



# SLOVENSKI STANDARD

## SIST EN 50289-3-6:2002

01-september-2002

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### Communication cables - Specifications for test methods - Part 3-6: Mechanical test methods - Impact resistance of the cable

Communication cables - Specifications for test methods -- Part 3-6: Mechanical test methods - Impact resistance of the cable

Kommunikationskabel - Spezifikationen für Prüfverfahren -- Teil 3-6: Mechanische Prüfverfahren - Schlagbeständigkeit des Kabels

Câbles de communication - Spécifications des méthodes d'essai -- Partie 3-6: Méthodes d'essais mécaniques - Résistance aux impacts du câble

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Ta slovenski standard je istoveten z: EN 50289-3-6:2001

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#### **ICS:**

33.120.10 Koaksialni kabli. Valovodi Coaxial cables. Waveguides

**SIST EN 50289-3-6:2002**

**en**

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EUROPEAN STANDARD

**EN 50289-3-6**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2001

ICS 33.120.10

English version

**Communication cables -  
Specifications for test methods  
Part 3-6: Mechanical test methods -  
Impact resistance of the cable**

Câbles de communication -  
Spécifications des méthodes d'essai  
Partie 3-6: Méthodes d'essais mécaniques -  
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Kommunikationskabel -  
Spezifikationen für Prüfverfahren  
Teil 3-6: Mechanische Prüfverfahren -  
Schlagbeständigkeit des Kabels

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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**

## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 46X, Communication cables.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50289-3-6 on 2001-03-01.

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) 2002-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-04-01

This European Standard has been prepared under the European Mandate M/212 given to CENELEC by the European Commission and the European Free Trade Association.

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## 1 Scope

This Part 3-6 of EN 50289 details the method of test to determine the impact resistance of the cable used in analogue and digital communication systems.

It is to be read in conjunction with Part 3-1 of EN 50289, which contains essential provisions for its application.

## 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).

EN 50289-3-1 2001 Communication cables - Specifications for test methods -- Part 3-1: Mechanical test methods - General requirements

EN 50290-1-2<sup>1)</sup> Communication cables -- Part 1-2: Definitions

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## 3 Definitions

For the purposes of this European Standard the definitions of EN 50290-1-2 apply.

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## 4 Test method

### 4.1 Sample

#### 4.1.1 Sample length

The sample length shall be sufficient to carry out the specified test. When only physical damage is to be evaluated, the length may range from 1 m (for example for small diameter jumper cords or duplex cables) to 5 m (for larger diameter cables). Longer lengths may be necessary to carry out electrical or optical transmission measurements.

#### 4.1.2 Termination

Unless otherwise specified in the relevant cable specification, the cable samples shall be terminated at each end in a connector, or in a manner such that the fibres/conductors, sheathings and any strain members are clamped together in a representative manner. The clamps on the impact apparatus may be adequate, or the sample may be long enough that no restraint is needed.

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<sup>1)</sup> At draft stage.

## 4.2 Equipment

The apparatus shall allow an impact to be impacted to a cable sample which is fixed to a flat substantial steel base. When a single or only a few impacts are required, a suitable apparatus, as shown in Figure 1a, is used. This allows a weight to drop vertically onto a piece of steel which transmits the impact to the cable sample. When repeated impacts are required (say, more than five), a more practical apparatus as shown in Figure 1b, is used which allows multiple impacts by a drop hammer.

In both cases, other equivalent apparatus may also be used.

The striking surface contacting the sample shall be rounded, either as a hemisphere (Figure 1c, 3A) or a cylinder (Figure 1c, 3B). The radius R of the surface shall be specified in the detail specification.

The apparatus shall include any test equipment needed to measure the changes in performance requested in the relevant cable specification.

## 4.3 Procedure

Unless otherwise specified, the conditions for testing shall be in accordance with EN 50289-3-1. If necessary, the sample shall be pre-conditioned at standard atmospheric conditions for 24 h.

The mass of the weight or drop hammer and the height from which it falls shall be adjusted to give the value of impact energy shown in the detail specification. The number and rate of impacts and their location on the sample shall be as specified in the relevant cable specification.

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## 5 Test report

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The test report shall include:

- number of impacts;
- impact energy;
- test temperature;
- radius of the striking surface;
- frequency of multiple impacts (if any);
- location of impacts on the sample;
- tests to be performed;
- temperature;
- sample length;
- pass/fail criteria, e.g.:
  - loss of optical continuity,
  - degradation of optical transmittance,
  - localised un-acceptable reflection (or change in impedance),
  - degradation of return loss and crosstalk,
  - physical damage to the cable.

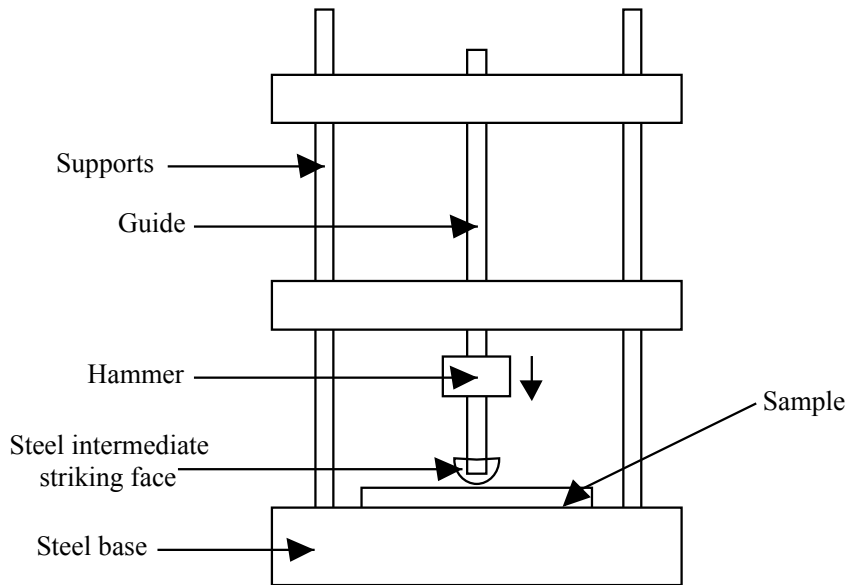


Figure 1a – Apparatus for few impacts

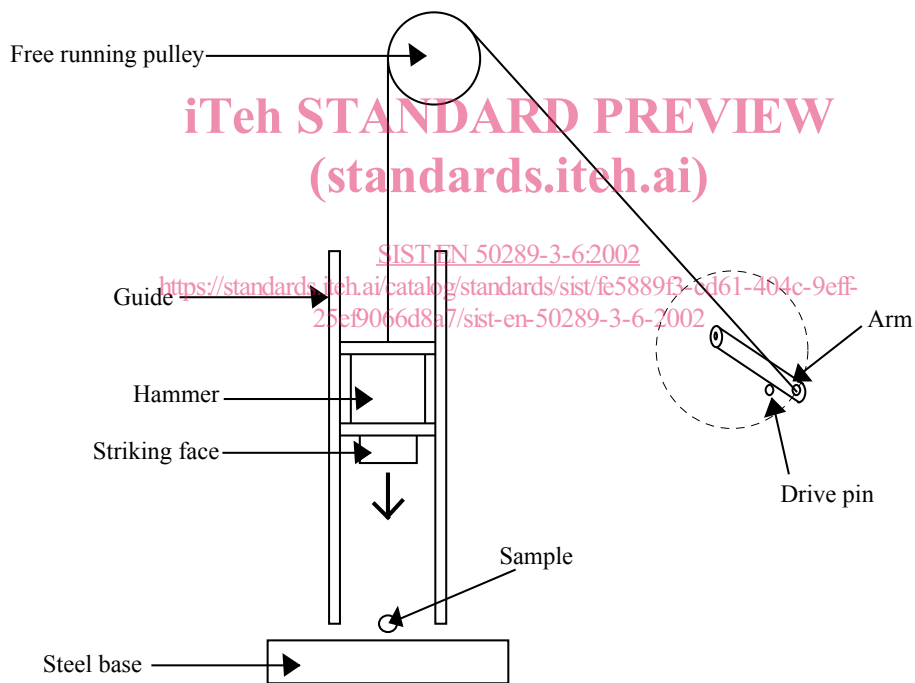


Figure 1b – Apparatus for multiple impacts

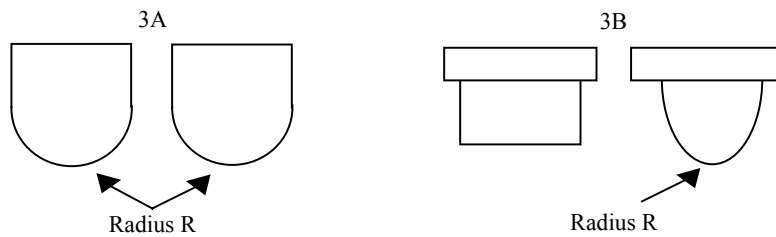


Figure 1c - Details of striking surface

Figure 1 - Impact test