



# SLOVENSKI STANDARD

## SIST EN 300 019-1-0 V2.1.2:2006

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Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-0: Classification of environmental conditions; Introduction

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**ICS:**

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

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# ETSI EN 300 019-1-0 V2.1.2 (2003-09)

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*European Standard (Telecommunications series)*

**Environmental Engineering (EE);  
Environmental conditions and environmental tests  
for telecommunications equipment;  
Part 1-0: Classification of environmental conditions;  
Introduction**

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## Intellectual Property Rights

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## Foreword

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

The present document is part 1, sub-part 0 of a multi-part deliverable covering the classification of environmental conditions and environmental tests for telecommunications equipment, as identified below:

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

**Sub-part 0: "Introduction";**

Sub-part 1: "Storage";

Sub-part 2: "Transportation";

Sub-part 3: "Stationary use at weatherprotected locations";

Sub-part 4: "Stationary use at non-weatherprotected locations";

Sub-part 5: "Ground vehicle installations";

Sub-part 6: "Ship environments";

Sub-part 7: "Portable and non-stationary use";

Sub-part 8: "Stationary use at underground locations";

Part 2: "Specification of environmental tests".

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.

### National transposition dates

Date of adoption of this EN:	5 September 2003
Date of latest announcement of this EN (doa):	31 December 2003
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2004
Date of withdrawal of any conflicting National Standard (dow):	30 June 2004

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## 1 Scope

The purpose of the present document is to select class(es) of environmental conditions and their severities to which equipment may be exposed. Only severe conditions, which may be harmful to the equipment, are included. The severities specified are those which will have a low probability of being exceeded; generally less than 1 %.

The purpose of the present document is to form a general overview of Part 1.

TR 100 035 [1] should be used in conjunction with all parts of EN 300 019 series. It gives an introduction to the main concepts of environmental engineering, the purpose and use of environmental classes and the corresponding test philosophy.

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## 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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] ETSI TR 100 035: "Environmental Engineering (EE); Environmental engineering; Guidance and terminology".
- [2] ETSI EN 300 019-1 (all subparts): "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Classification of environmental conditions".
- [3] ETSI EN 300 019-2 (all subparts): "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Specification of environmental tests".

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## 3 Definitions

For the purposes of the present document, the following terms and definitions apply:

**environmental class:** systematic representation of the environment for a family of locations with "similar properties"

NOTE: This means that the detailed description of the class may be envisaged as an envelope around a group of related environmental conditions. The class itself may not be considered directly as a typical example.

A class is composed of the most significant single factors, termed environmental parameters, selected from those factors which are assumed to influence equipment performance.

Full descriptions of each class are included in the appropriate parts of EN 300 019-1 [2].

**environmental condition:** physical, chemical or biological condition, external to an equipment, to which it is subjected at a certain time.

NOTE: Environmental conditions are generally composed of environmental conditions appearing in nature and environmental conditions generated by the equipment itself or by external sources.

**environmental factor:** physical, chemical or biological influence which, either singly or in combination with other influences, produces an environmental condition (e.g. heat, vibration)

**environmental parameter:** one or more physical, chemical or biological properties characterizing an environmental factor (e.g. temperature, acceleration)

EXAMPLE: The environmental factor vibration is characterized by the parameters: type of vibration (sinusoidal, random), acceleration and frequency.

**in-use:** An equipment is in-use when it is directly operational.

**mobile use:** An equipment is in mobile use when it is primarily intended to be installed or fixed and operated in or on, a vehicle or a ship.

**portable and non-stationary use:** The equipment is frequently moved from place to place. During transfer there is no special packaging for the equipment. The total transfer time may amount to a significant portion of the equipment's lifetime. The equipment is not permanently mounted on any structure or placed at a fixed site. The equipment may be operated while being either in a non-stationary or in a transfer state.

**severity of environmental parameter:** value of each quantity, characterizing the environmental parameter

EXAMPLE: The severity of sinusoidal vibration is defined by values of the acceleration ( $\text{m/s}^2$ ) and frequency (Hz).

**stationary use:** An equipment is mounted firmly on the structure, or on mounting devices, or it is permanently placed at a certain site. It is not intended for portable use, but short periods of handling during erection work, down time, maintenance and repair at the location are included.

**storage:** The equipment is placed at a certain site for a long period, but is not intended for use during this period. If the equipment is packaged, the environmental conditions apply to the packaging protecting the equipment.

**transportation:** phase during which the equipment is moved from one place to another after being made ready for dispatch

NOTE: It includes loading, unloading and temporary storage. The equipment is not in-use under these conditions.

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## 4 Environmental classes

### 4.1 Purpose of classification

The main purpose of environmental classification is to establish a number of "standardized" and operational frames of reference for a wide range of applications of (telecommunications) equipment. These classes cover storage, transportation, and in-use, in typical environmental conditions.



## 4.2 Environmental classes covered in Part 1

NOT IN-USE		IN-USE					
Storage	Transportation	Stationary use			Mobile use		Portable and non-stationary use
		Weather-protected locations	Non-weather-protected locations	Underground locations	Ground vehicle installations	Ship environment	
ETSI EN 300 019 Part 1-1	ETSI EN 300 019 Part 1-2	ETSI EN 300 019 Part 1-3	ETSI EN 300 019 Part 1-4	ETSI EN 300 019 Part 1-8	ETSI EN 300 019 Part 1-5	ETSI EN 300 019 Part 1-6	ETSI EN 300 019 Part 1-7
<b>Class 1.1</b> Weather-protected, partly temperature-controlled storage locations	Class 2.1 Very careful transportation	<b>Class 3.1</b> Temperature-controlled locations	Class 4.1 Non-weather-protected locations	Class 8.1 Partly weather-protected underground locations	Class 5.1 Protected installation	Class 6.1 Totally weather-protected locations	Class 7.1 Temperature controlled locations
Class 1.2 Weather-protected, not temperature-controlled storage locations	Class 2.2 Careful transportation	Class 3.2 Partly temperature-controlled locations	Class 4.1E Non-weather-protected locations - extended		Class 5.2 Partly protected installation	Class 6.2 Partly weather-protected locations	Class 7.2 Partly temperature-controlled locations
Class 1.3 Non-weather-protected storage locations	<b>Class 2.3</b> Public transportation	Class 3.3 Not temperature-controlled locations	Class 4.2L Non-weather-protected locations - extremely cold			Class 6.3 Non-weather-protected locations	Class 7.3 Partly weather-protected and non-weather-protected locations
Class 1.3E Non-weather-protected storage locations - extended		Class 3.4 Sites with heat-trap	Class 4.2H Non-weather-protected locations - extremely warm dry				Class 7.3E Partly weather-protected and non-weather-protected locations - extended
		Class 3.5 Sheltered locations					
		Class 3.6 Telecommunications control room locations					

NOTE 1: For each item of equipment, classes need to be selected for:

- storage;
- transportation;
- in-use (one or more classes can be selected).

NOTE 2: The example (**in bold**) shows possible class selections for equipment, i.e. class 1.1, class 2.3 and class 3.1.

NOTE 3: Class 3.1 includes exceptional operating conditions (shown as 3.1E in table 1 of EN 300 019-1-3 [2]) where reduced performance requirements are allowed. There shall be no irreversible failures when normal operating conditions has been restored. There is no separate class 3.1E.

Figure 1