SLOVENSKI STANDARD
SIST EN 41003:2000

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Particular safety requirements for equipment to be connected to telecommunication networks

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Besondere Sicherheitsanforderungen an Geräte zum Anschluß an Telekommunikationsnetze

Règles particulières de sécurité pour les matériels destinés à être reliés aux réseaux de télécommunications

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Besondere Sicherheitsanforderungen an Geräte zum Anschluß an Telekommunikationsnetze

This European Standard was approved by CENELEC on 1998-08-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, 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

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Foreword

The first edition of this standard was prepared by CENELEC TC 74X, in close cooperation with a number of international organizations, e.g. IEC, ECMA, CEPT, CCITT, ETSI. In 1993 TC 74X was disbanded and responsibility for this standard passed to CENELEC TC 74.

In September 1985, IEC published its Guide 105, produced jointly with CCITT, for use by technical committees responsible for equipment safety standards who wished to enhance their specific standards by adding harmonized requirements for telecommunication safety. Guide 105 is concerned with safety aspects which arise when equipment is connected to a telecommunication network. However, it is not written as a standard for testing and approval purposes.

At that time, a standard was needed for uniform application by network operators in Europe when approving subscribers' equipment for attachment to their networks, and for purchasing purposes by network operators.

In February 1986 the CENELEC Technical Board formed a working group `Telecom Safety' which became CENELEC/TC 74X in early 1987. IEC/TC 74 established WG7 to amend IEC 60950 for a similar purpose.

ENV 41003 was ratified by the CENELEC Technical Board in March 1988 and subsequently amended and converted it into this EN 41003 which was ratified in September 1990. In June 1992 the CENELEC Technical Board approved the reprint of EN 41003, which was technically unchanged from EN 41003:1991 and refers to EN 60950:1992 wherever possible.

The edition of EN 41003:1996 was deemed necessary following the publication of EN 60950:1992/A3:1995, to reflect further convergence of the two standards.

This edition of EN 41003 was deemed necessary following the publication of EN 60950:1992/A4:1997, to reflect further convergence of the two standards.

This new edition was ratified by the CENELEC Technical Board on 1998-08-01.

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)	1999-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2000-01-01

Annexes designated “normative” are part of the body of the standard.
Annexes designated “informative” are given for information only.
In this standard, annex A is normative and annexes B and C are informative.

Contents

Introduction

This standard follows and extends the principles of IEC Guide 105 and reconciles the safety requirements set by the IEC for the use of electrical products with the considerable safety experience of telecommunication network operators in the operation of their networks.

The standard recognises that although telecommunication networks have been shown to be safe to the touch in normal operation, some particular requirements should nevertheless be applied when equipment connected to these networks is used in subscriber's premises. These requirements ensure that possible hazards from equipment will not be propagated to the network. They also ensure that no contact can be made to network voltages through the equipment itself, and that at connection sockets where some access must be available, inadvertent contact or any contact with a large area of skin is prevented.

Upper levels for telecommunication signals have been defined. They include also telephone ringing signals which have been defined taking into account voltages commonly used in the different networks. The electrical hazard criteria have been chosen to accord with IEC 60479-1.

Test levels used for the equipment take account of the possibility that overvoltages may occur on the telecommunication network. Special consideration has been given to equipment parts expected to be held or touched during normal use, e.g. telephone handsets.

It is recognised that in high overvoltage risk areas, requirements of this standard may not be sufficient; additional protective devices, not covered by this standard, may be installed in the telecommunication network to better meet extreme conditions.

For the adoption of this standard, the relevant special national conditions and A-deviations apply that are listed in Annexes ZB and ZC of EN 60950:1992, including amendments.

1 Scope

This standard applies to equipment designed and intended to be connected to a TELECOMMUNICATIONS NETWORK termination. It does not apply to equipment covered by EN 60950.

It applies regardless of ownership or responsibility for installation or maintenance of the equipment, and regardless of the source of power.

This standard, in accordance with the `principles of safety' given in the introduction of EN 60950, covers the requirements and compliance criteria under three headings:

- Protection of equipment users from hazards in the equipment. The user is considered to be protected from hazards in the equipment if the equipment complies with a relevant safety standard, for example one of those listed in Annex A, but compliance with those standards is not part of this standard.

- Protection of SERVICE PERSONNEL working on the TELECOMMUNICATION NETWORK and other users of the TELECOMMUNICATION NETWORK, from hazardous conditions on the TELECOMMUNICATION NETWORK resulting from the connection of the equipment.

- Protection of equipment users from voltages on the TELECOMMUNICATION NETWORK.

