SLOVENSKI STANDARD
oSIST prEN 15947:2026

01-september-2026

Pirotehnični izdelki - Ognjemetni izdelki, kategorije F1, F2 in F3

Pyrotechnic articles - Fireworks, Categories F1, F2 and F3

Pyrotechnische Gegenstände - Feuerwerkskörper, Kategorien F1, F2 und F3

Articles pyrotechniques - Artifices de divertissement, Catégories F1, F2 et F3

Ta slovenski standard je istoveten z: **prEN 15947**

ICS:

71.100.30	Eksplozivi. Pirotehnika in ognjemeti	Explosives. Pyrotechnics and fireworks

oSIST prEN 15947:2026 **en,fr,de**

EUROPEAN STANDARD

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DRAFT
prEN 15947

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ICS 71.100.30

Will supersede EN 15947-1:2022, EN 15947-2:2022, EN 15947-3:2022, EN 15947-4:2022, EN 15947-5:2022

English Version

Pyrotechnic articles - Fireworks, Categories F1, F2 and F3

Articles pyrotechniques - Artifices de divertissement, Catégories F1, F2 et F3

Pyrotechnische Gegenstände - Feuerwerkskörper, Kategorien F1, F2 und F3

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 212.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Contents

Page

European foreword

This document (prEN 15947:2026) has been prepared by Technical Committee CEN/TC 212 “Pyrotechnic Articles”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede the series of standards EN 15947:2022.

prEN 15947:2026 includes the following significant technical changes with respect to the EN 15947:2022 series:

— merging of all five parts;

— improvement of the scope of the EN 15947 series, especially related to the applicability for fireworks containing detonative explosives other than black powder or flash composition or pyrotechnic composition;

— revision of normative references;

— update of terms and definitions by adding important terms and definitions, introducing groups and highlighting only the English terms and definitions;

— revision of environmental terminology to harmonize EN 15947 and EN 16261 terminology;

— removal of duplicated definitions under “Categorization of fireworks”, taken from Directive 2013/29/EU;

— improvement of the EN 15947 series in relation to wordings and specifications of CEN Internal Regulation 3;

— correction of Table 2 for applying an alphabetical order;

— printing has been amended in terms of type size;

— the labelling of very small items has been revised;

— the clause regarding labelling has been improved related to “tall buildings”;

— the procedure to attach a separate handle or separate base has been revised;

— test methods for cat. F1 have been revised;

— the EN 15947 series has been checked for missing tolerances and additions have been made;

— values within the EN 15947 series have been corrected to represent the needed precision;

— the lists of forbidden substances and mixtures have been reviewed and appropriately implemented;

— verification methods during EU-type examination of forbidden substances and mixtures have been added;

— a clause for temperature resistance has been added;

— a list of fireworks without plastics has been created (prohibition of plastics);

— a decision-tree on how to determine what may end-up in the environment is incorporated;

— disposal and storage of fireworks is specified in a targeted manner (to cover ESR 2), less via categorization and labelling rather than via requirements (e.g. via fireworks components that can be separated for disposal);

— amendment of silver fulminate requirement for throwdowns to not duplicate the ESR of Directive 2013/29/EU;

— clarification about functioning of fireworks with a reserve fuse;

— clause on testing of report rockets of category F2 has been removed;

— revision of what aspects of conformity assessment are maintained and how;

— better specification about special holding devices in the placing instructions;

— 'Do not inhale smoke' has been removed in the EN 15947:2022 series, but is reinstated again for the relevant types as before;

— modification of the testing of table bombs;

— improved use of the clamping device during testing;

— spinners have been added to the clause about extinguishing of flames (10 s group);

— Annex ZA has been updated to indicate support of each essential safety requirement (ESR).

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

1 Scope

This document defines various terms relating to the design, construction, primary packaging and testing of fireworks of categories F1, F2 and F3 as defined by Article 6 Paragraph (1) clause (a) subclause (i) to (iii) of Directive 2013/29/EU. It gives descriptions of fireworks types and establishes a system for categorization. Minimum labelling requirements for fireworks as well as for primary and selection packs of fireworks are specified. Firework specific test methods are defined. Specifications of requirements for construction and performance of firework, primary packs and selection packs complete this standard. This standard does not apply to fireworks intended to be kept or used at temperatures below −20 °C or above 50 °C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61672-1:2013, *Electroacoustics — Sound level meters — Part 1: Specifications*

EN ISO 660:2020, *Animal and vegetable fats and oils — Determination of acid value and acidity (ISO 660:2020)*

EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

EN ISO 17556:2019, *Plastics — Determination of the ultimate aerobic biodegradability of plastic materials in soil by measuring the oxygen demand in a respirometer or the amount of carbon dioxide evolved (ISO 17556:2019)*

