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DETONAATORITE VÄLJATÕMBETUGEVUSE  
MÄÄRAMINE

Explosives for civil uses - Detonators and detonating  
cord relays - Part 7: Verification of pull-out resistance  
of detonators

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13763-7:2025 sisaldab Euroopa standardi EN 13763-7:2025 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 13763-7:2025 consists of the English text of the European standard EN 13763-7:2025.</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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ICS 71.100.30

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EUROPEAN STANDARD

EN 13763-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Supersedes EN 13763-7:2003

English Version

## Explosives for civil uses - Detonators and detonating cord relays - Part 7: Verification of pull-out resistance of detonators

Explosifs à usage civil - Détonateurs et relais pour cordeau détonant - Partie 7 : Vérification de la résistance à l'arrachement des détonateurs

Explosivstoffe für zivile Zwecke - Zünder und Sprengschnurverzögerer - Teil 7: Überprüfung des Auszugswiderstands von Zündern

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 13763-7:2025) 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 13763-7:2003.

EN 13763-7:2025 includes the following significant technical changes with respect to EN 13763-7:2003:

- a) the document title has been changed from “Detonators and relays — Part 7: Determination of the mechanical strength of leading wires, shock tubes, connections, crimps and closures” to “Detonators and detonating cord relays — Part 7: Verification of pull-out resistance of 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) the Clause 4 “Principle” has been added;
- f) the Clause “Apparatus” has been completed;
- g) the Clause “Test pieces” is now called “Preparation of test sample”;
- h) the Clause “Procedure” has been revised and now also includes specifications for electronic detonators;
- 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 in accordance with the revised test procedure;
- 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 pull-out resistance of detonators.

This document applies to electric detonators, electronic detonators and non-electric detonators equipped with leading wires or shock tube.

This document does not apply to plain detonators or semi-finished detonators.

This document does not apply to surface connectors, detonating cord relays, coupling accessories, 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, leading wires or shock tubes can be subjected to pulling forces which can cause them being pulled out of a detonator or a loosening of components of a detonator. A pull-out can cause the detonator to detonate or can render it incapable of functioning.

For the verification of the pull-out resistance, detonator test pieces are either subjected to a sudden-release test or to a sudden- and a slow-release test. The slow-release test is intended to avoid hazardous situations related to fuse head initiations and is therefore not carried out for non-electric detonators. The sudden release test is intended to simulate the mechanical stress in boreholes. For both tests, the test piece is clamped with the detonator top facing downwards and with a weight attached to the leading wires or the shock tube. The weight is either released instantly (sudden release) or slowly (slow release). It is observed whether the test piece detonates upon the applied pull-out force or whether the shock tube or leading wires break or are pulled out. Test pieces subjected to the sudden-release test are subsequently initiated and it is observed whether they detonate.

## 5 Apparatus

**5.1 Clamping point**, to which the test piece (see Clause 6) shall be clamped in a vertical position (see Figure 1) and in a form such that the test piece remains in this position during the test procedure. The type of clamping shall not affect the test result.

**5.2 Weight(s)**, that can be attached to the leading wires or to the shock tube of the test piece. It shall be possible to apply either a weight of  $(40 \pm 0,1)$  N or to apply a weight of  $(100 \pm 1)$  N.