



SLOVENSKI STANDARD
SIST EN 300 019-2-1 V2.1.2:2006

01-februar-2006

Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-1: Specification of environmental tests; Storage

Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-1: Specification of environmental tests; Storage

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 019-2-1 V2.1.2:2006](https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006)

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

Ta slovenski standard je istoveten z: EN 300 019-2-1 Version 2.1.2

ICS:

19.040	Preskušanje v zvezi z okoljem	Environmental testing
33.050.01	Telekomunikacijska terminalska oprema na splošno	Telecommunication terminal equipment in general

SIST EN 300 019-2-1 V2.1.2:2006 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 019-2-1 V2.1.2:2006](https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006)

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

ETSI EN 300 019-2-1 V2.1.2 (2000-09)

European Standard (Telecommunications series)

**Environmental Engineering (EE);
Environmental conditions and environmental tests
for telecommunications equipment;
Part 2-1: Specification of environmental tests;
Storage**

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN 300 019-2-1 V2.1.2:2006](https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006)

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>



Reference

REN/EE-01024-2-1

Keywords

Environment, equipment practice, testing

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 019-2-1 V2.1.2:2006](https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006)<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:
editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2000.
All rights reserved.

Contents

Intellectual Property Rights	4
Foreword.....	4
1 Scope	5
2 References	5
3 Environmental test specifications.....	6
3.1 Specification T 1.1: Weatherprotected, partly temperature-controlled storage locations.....	7
3.2 Specification T 1.2: Weatherprotected, not temperature-controlled storage locations.....	10
3.3 Specification T 1.3: Non-weatherprotected storage locations and T 1.3 E: Non-weatherprotected storage locations - extended.....	13
4 Notes to tables	18
4.1 General note	18
4.2 Notes to tables 1 to 7	18
Bibliography	20
History	21

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 300 019-2-1 V2.1.2:2006](https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006)

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document is part 2, sub-part 1 of a multi-part EN covering the environmental conditions and environmental tests for telecommunications equipment, as identified below:

Part 1: "Classification of environmental conditions; Storage";

Part 2: "Specification of environmental tests; Storage".

Part 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 specifies the recommended test severities and test methods for the different environmental classes.

SIST EN 300 019-2-1 V2.1.2:2006

<https://standards.iteh.ai/catalog/standards/sis/2c110567-403d-45cf-b481-74a93164702/sist-en-300-019-2-1-v2.1.2-2006>
National transposition dates

Date of adoption of this EN:	23 June 2000
Date of latest announcement of this EN (doa):	30 September 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 March 2001
Date of withdrawal of any conflicting National Standard (dow):	31 March 2001

1 Scope

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

The tests defined in Part 2-1 of this multi-part standard apply to storage of equipment covering the environmental conditions stated in ETS 300 019-1-1 [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] ETSI ETS 300 019-1-1: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-1: Classification of environmental conditions; Storage" (standards.iteh.ai)
- [2] ETSI ETS 300 019-2-0: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2-0: Specification of environmental tests; Introduction" (standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2.1.2-2006)
- [3] IEC 60068-2: "Environmental testing - Part 2: Tests".
- [4] IEC 60068-2-1: "Environmental testing - Part 2: Tests. Tests A: Cold".
- [5] IEC 60068-2-2: "Environmental testing - Part 2: Tests. Tests B: Dry heat".
- [6] IEC 60068-2-6: "Environmental testing - Part 2: Tests - Test Fc: Vibration (sinusoidal)".
- [7] IEC 60068-2-14: "Environmental testing - Part 2: Tests. Test N: Change of temperature".
- [8] IEC 60068-2-18: "Environmental testing - Part 2: Tests. Test R and guidance: Water".
- [9] IEC 60068-2-27: "Environmental testing. Part 2: Tests. Test Ea and guidance: Shock".
- [10] IEC 60068-2-30: "Environmental testing - Part 2: Tests. Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)".
- [11] IEC 60068-2-56: "Environmental testing - Part 2: Tests. Test Cb: Damp heat, steady state, primarily for equipment".
- [12] IEC 60068-2-64: "Environmental testing - Part 2: Test methods - Test Fh: Vibration, broad-band random (digital control) and guidance".
- [13] IEC 60068-2-68: "Environmental testing - Part 2: Tests - Test L: Dust and sand".
- [14] IEC 60721-3-3: "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations".

