SLOVENSKI STANDARD
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Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment; Part 1-1: Classification of environmental conditions; Storage

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European Standard (Telecommunications series)

Environmental Engineering (EE);
Environmental conditions and environmental tests
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Part 1-1: Classification of environmental conditions;
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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 1 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 1-0 forms a general overview of part 1.

Part 2 specifies the recommended test severities and test methods for the different environmental classes.

National transposition dates	
Date of adoption of this EN:	19 April 2002
Date of latest announcement of this EN (doa):	31 July 2002
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2003
Date of withdrawal of any conflicting National Standard (dow):	31 January 2003

1 Scope

The present document defines classes of environmental conditions and their severities to which telecommunication equipment may be exposed during storage. The severities specified are those which will have a low probability of being exceeded; generally less than 1 %.

NOTE 1: Temporary storage during transport is included in part 1-2: Transportation.

NOTE 2: If the equipment is stored in its package, the environmental conditions apply to the packaged equipment.

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.

[1]   IEC 60721-3-1: "Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 1: Storage".

[2]   IEC 60068-2-27: "Environmental testing. Part 2: Tests. Test Ea and guidance: Shock".

[3]   IEC 60721-2-4: "Classification of environmental conditions. Part 2: Environmental conditions appearing in nature: Solar radiation and temperature".

3 Definitions

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

absolute humidity: mass of water vapour in grammes which is associated with one cubic metre of dry air in an air/water vapour mixture

non-weatherprotected location: location at which equipment is not protected from direct weather influences

relative humidity: ratio of the partial pressure of the water vapour in moist air at a given temperature, to the partial pressure of the water vapour in saturated air at the same temperature

storage: certain site where the equipment is placed for long periods but is not intended for use during these periods

weatherprotected location: location at which the equipment is protected from weather influences

NOTE 1: Totally weatherprotected location: Direct weather influences are totally excluded.

NOTE 2: Partly weatherprotected location: Direct weather influences are not completely excluded.

4   Environmental classes

The classes shown in parentheses, e.g. (1C1), may be selected for special applications.

4.1   Class 1.1: Weatherprotected, partly temperature-controlled storage locations

This class is a combination of classes 1K3/1Z2/1B1/1C2(1C1)/1S2/1M2 in IEC 60721-3-1 [1].

This class applies to weatherprotected partly temperature controlled storage. Humidity is usually not controlled. The climatogram is shown in figure 1.

Heating may be used to raise low temperatures especially where there is a significant difference between the conditions of this class and the open-air climate. Building construction is designed to avoid extremely high temperatures.

This class applies to storage locations:

- where equipment may be exposed to solar radiation and heat radiation. It may also be exposed to movements of the surrounding air due to draughts in buildings, e.g. through open windows. It is not subjected to precipitation and water from sources other than rain;

- without particular risks by biological attacks. This includes protective measures, e.g. special package design, or storing at locations of such construction that mould growth, attacks by animals etc. are not probable;

- with normal levels of contaminants experienced in urban areas with industrial activities scattered over the whole area, and/or with heavy traffic;

- without special precautions to minimize the presence of dust or sand, but not situated in proximity to dust or sand sources;

- with vibration of low significance and insignificant shock.

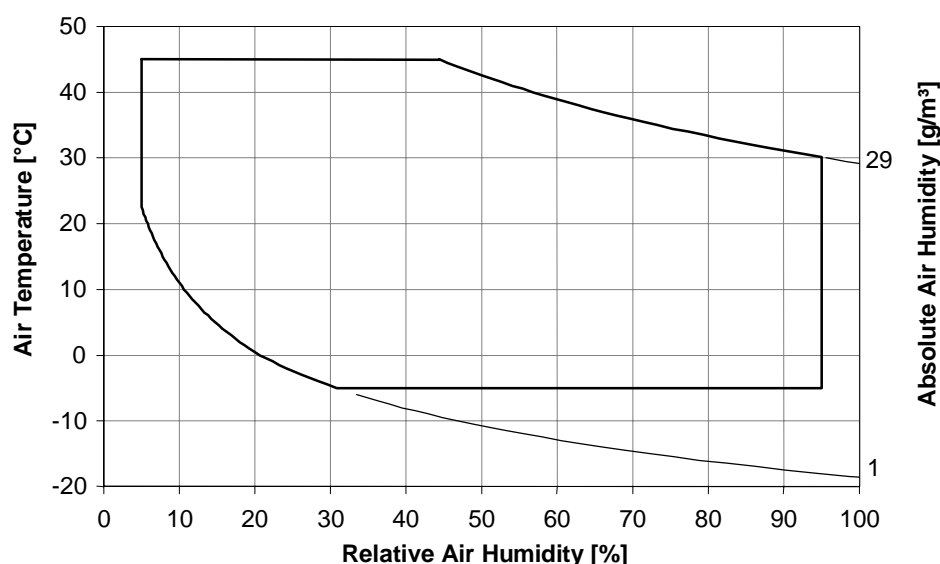The conditions of this class may occur in ordinary storage rooms for frost-resistant products.

