Tsiviilkäibes olevad lõhkeained. Detonaatorid ja releed. Osa 13: Elektridetonaatori elektrostaatilise laengu taluvuse määramine

Explosives for civil uses - Detonators and relays - Part 13: Determination of resistance of electric detonators against electrostatic discharge

EESTI STANDARDI EESSÕNA

Käesolev Eesti standard EVS-EN 13763-13:2004 sisaldab Euroopa standardi EN 13763-13:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 27.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 13763-13:2004 consists of the English text of the European standard EN 13763-13:2004. This document is endorsed on 27.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

NATIONAL FOREWORD

Käsitlusala: This European Standard specifies a method for determining whether electric detonators can withstand an electrostatic discharge (ESD) without detonating. This European Standard is not applicable to magnetically-coupled detonators.	**Scope:** This European Standard specifies a method for determining whether electric detonators can withstand an electrostatic discharge (ESD) without detonating. This European Standard is not applicable to magnetically-coupled detonators.

ICS 71.100.30

Võtmesõnad: electricity, explosives, explosives storage, heat stability, igniters, ignitor, inflammable matters, materials testing, mining, resistance, retardants, safety, specification (approval), specifications, specimen preparation, switches, testing, time-delay relays

EUROPEAN STANDARD

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English version

Explosives for civil uses - Detonators and relays - Part 13: Determination of resistance of electric detonators to electrostatic discharge

Explosifs à usage civil - Détonateurs et relais - Partie 13: Détermination de la résistance à la décharge électrostatique des détonateurs électriques

Explosivstoffe für zivile Zwecke - Zünder und Verzögerungselemente - Teil 13: Bestimmung der Widerstandsfähigkeit elektrischer Zünder gegen elektrostatische Entladungen

This European Standard was approved by CEN on 2 January 2004.

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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Contents

Foreword

This document (EN 13763-13:2004) 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

Annex A is informative, annex B is normative.

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 EU Directive 93/15.

For the relationship with EU Directive, see informative annex ZA, which is an integral part of this standard.

This European Standard is one of a series of standards with the generic title *Explosives for civil uses – Detonators and relays.* The other parts of this series are listed below:

EN 13763-1	Part 1: Requirements
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 13763-14	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	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 system

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 a method for determining whether electric detonators can withstand an electrostatic discharge (ESD) without detonating.

This European Standard is not applicable to magnetically-coupled detonators.

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

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

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

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:1999).*

3 Terms and definitions

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

3.1
bridgewire ignition system
internal components of an electric detonator that convert electrical energy into the first pyrotechnical output by the mean of a resistive bridgewire heated by Joule effect

3.2
«pins-to-case» configuration
configuration in which the electrostatic discharge occurs between the two short-circuited leading wires ends and the detonator casing

3.3
«pin-to-pin» configuration
configuration in which the electrostatic discharge occurs through the bridgewire of the ignition system

4 Apparatus

4.1 Electrostatic discharge generator (ESD generator), with capacitance ranging from 500pF to 3 500pF and voltage sufficient to give the required impulse.

4.2 Equipment to record the ESD current and calculate the ESD impulse delivered to the detonator.

4.3 Conditioning chamber for maintaining a temperature of (20 ± 2) °C and a relative humidity of not greater than 60%.