SLOVENSKI STANDARD

SIST EN 50290-2-21:2002/A1:2008

01-februar-2008

Komunikacijski kabli - 2-21. del: Skupna pravila za naḷ rtovanje in konstrukcija - Izolacijske PVC zmesi

Communication cables - Part 2-21: Common design rules and construction - PVC insulation compounds

Kommunikationskabel - Teil 2-21: Gemeinsame Regeln für Entwicklung und Konstruktion - PVC-Isoliermischungen

Câbles de communication - Partie 2-21: Règles de conception communes et construction - Mélanges en PVC pour enveloppes isolantes

Ta slovenski standard je istoveten z: EN 50290-2-21:2001/A1:2007

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29.035.20

33.120.10

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EUROPEAN STANDARD

NORME EUROPÉENNE

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English version

Communication cables - Part 2-21: Common design rules and construction - PVC insulation compounds

Câbles de communication - Partie 2-21: Règles de conception communes et construction - Mélanges en PVC pour enveloppes isolantes

Kommunikationskabel - Teil 2-21: Gemeinsame Regeln für Entwicklung und Konstruktion - PVC-Isoliermischungen

This amendment A1 modifies the European Standard EN 50290-2-21:2001; it was approved by CENELEC on 2007-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

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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

Ref. No. EN 50290-2-21:2001/A1:2007 E

Foreword

This amendment to the European Standard EN 50290-2-21:2001 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 amendment A1 to EN 50290-2-21:2001 on 2007-03-01.

The following dates were fixed:

– latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2008-03-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2010-03-01

This amendment introduces a new PVC insulation Grade for high temperature.

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1 Scope

Add after the first paragraph:

For cables with a maximum rated temperature of 90 °C, compound of Grade TI55 shall be used and it shall comply with the requirements described in Table 1.

3 Requirement

Add after the first paragraph:

If lead free PVC is required, the lead content shall be less than 400 ppm, measured according to EN 50414.

Replace Table 1 by the following to introduce Grade TI55:

Table 1 - PVC insulation compound

Characteristics		Test method	Unit	Grades				
				TI51	TI52	TI53	TI54	TI55
1	Maximum rated temperature at cable for which the compound can be used		°C	70	70	90	70	90/105 [a]
2	Density	EN 60811-1-3 Clause 8	g/cm³	To be recorded				
3	Hardness	ISO 868	Shore A Shore D	To be recorded				
4	Mechanical characteristics							
4.1	In state of delivery	EN 60811-1-1 9.1						
4.11	Tensile strength – median, min.		MPa	12,5	10	15	17	15
4.12	Elongation at break – median, min.		%	125	150	150	125	150
4.2	After ageing Ageing conditions – temperature – duration	EN 60811-1-2 8.1	 °C h	 80 ± 2 7 x 24	 80 ± 2 7 x 24	 135 ± 2 14 x 24	 80 ± 2 7 x 24	 140 ± 2 14 x 24
4.21	Tensile strength – median, min. – variation, max.		 MPa %	 12,5 ± 20	 10 ± 20	 15 ± 25	 17 ± 25	 15 ± 25
4.22	Elongation at break – median, min. – variation, max.		 % %	 125 ± 20	 150 ± 20	 150 ± 25	 125 ± 25	 150 ± 25
5	Loss of mass Ageing conditions – temperature – duration Loss of mass, max.	EN 60811-3-2 8.1	 °C h mg/cm²	 80 ± 2 7 x 24 2,0	 80 ± 2 7 x 24 2,0	 115 ± 2 14 x 24 1,5	 100 ± 2 7 x 24 2,0	 115 ± 2 14 x 24 1,5
6	Heat shock Test conditions – temperature – duration Result to be obtained	EN 60811-3-1 9.1	 °C h	 150 ± 2 1 No cracks	 150 ± 2 1 No cracks	 150 ± 2 1 No cracks	 150 ± 2 1 No cracks	 150 ± 2 6 No cracks

Table 1 - PVC insulation compound *(continued)*

Characteristics		Test method	Unit	Grades				
				TI51	TI52	TI53	TI54	TI55
7	Pressure test at high temperature	EN 60811-3-1 8.1						
	Test conditions							
	– temperature		°C	80 ± 2	70 ± 2	90 ± 2	80 ± 2	90 ± 2
	– duration		h	4	4	4	4	4
	Result to be obtained							
	- depth of indentation median, max.		%	50	50	50	50	50
8	Behaviour at low temperature							
8.1	Bending test at low temperature	EN 60811-1-4 8.1						
	Test conditions							
	– temperature		°C	– 15 ± 2	– 15 ± 2	– 15 ± 2	– 15 ± 2	– 15 ± 2
	Result to be obtained			No cracks	No cracks	No cracks	No cracks	No cracks
8.2	Elongation test at low temperature	EN 60811-1-4 8.3						
	Test conditions							
	– temperature		°C	– 15 ± 2	– 15 ± 2	–	–	–
	Elongation min.		%	20	20	–	–	–
9	Volume resistivity, min.	Annex A						
	- at max. rated temp. at cable		Ω.m	10^{8}	10^{8}	10^{7}	10^{9}	10^{7}
	- at 20 °C		Ω.m	10^{11}	10^{11}	10^{10}	10^{12}	10^{10}
10	Thermal stability [b] at 200 °C, min.	EN 60811-3-2 Clause 9	min	–	–	240	80	120
11	Shrinkage [c], max.	EN 60811-1-3 Clause 10	%	4	4			
	Test conditions							
	– temperature		°C	150 ± 2	150 ± 2	–	–	–
	– duration		min	15	15			
12	Dielectric constant [d]	Under consideration						

[a] The maximum rated temperature of 90 °C may exceed up to 105 °C, but with reduced lifetime.

[b] Test to be performed after ageing (14 x 24 h at 140 °C).

[c] When required in cable detail specification.

[d] When required the dielectric constant shall be measured at 1 kHz. Typical values are under consideration.