SLOVENSKI STANDARD

SIST EN 13630-10:2005

01-julij-2005

Eksplozivi za civilno uporabo - Detonacijske in poļ asi goreļ e vģigalne vrvice - 10. del: Ugotavljanje sposobnosti detonacijskih vrvic za prenos vģiga

Explosives for civil uses - Detonating cords and safety fuses - Part 10: Determination of initiating capability of detonating cords

Explosivstoffe für zivile Zwecke - Sprengschnüre und Sicherheitsanzündschnüre - Teil 10: Bestimmung der Zündfähigkeit von Sprengschnüren

Explosifs a usage civil - Cordeaux détonants et meches de sureté - Partie 10: Détermination de la capacité d'allumage des cordeaux détonants

Ta slovenski standard je istoveten z: EN 13630-10:2005

ICS:

71.100.30 Eksplozivi. Pirotehnika Explosives. Pyrotechnics

SIST EN 13630-10:2005 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13630-10

May 2005

ICS 71.100.30

English version

Explosives for civil uses - Detonating cords and safety fuses - Part 10: Determination of initiating capability of detonating cords

Explosifs à usage civil - Cordeaux détonants et mèches de sûreté - Partie 10: Détermination de la capacité d'allumage des cordeaux détonants

Explosivstoffe für zivile Zwecke - Sprengschnüre und Sicherheitsanzündschnüre - Teil 10: Bestimmung der Zündfähigkeit von Sprengschnüren

This European Standard was approved by CEN on 25 March 2005.

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.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 13630-10:2005: E

Contents

Foreword

This European Standard (EN 13630-10:2005) 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 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

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(s).

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

This document is one of a series of standards with the generic title *Explosives for civil uses – Detonating cords and safety fuses.* The other parts of this series are listed below:

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 13630-5 Part 5: Determination of resistance to abrasion of detonating cords

EN 13630-6 Part 6: Determination of 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

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

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 the initiating capability of flexible plastic-coated detonating cords and flexible fibrous-overbraided detonating cords, for civil use. It applies only to those detonating cords, having a maximum grammage of 40 g/m, that are used to initiate another detonating cord or a high explosive.

NOTE The limitations of this method are described in Annex B.

2 Normative references

The following referenced documents are indispensable for the application 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 13763-15, *Explosives for civil uses - Detonators and relays — Part 15: Determination of equivalent initiating capability*

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

EN ISO 536, *Paper and board — Determination of grammage. (ISO 536:1995)*

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.

4 Principle

A detonating cord is taped tightly to a stack of paper cards. The detonating cord is detonated and the total numbers of cards cut is used as a measure of the initiating capability of the detonating cord.

5 Apparatus

5.1 Detonator

A detonator of equivalent initiating capability, determined in accordance with EN 13763-15, as specified by the manufacturer of the detonating cord.

5.2 Paper cards

Cards cut from plain non-coated paper of a grammage (g_c) between 240 g/m^2 and 260 g/m^2 as determined according to EN ISO 536. The dimensions of the paper cards shall be (100 ± 5) mm long and (50 ± 5) mm wide.

5.3 Support plate

Steel or aluminium plate (200 ± 20) mm long and (60 ± 5) mm wide. The thickness shall be at least 4,0 mm.

5.4 Tape

Sticky tape, width (20 ± 2) mm.

6 Test pieces

Select five pieces of detonating cords, each of (500 ± 50) mm in length.

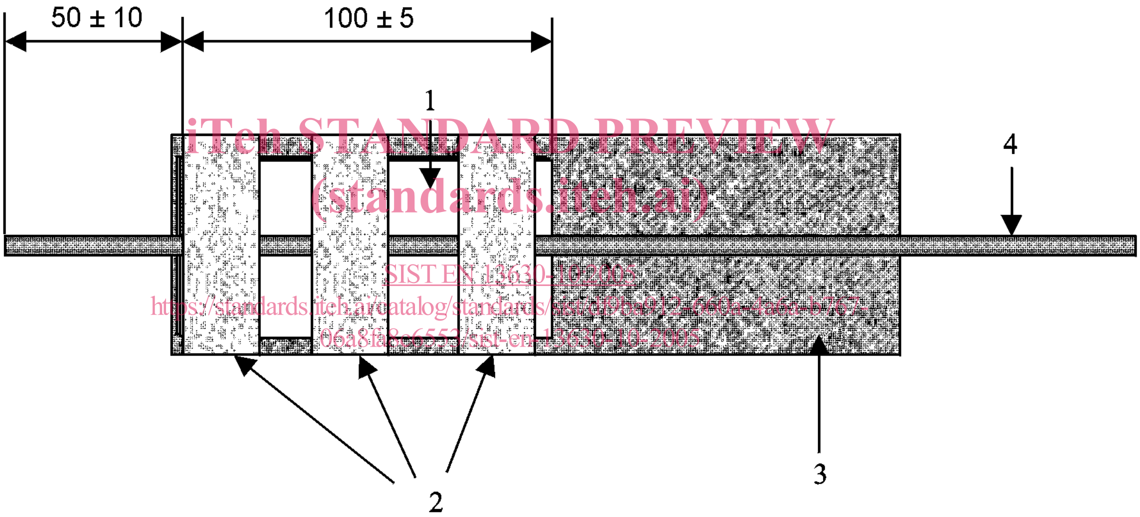
7 Procedure

Select such a number of paper cards that after the test at least five paper cards are completely uncut.

NOTE Depending on the grammage of the paper, the number of cards likely to be required is 24 to 33 for 12 g/m detonating cords and 35 to 45 for 24 g/m detonating cords.

Place the paper cards on top of the support plate. Tightly connect one end of the detonating cord with three equally spaced pieces of tape to the paper cards and the support plate. Provide an excess end of (50 ± 10) mm of detonating cord (see Figure 1).

Dimensions in millimetres



Key

1 paper cards
2 tape
3 support plate
4 detonating cord

Figure 1 - Detonating cord connected to the paper cards and support plate

At the other end of the detonating cord tape the detonator to the detonating cord over a distance of (25 ± 5) mm or in a manner specified by the manufacturer.

Place the assembly on a solid base of steel or concrete.

Fire the detonator.

Collect the paper cards. Count the number of paper cards that are cut completely. Add the total number of partially cut cards using the percentage (with an accuracy of 5 %) of each paper card that has been cut (i.e. if the paper card is cut for 30 mm add 0,3 to the number of cut cards). The number of cut paper cards (*X*) is the sum of the total and partial cut cards.

Perform the test five times.

8 Calculation of results

The initiating capability (IC_n) of each detonating cord is calculated using the equation:

$$IC_n = \frac{(X_n \times g_c)}{1\,000}$$

NOTE although the unit of *IC* is g/m^2, IC will be used without units when expressing the results.

where: n is the number of the test

IC_n is the initiating capability of the detonating cord in the n^{th} test (-)

X_n is the number of paper cards cut in the n^{th} test (-)

g_c is the grammage of the paper cards in g/m^2

Report the result as the arithmetic mean of the five individual values, rounded down to the nearest whole number.

9 Test report

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

a) initiating capability claimed by the manufacturer;

b) type and grammage of paper card used in the test (g_c);

c) individual results of all five tests in the form of the total number of paper cards cut (X_n) and the calculated initiating capability (IC_n);

d) mean value of the initiating capability (*IC*) of the detonating cord;

e) type of detonator used.

Annex A
(informative)

Range of applicability of the test method

Range of applicability of the test method: - 30 °C to + 80 °C.