SLOVENSKI STANDARD

SIST EN 13630-5:2004

01-februar-2004

Eksplozivi za civilno uporabo ï Detonacijske in poļ asi goreļ e vģigalne vrvice ï 5. del: Ugotavljanje odpornosti detonacijskih vrvic na abrazijo

Explosives for civil uses - Detonating cords and safety fuses - Part 5: Determination of resistance to abrasion of detonating cords

Explosivstoffe für zivile Zwecke - Sprengschnüre und Sicherheitsanzündschnüre - Teil 5: Bestimmung der Widerstandsfähigkeit von Sprengschnüren gegenüber Abrieb

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Explosifs a usage civil - Cordeaux détonants et meches de sureté - Partie 5: Détermination de la résistance a l'abrasion des cordeaux détonants

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Ta slovenski standard je istoveten z: EN 13630-5:2003

ICS:

71.100.30	Eksplozivi. Pirotehnika	Explosives. Pyrotechnics

SIST EN 13630-5:2004 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13630-5

December 2003

ICS 71.100.30

English version

Explosives for civil uses - Detonating cords and safety fuses - Part 5: Determination of resistance to abrasion of detonating cords

Explosifs à usage civil - Cordeaux détonants et mèches de sûreté - Partie 5: Détermination de la résistance à l'abrasion des cordeaux détonants

Explosivstoffe für zivile Zwecke - Sprengschnüre und Sicherheitsanzündschnüre - Teil 5: Bestimmung der Widerstandsfähigkeit von Sprengschnüren gegenüber Abrieb

This European Standard was approved by CEN on 10 November 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.

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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 Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 13630-5:2003) 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 June 2004, and conflicting national standards shall be withdrawn at the latest by June 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.

Annexes A and C are informative.

Annex B is normative.

This European Standard is one of a series of standards on *Explosives for civil uses – Detonating cords and safety fuses.* The other parts of this series are:

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EN 13630-1	Part 1: Requirements.
EN 13630-2	Part 2: Determination of thermal stability of detonating cords and safety fuses.
EN 13630-3	Part 3: Determination of sensitiveness to friction of the core of detonating cords.
EN 13630-4	Part 4: Determination of sensitiveness to impact of detonating cords.
EN 13630-6	Part 6: Measurement of the resistance to tension of detonating cords.
EN 13630-7	Part 7: Determination of reliability of initiation of detonating cords.
EN 13630-8	Part 8: Determination of resistance to water of detonating cords and safety fuses
EN 13630-9	Part 9: Determination of transmission of detonation from detonating cord to detonating cord
prEN 13630-10	Part 10: Determination of initiating capability of detonating cords
EN 13630-11	Part 11: Determination of velocity of detonation of detonating cords.
EN 13630-12	Part 12: Determination of burning duration of safety fuses.

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

Introduction

During usage on site, the coating of detonating cords may be subjected to abrasive forces when drawn over rough surfaces. The coating is worn away gradually by abrasion to cause failure, which will affect the performance of the detonating cord. This standard deals with the ability of detonating cords to resist the abrasive forces likely to be experienced in normal use.

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1 Scope

This European Standard describes the method for determining the resistance of the coating of flexible plastic-coated detonating cords and flexible fibrous-overbraided detonating cords, for civil use to failure when subjected to abrasion.

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 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 apply.

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4 Apparatus

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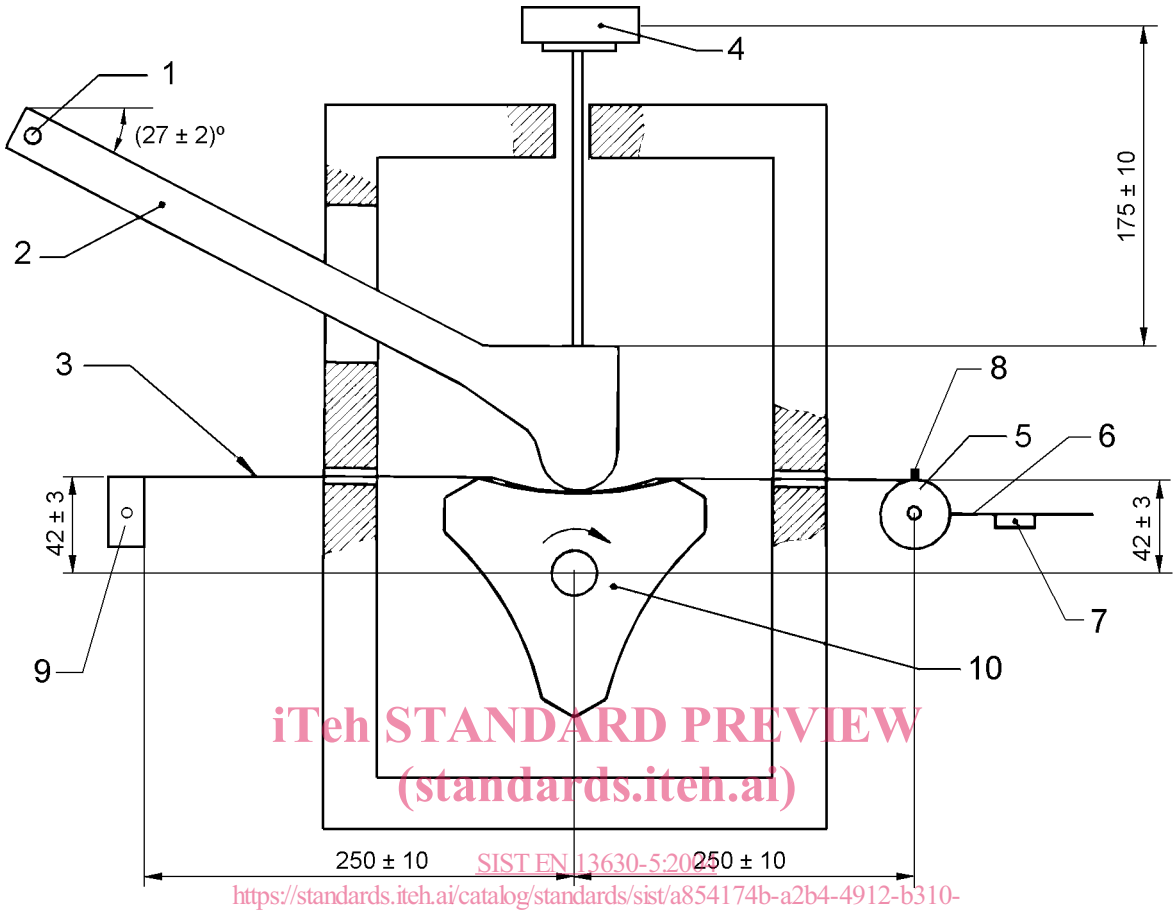
4.1 Digital timer with relay output, capable of:

