

TSIVIILKÄIBES OLEVAD LÕHKEAINED. DETONAATORID
JA DETONEERNÖÖRIDE RELEED. OSA 11:
DETONAATORITE, DETONEERNÖÖRIDE RELEEDE JA
PEALMISTE ÜHENDUSKOMPLEKTIDE
KUKKUMISKINDLUSE MÄÄRAMINE

Explosives for civil uses - Detonators and detonating
cord relays - Part 11: Verification of resistance to
damage by dropping of detonators, detonating cord
relays and surface connectors

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13763-11:2025 sisaldab Euroopa standardi EN 13763-11:2025 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 13763-11:2025 consists of the English text of the European standard EN 13763-11:2025.</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 13763-11

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2025

ICS 71.100.30

Supersedes EN 13763-11:2003

English Version

**Explosives for civil uses - Detonators and detonating cord
relays - Part 11: Verification of resistance to damage by
dropping of detonators, detonating cord relays and surface
connectors**

Explosifs à usage civil - Détonateurs et relais pour
cordeau détonant - Partie 11 : Vérification de la
résistance à la chute des détonateurs, des relais pour
cordeau détonant et des connecteurs de surface

Explosivstoffe für zivile Zwecke - Zünder und
Sprengschnurverzögerer - Teil 11: Überprüfung der
Widerstandsfähigkeit von Zündern,
Sprengschnurverzögerern und Oberflächenverbindern
gegen Fall

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

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 CEN-CENELEC Management Centre 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 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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 13763-11:2025) 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 13763-11:2003.

EN 13763-11:2025 includes the following significant technical changes with respect to EN 13763-11:2003:

- a) the document title has been changed from “Detonators and relays — Part 11: Determination of resistance to damage by dropping of detonators and relays” to “Detonators and detonating cord relays — Part 11: Verification of resistance to damage by dropping of detonators, detonating cord relays and surface connectors”;
- b) the Introduction has been removed;
- c) the Scope has been revised to clarify the covered and not covered explosives; the document now also applies to semi-finished detonators and electronic detonators;
- d) the normative references have been updated;
- e) the Clause 4 “Principle” has been added;
- f) the Clause “Apparatus” has been revised and completed;
- g) the Clause “Procedure” has been restructured, revised and further detailed;
- h) surface connectors and detonating cord relays are now tested as made available on the market and surface connectors are now subjected to the free-fall drop test and detonating cord relays to the guided drop test only;
- i) the Clause 8 “Expression of results” has been added;
- j) the Clause “Test report” does no longer require conformity with EN ISO/IEC 17025 and the information to be provided has been revised;
- k) the former Annex A “Range of applicability of the test method” has been removed;
- l) the Annex ZA has been updated;
- m) 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 test methods for the verification of the resistance to damage by dropping of detonators, detonating cord relays and surface connectors.

This document does not apply to shock tubes 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 use, detonators, detonating cord relays and surface connectors can be accidentally dropped from a loading basket, from the edge of a bench, or down an unloaded borehole. Detonators, relays and surface connectors can either break or undergo inadvertent detonation when being dropped.

For the verification of the resistance to damage by dropping, test pieces are dropped from a height of 5 m onto a hard surface. The test is carried out either as a free-fall drop test, as a guided drop test or both depending on the explosive article tested. It is observed whether a test piece undergoes detonation upon impact. Test pieces subjected to the free-fall drop test are afterwards initiated to check whether they detonate.

5 Apparatus

5.1 Clamp, capable of holding the test piece at a height of $(5 \pm 0,02)$ m and with a mechanism to release it.

5.2 Concrete floor.

5.3 Metal tube, with a length of $(5 \pm 0,05)$ m and an inner diameter of between 1,5 times to 2,0 times the diameter of the detonator or detonating cord relay being tested.

5.4 Steel plate, measuring at least 100 mm × 100 mm with a thickness of ≥ 10 mm.

5.5 Length measuring device, capable to measure up to 5 m and readable to the nearest 1 mm.

5.6 Means of initiation, for the tested explosive as specified in accordance with EN 13763-1:2025, 4.2.1.4 (for electric detonator), 4.3.1.4 (for non-electric detonator), 4.4.1.4 (for electronic detonator),