



**SLOVENSKI STANDARD**  
**SIST EN 14035-33:2006**  
**01-januar-2006**

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**Ognjemet – 33. del: Helikopterji – Specifikacija in preskusne metode**

Fireworks - Part 33: Spinners - Specification and test methods

Feuerwerkskörper - Teil 33: Wirbel, steigend - Anforderungen und Prüfverfahren

Artifices de divertissement - Partie 33: Tourbillons volants - Spécifications et méthodes d'essai

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**Ta slovenski standard je istoveten z: EN 14035-33:2005**

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**ICS:**

71.100.30

**SIST EN 14035-33:2006**

**en**

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ICS 71.100.30

English Version

## Fireworks - Part 33: Spinners - Specification and test methods

Artifices de divertissement - Partie 33: Tourbillon volant -  
Spécifications et méthodes d'essai

Feuerwerkskörper - Teil 33: Wirbel, steigend -  
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 19 September 2005.

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.

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**Contents**

Page

|   |    |
|---|----|
| Foreword .....  | 4  |
| 1 Scope .....   | 6  |
| 2 Normative references .....  | 7  |
| 3 Terms and definitions .....   | 7  |
| 4 Construction.....   | 7  |
| 4.1 Means of ignition.....  | 7  |
| 4.2 Length of initial fuse .....  | 7  |
| 4.3 Attachment of initial fuse .....  | 7  |
| 4.4 Protection of spinner .....   | 7  |
| 4.5 Materials of firework case .....  | 7  |
| 4.6 Integrity of firework case.....   | 8  |
| 4.7 Net explosive content .....   | 8  |
| 4.8 Visibility of point of ignition .....   | 8  |
| 5 Performance .....   | 8  |
| 5.1 Initial fuse .....  | 8  |
| 5.2 Principal effects .....   | 8  |
| 5.3 Functioning .....   | 8  |
| 5.4 Explosion.....  | 8  |
| 5.5 Burning matter .....  | 8  |
| 5.6 Angle of flight.....  | 9  |
| 6 Primary pack .....  | 9  |
| 7 Minimum labelling requirements .....  | 9  |
| 7.1 General .....   | 9  |
| 7.2 Type name and category .....  | 9  |
| 7.3 Safety information.....   | 9  |
| 7.3.1 General .....   | 9  |
| 7.3.2 Spinners.....   | 9  |
| 7.3.3 Identification of top side.....   | 10 |
| 7.4 Name, address and telephone number of manufacturer or distributor or importer ..... | 10 |
| 7.5 Reference to this standard .....  | 10 |
| 7.6 Printing .....  | 10 |
| 7.6.1 Labelling .....   | 10 |
| 7.6.2 Type size.....  | 11 |
| 7.7 Marking of very small spinners.....   | 11 |
| 7.7.1 Reduced size .....  | 11 |
| 7.7.2 Reduced information .....   | 11 |
| 7.8 Additional information on the primary pack .....                                    | 11 |
| 8 Test methods.....   | 11 |
| 8.1 Attachment of initial fuse (type test and batch test) .....                         | 11 |
| 8.1.1 Apparatus .....   | 11 |
| 8.1.2 Procedure .....   | 11 |
| 8.2 Performance (type test and batch test) .....  | 12 |
| 8.2.1 Test environment .....  | 12 |
| 8.2.2 Apparatus .....   | 12 |
| 8.2.3 Procedure .....   | 12 |
| 8.3 Determination of net explosive content (type test) .....                            | 13 |
| 8.3.1 Apparatus .....   | 13 |
| 8.3.2 Procedure .....   | 13 |
| 8.4 Labelling (type test and batch test) .....  | 13 |

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[SIST EN 14035-33:2006](https://standards.itech.ai/catalog/standards/sist/dcf5b9bc-0584-4420-8dce-3561a82d644/sist-en-14035-33-2006)

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|  |    |
|--|----|
| Annex A (normative) Type testing .....           | 14 |
| A.1 General .....                                | 14 |
| A.2 Number of spinners to be tested .....        | 14 |
| A.3 Loose pyrotechnic composition .....          | 14 |
| A.4 Thermal conditioning .....                   | 15 |
| A.5 Mechanical conditioning .....                | 15 |
| A.5.1 Apparatus .....                            | 15 |
| A.5.2 Procedure .....                            | 18 |
| A.6 Number of primary packs to be examined ..... | 18 |
| A.7 Test report .....                            | 18 |
| Annex B (normative) Batch testing .....          | 21 |
| B.1 General .....                                | 21 |
| B.2 Sampling plans .....                         | 21 |
| B.3 Unit of product .....                        | 21 |
| B.4 Nonconformity .....                          | 21 |
| B.5 Test report .....                            | 23 |
| B.6 Acceptance or rejection of a batch .....     | 23 |
| B.6.1 General .....                              | 23 |
| B.6.2 Nonconforming units .....                  | 23 |
| B.6.3 Critical nonconforming units .....         | 23 |
| B.6.4 Major nonconforming units .....            | 23 |
| B.6.5 Minor nonconforming units .....            | 23 |
| Annex C (informative) A-Deviations .....         | 24 |