3 Environmental test specifications

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

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

If the equipment is normally stored in a packed state then it shall be tested in its packaging.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 019-2-1 V2.1.2:2006

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

3.1 Specification T 1.1: Weatherprotected, partly temperature-controlled storage locations

Table 1: Test specification T 1.1: Weatherprotected, partly temperature-controlled storage locations - climatic tests

Environmental parameter			Environmental Class 1.1	Environmental test specification T1.1: Weatherprotected, partly temperature-controlled storage locations					
Type	Parameter	Detail parameter	Characteristic severity	Test severity	Duration	Reference	Method	Notes	
Air temperature	low	(°C)	-5	-5	72 h	IEC 60068-2-1 [4]	Ab: Cold		
	high	(°C)	+45	+45 or +55	72 h	IEC 60068-2-2 [5]	Bb: Dry heat	2	
	change	(°C/min)	0,5	none				3	
Humidity	relative	low	(%)	5	none			10	
		high	(%)	95	93	96 h	IEC 60068-2-56 [11]	Cb: Damp heat steady state	5
		condensation	(°C)	yes	none				6
	absolute	low	(g/m ³)	1	none				10
		high	(g/m ³)	29					8
Air	pressure	low	(kPa)	70	none			9	
		high	(kPa)	106	none			9	
	speed	(m/s)	1	none				10	
Water	rain	intensity		no					
		low temperature		no					
	other sources icing & frosting			no yes				10	
Radiation	solar	(W/m ²)	700					13	
	heat	(W/m ²)	600					13	

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a931077f/sist-en-300-019-2-1-v2-1-2-2006>

IT&H STANDARD PREVIEW
(standards.iteh.ai)

Table 1: Test specification T1.1: Weatherprotected, partly temperature-controlled storage locations - climatic tests

Environmental parameter			Environmental Class 1.1	Environmental test specification T1.1: Weatherprotected, partly temperature-controlled storage 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				14	
		H ₂ S (mg/m ³)	0,1/0,5	none				14	
	chlorine	salts		sea and road salt mist	none				14
		Cl ₂ (mg/m ³)	0,1/0,3		none				14
		HCl (mg/m ³)	0,1/0,5		none				14
	nitrogen	NO _x (mg/m ³)	0,5/1,0		none				14
		NH ₃ (mg/m ³)	1,0/3,0		none				14
	hydrogen fluoride	HF (mg/m ³)	0,01/0,03		none				14
ozone	O ₃ (mg/m ³)	0,05/0,1		none				14	
Mechanically active substances	dust	sedimentation (mg/(m ² h))	1,5	none				15	
		suspension (mg/m ³)	0,2	none				15	
	sand	(mg/m ³)	30	none				15	
Flora and Fauna	micro organisms		negligible						
	rodents, insects		negligible						
no = this condition does not occur in this class. none = verification is required only in special cases.				NOTE: (n = number of note), see subclause 4.2.					

Table 2: Test specification T 1.1: Weatherprotected, partly temperature-controlled storage locations - mechanical tests

Environmental parameter			Environmental Class 1.1	Environmental test specification T 1.1: Weatherprotected, partly temperature-controlled storage locations				
Type	Parameter	Detail parameter	Characteristic severity	Test severity	Duration	Reference	Method	Notes
Vibration	sinusoidal	velocity (mm/s)	1,5	5	3 x 5 sweep cycles	IEC 60068-2-6 [6]	Fc: Vibration (sinusoidal)	17
		displacement (mm)						
		acceleration (m/s ²)	5	2				
		frequency range (Hz)	2-9 9-200	5-62 62-200				
		axes of vibration		3				
	random	ASD (m ² /s ³)		0,02	3 x 30 minutes	IEC 60068-2-64 [12]	Fh: Vibration, broad-band random (digital control)	18
		(dB/oct)						
		frequency range (Hz)		+12 -12				
		axes of vibration		5-10 10-50 50-100				
			3					
Shocks	shocks	shock spectrum	Type L	none				19a
		duration (ms)	22					
		acceleration (m/s ²)	40					
		number of shocks						
		directions of shocks						
Load	static load	(kPa)	5	none				20
no = this condition does not occur in this class. none = verification is required only in special cases.				NOTE (n = number of note), see subclause 4.2.				

<https://standards.iteh.ai/catalog/standards/sist/2c110567-403d-45cf-b481-74a9310f78f5/sist-en-300-019-2-1-v2-1-2-2006>

iTeh STANDARD PREVIEW
 (standards.iteh.ai)