Requirements additional to those specified in this standard may be necessary for:

- equipment intended for operation while exposed, for example, to extremes of temperature; to excessive dust, moisture, or vibration; to flammable gases; to corrosive or explosive atmospheres;

- electromedical applications with physical connections to the patient.

The requirements for the following items are not covered by this standard:

- functional reliability of equipment,
- telecommunication facilities with remote supply using HAZARDOUS VOLTAGE,
- protection of equipment or TELECOMMUNICATION NETWORKS from damage.

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.

IEC Publications and corresponding European publications

If the IEC Publication has been modified by CENELEC common modification, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
IEC 60950 (mod)	1991	Safety of information technology equipment	EN 60950	1992
A1	1992		A1	1993
A2	1993		A2	1993
A3 (mod)	1995		A3	1995
			+ corr. Jan.	1996
A4 (mod)	1996		A4	1997

NOTE: Lists of other related documents can be found in Annexes A and B.

3 Definitions

For the purposes of this standard, the definitions of EN 60950 apply.

NOTE 1: Defined terms are printed in SMALL CAPITALS.

NOTE 2: For information about telecommunication network voltages and signals, see Annex C.

4 Safety requirements and compliance criteria

The general conditions for tests of EN 60950, subclause 1.4 apply.

The references to the requirements of EN 60950 in 4.2.2, 4.2.4 and 4.4.2 may be replaced by the corresponding requirements in other relevant safety standards listed in Annex A, if the equipment is designed to comply with one of these standards.

4.1 Connection to other equipment

EN 60950, subclause 2.10.1 applies

4.1.1 Types of interconnection circuits

EN 60950, subclause 2.10.2 applies

4.1.2 Interconnection of ELV circuits

EN 60950, subclause 2.10.3 applies

4.1.3 Safety statements

The safety status (SELV CIRCUIT, TNV-1 CIRCUIT; TNV -2 CIRCUIT; TNV -3 CIRCUIT, LIMITED CURRENT CIRCUIT, ELV CIRCUIT and HAZARDOUS VOLTAGE) of interconnection points for the connection of other equipment shall be stated in the manufacturer's documentation supplied with the equipment.

4.2 TNV circuit chracteristics and requirements

4.2.1 Limits

EN 60950, subclause 6.2.1.1 applies

4.2.2 Separation from other circuits and from accessible parts

EN 60950, subclause 6.2.1.2 applies

The WORKING VOLTAGE of the insulation shall be specified by the manufacturer of the equipment.

4.2.3 Operating voltages generated externally

EN 60950, subclause 6.2.1.3 applies

4.2.4 Separation from hazardous voltages

EN 60950, subclause 6.2.1.4 applies

4.2.5 Connection of TNV circuits to other circuits

EN 60950, subclause 6.2.1.5 applies

4.3 Protection against contact with TNV circuits

4.3.1 Accessibility

EN 60950, subclause 6.2.2.1 applies

4.3.2 Battery compartments

EN 60950, subclause 6.2.2.2 applies

The requirements of 4.3.1 and 4.3.2 apply in place of any more restrictive requirements in the relevant safety standard, for example one of those listed in Annex A, with which the equipment complies for protection of the user from hazards in the equipment.

4.4 Protection of telecommunication network service personnel and users of other equipment connected to the network, from hazards in the equipment

4.4.1 Protection from hazardous voltages

EN 60950, subclause 6.3.1 applies

4.4.2 Use of protective earthing

EN 60950, subclauses 2.5.2 and 6.3.2 apply

4.4.3 Separation of the telecommunication network from earth

EN 60950, subclause 6.3.3 applies

4.4.4 Leakage current to and from telecommunication networks

EN 60950, subclause 6.3.4 applies

4.5 Protection of equipment users from overvoltages on telecommunication networks

4.5.1 Separation from circuitry to be connected to a telecommunication network

EN 60950, subclauses 6.4.1 and 6.4.2 apply

For equipment incorporating both REINFORCED INSULATION and lower grades of insulation, care shall be taken to ensure that the voltage applied to the REINFORCED INSULATION does not overstress BASIC INSULATION or SUPPLEMENTARY INSULATION.

NOTE: Where necessary, and before carrying out these tests, integrated circuits and the like in secondary circuits may be disconnected or removed to avoid damage or destruction by capacitive charging currents, or other occurrences.

During the tests, equipotential bonding may be used to avoid damage to components and insulation which are not involved in the test.

4.5.2 Impulse test

The test is described in EN 60950, subclause 6.4.2.1

Compliance is checked according to EN 60950, subclause 6.4.2.3

4.5.3 Electric strength test

The test is described in EN 60950, subclause 6.4.2.2

Compliance is checked according to EN 60950, subclause 6.4.2.3