrasive surface**

When tested in accordance with 8.4, the friction head shall not ignite.

#### **4.3 Attachment of initial fuse**

For hand-held fountains with protruding fuse, the attachment of the protruding fuse to the hand-held fountain shall be secure when tested in accordance with 8.2.

For hand-held fountains with sealing paper or ignition head or friction head, the attachment of the sealing paper or ignition head or friction head to the hand-held fountain shall be secure when tested in accordance with 8.3.

#### **4.4 Protection of hand-held fountain**

The hand-held fountain shall be contained in a primary pack conforming to Clause 6.

Conformity to this requirement shall be verified by visual examination.

#### **4.5 Materials of firework case**

The body of the firework case shall be made of paper, cardboard or plastics. If the handle is a separate component, it shall be made of non-metallic material.

Conformity to these requirements shall be verified by visual examination.

#### **4.6 Integrity**

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##### **4.6.1 Firework case**

There shall be no holes, splits, dents or bulges in the body of the firework case. There shall be no holes or splits in the end closure, if any. If the end closure is a separate component, it shall be securely in place.

Conformity to these requirements shall be verified by visual examination.

##### **4.6.2 Handle**

If the handle is a separate component, it shall be securely in place, when tested in accordance with 8.6. If the handle is an integral part of the body, it shall be clearly identified, in accordance with 7.3.4.

#### **4.7 Net explosive content**

When determined in accordance with 8.9, a hand-held fountain shall have a net explosive content of not more than 15,0 g.

#### **4.8 Length of handle**

When measured in accordance with 8.5, the end of the firework case of a hand-held fountain which is not filled with pyrotechnic composition and which acts as a handle, or the handle, if the handle is a separate component, shall have a minimum length of 40 mm.

## 5 Performance

### 5.1 Initial fuse

NOTE Small hand-held fountains with a net explosive content of not more than 3,0 g do not usually have an initial fuse (producing the principal effects immediately after ignition).

When tested in accordance with 8.7 or 8.8, the hand-held fountain without initial fuse shall ignite within 10 s and the ignition shall be visible.

When tested in accordance with 8.7 or 8.8, the hand-held fountain with protruding fuse or ignition head shall ignite within 10 s and the ignition shall be visible.

When tested in accordance with 8.7 or 8.8, the hand-held fountain with friction head shall ignite and the ignition shall be visible.

For hand-held fountains with a net explosive content of more than 3,0 g, the duration of the initial fuse burning shall be 3,0 s to 8,0 s, when tested in accordance with 8.7 or 8.8.

### 5.2 Principal effects

When tested in accordance with 8.7 or 8.8, the principal effects of the hand-held fountain, as given in EN 14035-2, shall be the emission of sparks and flames with or without aural effect other than report or whistle.

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### 5.3 Functioning

When tested in accordance with 8.7 or 8.8, the hand-held fountain shall function completely.

### 5.4 Explosions and other failures

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When tested in accordance with 8.7 or 8.8, the hand-held fountain shall not produce an explosion or rupture during functioning.

### 5.5 Burning matter

When tested in accordance with 8.7, the functioning of an indoor hand-held fountain shall not cause any holes in the test paper and shall not cause the test paper to catch fire.

When tested in accordance with 8.8, no burning or incandescent matter from a hand-held outdoor fountain shall fall to the ground more than 1,0 m from the testing point.

When tested in accordance with 8.7, any flames caused by the functioning of the indoor hand-held fountain shall be extinguished within 5,0 s of the hand-held fountain ceasing to function.

When tested in accordance with 8.8, any flames caused by the functioning of the outdoor hand-held fountain shall be extinguished within 10,0 s of the hand-held fountain ceasing to function.

## 6 Primary pack

The primary pack shall completely enclose the hand-held fountain(s) and there shall be no holes or splits in the pack.

The primary packs of hand-held fountains with friction head shall be fitted with a striking surface. The striking surface on the pack shall be covered or the pack shall be sealed.

Conformity to these requirements shall be verified by visual examination.

## 7 Minimum labelling requirements

### 7.1 General

Hand-held fountains and their primary packs shall be marked with the information specified in 7.2 to 7.5 and, if relevant, 7.7 and/or 7.8.

The specified information shall be given in the language(s) of the country in which the hand-held fountains contained in the primary packs are offered for retail sale. For each language, it shall be presented as a whole and shall not be interrupted by other text. Additional text given in another language shall not conflict with the specified information.

Conformity to the requirements specified in 7.1 to 7.5, 7.6.1, 7.7.2 and 7.8 shall be verified by visual examination.

NOTE Examples of typical labels for bangers, for which many of the marking requirements are similar to those specified for hand-held fountains in this document, are given in EN 14035-4.

### 7.2 Type name and category

The type name shall be marked, in upper case, as 'HAND-HELD FOUNTAIN'. If a trade name is used in addition to the type name, it shall not conflict with the principal effect of a fountain or with the name of another type of firework.

The appropriate category shall be marked, in upper case, as 'CATEGORY 1' or 'CAT 1'.

### 7.3 Safety information

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#### 7.3.1 General

Safety information shall be emphasized by use of a heading, or bold type, or similar. If necessary, instructions in addition to those specified in 7.3.2 to 7.3.4 may be given.

#### 7.3.2 Indoor hand-held fountains

Labelling shall include at least the following safety information in the order as given:

- 'Light fuse at its outermost end'<sup>1)</sup>; or
- 'Light ignition head'<sup>1)</sup>; or
- 'Light sealing paper'<sup>1)</sup>;
- 'Hold at arms length and point away from body and other people and flammable materials'.

#### 7.3.3 Outdoor hand-held fountains

Labelling shall include at least the following safety information in the order as given:

- 'For outdoor use only';

<sup>1)</sup> Whichever is appropriate.

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- 'Ignite on the striking surface'<sup>1)</sup>
- 'Light fuse at its outermost end'<sup>1)</sup>; or
- 'Light ignition head'<sup>1)</sup>;
- 'Hold at arms length and point away from body and other people';
- 'Do not point into the wind'.

### 7.3.4 Handle

If the handle is an integral part of the body, the handle section shall be in a contrasting colour with the word 'Handle' and no other words marked on it.

### 7.4 Name, address and telephone number of manufacturer or distributor or importer

Labelling shall include:

- name or trade mark, address and telephone number of manufacturer; or
- abbreviation or code allowing identification of manufacturer; or
- name or trade mark, address and telephone number of his authorized distributor; or
- if manufacturer is not established in a CEN member country, of importer in a CEN member country.

The address shall comprise at least the town and country. On the hand-held fountain at least the abbreviations allowing the identification of

- manufacturer; or
- distributor or importer, with an additional code or abbreviation for manufacturer

shall be marked.

### 7.5 Reference to this document

A hand-held fountain shall be marked with 'EN 14035-18'. A primary pack shall be marked with the words 'Contents conform to EN 14035-18'.

### 7.6 Printing

#### 7.6.1 Labelling

Labelling shall be clearly visible, easily legible, indelible and on a single-colour background (except the handle).

NOTE Printing errors which are not misleading should not be classified as faults.

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<sup>1)</sup> Whichever is appropriate.