



SLOVENSKI STANDARD
SIST HD 21.2 S2:1998/A3:1998
01-februar-1998

**Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V
- Part 2: Test methods - Amendment A3**

Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V -- Part 2: Test methods

Polyvinylchlorid-isolierte Leitungen mit Nennspannungen bis 450/750 V -- Teil 2: Prüfverfahren

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Conducteurs et câbles isolés au polychlorure de vinyle, de tension assignée au plus égale à 450/750 V -- Partie 2: Méthodes d'essais

<https://standards.iteh.ai/catalog/standards/sist/fa7188b7-aa2d-4466-a662-96aafc4dd995/sist-hd-21-2-s2-1998-a3-1998>

Ta slovenski standard je istoveten z: HD 21.2 S2:1990/A3:1993

ICS:

29.060.20 Kabli Cables

SIST HD 21.2 S2:1998/A3:1998 en

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HARMONIZATION DOCUMENT

HD 21.2 S2/A3

DOCUMENT D'HARMONISATION

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO
Urad RS za standardizacijo in meroslovje
LJUBLJANA

HARMONISIERUNGSDOKUMENT

SIST. HD 21.2 S2/A3

February 1993

PREVZET PO METODI HAZGLASITVE

-82- 1998

UDC (621.315.211.2+621.315.32).027.475-036.743.22-001.2.001.4

Descriptors: See HD 21.2 S2:1990

ENGLISH VERSION

Polyvinyl chloride insulated cables of rated
voltages up to and including 450/750 V
Part 2: Test methodsConducteurs et câbles isolés
au polychlorure de vinyle, de
tension assignée au plus égale à
450/750 V
Deuxième partie: Méthodes
d'essaisPolyvinylchlorid-isolierte
Leitungen mit Nennspannungen bis
450/750 V
Teil 2: Prüfverfahren**iTeh STANDARD PREVIEW**

This amendment A3 modifies the Harmonization Document HD 21.2 S2:1990. It was approved by CENELEC on 1992-12-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this amendment on a national level.

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Up-to-date lists and bibliographical references concerning national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French and German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Ref. No. HD 21.2 S2:1990/A3:1993 E

FOREWORD

At the request of the CENELEC Technical Committee TC 20, Electric cables, a draft for an amendment to HD 21.2 S2:1990 was submitted to the CENELEC Unique Acceptance Procedure (UAP) in January 1992.

The text of the draft was approved by CENELEC as amendment A3 to HD 21.2 S2 on 9 December 1992.

The following dates were fixed:

- latest date of announcement
of the HD at national level (doa) 1993-03-01
- latest date of publication of
a harmonized national standard (dop) 1993-09-01
- latest date of withdrawal of
conflicting national standards (dow) 1993-09-01

For products which have complied with HD 21.2 S2:1990 and its amendments before 1993-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1994-09-01.

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Insert the following new clauses.

3.5 Extension tests for extensible leads

3.5.1 Extension test before ageing.

The requirements are given in Part 1, sub-clause 5.6.3.5

Take a 30 coil length or whole assembly if it contains less than 30 coils in total.

Calculate the total length of the cord in the coiled section as:

$$L = n \pi (D - d)$$

L = Total length of cord

n = number of turns

D = Outer diameter of coil

d = Diameter of cord

Suspend the coil vertically by means of a hook from the first turn.

The sample coiled section shall then be extended to 60% of length "L" (as calculated above) five times within 15 ± 2 s. The test shall be carried out at a temperature of $20 \pm 5^\circ\text{C}$, after the sample has been maintained at that temperature for 24 hours.

3.5.2 Extension test after ageing.

The requirements are given in Part 1, sub-clause 5.6.3.5.

An oven with natural air flow shall be used, complying with the requirements in Sub-Clause 8.1.2 of HD 505.1.2.

A 30 coil length or whole assembly if it contains less than 30 coils in total shall be suspended horizontally in the middle of the oven by means of its two ends, and shall be kept in the oven at 70°C for 168 h.

The extension test shall then be carried out as specified in Sub-Clause 3.5.1 above.

