



SLOVENSKI STANDARD
SIST EN 300 019-2-4 V2.1.2:2006
01-februar-2006

Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-4: Specification of environmental tests; Stationary use at non-weatherprotected locations

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33.050.01	Telekomunikacijska terminalska oprema na splošno	Telecommunication terminal equipment in general

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European Standard (Telecommunications series)

**Equipment Engineering (EE);
Environmental conditions and environmental tests for
telecommunications equipment;
Part 2-4: Specification of environmental tests;
Stationary use at non-weatherprotected locations**

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Environmental Engineering (EE).

The present document consists of 2 parts as follows:

Part 1: "Classification of environmental conditions".

NOTE 1: Specifies different standardized environmental classes covering climatic and biological conditions, chemically and mechanically active substances and mechanical conditions during storage, transportation and in use.

Part 2: "Specification of environmental tests".

NOTE 2: Specifies the recommended test severities and test methods for the different environmental classes.

Each part of the standard is divided into sub-parts. Sub-part 2-0 forms a general overview of Part 2.

This sub-part 2-4 deals with stationary use at non-weatherprotected locations.

National transposition dates

Date of adoption of this EN:	3 September 1999
Date of latest announcement of this EN (doa):	31 December 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2000
Date of withdrawal of any conflicting National Standard (dow):	30 June 2000

1 Scope

The present document specifies test methods and severities for verification of the required resistibility of equipment according to the relevant environmental class.

The tests defined in Part 2-4 of this multi-part standard apply to stationary use of equipment at non-weatherprotected locations covering the environmental conditions stated in ETS 300 019-1-4 [1].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ETS 300 019-1-4: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-4: Classification of environmental conditions; Stationary use at non-weatherprotected locations".
- [2] IEC 60068-2: "Environmental testing - Part 2: Tests".
- [3] ETS 300 019-2-0: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-0: Specification of environmental tests; Introduction".
- [4] Void.
- [5] Void.
- [6] IEC 60721-3-4: "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weatherprotected locations".

3 Environmental test specifications

The detailed descriptions of the environmental conditions are given in clauses 4 and 5 of ETS 300 019-1-4 [1].

ETS 300 019-2-0 [3] forms a general overview of Part 2 of the present document.

The equipment under test is assumed to be in its operational state throughout the test conditions described in the present document unless otherwise stated. The required performance before, during and after the test need to be specified in the product specification. Input and load conditions of the equipment shall be chosen to obtain full utilization of the equipment under test. The heat dissipation shall be maximized, except for the steady state, low temperature test, where it shall be minimized.

3.1 Specification T 4.1: Non-weatherprotected locations

This specification applies to many member countries of ETSI. See tables 1 and 3.

Table 1: Test specification T 4.1: Stationary use at non-weatherprotected locations-climatic tests

Environmental parameter			Environmental Class 4.1	Environmental test specification T4.1: Stationary use, Non-weatherprotected locations					
Type	Parameter	Detail parameter	Characteristic severity	Test severity	Duration	Reference	Method	Notes	
Air temperature	low	(°C)	-33	-33 or -45	16 h	IEC 60068-2-1	Ab/Ad: Cold	1	
	high	(°C)	+40	+40 or +55	16 h	IEC 60068-2-2	Bb/Bd: Dry heat	2	
	change	(°C) (°C/min)	0,5	-10 / +40 0,5	2 cycles t ₁ = 3 h	IEC 60068-2-14	Nb: Change of temperature	3	
Humidity	relative	low	(%)	15	none			8	
		high	(%)	100	93 +30	21 d	IEC 60068-2-56	Cb: Damp heat steady state	4
		condensation	(%) (°C)	yes	90-100 +30	6 cycles	IEC 60068-2-30	Db: Damp heat, cyclic Variant 1	5
	absolute	low	(g/m ³)	0,26	none				
		high	(g/m ³)	25					6
Air	pressure	low	(kPa)	70	none			7	
		high	(kPa)	106	none			7	
	speed	(m/s)	50	none				8	
Water	rain	intensity	(mm/min)	6 mm/min	0,01 m ³ /min 90 kPa none	3 min/m ² or 15 min	IEC 60068-2-18	Rb: Impacting water Method 2.2	9
		low temperature	(°C)	+5					
	other sources icing & frosting			splashing water yes	none				10 8
Radiation	solar	(W/m ²)	1 120					11	
	heat	(W/m ²)	negligible						

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Environmental parameter			Environmental Class 4.1	Environmental test specification T4.1: Stationary use, Non-weatherprotected locations					
Type	Parameter	Detail parameter	Characteristic severity	Test severity	Duration	Reference	Method	Notes	
Chemically active substances	sulphur	SO ₂ (mg/m ³)	0,3/1,0	none				12	
		H ₂ S (mg/m ³)	0,1/0,5	none				12	
	chlorine	salt mist		sea and road salt	none				12
		Cl ₂ (mg/m ³)		0,1/0,3	none				12
		HCl (mg/m ³)		0,1/0,5	none				12
	nitrogen	NO _x (mg/m ³)		0,5/1,0	none				12
		NH ₃ (mg/m ³)		1,0/3,0	none				12
	hydrogen fluoride HF		(mg/m ³)	0,01/0,03	none				12
ozone O ₃		(mg/m ³)	0,05/0,1	none				12	
Mechanically active substances	dust	sedimentation (mg/(m ² h))	20					13	
		suspension (mg/m ³)	5					13	
	sand		(mg/m ³)	300					13
Flora and fauna	micro organisms		mould, fungus, etc.	none				14	
	rodents, insects		rodents, etc.	none				14	

NOTE 1: none = verification is required only in special cases.
NOTE 2: n = number of note, see clause 5.

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