SLOVENSKI STANDARD
SIST EN 50520:2020

01-december-2020

Nadomešča:
SIST EN 50520:2009

Prekrivne plošče in folije za zaščito in opozarjanje na položaj kablov ali zasutih kanalov v podzemnih napeljavah

Cover plates and cover tapes for the protection and location warning of buried cables or buried conduits in underground installations

Abdeckplatten und –bänder zum Schutz und zur Warnkennzeichnung der Lage von Kabeln oder erdverlegten Elektroinstallationsrohren in Unterbodeninstallationen

Plaques et bandes de protection pour la protection et le signalement des câbles enterrés ou des conduits enterrés dans les installations sous terre

Ta slovenski standard je istoveten z: **EN 50520:2020**

ICS:

29.060.01	Električne žice in kabli na splošno	Electrical wires and cables in general
29.120.10	Inštalacijske cevi za električne namene	Conduits for electrical purposes

SIST EN 50520:2020 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50520

October 2020

ICS 29.120.10

Supersedes EN 50520:2009 and all of its amendments and corrigenda (if any)

English Version

Cover plates and cover tapes for the protection and location warning of buried cables or buried conduits in underground installations

Plaques de protection et bandes de protection utilisées pour protéger et avertir de la présence des câbles enterrés ou des conduits enterrés dans les installations souterraines

Abdeckplatten und -bänder zum Schutz und zur Warnkennzeichnung der Lage von Kabeln oder erdverlegten Elektroinstallationsrohren in Unterbodeninstallationen

This European Standard was approved by CENELEC on 2020-09-14. CENELEC 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 CEN-CENELEC Management Centre or to any CENELEC 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 CENELEC 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 Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Contents

European foreword

This document (EN 50520:2020) has been prepared by CLC/TC 213, “Cable management systems”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-09-14
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2023-09-14

This document supersedes EN 50520:2009 and all of its amendments and corrigenda (if any).

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

A cover plate or a cover tape that conforms to this document is deemed to be safe for use.

This is a European Standard for cable management products used for electro-technical purposes. It relates to the Council Directives on the approximation of laws, regulations and administrative provisions of the Member States relating to Low Voltage Directive 2014/35/EU through consideration of the essential requirements of this directive.

This document is supported by separate standards to which references are made.

This document has been prepared under a mandate given to CENELEC 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 ZZ, which is an integral part of this document.

1 Scope

This document establishes the requirements and tests for cover plates and cover tapes used for the mechanical protection, identification and warning of the location of buried cables or buried conduits.

NOTE This document does not apply to meshes and tapes falling under EN 12613.

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.

IEC 60417, *Graphical symbols for use on equipment*

ISO 3864 (series), *Graphical symbols — Safety colours and safety signs*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
cover plate
plate with a defined length and width that are linked one to another and are located underground, above the cables and/or conduits that are intended:

— to protect against mechanical damage to the underground cables and/or conduit installations; and

— to identify in a prominent manner the location of the underground cables and/or conduit installations along their length and width

3.2
cover tape
tape with a defined width that are located underground, above the cables and/or conduits and that are intended:

— to protect against mechanical damage to the underground cables and/or conduit installations; and

— to identify in a prominent manner the location of the underground cables and/or conduit installations along their length and width

3.3
hygroscopic material
material having the characteristic of enabling attraction or holding water greater than 1,0 % by weight of the material from the surrounding environment at 23 °C and 50 % relative humidity

4 General requirements

Cover plates and cover tapes shall be so designed and constructed that, when installed according to manufacturer's instructions, they provide mechanical protection and location warning of cables or conduits in all their extension (length and width).

Compliance is checked by carrying out all the tests specified.

Products made of hygroscopic material shall fulfil requirements of 5.3 before testing.

Compliance is checked by inspection of raw material supplier's data sheet.

5 General conditions for tests

5.1 Test conditions

Tests according to this document are type tests.

NOTE Annex A provides an overview of the tests to be applied on the cover plates and cover tapes.

Unless otherwise specified, the samples are tested as delivered and under normal conditions of use, according to the manufacturer's instructions.

Unless otherwise specified, the tests are carried out in the order of the clauses, at an ambient temperature between 15 °C and 35 °C.

In case of doubt, the tests are made at an ambient temperature of (20 ± 5) °C.

5.2 Samples

Unless otherwise specified, each test is made on three new samples.

NOTE Certain tests, for instance the checking of dimensions, do not affect a change in the property of the samples; therefore these samples are considered as new samples and can be used for further tests.

5.3 Conditioning

Samples made of hygroscopic material shall be conditioned for at least 240 h, at a temperature of (23 ± 2) °C and a relative humidity between 90 % and 95 %. All tests shall be carried out immediately after this conditioning.

