



BSI Standards Publication

## Plastics warning devices for underground cables and pipelines with visual characteristics

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## National foreword

This British Standard is the UK implementation of EN 12613:2021. It supersedes BS EN 12613:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/-/1, GB Co-ordination for International work on plastics standards.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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EUROPEAN STANDARD

**EN 12613**

NORME EUROPÉENNE

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January 2021

ICS 83.140.99

Supersedes EN 12613:2009

English Version

## Plastics warning devices for underground cables and pipelines with visual characteristics

Dispositifs avertisseurs à caractéristiques visuelles, en matière plastique, pour câbles et canalisations enterrés

Warneinrichtungen aus Kunststoff mit visuellen Eigenschaften für erdverlegte Kabel und Rohrleitungen

This European Standard was approved by CEN on 13 December 2020.

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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 CEN-CENELEC Management Centre 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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## European foreword

This document (EN 12613:2021) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12613:2009.

The major modifications compared to the previous edition are:

- Addition of a reference to Regulation (EC) No 1907/2006 (REACH) (Clause 4);
- Addition of the apparatus for measurement of dimensional characteristics (5.3.1);
- Review of the tolerances for nominal widths greater than 1 000 mm (5.3.3);
- Deletion of the transversal rigidity (5.4.3 in EN 12613:2009), since it is not a discriminating characteristic for products with width  $\leq 500$  mm;
- Addition of a sentence to specify that the case of absence of rupture of the test specimen is considered as successful (5.5);
- The method according EN 60898-1, for the resistance of printing, is now recommended only (instead of being mandatory) and other methods are allowed (5.9);
- Review of the number of test pieces reduced from four to one. In addition, when the test is not successful, an acceptance criteria is defined for retesting (6.1);
- Extension of the tolerances on the test temperature for the products submitted to testing (6.1);
- Deletion of 6.4 of EN 12613:2009 (transversal rigidity);
- Deletion of Clause 7 of EN 12613:2009 as factory production control tests do not necessarily appear in a product standard;
- In A.2, deletion of the paragraph beginning with "IMPORTANT" (no added value);
- Review of Figure A.4 and expressing of minimum gaps between the plates and the transversal walls of the central compartment;
- Addition of Table A.2 giving the characteristics of an alternative quality of EPDM sheets (A.2.4);
- Review of tolerances for EPDM sheets (Table A.3);
- Total load values were changed to minimum values (Table A.4);
- Review of the number of test pieces (A.3);

- Review of the number of test pieces to be tested from six to three (A.5);
- Addition of a new paragraph for the acceptance criteria (A.6);
- Change of the duration of the test from 15 days to 28 days (B.3);
- Addition of a Bibliography.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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 the United Kingdom.

## **Introduction**

Visual warning devices are used for the manual or mechanized laying of cables and piping buried in ground such as electrical power cables, communication cables, pressure and non-pressure piping systems.

The purpose of warning devices is to warn of the presence of a pipe or a cable, when opening a trench, to indicate its orientation and to identify the equipment protected.

The warning devices are expected to last at least the lifetime of the equipment with which they are associated.

## 1 Scope

This document specifies the material, mechanical and functional (fitness for purpose) requirements for warning devices with visual characteristics manufactured from plastics, intended to indicate the presence of cables and piping systems buried in ground when opening trenches and more generally during digging work.

This document also specifies test methods.

This document is applicable to two types of visual warning devices: tapes (type 1) and meshes (type 2).

## 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.

EN 60898-1:2019, *Electrical accessories — Circuit-breakers for overcurrent protection for household and similar installations — Part 1: Circuit-breakers for a.c. operation (IEC 60898-1:2015, modified)*

EN ISO 175, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals (ISO 175)*

EN ISO 846, *Plastics — Evaluation of the action of microorganisms (ISO 846)*

EN ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance (ISO 4892-1)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 3.1

#### **Type 1 warning device**

strip manufactured from plastics to warn of the presence of underground cables or pipes during excavation

### 3.2

#### **Type 2 warning device**

mesh/net manufactured from plastics to warn of the presence of underground cables or pipes during excavation

### 3.3

#### **nominal width of a warning device**

$W_0$

overall width of the warning device, as declared by the manufacturer, in millimetres

### 3.4

#### **longitudinal direction**

direction corresponding to the extrusion direction, parallel to the length of the reel