**Figure 1: Climatogram for class 1.1: weatherprotected,
partly temperature-controlled storage locations**

4.2   Class 1.2: Weatherprotected, not temperature-controlled storage locations

This class is a combination of classes 1K4/1Z2/1Z3/1Z5/1B2/1C2(1C1)/1S3/1M2 in IEC 60721-3-1 [1].

This class applies to weatherprotected storage having neither temperature nor humidity control. The location may have openings directly to the open air, i.e. it may be only partly weatherprotected. The climatogram is shown in figure 2.

This class applies to storage locations:

-    where equipment may be exposed to solar radiation and temporarily to heat radiation. They may also be exposed to movements of the surrounding air due to draughts, e.g. through doors, windows or other openings. They may be subjected to condensed water, dripping water and to icing. They may also be subjected to limited wind-driven precipitation including snow;

-    where mould growth, or attacks by animals, except termites, may occur;

-    with normal levels of contaminants experienced in urban areas with industrial activities scattered over the whole area, and/or with heavy traffic;

-    in areas with sources of sand or dust, including urban areas;

-    with vibration of low significance and insignificant shock.

The conditions of this class may occur in:

-    unattended buildings;

-    some entrances of buildings;

-    some garages and shacks.

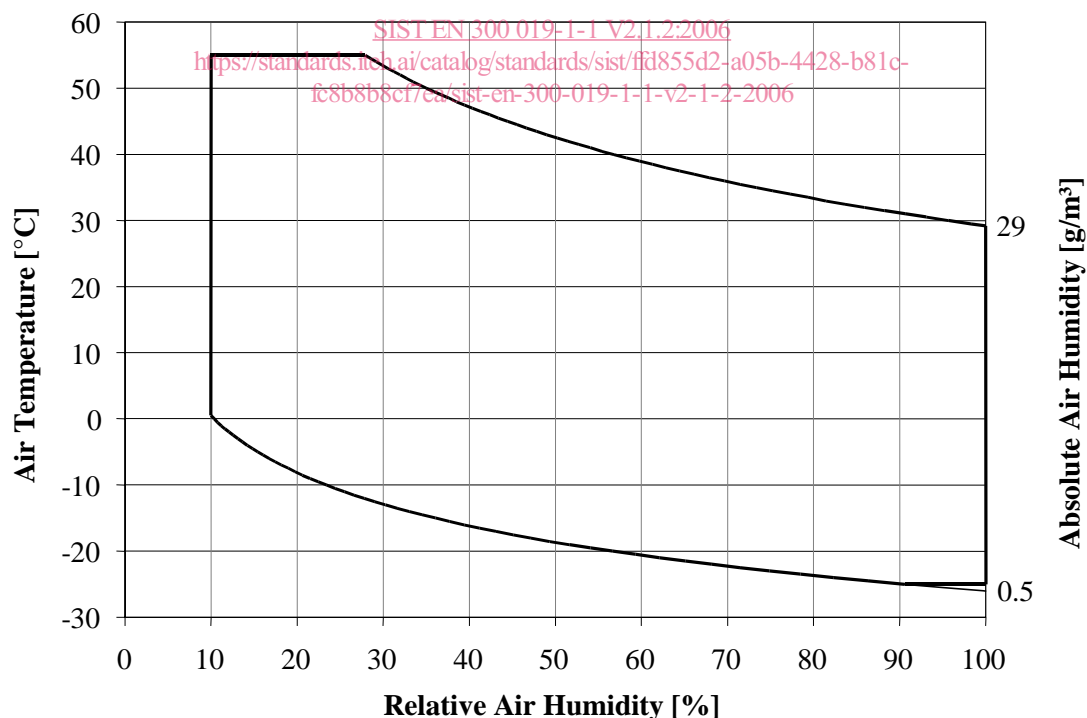iTeh STANDARD PREVIEW
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Figure 2: Climatogram for class 1.2: weatherprotected, not temperature-controlled storage locations