3.6 Endurance test for extensible leads

The requirements are given in Part 1, sub-clause 5.6.3.6.

To carry out this test use a flexing apparatus of a type similar to that shown in figure 1 of this Part, the movable carrier having a travel of approximately 1 metre at a rate of 0.33 m/s, modified as follows (see figures 3a and 3b of this Part).

Remove the pulleys from the movable carrier on the machine shown in figure 1. Attach the sample to the pulley represented at point E in figures 3a and 3b. The attachment may be made by any method which avoids excessive stress concentration on the cable. Make electrical connections between the individual cores at one end of the extensible leads and one set of electrical connections on the machine. Thread a support through the coiled section of the lead. This support may be made of any reasonably low-friction material (such as PTFE) of a diameter which does not cause a groove to be cut into the sheath material during operation of the machine. The support is represented in figures 3a and 3b by a dotted line. The support is secured at one end of the machine near to point E and at a point on the opposite end of the machine which allows the machine to operate without contact between the carrier and the support. Connect the free end of the extension lead to either the movable carrier (figure 3a), or a cable leading from the carrier, (figure 3b), again avoiding stress concentration. Connect a length of cable (of at least the same current carrying capacity and number of cores as the cable under the test) between the individual cores of the remaining unconnected end of the extensible lead and the remaining electrical connections on the machine. This cable must be of sufficient length to allow the machine to operate without the cable becoming stretched, and may be supported by any convenient means which allows movement without interference by the carrier. Where the extensible lead is connected as illustrated in figure 3b, it will be necessary to ensure that the coiled section of the cable is returned to its original closed length at the point in the cycle nearest to end E by means of an adjustable device mounted on the movable carrier F.

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A sample shall be so arranged that the operation of the machine causes the section under test to be stretched to three times its closed length, and returned to its closed length during each single cycle of machine operation. Where possible a complete cord or section of cord shall be fixed between point E and the movable carrier, point F. Where this is not possible due to the short length of the finished cord, the sample shall be attached at point E and a length of similar cable shall be attached between the remaining unconnected end and the movable carrier, the length of this cable being such that the operation of the machine causes stretching of the extensible to three times its closed length.

Secure one end of the test sample to the fixed post and the other end to the moving post situated at carrier F.

Each conductor of the sample shall be loaded with the current specified in the table in Clause 3.1 of this Part.

4. Tests under Fire Conditions

4.1 Tests for extensible leads

The requirements are given in Part 1, sub-clause 5.6.4.1. The coiled cable shall be tested in accordance with HD 405.1 S1, except that the following special conditions shall apply.

i) Sample

The test sample shall be a complete extensible lead, from which the tail at one end shall be cut off, and the tail at the other end cut to leave a length of approximately 15mm.

If the length of the closed lead, excluding the remaining tail, exceeds 500mm then a portion of the coiled lead shall be cut off from the end where the tail has been completely removed to leave a closed length of approximately 500mm.

ii) Clamping of sample

The test sample shall be clamped by the short tail and allowed to hang vertically. Otherwise the conditions of Clauses 5 of HD 405.1 S1 shall apply.

iii) Test Procedure

Using a single gas burner as described in Clause 6 of HD 405.1 set up the burner so that the axis of the burner tube is at an angle of 45° to centre axis of the helix of the coiled lead sample. When the burner is in use the tip of the inner blue cone of the flame shall impinge upon the outside of the first helix at the bottom of the coil. The flame shall be essentially perpendicular to the outer surface of the coil and not tangential.

The flame shall be applied for a continuous period of 60 +2, -0 seconds. S2:1998/A3:1998

