

Final draft **ETSI EN 300 119-1** V2.1.0 (2004-05)

European Standard (Telecommunications series)

**Environmental Engineering (EE);
European telecommunication standard
for equipment practice;
Part 1: Introduction and terminology**



Reference

REN/EE-TMG003

Keywords

environment, equipment practice, vocabulary

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Environmental Engineering (EE), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document is part 1 of a multi-part deliverable, aimed at setting out on a common basis, the installation engineering requirements for telecommunication practice. The present document is a general introduction and explains the terminology used. EN 300 119-2 [2] specifies the engineering requirements for racks and cabinets.

EN 300 119-3 [3] covers the engineering requirements for miscellaneous racks/cabinets. EN 300 119-4 [4] covers the engineering requirements for subracks in miscellaneous racks and cabinets. EN 300 119-5 [5] covers the preferred thermal management solutions for subracks, racks/cabinets and miscellaneous racks/cabinets installed indoors in restricted access locations, for the removal of heat dissipated by one or more subracks in a rack complying to the requirements of this multi-part standard.

The present document applies to all telecommunications equipment forming part of public telecommunications networks and is based on the work of IEC Sub Committee 48D.

The present document is part 1 of a multi-part deliverable covering the European telecommunication standard for equipment practice, as identified below:

Part 1: "Introduction and terminology";

Part 2: "Engineering requirements for racks and cabinets";

Part 3: "Engineering requirements for miscellaneous racks and cabinets";

Part 4: "Engineering requirements for subracks in miscellaneous racks and cabinets";

Part 5: "Thermal management".

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

1 Scope

The present document sets out the major engineering requirements for telecommunications equipment forming part of a public telecommunications network installed either on public telecommunications operators' sites or in premises of operators' customers.

It is expected that the areas of transmission equipment and switching equipment will increasingly merge into one. As a result, the present document should be applied to all forms of telecommunications equipment.

The operating authorities should be given the data to help them plan buildings and building utilization, including ceiling heights, equipment and traffic areas, hallways and doors and transport installations (freight elevators, loading ramps, etc.). They also need to be able to compute the structural design requirements and the type and scope of air conditioning needed.

It should be made possible to expand existing installations and to combine equipment from different manufacturers. Therefore, operating authorities are guaranteed a wide scope for system selection.

The equipment designer should be able to derive a suitable mechanical design for telecommunications equipment.

Such a scope calls for standardization of certain levels in the mechanical hierarchy, e.g.:

- dimensions for racks, miscellaneous racks and subracks. The definitions of cabinets and racks contained in IEC publication 60917-1 [1] are:
 - **Cabinet:** a free-standing and self-supporting enclosure for housing electrical and/or electronic equipment. It is usually fitted with doors and/or side panels which may or may not be removable;
 - **Rack:** a free-standing or fixed structure for housing electrical and/or electronic equipment.
- accessibility of rack rows;
- cable access;
- heat load;
- static load;
- compatibility with Electro-Magnetic Compatibility (EMC) and Electro-Static Discharge (ESD) requirements.

Existing equipment practices are not covered by the present document.

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] IEC publication 60917-1: "Modular order for the development of mechanical structures for electronic equipment practices - Part 1: Generic standard".
- [2] ETSI EN 300 119-2: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 2: Engineering requirements for racks and cabinets".

- [3] ETSI EN 300 119-3: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 3: Engineering requirements for miscellaneous racks and cabinets".
- [4] ETSI EN 300 119-4: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 4: Engineering requirements for subracks in miscellaneous racks and cabinets".
- [5] ETSI EN 300 119-5: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 5: Thermal management".

3 Mechanical equipment interfaces

When defining an equipment practice, the mechanical interfaces between parts (of the equipment concerned) shall be specified.

These interfaces are defined as the physical boundaries between different parts and are characterized by co-ordination dimensions.

All environmental considerations (including electro-magnetic and electro-static) shall be addressed within these dimensional constraints.

4 The multi-level approach

In most equipment practices subracks are mounted in racks/cabinets. Thus, mechanical interfaces, i.e. boundaries, exist between these different pieces of equipment.

However, to avoid unnecessary specifications, the restriction is made that minimal requirements are only stated for the mechanical interfaces between equipment of different manufacturers or for functionally different equipment from a single manufacturer.

This means, for example, that equipment delivered in a rack/cabinet from a single manufacturer has only to fulfil the requirements regarding the mechanical interface between the rack/cabinet and the environment and not any requirements regarding the mechanical interfaces inside the rack/cabinet. In the framework of the present document, this situation refers to the rack/cabinet as a complete, independent, mechanical entity.

The specification of the miscellaneous rack/cabinet is thus determined by the mechanical interfaces to the environment and between the rack and the installed subracks.

NOTE: The miscellaneous rack has to accommodate subracks of several different types of equipment and suppliers.

These two levels may be expanded towards an interface specification, e.g. between miscellaneous subracks and plug-in units. Such an expansion depends on future technical needs and necessities, and is not, therefore, included within the present document.

The present deliverable is presented in five parts. The present part constitutes an introduction and terminology. EN 300 119-2 [2] specifies the engineering requirements for racks/cabinets and EN 300 119-3 [3] the engineering requirements for miscellaneous racks/cabinets - the miscellaneous racks and cabinets have to incorporate subracks of several types of equipment and/or suppliers. EN 300 119-4 [4] covers engineering requirements for subracks in miscellaneous racks (see figure 1). EN 300 119-5 [5] covers the preferred thermal management solutions for subracks, racks/cabinets and miscellaneous racks/cabinets installed indoors in restricted access locations, for the removal of heat dissipated by one or more subracks in an ETSI rack.

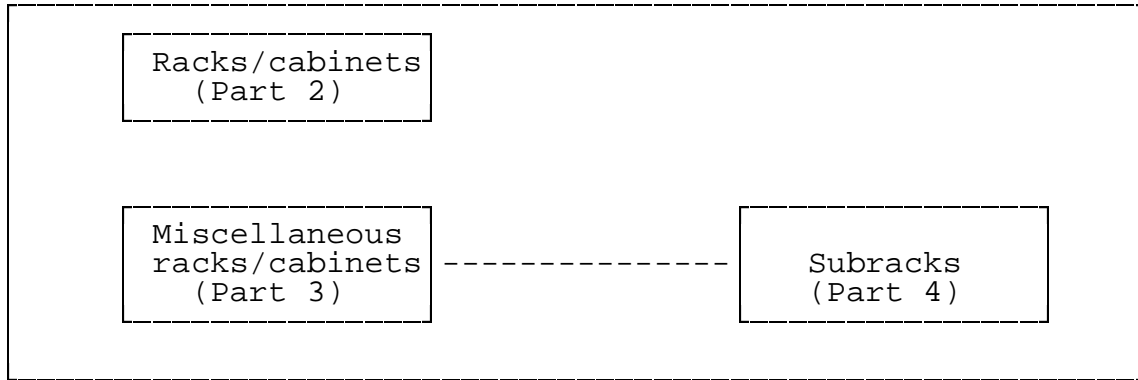


Figure 1

History

Document history		
Edition 1	January 1994	Publication as ETS 300 119-1
V2.1.0	May 2004	One-step Approval Procedure OAP 20040924: 2004-05-26 to 2004-09-24