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Environmental Engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment - Part 2: Specification of environmental tests - Sub-part 7: Portable and non-stationary use

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**Environmental Engineering (EE);
Environmental conditions and environmental tests
for telecommunications equipment;
Part 2: Specification of environmental tests;
Sub-part 7: Portable and non-stationary use**

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Foreword

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

The present document is part 2, sub-part 7 of a multi-part deliverable. Full details of the entire series can be found in part 2, sub-part 0 [i.1].

National transposition dates

Date of adoption of this EN:	12 September 2024
Date of latest announcement of this EN (doa):	31 December 2024
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 June 2025
Date of withdrawal of any conflicting National Standard (dow):	30 June 2025

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

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

The tests defined in the present document apply to portable and non-stationary use of equipment, covering the environments stated in ETSI EN 300 019-1-7 [1].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are necessary for the application of the present document.

- [1] [ETSI EN 300 019-1-7 \(V2.1.4\)](#): "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-7: Classification of environmental conditions; Portable and non-stationary use".
- [2] [IEC 60068-2-1 \(03-2007\)](#): "Environmental testing - Part 2-1: Tests - Test A: Cold".
- [3] [IEC 60068-2-2 \(07-2007\)](#): "Environmental testing - Part 2-2: Tests - Test B: Dry heat".
- [4] [IEC 60068-2-14:2023](#): "Environmental testing - Part 2-14: Tests - Test N: Change of temperature".
- [5] [IEC 60068-2-78 \(10-2012\)](#): "Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state".
- [6] [IEC 60068-2-30 \(08-2005\)](#): "Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)".
- [7] [IEC 60068-2-18 \(03-2017\)](#): "Environmental testing - Part 2-18: Tests - Test R and guidance: Water".
- [8] [IEC 60068-2-64 \(2008+A1:2019\)](#): "Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance".
- [9] [IEC 60068-2-27 \(02-2008\)](#): "Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock".
- [10] [IEC 60068-2-31 \(05-2008\)](#): "Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens".

2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI EN 300 019-2-0: "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 2: Specification of environmental tests; Sub-part 0: Introduction".
- [i.2] ETSI EN 300 019-1-0: "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-0: Classification of environmental conditions; Introduction".
- [i.3] IEC 60068-2-68 (08-1994): "Environmental testing - Part 2-68: Tests - Test L: Dust and sand".
- [i.4] IEC 60721-3-7 (10-2002): "Classification of environmental conditions - Part 3-7: Classification of groups of environmental parameters and their severities - Portable and non-stationary use".

3 Definition of terms, symbols and abbreviations

3.1 Terms (<https://standards.iteh.ai>)

For the purposes of the present document, the terms given in ETSI EN 300 019-1-0 [i.2] apply.

3.2 Symbols

For the purposes of the present document, the symbols given in ETSI EN 300 019-1-0 [i.2] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI EN 300 019-1-0 [i.2] apply.

4 Environmental test specifications

4.0 General

The equipment shall be tested in its operational state throughout the test conditions described in the present document. The detailed descriptions of the environmental conditions are given in clauses 4 and 5 of ETSI EN 300 019-1-7 [1].

ETSI EN 300 019-2-0 [i.1] forms a general overview of part 2 of this multi-part deliverable.

4.1 Equipment setup and configuration

The equipment shall be tested in its operational state throughout the test conditions described in the present document unless otherwise stated. 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.

4.2 Performance criteria

The following performance criteria shall apply in the tests defined by the present document.

Performance criterion A:

The equipment shall function according to the manufacturer specifications before, during and after the tests. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer when the apparatus is used as intended. If the minimum performance level is not specified by the manufacturer, then this may be deduced from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

Performance criterion B:

The equipment shall function according to the manufacturer specifications before and after the tests. During the test it is not required to monitor the equipment functionality. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer when the apparatus is used as intended. If the minimum performance level is not specified by the manufacturer, then this may be deduced from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

Performance criterion C:

The equipment shall function according to the manufacturer specifications before and after the tests. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer when the apparatus is used as intended. If the minimum performance level is not specified by the manufacturer, then this may be deduced from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

During the application of the test, temporary loss of function is allowed but after the test the equipment shall restore to the normal functionality without replacement of components, manual rebooting or human intervention.

The equipment shall sustain the test without permanent structural or mechanical damage.

Performance criterion D:

This performance criterion applies to the enclosure of the equipment. No corrosion traces (e.g. rust) or deterioration of the enclosure shall occur at the end of the test.

4.3 Specification T 7.1: temperature-controlled locations

The tests specifications T 7.1 of the present document shall apply to equipment, depending on the selected IEC mechanical class, used at, and direct transfer between, permanently temperature-controlled and enclosed locations. Humidity is usually not controlled. See tables 1, 5 and 6.

4.4 Specification T 7.2: partly temperature-controlled locations

The tests specifications T 7.2 of the present document shall apply to equipment, depending on the selected IEC mechanical class, used at, and direct transfer between, enclosed locations having neither temperature nor humidity control. See tables 2, 5 and 6.

4.5 Specification T 7.3: partly weatherprotected and non-weatherprotected locations

The tests specifications T 7.3 of the present document shall apply to equipment, depending on the selected IEC mechanical class, used at partly weatherprotected locations in buildings of such a construction that extremely low temperatures are avoided. This class also applies to use at non-weatherprotected locations in a Warm Temperate climate and to transfer between these locations. During cold seasons non-weatherprotected use and transfer is limited. See tables 3, 5 and 6.

4.6 Specification T 7.3E: partly weatherprotected and non-weatherprotected locations - extended

The tests specifications T 7.3E of the present document shall apply to equipment, depending on the selected IEC mechanical class, used at partly weatherprotected locations in buildings of any construction - except in extremely cold and cold climates - where extremely low temperatures shall be avoided. This class also applies at non-weatherprotected locations in moderate open-air climates and to transfer between these conditions (during extremely cold days use and transfer is limited). See tables 4, 5 and 6.

4.7 Specification T 7.1: temperature-controlled locations - climatic test

This specification in table 1 shall apply to use at, and direct transfer between, permanently temperature-controlled enclosed locations where humidity is usually not controlled described in ETSI EN 300 019-1-7 [1]. See tables 1, 5 and 6.

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