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SIST EN 14035-33:2006

<https://standards.iteh.ai/catalog/standards/sist/dcf5b9bc-0584-4420-8dce-43561a82d644/sist-en-14035-33-2006>

## Foreword

This European Standard (EN 14035-33:2005) 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 May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This European Standard is one of a series of standards 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.*

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

EN 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.*

EN 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.*

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

EN 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 European Standard specifies requirements for the construction, performance, packaging and labelling of spinners and the corresponding test methods. It is applicable to fireworks which are classified as spinners of category 1 and category 2 in EN 14035-2 and which are contained in a primary pack.

It is not applicable to spinners containing report composition.

It is not applicable to spinners 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 µm.

NOTE In EN 14035-2, spinners are classified as follows:

- Brief description: tube or tubes containing pyrotechnic composition, and with aerofoils attached;
- Principal effects: rotation and ascent, with emission of sparks and/or flames, with or without aural effect.

Schemes for type testing of spinners and batch testing of spinners are specified in Annex A and Annex B respectively.



## 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. 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 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*.

## 3 Terms and definitions

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

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## 4 Construction

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### 4.1 Means of ignition

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The means of ignition shall be identified by an initial fuse.

Conformity to this requirement shall be verified by visual examination.

### 4.2 Length of initial fuse

The initial fuse shall have such a length, that the point of ignition is above the aerofoils.

This requirement shall be verified by visual examination.

### 4.3 Attachment of initial fuse

The attachment of the protruding fuse to the spinner shall be secure when tested in accordance with 8.1.

### 4.4 Protection of spinner

The spinner shall be contained in a primary pack complying with 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 or cardboard. The aerofoils shall be of cardboard or plastics.

If the end closures are separate components, they shall be made of clay, cardboard, glue, compressed sawdust or similar material.

Conformity to these requirements shall be verified by visual examination.

#### **4.6 Integrity of firework case**

There shall be no holes, splits, dents or bulges in the body of the firework case, except those technically necessary for the correct functioning of the spinner. There shall be no holes or splits in the end closures. If the end closures are separate components, they shall be securely in place.

Conformity to these requirements shall be verified by visual examination.

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

When determined in accordance with 8.3, a category 1 spinner shall have a net explosive content of not more than 1,0 g.

When determined in accordance with 8.3, a category 2 spinner shall have a net explosive content of not more than 15,0 g.

#### **4.8 Visibility of point of ignition**

The point of ignition shall be visible from the top of the spinner.

Conformity to this requirement shall be verified by visual examination.

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### **5 Performance**

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#### **5.1 Initial fuse**

When tested in accordance with 8.2, the initial fuse shall ignite within 10 s and the ignition shall be visible.

When tested in accordance with 8.2, the duration of the initial fuse burning shall be 3,0 s to 8,0 s.

#### **5.2 Principal effects**

When tested in accordance with 8.2, the principal effects of the spinner, as given in EN 14035-2, shall be rotation and ascent, with emission of sparks and/or flames, with or without aural effect.

#### **5.3 Functioning**

When tested in accordance with 8.2, the spinner shall function completely.

#### **5.4 Explosion**

When tested in accordance with 8.2, the spinner shall not produce an explosion.

#### **5.5 Burning matter**

When tested in accordance with 8.2, no burning or incandescent matter from a category 1 spinner shall fall to the ground more than 1,0 m from the testing point.

When tested in accordance with 8.2, no burning or incandescent matter from a category 2 spinner shall fall to the ground more than 6,0 m from the testing point.

When tested in accordance with 8.2, any flames caused by the functioning of the spinner shall be extinguished within 10,0 s of the spinner ceasing to function.

### 5.6 Angle of flight

When tested in accordance with 8.2, the angle of flight of the spinner shall not exceed 15° up to a height of 3 m above ground.

## 6 Primary pack

The primary pack shall completely enclose the spinner(s). There shall be no holes or splits in the pack, except those which are intended to enable the packaging to be opened and those which are otherwise technically necessary.

Conformity to these requirements shall be verified by visual examination.

## 7 Minimum labelling requirements

### 7.1 General

Spinners 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 spinners or 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 spinners in this standard, are given in EN 14035-4.

### 7.2 Type name and category

The type name shall be marked, in upper case, as 'SPINNER'. If a trade name is used in addition to the type name, it shall not conflict with the principal effects of a spinner or with the name of another type of firework.

The appropriate category shall be marked, in upper case, as 'CATEGORY 2' or 'CAT 2', for example.

### 7.3 Safety information

#### 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 7.3.3 may be given.

#### 7.3.2 Spinners

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