

TSIVIILKÄIBES OLEVAD LÕHKEAINED. DETONAATORID
JA DETONEERNÖÖRIDE RELEED. OSA 5:
ELEKTRIJUHTMETE JA IMPULSI SIIRDETORUDE
LÕIKEKINDLUSE MÄÄRAMINE

Explosives for civil uses - Detonators and detonating
cord relays - Part 5: Verification of resistance to
cutting damage of leading wires and shock tubes

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 13763-5:2025 sisaldab Euroopa standardi EN 13763-5:2025 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 13763-5:2025 consists of the English text of the European standard EN 13763-5:2025.</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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English Version

Explosives for civil uses - Detonators and detonating cord relays - Part 5: Verification of resistance to cutting damage of leading wires and shock tubes

Explosifs à usage civil - Détonateurs et relais pour cordeau détonant - Partie 5 : Vérification de la résistance à la coupure des fils d'amorce et des tubes à transmission d'ondes de choc

Explosivstoffe für zivile Zwecke - Zünder und Sprengschnurverbinder - Teil 5: Überprüfung der Widerstandsfähigkeit von Zünderdrähten und Zündschläuchen gegen Schnittbelastung

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
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European foreword

This document (EN 13763-5:2025) 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 13763-5:2003.

EN 13763-5:2025 includes the following significant technical changes with respect to EN 13763-5:2003:

- a) the document title has been changed from “Detonators and relays — Part 5: Determination of resistance to cutting damage of leading wires and shock tubes” to “Detonators and detonating cord relays — Part 5: Verification of resistance to cutting damage of leading wires and shock tubes”;
- 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 revised and completed;
- g) the Clause “Test pieces” is now called “Preparation of test sample” and has been revised to include the conditioning of the test pieces that is no longer part of the clause “Procedure”;
- h) the Clause “Procedure” has been revised and further detailed;
- 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) a new Annex A “Example of a cutting damage test apparatus” has been added;
- m) the 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.

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1 Scope

This test method specifies a test method for the verification of the resistance to cutting damage of leading wires and shock tubes of leading wires of electric and electronic detonators as well as shock tubes of non-electric detonators, surface connectors and electronic detonators.

This document does not apply to detonating cord relays 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:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp/>

4 Principle

During use, the insulation on the leading wires and the plastic tubing of shock tubes can be drawn over sharp edges cutting into the material. In case of leading wires, this could cause short cuts and in case of shock tubes, this could cause misfires.

For the verification of the resistance to cutting damage, a test piece is drawn over a cutting edge whilst being subjected to a load in longitudinal direction. For leading wires, it is observed whether an electrical contact is made between the conductor wire of the test piece and the cutting edge. For shock tubes, the test pieces are subsequently immersed in water and initiated afterwards; it is checked whether the test piece initiates.

5 Apparatus

5.1 Cutting damage test apparatus, comprising the components 5.1.1 to 5.1.6. The principle of the apparatus and the distances between the components are shown in Figure 1.

An example of the cutting damage test apparatus is shown in Figure A.1.

5.1.1 Cutting edge, made from tungsten carbide, having a 90° cutting edge radiused to $(0,07 \pm 0,02)$ mm.

5.1.2 Pulley A, having a diameter of $(32,0 \pm 1)$ mm.

5.1.3 Pulley B, having a diameter of $(32,0 \pm 1)$ mm. It shall be possible to attach the test piece to the pulley so that it stays attached when the pulley B is rotated.