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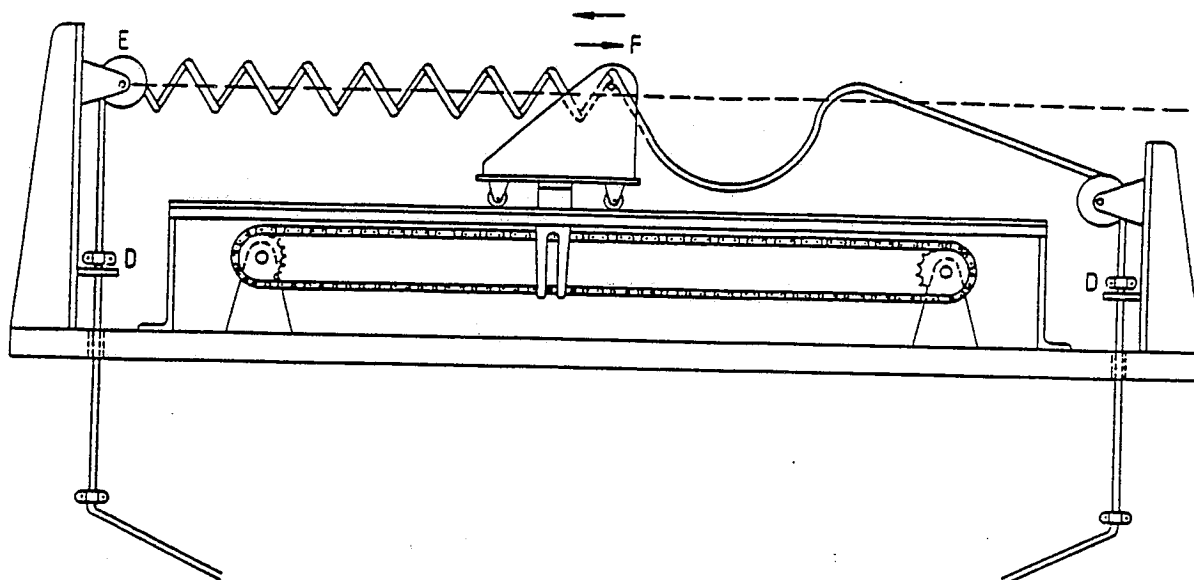


Figure 3a. Modified flexing apparatus for extensible leads.

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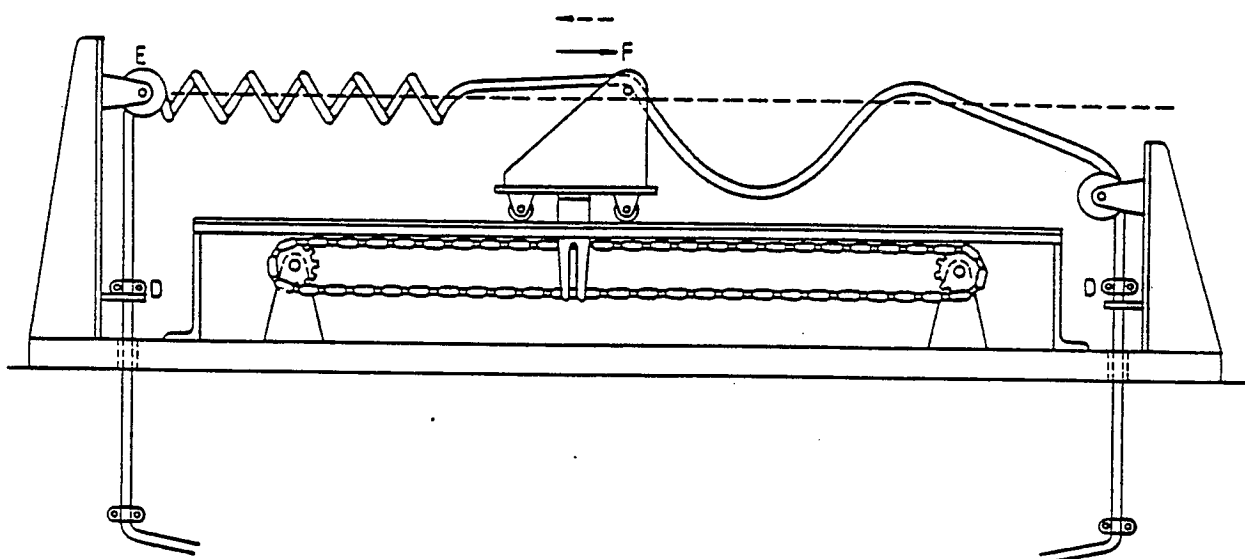


Figure 3b. Modified flexing apparatus for short extensible leads.