ISO 2859-1:2026, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 4793:1980, *Laboratory sintered (fritted) filters — Porosity grading, classification and designation*

ISO 6344-3:2021, *Coated abrasives — Determination and designation of grain size distribution — Part 3: Microgrit sizes P240 to P5000*

ISO 21948:2001, *Coated abrasives — Plain sheets*

ISO 22863-7:2021, *Fireworks — Test methods for determination of specific chemical substances — Part 7: Chlorates content by chemical titration analysis*

ISO 22863-8:2021, *Fireworks — Test methods for determination of specific chemical substances — Part 8: Arsenic content by hydride generation atomic fluorescence spectrometry*

ISO 22863-10:2021, *Fireworks — Test methods for determination of specific chemical substances — Part 10: Nitrogen content in nitrocellulose by iron(II) sulfate titration*

ISO 22863-11:2022, *Fireworks — Test methods for determination of specific chemical substances — Part 11: Phosphorus content by inductively coupled plasma optical emission spectrometry (ICP-OES)*

ISO 22863-12:2022, *Fireworks — Test methods for determination of specific chemical substances — Part 12: Picrates and picric acid by high performance liquid chromatography*

ISO/NP 22863-17, *Fireworks — Test methods for determination of specific chemical substances — Part 17: Determination of potassium chlorate by ion chromatography*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Materials

3.1.1
black powder
intimate mixture of charcoal and sodium nitrate or potassium nitrate with or without sulphur

3.1.2
bursting charge
pyrotechnic composition, which is intended to burst open the firework case and to expel one or more pyrotechnic units, which can also transmit ignition

3.1.3
effect charge
pyrotechnic composition, other than propellant charge or bursting charge, which upon functioning will burn or explode to produce a visual and/or aural effect

3.1.4
flash composition
inherent mixture of a metal and an oxidizer

Note 1 to entry: This is usually perchlorate or nitrate metal based.

3.1.5
microplastic
solid plastic particle with the longest dimension between 1 µm and 5 000 µm (= 5 mm), insoluble in water, not biodegradable in the open environment and tending to accumulate

Note 1 to entry: Microplastics have regular and irregular shapes.

3.1.5.1
primary microplastic
polymer fragment, debris or alike resulting directly from an explosion

3.1.5.2
secondary microplastic
polymer fragments, debris or alike that end up in the environment

3.1.6
plastic
non-biodegradable material which contains, as an essential ingredient, a polymer (3.1.7) and which, at some stage in its processing into finished products, can be shaped by heat and/or pressure

Note 1 to entry: Plastics consist mainly polymers and minor contents of additives.

Note 2 to entry: Plastics comprise both thermoplastic and thermoset materials.

3.1.7
polymer
chemical compound or mixture of compounds consisting of repeating structural units created through polymerization

Note 1 to entry: In practice, the mass of polymer is above 10 000 Dalton.

3.1.8
propellant charge
pyrotechnic composition which will burn to evolve gas which, in turn, is intended to propel the firework as a whole or to expel one or more pyrotechnic units without bursting the firework case, and which can also transmit ignition

3.1.9
pyrotechnic composition
substance or mixture of substances which is designed to produce heat, light, sound, gas or smoke or a combination of such effects through self-sustained exothermic chemical reactions

3.1.10
report charge
pyrotechnic composition which is solely intended to produce a report upon functioning

3.2 Characteristic

3.2.1
biodegradable
decomposable at the end of life in naturally occurring soil conditions

Note 1 to entry: Decomposition products can comprise carbon dioxide, water, microbial mass and minerals (non-exhaustive list).

Note 2 to entry: Biodegradable materials can be both biobased or fossil-based.

3.2.2
burning rate of composition
net explosive content in grams divided by the effect time in seconds

3.2.3
droop
angle by which the tip of a composition-coated wire has been deflected from the horizontal, after the firework has ceased to function

3.2.4
explosion
sudden release of energy accompanied by a report with or without a flash

3.2.5
first principal effect
principal effect of a firework which is the first to occur during the functioning of the firework

3.2.6
initial fuse burning
burning which immediately follows ignition and precedes any effect

3.2.7
invisible burning
burning occurring within the firework case which is not visible to the person who ignited the firework

3.2.8
invisible burning time
time between preliminary effect and first principal effect

3.2.9
net explosive content
NEC
mass of pyrotechnic composition in the firework

Note 1 to entry: For this standard series the NEC does not include the pyrotechnic composition in the initial fuse or transmitting fuses, friction or ignition heads.

3.2.10
preliminary effect
visual and/or aural effect which follows the initial fuse burning and precedes the first principal effect of a firework

Note 1 to entry: For example, for bangers or flash bangers; whistling, flames, sparks, crackling or combinations thereof are preliminary effects.