5.4 Validation of the results

The samples are submitted to all the relevant tests and the requirements are satisfied if all the tests are met.

If one sample does not satisfy a test due to an assembly or a manufacturing fault, that test and any preceding one that could have influenced the results of the test shall be repeated, and also the tests that follow shall be carried out in the required sequence on another full set of samples, all of which shall comply with the requirements.

NOTE The applicant can submit, together with a number of samples specified in 5.2, the additional set of samples that could be required, should one sample fail. The testing station will then, without further request, test the additional samples and will only reject them if a further failure occurs. If the additional set of samples is not submitted at the same time, the failure of one sample will entail rejection.

When toxic or hazardous processes are used, due regard shall be given to the safety of the persons within the test area.

6 Classification

6.1 According to material

6.1.1 Hygroscopic material

6.1.2 Non hygroscopic material

6.2 According to the temperature

The minimum temperature of transport, storage, installation and application is given in Table 1.

Table 1 — Minimum transport, storage installation and application temperature

Temperature **°C**
+5
-5
-15
-20
-25
-45

7 Marking and documentation

7.1 Cover plates and cover tapes shall be marked with:

— name, sign or trademark of the manufacturer or responsible vendor;

— a product identification mark which may be, for example, a catalogue number, a symbol or the like

— the reference to this document;

— the following notice:

  — a warning, as for example *ATTENTION* or *PRECAUTION*;

  — for the cover plates and cover tapes intended for protection and signalling of electric cables or conduits for electric cables buried underground:

    the warning sign for dangerous voltage as specified in IEC 60417 (code 5036), inside an advertisement sign as specified on ISO 3864 (series), and the message ELECTRIC CABLES;

  — for cover plates and cover tapes intended for protecting and indicating the presence of information and communication technology cables or conduits for information and communication technology cables that are buried underground:

    an advertisement sign as specified in ISO 3864 (series), and the message *CABLES.*

Cover plates and cover tapes can voluntarily be marked with:

— the trademark or name of either the Supplier electric company or operator of the network.

— any information regarding the used raw material, as e.g. the recycling mark showing the used material.

NOTE An example of the marks that are on a cover plate or cover tape is given in Annex B.

Compliance is checked by inspection and if necessary by measurement.

7.2 Marking shall be so designed that:

— the text shall be placed in the above part of the cover plates;

— the text shall be in capital letters with a minimum of 15 mm height;

— in cover plates, all the markings shall be placed in every plate;

— in cover tapes the text shall be marked at intervals not exceeding 1 m;

— the text shall present a good contrast with the background colour.

It is recommended that the marks are to be placed approximately in a central position.

NOTE Examples of safety colours are given in the ISO 3864 (series).

Compliance is checked by inspection and if necessary by measurement.

7.3 The marking shall be durable and clearly legible

Compliance is checked by inspection, using normal or corrected vision, without additional magnification and by rubbing the marking by hand for 15 s with a piece of cotton cloth soaked with water and again for 15 s with a piece of cotton cloth soaked with 95+% n-hexane (Chemical Abstracts Service Registry Number, CAS RN, 110-54-3).

NOTE 95+% n-hexane (Chemical Abstracts Service Registry Number, CAS RN, 110–54–3) is available from a variety of chemical suppliers as a high pressure liquid chromatography (HPLC) solvent.

When using the liquid specified for the test, precautions as stated in the relative material safety datasheet provided by the chemical supplier shall be taken to safeguard the laboratory technicians.

Products complying with the previous edition of the standard need not be tested again as this requirement does not have impact on the safety of the product.

The piece of cotton cloth used for rubbing the markings is constituted by cotton wool wrapped in a piece of surgical gauze.

The surface to be tested shall be dried before rubbing the marking with n-hexane solvent.

The test shall be carried out by rubbing for 15 s with a piece of cotton cloth soaked with water and again for 15 s with a piece of cotton cloth soaked with 95+% n-hexane, with a rate of approximately 1 cycle per second (a cycle comprising a forward and backward movement along the length of the marking. For long markings, rubbing can be limited to a part of the marking, over a path of at least 20mm length).

In order to apply a constant pressure, a cylindrical weight with a diameter of 40 ± 1 mm and a mass of 300 ± 5 g is placed on the piece of cloth.

The sample shall be fixed on a support in order to avoid its movement and a lateral pull force to the right and left hand sides shall be applied to the piece of cloth with the weight on it until 15 cycles have been completed. Pull force shall be applied as to keep constant the pressure of the weight and cloth over the sample.

Figure 1 below illustrates the procedure: