

English Version

## Explosives for civil uses - Detonating cords and safety fuses - Part 8: Determination of resistance to water of detonating cords and safety fuses

Explosifs à usage civil - Cordeaux détonants et mèches de sûreté - Partie 8 : Détermination de la résistance à l'eau des cordeaux détonants et mèches de sûreté

Explosivstoffe für zivile Zwecke - Sprengschnüre und Sicherheitsanzündschnüre - Teil 8: Bestimmung der Wasserfestigkeit von Sprengschnüren und Sicherheitsanzündschnüren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 321.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning :** This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

# Contents

Page

European foreword .....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions .....	4
4 Principle.....	4
4.1 Principle for detonating cords .....	4
4.2 Principle for safety fuses.....	4
5 Apparatus .....	4
5.1 Apparatus for immersion test on detonating cord .....	4
5.1.1 Tank of water .....	4
5.1.2 Means of supporting the test piece.....	4
5.1.3 Weight, or other means .....	5
5.2 Apparatus for immersion test on safety fuse.....	5
5.2.1 Tank of water .....	5
5.2.2 Weight.....	6
5.2.3 Apparatus for the measurement of burning duration.....	6
6 Preparation of test samples .....	6
6.1 For detonating cords.....	6
6.2 For safety fuses .....	7
7 Procedure .....	7
7.1 General.....	7
7.2 For immersion test on detonating cord .....	7
7.3 For immersion test on safety fuse.....	7
8 Test report.....	8
Annex ZA (informative) Relationship between this European Standard and the essential safety requirements of Directive 2014/28/EU relating to the making available on the market and supervision of explosives for civil uses aimed to be covered.....	9
Bibliography .....	10

## European foreword

This document (prEN 13630-8:2021) has been prepared by Technical Committee CEN/TC 321 “Explosives for civil uses”, the secretariat of which is held by UNE.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13630-8:2002.

In comparison with the previous edition, the following technical modifications have been made:

- a) the normative references have been updated;
- b) the structure of the main body of the document has been reorganized;
- c) Annex A, *Range of applicability of the test method*, has been removed;
- d) Annex ZA has been updated.

This document has been prepared under a Standardization Request (M/562) annexed to the Commission Implementing Decision C(2019)6634 final as regards Explosives for civil uses given to CEN by the European Commission and the European Free Trade Association, and supports Essential Safety requirements of Directive 2014/28/EU.

For relationship with Directive 2014/28/EU, see informative Annex ZA, which is an integral part of this document.

EN 13630, *Explosives for civil uses — Detonating cords and safety fuses*, is currently composed of the following parts:

- *Part 1: Requirements*
- *Part 2: Determination of thermal stability of detonating cords and safety fuses*
- *Part 3: Determination of sensitiveness to friction of the core of detonating cords*
- *Part 4: Determination of sensitiveness to impact of detonating cords*
- *Part 5: Determination of resistance to abrasion of detonating cords*
- *Part 6: Measurement of resistance to tension of detonating cords*
- *Part 7: Determination of reliability of initiation of detonating cords*
- *Part 8: Determination of resistance to water of detonating cords and safety fuses*
- *Part 9: Determination of transmission of detonation from detonating cord to detonating cord*
- *Part 10: Determination of initiating capability of detonating cords*
- *Part 11: Determination of velocity of detonation of detonating cords*
- *Part 12: Determination of burning duration of safety fuses*

## 1 Scope

This document specifies a method for determining the resistance to water of flexible detonating cords and water-resistant safety fuses.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

prEN 13630-7:2021, *Explosives for civil uses — Detonating cords and safety fuses — Part 7: Determination of reliability of initiation of detonating cords*

prEN 13630-12:2021, *Explosives for civil uses — Detonating cords and safety fuses — Part 12: Determination of burning duration of safety fuses*

prEN 13857-1:2021, *Explosives for civil uses — Part 1: Terminology*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 13857-1:2021 apply.

## 4 Principle

### 4.1 Principle for detonating cords

The resistance to water for detonating cord is assessed by subjecting test samples to an immersion in water under tensile load for a given time and its ability to be initiated is then checked using a detonator and a witness plate.

### 4.2 Principle for safety fuses

The resistance to water for safety fuse is assessed by subjecting test samples to an immersion in water for a given time and its performance is then checked by measuring the burning duration.

## 5 Apparatus

### 5.1 Apparatus for immersion test on detonating cord

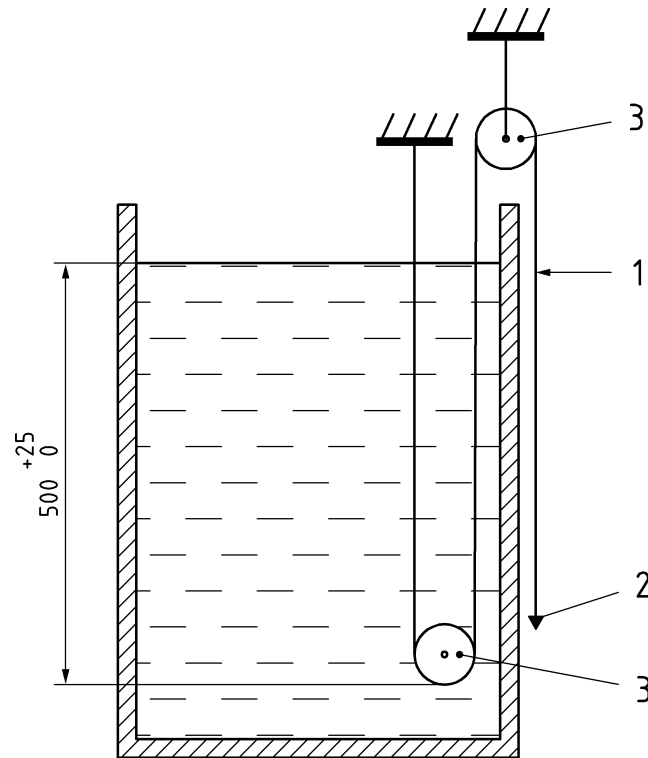
#### 5.1.1 Tank of water

A tank full of water open at the top and of a sufficient size to accommodate the means of supporting the test piece (5.1.2), see Figure 1. The temperature of water shall be  $(20 \pm 10) ^\circ\text{C}$ .

#### 5.1.2 Means of supporting the test piece

A suitable means is shown in Figure 1. In this case, the diameter of the pulleys shall be sufficiently large that they do not cause damage to the cover of the test piece and shall be at least 100 mm. One pulley shall be maintained at the bottom of the tank.

Dimensions in millimetres



**Key**

- 1 detonating cord
- 2 tensile load
- 3 pulley

**Figure 1 — Example of arrangement for the immersion of detonating cords**

### 5.1.3 Weight, or other means

Able to subject the test piece to a tensile load enough to keep the test piece vertical under the water level.

In case the detonating cord has been designed for use in a specific application, the weight, or other means, shall be that specified by the manufacturer.

## 5.2 Apparatus for immersion test on safety fuse

### 5.2.1 Tank of water

A tank full of water, open at the top, of a sufficient size to immerse the sample under at least 500 mm of water, see Figure 2. The temperature of water shall be  $(20 \pm 10) ^\circ\text{C}$ .