TSIVIILKÄIBES OLEVAD LÕHKEAINED. DETONAATORID JA DETONEERNÖÖRIDE RELEED. OSA 13: ELEKTRILISTE JA ELEKTROONILISTE DETONAATORITE ELEKTROSTAATILISE LAENGU TUNDLIKKUSE MÄÄRAMINE

Explosives for civil uses - Detonators and detonating cord relays - Part 13: Verification of the resistance to electrostatic discharge (ESD) of electric and electronic detonators

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13763-13:2025 sisaldab Euroopa standardi EN 13763-13:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 13763-13:2025 consists of the English text of the European standard EN 13763-13:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.10.2025.	Date of Availability of the European standard is 01.10.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Explosives for civil uses - Detonators and detonating cord relays - Part 13: Verification of the resistance to electrostatic discharge (ESD) of electric and electronic detonators

Explosifs à usage civil - Détonateurs et relais pour cordeau détonant - Partie 13 : Vérification de la résistance à la décharge électrostatique (DES) des détonateurs électriques et électroniques

Explosivstoffe für zivile Zwecke - Zünder und Sprengschnurverzögerer - Teil 13: Überprüfung der Widerstandsfähigkeit von elektrischen und elektronischen Zündern gegen elektrostatische Entladungen

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 13763-13:2025) 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 13763-13:2004.

EN 13763-13:2025 includes the following significant technical changes with respect to EN 13763-13:2004:

a) the document title has been changed from “Detonators and relays — Part 13: Determination of resistance of electric detonators to electrostatic discharge” to “Detonators and detonating cord relays — Part 13: Verification of the resistance to electrostatic discharge (ESD) of electric and electronic detonators”;

b) the Scope has been revised to include electronic detonators and to clarify the covered and not covered explosives;

c) the normative references have been updated;

d) the terminology entries 3.1, 3.2 and 3.3 have been removed;

e) Clause 4 “Principle” has been added;

f) the clause “Apparatus” has been revised and enlarged and now also includes the apparatus for testing electronic detonators;

g) the clause “Test pieces” is now called “Preparation of test sample” and has been revised and now also includes electronic detonators;

h) the clause “Procedure” has been revised and further detailed and now also includes the procedure for testing electronic detonators;

i) in Table 1 “ESD impulse values for testing electric detonators”, tolerance values have been introduced;

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) Annex A “Range of applicability of the test method” has been removed;

m) former Annex B is now Annex A “Adjustment of the electrostatic discharge generator for testing electric detonators” and has been revised;

n) a new Annex B “Function test for electronic detonators” has been added;

o) Annex ZA has been updated;

p) 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 electrostatic discharge (ESD) of electric and electronic detonators.

This document does not apply to electronic detonators without leading wires, non-electric, plain or semi-finished detonators.

This document does not apply to surface connectors, detonating cord relays or 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 13763-21:2025, *Explosives for civil uses — Detonators and detonating cord relays — Part 21: Verification of flash-over voltage of electric detonators*

EN 13763-27:2025, *Explosives for civil uses — Detonators and detonating cord relays — Part 27: Test methods for electronic initiation systems*

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 transport and use, detonators can be exposed to electrostatic discharge (ESD) from human bodies, machines, by lightning and by charge generated by detonation of explosives. Electric and electronic detonators with leading wires can be initiated by ESD. Electronic detonators also can be functionally damaged or, once commanded to fire, can misfire, or detonate at a time different from the programmed delay time.

For the verification of the resistance to ESD, test pieces are subjected to electrostatic discharge in order to check whether they detonate. The electrostatic discharge is applied to the test pieces either between the two leading wires (pin-to-pin configuration, see Figure 1) or between the short-circuited leading wires and the shell (pins-to-case configuration, see Figure 2). For electronic detonators it is also checked whether the test pieces can be initiated and detonates at the programmed delay time.