

**Tsiviilkäibes olevad lõhkeained.
Detonaatorid ja releed. Osa 1: Nõuded**

Explosives for civil uses - Detonators and relays -
Part 1: Requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13763-1:2004 sisaldab Euroopa standardi EN 13763-1:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 27.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13763-1:2004 consists of the English text of the European standard EN 13763-1:2004.</p> <p>This document is endorsed on 27.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European Standard specifies the requirements for detonators, surface connectors, shock tube and detonating cord relays for civil uses. This European Standard does not cover electronic initiation systems (see CEN/TS 13763-27) nor the devices and accessories for reliable and safe function of detonators and relays (see prEN 13763-26).</p>	<p>Scope:</p> <p>This European Standard specifies the requirements for detonators, surface connectors, shock tube and detonating cord relays for civil uses. This European Standard does not cover electronic initiation systems (see CEN/TS 13763-27) nor the devices and accessories for reliable and safe function of detonators and relays (see prEN 13763-26).</p>
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Võtmesõnad: electricity, explosion proofn, explosives, explosives storage, heat stability, igniters, ignitor, inflammable matters, materials testing, mining, retardants, safety, specification (approval), specifications, specimen preparation, switches, testing, time-delay relays

ICS 71.100.30

English version

Explosives for civil uses - Detonators and relays - Part 1: Requirements

Explosifs à usages civil - Cordeaux détonants et mèches
de sûreté - Partie 1: Exigences

Explosivstoffe für zivile Zwecke - Zünder und
Verzögerungselemente - Teil 1: Anforderungen

This European Standard was approved by CEN on 24 December 2003.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 13763-1:2004) has been prepared by Technical Committee CEN/TC 321 "Explosives for civil uses", the secretariat of which is held by AENOR.

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 September 2004 and conflicting national standards shall be withdrawn at the latest by September 2004.

Annexes A, B and C are normative, annexes D and E are informative.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Directive 93/15/EEC

For relationship with EU Directive 93/15/EEC, see informative annex ZA, which is an integral part of this standard.

This European Standard is one of a series of standards on Explosives for civil uses - Detonators and relays. Other parts of this series are listed below:

EN 13763-2	Part 2: Determination of thermal stability.
EN 13763-3	Part 3: Determination of sensitiveness to impact.
EN 13763-4	Part 4: Determination of resistance to abrasion of leading wires and shock tubes.
EN 13763-5	Part 5: Determination of resistance to cutting damage of leading wires and shock tubes.
EN 13763-6	Part 6: Determination of resistance to cracking in low temperatures of leading wires.
EN 13763-7	Part 7: Determination of the mechanical strength of leading wires, shock tubes, connections, crimps and closures.
EN 13763-8	Part 8: Determination of resistance to vibration of plain detonators.
EN 13763-9	Part 9: Determination of resistance to bending of detonators.
EN 13763-11	Part 11: Determination of resistance to damage by dropping of detonators and relays.
EN 13763-12	Part 12: Determination of resistance to hydrostatic pressure.
EN 13763-13	Part 13: Determination of resistance of electric detonators to electrostatic discharge.
EN 13763-14	Part 14: Determination of resistance of electric detonators to the influence of radio frequency radiation
EN 13763-15	Part 15: Determination of equivalent initiating capability.

EN 13763-16:2003	Part 16: Determination of delay accuracy.
EN 13763-17	Part 17: Determination of no-fire current of electric detonators.
EN 13763-18	Part 18: Determination of series firing current of electric detonators.
EN 13763-19	Part 19: Determination of firing impulse of electric detonators.
EN 13763-20	Part 20: Determination of total electrical resistance of electric detonators.
EN 13763-21	Part 21: Determination of flash-over voltage of electric detonators.
EN 13763-22	Part 22: Determination of capacitance, insulation resistance, and insulation breakdown of leading wires.
EN 13763-23	Part 23: Determination of the shock-wave velocity of shock tubes.
EN 13763-24	Part 24: Determination of the electrical non-conductivity of shock tubes.
EN 13763-25	Part 25: Determination of transfer capacity of relays and coupling accessories.
prEN 13763-26	Part 26: Definitions, methods and requirements for devices and accessories for reliable and safe function of detonators and relays.
CEN/TS 13763-27	Part 27: Definitions, methods and requirements for electronic initiation systems.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies the requirements for detonators, surface connectors, shock tube and detonating cord relays for civil uses.

