

TSIVIILKÄIBES OLEVAD LÕHKEAINED. DETONAATORID
JA DETONEERNÖÖRIDE RELEED. OSA 18:
ELEKTRIDETONAATORITE JADAÜHENDUSE
LÕHKAMISVOOLU MÄÄRAMINE

Explosives for civil uses - Detonators and detonating
cord relays - Part 18: Verification of the series firing
current of electric detonators

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13763-18:2025 sisaldab Euroopa standardi EN 13763-18:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.10.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 13763-18:2025 consists of the English text of the European standard EN 13763-18:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 01.10.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

EN 13763-18

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN 13763-18:2003

English Version

Explosives for civil uses - Detonators and detonating cord relays - Part 18: Verification of the series firing current of electric detonators

Explosifs à usage civil - Détonateurs et relais pour cordeau détonant - Partie 18: Vérification du courant d'allumage en série de détonateurs électriques

Explosivstoffe für zivile Zwecke - Zünder und Sprengschnurverzögerer - Teil 18: Überprüfung des Serienzündstromes elektrischer Zünder

This European Standard was approved by CEN on 29 September 2025.

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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.

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

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European foreword

This document (EN 13763-18:2025) has been prepared by Technical Committee CEN/TC 321 “Explosives for civil uses”, the secretariat of which is held by UNE.

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 April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

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

This document supersedes EN 13763-18:2003.

EN 13763-18:2025 includes the following significant technical changes with respect to EN 13763-18:2003:

- a) the document title has been changed from “Detonators and relays — Part 18: Determination of series firing current of electric detonators” to “Detonators and detonating cord relays — Part 18: Verification of series firing current of electric detonators”;
- b) the Introduction has been removed;
- c) the Scope has been revised to clarify the covered and not covered explosives;
- d) the normative references have been updated;
- e) Clause 4 “Principle” has been added;
- f) the clause “Apparatus” has been revised;
- g) the clause “Test pieces” is now called “Preparation of test sample” and the possibility is now considered that the fuse head differs between instantaneous and delay detonators in a delay series;
- h) the clause “Procedure” has been restructured, revised and further detailed;
- i) the expression “current breakage time” has been replaced by “current interruption time”;
- j) Clause 8 “Expression of results” has been added;
- k) the clause “Test report” does no longer require conformity with EN ISO/IEC 17025 and the information to be provided has been revised;
- l) former Annex A “Range of applicability of the test method” has been removed;
- m) Annex ZA has been updated;
- n) the Bibliography has been added and lists EN ISO/IEC 17025:2017.

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.

A list of all parts in the EN 13763 series, published under the general title *Explosives for civil uses — Detonators and detonating cord relays*, can be found on the CEN website.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies a method for the verification of the series firing current of electric detonators.

This document does not apply to non-electric detonators, electronic detonators, plain detonators, semi-finished detonators.

This document does not apply to shock tubes, leading wires, surface connectors, detonating cord relays, coupling accessories and electronic initiation systems.

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 13763-1:2025, *Explosives for civil uses — Detonators and detonating cord relays — Part 1: Requirements*

EN 13857-1:2025, *Explosives for civil uses — Part 1: Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13857-1:2025 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>

4 Principle

During blasting using electric detonators, the detonators are usually connected in series. The applied current for the initiation of the detonators needs to initiate all fuse heads within a given time, which is only possible if the bridge wires of all detonators are intact. For avoiding misfires the specified series firing current has to be appropriate.

For the verification of the series firing current specified for an electric detonator, two tests are carried out. In the first step, it is determined whether and at what time the applied current is interrupted during the applied pulse duration. Considering the results of the first step, in a second step it is verified that the specified series firing current initiates five test pieces connected in series.

5 Apparatus

5.1 Current source, capable of producing square current pulses with a current value of the series firing current, I_s , as specified for the tested electric detonator in accordance with EN 13763-1:2025, 4.2.1.4, with a current overshoot of $\leq 10\%$ and pulse durations as specified in Clause 7. The duration of the current overshoot shall be ≤ 1 ms on pure resistive load. The rise time, i.e. from 10 % up to 90 % of the adjusted amplitude, and the fall time, i.e. from 90 % down to 10 % of the adjusted amplitude, of the square pulse shall be ≤ 50 μ s. The maximum permissible uncertainty of the amplitude shall be $\pm 1,0\%$.

5.2 Current interruption time measuring device, capable of being connected either to the current source (5.1) or the leading wires of a test piece for measuring the time interval between the start of the current pulse and the interruption or the stop of the current pulse. The time measuring device shall have a resolution of 10 μ s and a permissible uncertainty of $\leq 0,1$ ms.