- being set to a predetermined time in the range of (0 to 10) s ± 0,1 s;
- being started (triggered) when the hinged arm is lifted by the test piece;
- automatically stopping the rotor when the predetermined time has elapsed.

4.2 Abrasion test apparatus, as shown in Figure 1, comprising the following main components.

Dimensions in millimetres



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Key

1 Pivot
2 Hinged arm
3 Detonating cord
4 Weight
5 Pulley
6 Rod
7 Weight
8 Clamp screw for attaching the test piece
9 Clamp for attaching the test piece
10 Rotor

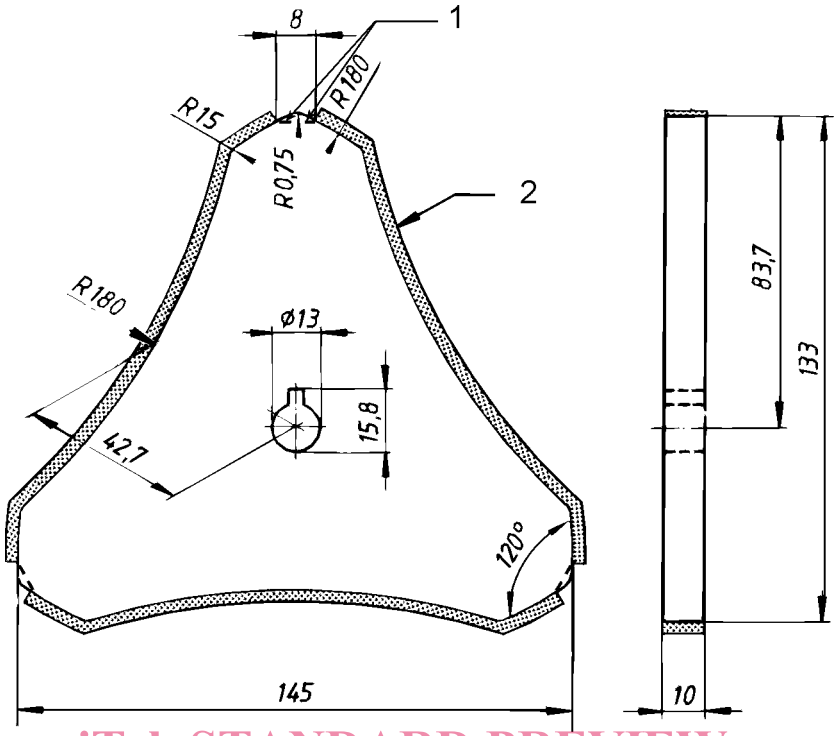
NOTE The weight on the rod to the right of the pulley (diameter 70 mm ± 1 mm) may hang down the right side of the pulley.

Figure 1 – Abrasion test apparatus with rotor in starting position

4.2.1 Steel or brass rotor, as shown in Figure 2, with a perimeter of (453 ± 2) mm to which three abrasive strips (4.2.2) are attached by means of glue or double-sided adhesive tape. It shall be ensured that electrical contact between the abrasive strips and the rotor is made, e.g. at the slits on the rotor where the ends of the abrasive strips are inserted (see Figure 2). The rotor shall rotate at a speed of (9,96 ± 0,18) rpm, producing a mean peripheral speed of (0,075 ± 0,001) m/s.

NOTE Depending on attachment principle (glue or tape) of the abrasive strip to the rotor, the abrasive strip may have to be bent carefully using a suitable tool in order to fit properly against the surface of the rotor.

Dimensions in millimetres



Key

1 Slit for the end of the abrasive strip

2 Abrasive strip

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Figure 2 – Rotor

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4.2.2 Abrasive strips, three pieces approximately 10 mm x 145 mm each, made of grinding steel as specified in annex B.

4.2.3 Load, to be applied to the test piece through the hinged arm (see 4.2.4).

4.2.4 Hinged arm, made of steel or brass as shown in Figure 3. In the starting position, the hinged arm shall apply a load of (8,35 ± 0,05) N to the test piece.