This European Standard does not cover electronic initiation systems (see CEN/TS 13763-27) nor the devices and accessories for reliable and safe function of detonators and relays (see prEN 13763-26).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13857-1:2003, *Explosives for civil uses - Part 1: Terminology*.

EN 13763-2, *Explosives for civil uses - Detonators and relays - Part 2: Determination of thermal stability*.

EN 13763-3, *Explosives for civil uses - Detonators and relays - Part 3: Determination of sensitiveness to impact*.

EN 13763-4, *Explosives for civil uses - Detonators and relays - Part 4: Determination of resistance to abrasion of leading wires and shock tubes*.

EN 13763-5, *Explosives for civil uses - Detonators and relays - Part 5: Determination of resistance to cutting damage of leading wires and shock tubes*.

EN 13763-6, *Explosives for civil uses - Detonators and relays - Part 6: Determination of resistance to cracking in low temperatures of leading wires*.

EN 13763-7, *Explosives for civil uses - Detonators and relays - Part 7: Determination of the mechanical strength of leading wires, shock tubes, connections, crimps and closures*.

EN 13763-8, *Explosives for civil uses - Detonators and relays - Part 8: Determination of resistance to vibration of plain detonators*.

EN 13763-9, *Explosives for civil uses - Detonators and relays - Part 9: Determination of resistance to bending of detonators*.

EN 13763-11, *Explosives for civil uses - Detonators and relays - Part 11: Determination of resistance to damage by dropping of detonators and relays*.

EN 13763-12, *Explosives for civil uses - Detonators and relays - Part 12: Determination of resistance to hydrostatic pressure*.

EN 13763-13, *Explosives for civil uses - Detonators and relays - Part 13: Determination of resistance of electric detonators to electrostatic discharge*.

EN 13763-15, *Explosives for civil uses - Detonators and relays - Part 15: Determination of equivalent initiating capability*.

EN 13763-16:2003, *Explosives for civil uses - Detonators and relays - Part 16: Determination of delay accuracy*.

EN 13763-17, *Explosives for civil uses - Detonators and relays - Part 17: Determination of no-fire current of electric detonators.*

EN 13763-18, *Explosives for civil uses - Detonators and relays - Part 18: Determination of series firing current of electric detonators.*

EN 13763-19, *Explosives for civil uses - Detonators and relays - Part 19: Determination of firing impulse of electric detonators.*

EN 13763-20, *Explosives for civil uses - Detonators and relays - Part 20: Determination of total electrical resistance of electric detonators.*

EN 13763-21, *Explosives for civil uses - Detonators and relays - Part 21: Determination of flash-over voltage of electric detonators.*

EN 13763-22, *Explosives for civil uses - Detonators and relays - Part 22: Determination of capacitance, insulation resistance, and insulation breakdown of leading wires.*

EN 13763-23, *Explosives for civil uses - Detonators and relays - Part 23: Determination of the shock-wave velocity of shock tubes.*

EN 13763-24, *Explosives for civil uses - Detonators and relays - Part 24: Determination of the electrical non-conductivity of shock tubes.*

EN 13763-25, *Explosives for civil uses - Detonators and relays - Part 25: Determination of transfer capacity of relays and coupling accessories.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13857-1:2003 apply.

4 Requirements

4.1 Thermal stability

When tested in accordance with EN 13763-2:

- for detonators, surface connectors or relays, there shall be no detonation;
- for shock tubes, there shall be no visible evidence of reaction.

4.2 Sensitiveness to impact

When tested in accordance with EN 13763-3, the mean and minimum heights at which explosion is observed shall be greater than the values listed in the Table below. The mean height is calculated using the Bruceton method as described in annex B. When successive no-explosion events occur at the maximum height during the test, the mean height shall not be calculated and only the minimum height shall be considered as pass criterion.