



SLOVENSKI STANDARD

SIST EN 13763-25:2004

01-september-2004

Eksplozivi za civilno uporabo - Detonatorji in zakasnilniki - 25. del: Ugotavljanje prenosne zmogljivosti površinskih konektorjev, zakasnilnikov in spojnih elementov

Explosives for civil uses - Detonators and relays - Part 25: Determination of transfer capability of surface connectors, relays and coupling accessories

Explosivstoffe für zivile Zwecke - Zünder und Verzögerungselemente - Teil 25: Bestimmung des Übertragungsvermögens von Oberflächenverbindern, Verzögerern und Verbindern (standards.iteh.ai)

Explosifs a usage civil - Détonateurs et relais - Partie 25: Détermination de la capacité de transmission des relais et des manchons (standards.iteh.ai)

Ta slovenski standard je istoveten z: EN 13763-25:2004

ICS:

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ICS 71.100.30

English version

Explosives for civil uses - Detonators and relays - Part 25:
Determination of transfer capability of surface connectors, relays
and coupling accessories

Explosifs à usage civil - Détonateurs et relais - Partie 25:
Détermination de la capacité de transmission des relais et
des manchons

Explosivstoffe für zivile Zwecke - Zünder und
Verzögerungselemente - Teil 25: Bestimmung des
Übertragungsvermögens von Oberflächenverbindern,
Verzögerern und Verbindern

This European Standard was approved by CEN on 2 February 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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Foreword

This document (EN 13763-25:2004) 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 November 2004, and conflicting national standards shall be withdrawn at the latest by November 2004.

This document 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(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

Annex A is informative.

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 at 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
prEN 13763-10	Part 10: Method for the determination of resistance to torsion of sealing plugs
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 detonator to electrostatic discharge
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

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- 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 tube
- EN 13763-24 Part 24: Determination of the electrical non-conductivity of shock tube
- 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.

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Introduction

When using non-electric initiation systems there is a need to transfer the shock-wave from one unit to another and/or to delay the signal. This can be done by means of surface connectors, relays and coupling accessories.

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1 Scope

This European Standard specifies methods for determining the transfer capability of surface connectors, relays and coupling accessories intended for non-electric initiation systems.

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 13857-3, *Explosives for civil uses – Part 3: Information to be provided by the manufacturer or his authorised representative to the user*.

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

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*.

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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:

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3.1

coupling accessory

device for transferring a shock-wave which does not include an explosive charge

4 Test pieces

Select 25 items of the same type, having the same materials and construction.

5 Apparatus

5.1 Shock tubes or detonating cords

For use as donors and/or receptors.

5.2 Witness papers

5.3 Initiating device for the donors

6 Procedure

6.1 Surface connectors or relays other than those designed to be hung from near-vertical rock faces

Connect the maximum number of receptors claimed by the manufacturer to the surface connector or to the relay in accordance with the manufacturer's instructions.

Condition the full assembly by submerging it in water at a depth of $(0,5 \pm 0,1)$ m for 48_0^{+1} h at a temperature of (20 ± 5) °C, ensuring that the ends of the receptors are kept out of the water.

Unless otherwise specified by the manufacturer, ensure that the free end of the surface connector or relay remains submerged during conditioning.

After conditioning, remove the connector or relay from the water.

Place witness papers at the end of each receptor.

Initiate the donor using the initiating device and check the witness paper at the end of each receptor.

Record whether or not the shock-wave has been successfully transferred to all of the receptors.

6.2 Surface connectors or relays designed to be hung from near-vertical rock faces

If the surface connector or relay is of a type designed only to be hung from a near-vertical rock face and not laid on the ground, where it may be exposed to puddles of water, as stated by the manufacturer, the procedure described in 6.1 shall be performed with the connector or relay subjected to the ingress of water test for IPX4 (spray test) as described in EN 60529, instead of total immersion in water.

6.3 Coupling accessories other than those designed to be hung from near-vertical rock faces

Connect the maximum number of receptors claimed by the manufacturer to the coupling accessory in accordance with the manufacturer's instructions.

Condition the full assembly by submerging it in water at a depth of $(0,5 \pm 0,1)$ m for 48_0^{+1} h at a temperature of (20 ± 5) °C, ensuring that the ends of the receptors are kept out of the water.

After conditioning, remove the coupling accessory from the water.

Place witness papers at the end of each receptor.

Initiate the donor using the initiating device and check the witness paper at the end of each receptor.

Record whether or not the shock-wave has been successfully transferred to all of the receptors.

6.4 Coupling accessories designed to be hung from near-vertical rock faces

If the coupling accessory is of a type designed only to be hung from a near-vertical rock face and not laid on the ground, where it may be exposed to puddles of water, as stated by the manufacturer, the procedure described in 6.3, shall be performed with the coupling accessory subjected to the ingress of water test for IPX4 (spray test) as described in EN 60529, instead of total immersion in water.

These subclauses 6.3 and 6.4 shall include all transfers, which are specified in the information to be provided by the manufacturer or his authorised representative to the user according to EN 13857-3.

7 Test report

The test report shall conform to EN ISO/IEC 17025. In addition, the following information shall be given:

- a) reference to this standard;
- b) number of receptors that did not initiate during the test.