



SLOVENSKI STANDARD SIST EN 50290-2-27:2002

01-september-2002

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SIST HD 624.7 S1:1996

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Communication cables -- Part 2-27: Common design rules and construction - Halogen free flame retardant thermoplastic sheathing compounds

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Kommunikationskabel -- Teil 2-27: Gemeinsame Regeln für Entwicklung und Konstruktion - Halogenfreie flammwidrige thermoplastische Mantelmischungen

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Câbles de communication -- Partie 2-27: Règles de conception communes et construction - Mélanges pour gainage thermoplastique sans halogène et avec propagation retardée de flamme

Ta slovenski standard je istoveten z: EN 50290-2-27:2002

ICS:

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| 29.035.20 | Ú æ cã } ã Á { ^ } ã [æã \ ã
{ æ^!ãã | Plastics and rubber insulating materials |
| 33.120.10 | Koaksialni kabli. Valovodi | Coaxial cables. Waveguides |

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EUROPEAN STANDARD

EN 50290-2-27

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2002

ICS 29.035.20; 33.120.10

Supersedes HD 624.7 S1:1994

English version

Communication cables
Part 2-27: Common design rules and construction –
Halogen free flame retardant thermoplastic
sheathing compounds

Câbles de communication
Partie 2-27: Règles de conception
communes et construction –
Mélanges pour gainage thermoplastique
sans halogène et avec propagation
retardée de flamme

Kommunikationskabel
Teil 2-27: Gemeinsame Regeln
für Entwicklung und Konstruktion -
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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 a joint working group of the Technical Committees CENELEC TC 46X, Communication cables, and CENELEC TC 86A, Optical fibres and optical fibre cables.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50290-2-27 on 2001-11-01.

This European Standard supersedes HD 624.7 S1:1994.

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) 2002-08-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2004-08-01

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 2-27 of EN 50290 gives specific requirements for halogen free flame retardant thermoplastic sheathing compounds used in communication cables.

It is to be read in conjunction with Part 2-20 of EN 50290.

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 60811-1-1:1995	Insulating and sheathing materials of electric and optical cables - Common test methods -- Part 1-1: General application - Measurement of thickness and overall dimensions - Tests for determining the mechanical properties (IEC 60811-1-1:1993)
EN 60811-1-2:1995	Insulating and sheathing materials of electric cables - Common test methods Part 1-2: General application -- Thermal ageing methods (IEC 60811-1-2:1985 + corr. May 1986 + A1:1989)
EN 60811-1-4:1995	Insulating and sheathing materials of electric and optical cables - Common test methods -- Part 1-4: General application - Tests at low temperature (IEC 60811-1-4:1985 + corr. May 1986 + A1:1993)
EN 60811-3-1:1995	Insulating and sheathing materials of electric and optical cables - Common test methods -- Part 3-1: Methods specific to PVC compounds - Pressure test at high temperature - Tests for resistance to cracking (IEC 60811-3-1:1985 + corr. May 1986)
HD 405.3 S1:1993	Tests on electric cables under fire conditions -- Part 3: Tests on bunched wires or cables (IEC 60332-3:1992)
IEC 60754-2:1991 + A1:1997	Test on gases evolved during combustion of materials from cables - Determination of degree of acidity of gases by measuring pH and conductivity

3 Requirements

In case of specific applications, additional performances could be needed. Relevant test methods and requirements shall be included in the detail specifications of the cables.

Table 1 - Halogen free flame retardant thermoplastic sheathing compounds

Characteristics		Test method	Unit	Requirement
1	Maximum rated temperature at cable for which the compound can be used		° C	70
2	Mechanical characteristics (see note 1)			
2.1	In state of delivery	EN 60811-1-1 9.2		
2.11	Tensile strength - median, min.		MPa	9
2.12	Elongation at break - median, min.		%	125
2.2	After ageing	EN 60811-1-2 8.1		
	Ageing conditions - temperature - duration		° C h	100 ± 2 7 x 24
2.21	Tensile strength - variation, max.		%	± 30
2.22	Elongation at break - median, min. - - variation, max. - for thickness		% % mm	100 100 ¹⁾ ± 30 ± 40 > 0,6 ≤ 0,6
3	Heat shock Test conditions - temperature - duration Result to be obtained	EN 60811-3-1 9.2	° C h	130 ± 2 1 No crack
4	Behaviour at low temperature			
4.1	Bending at low temperature ²⁾ Test conditions - temperature Result to be obtained	EN 60811-1-4 8.2	° C	- 15 ± 2 No crack
4.2	Elongation without break ³⁾ Test conditions - temperature Elongation, min.	EN 60811-1-4 8.4	° C %	- 15 ± 2 20

1) Provisional value.

2) For outer diameters up to and including 12,5 mm.

3) For outer diameters exceeding 12,5 mm.

Table 1 (continued)

Characteristics		Test method	Unit	Requirement
5	Pressure at high temperature Test conditions - temperature - duration (for all values of cable diameter) Result to be obtained - depth of indentation median, max.	EN 60811-3-1 8.2	° C h %	80 ± 2 4 50
6	Oxygen index (see note 2)	HD 405.3		
7	Corrosivity	IEC 60754-2		To meet
8	Smoke opacity (see note 3)			
9	Toxicity	Under consideration		

NOTE 1 Guidance for the preparation of samples for tensile and elongation tests before and after ageing. If the samples under test have ridges on the inside caused by the inner components of the cable (cores or wire braid) then these ridges should be removed by buffing, cutting or skiving.

NOTE 2 Oxygen index measurement has been found to be a suitable indicator to guide selection and monitoring of materials used in cables which have to meet the fire performance tests specified in the relevant cable specification.

NOTE 3 For selection of materials used in cables, IEC 60695-6 may be considered.

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