



**SLOVENSKI STANDARD**  
**SIST EN 50146:2000**  
**01-junij-2000**

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**Cable ties for electrical installations**

Cable ties for electrical installations

Kabelbinder für elektrische Installationen

Colliers pour installations électriques

**Ta slovenski standard je istoveten z: EN 50146:2000**

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**ICS:**

29.120.99	Druga električna dodatna oprema	Other electrical accessories
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**SIST EN 50146:2000**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 50146**

February 2000

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ICS 29.120.20

English version

## **Cable ties for electrical installations**

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## **CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

EN 50146:2000

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 213, Cable management.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50146 on 1999-08-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2000-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-08-01

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## 1 Scope

This European standard specifies requirements for metallic, non-metallic and composite cable ties and their associated fixing devices used for the management and support of wiring systems in electrical installations up to and including AC 1 000 V or DC 1 500 V.

Cable ties and associated fixing devices may also be suitable for other applications and where so used, regard should be taken of any additional requirements.

This European Standard does not cover the fixation of the fixing device to the supporting surface.

## 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).

<u>Publication</u>	<u>Year</u>	<u>Title</u>
EN 60068-2-52	1996	Environmental testing -- Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52:1996)
EN 60695-2-2 + A1	1994 1995	Fire hazard testing -- Part 2: Test methods - Section 2: Needle-flame test (IEC 60695-2-2:1991 + A1:1994)
EN ISO 6988	1994	Metallic and other non-organic coatings - Sulphur dioxide test with general condensation of moisture (ISO 6988:1985)

## 3 Definitions

For the purpose of this standard, the following definitions apply:

### 3.1

#### **cable tie**

a component which is used to bind cables and to support them when necessary. The component consist of a head and a strap forming the main body of the cable tie, and a locking device

### 3.2

#### **fixing device**

a component specifically designed to secure the cable tie

NOTE A cable tie and the fixing device may be manufactured as an integrated component.

### 3.3

#### **metallic component**

a component which consists of metal only

### 3.4

#### **non-metallic component**

a component which consists of non-metallic material only

### 3.5

#### **composite component**

a component comprising both metallic and non-metallic materials

### 3.6

#### **environmental influence**

the effect of corrosive or polluting substances or solar radiation, etc.

## 4 General requirements

The cable ties and their associated fixing devices, where available, shall be so designed and constructed that they ensure safe handling, protection and support for the cables contained therein.

## 5 General notes on tests

**5.1** Tests according to this standard are type tests. Unless otherwise specified, tests are carried out with the cable ties and their associated fixing devices, where available, installed as in normal use according to the manufacturer's instructions.

**5.2** Type tests on non-metallic and composite components shall commence when the samples have been removed from their packaging and then conditioned at a temperature of  $(25 \pm 5)^\circ\text{C}$  and at a relative humidity of between 40% and 60%, for a period of  $(168 \pm 5)$  h.

**5.3** Unless otherwise specified, the tests shall be carried out at an ambient temperature of  $(25 \pm 5)^\circ\text{C}$  and with a relative humidity of between 40% and 60%.

**5.4** Unless otherwise specified, three new samples are submitted to the tests and the requirements are satisfied if all the tests are met. If only one of the samples does not satisfy a test due to an assembly or manufacturing fault, that test and any preceding one which may have influenced the results of the test shall be repeated and also the tests which follow shall be made in the required sequence on another full set of samples, all of which shall comply with the requirements.

NOTE The applicant, when submitting the first set of samples may also submit an additional set of samples which may be necessary should one sample fail. The test station will then without further request test the additional set of samples and will reject only if a further failure occurs. If the additional set of samples is not submitted at the same time, a failure of one sample will entail a rejection.

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

## 6 Classification

**6.1** According to material

**6.1.1** Metallic component

**6.1.2** Non-metallic component

**6.1.3** Composite component

6.2 According to minimum loop tensile strength for cable ties given in Table 1

**Table 1 — Minimum loop tensile strength**

Minimum loop tensile strength N
50
80
130
180
220
360
450
530
800
1 150
1 300
2 200

6.3 According to temperature

6.3.1 According to maximum temperature for application given in Table 2

**Table 2 — Maximum temperature for application**

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Temperature °C
60
85
105
120
150
250

6.3.2 According to minimum temperature for application given in Table 3

**Table 3 — Minimum temperature for application**

Temperature °C
0
- 5
- 15
- 25
- 40
- 60

6.3.3 According to minimum temperature during installation as declared by the manufacturer



**6.4** According to the flame application time given in Table 4 for non-metallic and composite cable ties only

**Table 4 — Flame application time**

Application time s
< 5
5
10
20
30
60
120

**6.5** According to environmental influences

**6.5.1** According to UV resistance for non-metallic and composite components

**6.5.2** According to resistance to atmospheric corrosion for metallic and composite components

## 7 Marking and documentation

**7.1** Each cable tie and fixing device shall be marked with the manufacturer's or responsible vendor's name or trade mark and identifying symbol.

Where it is not possible, for example, due to the small size of a cable tie or fixing device to mark on it the identifying symbol, then this symbol may be marked on the packaging.

NOTE 1 The identifying symbol can be a type reference number, letter, etc.

NOTE 2 Marking may be applied, for example, by moulding, pressing, engraving, printing, adhesive labels, etc.

**7.2** Marking on the cable ties or fixing device shall be durable and clearly legible.

Marking shall be checked by inspection and by rubbing the marking by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with petroleum spirit.

Marking made by moulding, pressing or engraving is not subjected to this test.

After the test the marking shall be legible.

NOTE Petroleum spirit is defined as the aliphatic solvent hexane with a content of aromatics of maximum 0,1% by volume, a kauri-butanol value of 29, initial boiling point of 65 °C, a dry point of 69 °C and a specific gravity of 680 kg/m<sup>3</sup>.

**7.3** The manufacturer or responsible vendor shall provide in his literature:

- the classification according to clause 6;
- the maximum and minimum bundle diameter in mm in relation to each cable tie;
- the maximum static load for the fixing device;