3.2.11
principal effect
effects listed in the classification table as illustrated in Table 2 for a particular type of firework

3.2.12
sustainable substance
material that ensures the environmental and economic needs of the present without compromising the future

Note 1 to entry: Potentially broader scopes exist. This definition neglects social aspects for the time being.

3.3 Components

3.3.1
debris
solid part of the firework which remains after the firework has ceased to function

Note 1 to entry: Chemical products resulting from the combustion of the pyrotechnic compositions are not considered as “debris”.

3.3.2
end closure
component or crimp which is designed to seal one end of a firework case or pyrotechnic unit

3.3.3
external support
support which is not integral to the firework, or which must be fixed to the firework before use by the user to provide stability

Note 1 to entry: External support includes but is not limited to: burying firework in soft ground or material, fixing firework to a post or using heavy objects (for example sandbags).

3.3.4
firework case
casing which is designed to retain pyrotechnic compositions within a firework

3.3.5
friction head
ignition head designed to be ignited by friction

3.3.6
ignition head
initial fuse consisting of pyrotechnic composition only

3.3.7
initial fuse
component of a firework which is ignited to start the firework functioning

3.3.8
primary pack
package of one or more fireworks with the same registration number offered for retail sale as a single unit or as a part in a selection pack

Note 1 to entry: For registration number see Directives 2013/29/EU, Article 9 and 2014/58/EU, Article 1.

3.3.9
projected debris
debris laterally projected at ground level while functioning

3.3.10
protruding fuse
initial fuse that extends from the firework case and is used to ignite the article with a given time delay

3.3.11
pyrotechnic unit
discrete unit that is part of a firework which, upon functioning, will burn or explode to produce a visual and/or aural effect

Note 1 to entry: The effect produced by a pyrotechnic unit is normally part of a combination of effects produced by the firework.

3.3.12
reserve fuse
component of a firework which is ignited in order to start the firework functioning when the initial fuse fails

3.3.13
rocket launcher
tube, frame or base from which a rocket, report rocket or mini rocket, can be launched

3.3.14
sealing paper
thin paper that closes one end of the firework, covering the pyrotechnic composition which is ignited to start the firework functioning

3.3.15
selection pack
package of fireworks of more than one registration number offered for retail sale as a single unit

Note 1 to entry: A selection pack may contain primary packs as well as individual fireworks.

Note 2 to entry: For registration number see Directives 2013/29/EU and 2014/58/EU.

3.3.16
transmitting fuse
component of a firework which is intended to transmit ignition from one part of a firework to another, with or without a delay

3.4 Testing

3.4.1
AQL
quality level that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling

3.4.2
batch
collection of units of a product from which a sample is drawn and inspected in order to determine whether that collection conforms to the acceptance criteria

Note 1 to entry: The term batch is based on the definition of "lot" in ISO 2859-1:2026.

3.4.3
batch test
test performed on one or more sample(s) of products taken at random from a batch to check compliance with a given specification

Note 1 to entry: Batch testing aims at proving all products which are placed on the market are in conformity with the type which is described in the EU-type examination certificate and has been successfully submitted to type test determined by the standard.

3.4.4
critical nonconforming unit
nonconforming unit with one or more critical nonconformities, with or without major or minor nonconformities

3.4.5
critical nonconformity
nonconformity that judgement and experience indicate is likely to result in hazardous or unsafe conditions

Note 1 to entry: This type of nonconformity is referred to as a “class A nonconformity” in ISO 2859-1:2026.

3.4.6
major nonconforming unit
nonconforming unit with one or more major nonconformities, with or without minor nonconformities, but with no critical nonconformities

3.4.7
major nonconformity
nonconformity, other than a critical nonconformity, which is likely to result in failure, to reduce materially the usability of the firework, or to increase the potential hazard

Note 1 to entry: This type of nonconformity is referred to as a “class B nonconformity” in ISO 2859-1:2026.

3.4.8
minor nonconforming unit
nonconforming unit with one or more minor nonconformities, but with no critical or major nonconformities

3.4.9
minor nonconformity
nonconformity that is not likely to reduce materially the usability of the firework

Note 1 to entry: This type of nonconformity is referred to as a “class C nonconformity” in ISO 2859-1:2026.

3.4.10
nonconforming unit
firework or a primary pack with one or more nonconformities

3.4.11
nonconformity
non-fulfilment of a specified requirement

3.4.12
testing point
location in the test area where the firework is placed at the beginning of a performance test

3.4.13
type test
test performed on a sample of product, representative of the production envisaged, in order to demonstrate its compliance with the essential safety requirements of Annex I of Directive 2013/29/EU

Note 1 to entry: The successful submission to type tests leads to the attribution of an EU-type examination certificate.

Note 2 to entry: Compliance with the essential safety requirements is given in Annex ZA.