



**Environmental Engineering (EE);
European telecommunication standard
for equipment practice;
Part 7: Engineering requirements for
Subracks in harmonized racks and cabinets
with extended features**

Reference

DEN/EE-0058

Keywords

environment, equipment practice, rack

ETSI

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Foreword

This draft European Standard (EN) has been produced by ETSI Technical Committee Environmental Engineering (EE), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI standards EN Approval Procedure.

The present document is part 7 of a multi-part deliverable aimed at setting out, on a common basis, the engineering requirements for telecommunication practice, for housing equipment forming part of a public telecommunications network. ETSI EN 300 119-1 [i.1] is a general introduction and explains the terminology used. ETSI EN 300 119-2 [i.2] specifies the engineering requirements for racks and cabinets and ETSI EN 300 119-3 [i.3] specifies the engineering requirements for miscellaneous racks and cabinets. ETSI EN 300 119-5 [i.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 specifies the engineering requirements for subracks mounted in harmonized racks and cabinets with extended features.

The present document applies to all telecommunications equipment forming part of the public telecommunications network.

The present document, ETSI EN 300 119-7, is defining extension to the existing parts of the standard to harmonize dimensions and to extend rack installation capabilities.

These extended features are:

- mounting bracket depth adjustment only on subrack level (as normally done in many other standardized equipment practices; see 19 inches)
- common position of mounting brackets for both 300 mm and 600 mm depth
- recessed subrack mounting plane compared to ETSI EN 300 119-3 [i.3] and ETSI EN 300 119-4 [i.4] to allow more room for cable management and better cable access from front/rear aisle
- design subrack mounting plane in a manner so that not only 600 mm deep rack is a earthquake proof design but also the 300 mm rack (600 mm: ~7 inches deep upright; 300 mm ~3,5 inches deep upright; commonality with EIA rack standard for SNBF)
- make ETSI mounting principle similar to SNBF (5 inches deep upright) which is used in USA telecommunication offices to gain more commonality for international markets
- define extra front side cabling space for accommodating optical and electrical I/O cables

Illustrative figures are contained in annex A.

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

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

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**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 details requirements for subracks for use in harmonized racks/cabinets, as described in ETSI EN 300 119-6 [i.6]. The subrack will normally be supplied as a fully assembled structure, unequipped, partially equipped or fully equipped with plug-in units, etc.

2 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 reference document (including any amendments) applies.

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NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

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

- [1] IEC 60917-2-2: "Modular order for the development of mechanical structures for electronic equipment practices - Part 2: Sectional specification - Interface co-ordination dimensions for the 25 mm equipment practice - Section 2: Detail specification - Dimensions for subracks, chassis, backplanes, front panels and plug-in units".

2.2 Informative references

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 300 119-1: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 1: Introduction and terminology".
- [i.2] ETSI EN 300 119-2: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 2: Engineering requirements for racks and cabinets".
- [i.3] ETSI EN 300 119-3: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 3: Engineering requirements for miscellaneous racks and cabinets".
- [i.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".
- [i.5] ETSI EN 300 119-5: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 5: Thermal management".
- [i.6] ETSI EN 300 119-6: "Environmental Engineering (EE); European telecommunication standard for equipment practice; Part 6: Engineering requirements for harmonized racks and cabinets with extended features".
- [i.7] ECIA EIA/ECA-310-E: "Cabinets, Racks, Panels, and Associated Equipment".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

EIA	Electronic Industries Alliance
SNBF	Seismic Network Bay Frame

NOTE: Based on 23 inches EIA-310-E standard [i.7].

USA	United States of America
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4 Dimensions for subracks

The dimensions height H, width W and depth D1 and D2 of the equipped subrack shall include all plug-in units, switches, lamps, cooling fans, connectors, etc.

The depth dimensions for the subrack mounting brackets are harmonized between 300 mm and 600 mm deep racks so that two subracks can be also mounted back to back into a 600 mm deep rack without changing the mounting bracket position. For a maximum of installation flexibility, the mounting brackets shall be replaceable by different mounting bracket types or they shall just be adjustable depthwise. Hence they shall not be an integrated part of subrack side plates but separate parts.

For a table of dimensions, see table 1 and refer to figures A.1, A.2, A.3 and A.4.

5 Accessibility

Subracks fitting in a harmonized rack/cabinet with extended features or a miscellaneous rack/cabinet of depth 300 mm shall require access only from the front, so that they can be placed in harmonized rack/cabinet with extended features or miscellaneous racks/cabinets which are back to back or against a wall.

6 Weight

6.1 Unequipped subrack

Unequipped subracks shall have a maximum weight of 18 kg for safe handling. Supply of subracks exceeding 18 kg, if requested, shall be agreed between the supplier and user.

6.2 Equipped subrack

On demand, the supplier shall provide administrations, operators or customers with the total weight of the equipped subrack to enable the fully equipped miscellaneous rack/cabinet weight to be determined for telecommunications centres and customer site floor loading calculations.

NOTE: See also figures A.1 and A.2 where dimensions are in mm.

Table 1

Dimensions for subracks mounted in harmonized racks/cabinets with extended features	(see note 2)				
H = height	C	n x 25			
W1= overall width over flanges	C	535 (see note 1)		535	
W2= width	C	450		500	
W3= mounting centre distance	A	515 (see note 1)		515	
R = mounting position	C	12,5 + n x 25		12,5 + n x 25	
S = mounting pitch	A	n x 25		n x 25	
D1 = mounting depth (front)	C	rack 300 deep	rack 600 deep	rack 300 deep	rack 600 deep
		200	200	200	200
D2 = mounting depth (rear)	C	80	375	80	375
<p>NOTE 1: Subracks with dimensions W1 = 485 and W3 = 465 may be fitted into harmonized racks/cabinets with extended features (ETSI EN 300 119-6 [i.6] or miscellaneous racks/cabinets (ETSI EN 300 119-3 [i.3]) by use of adaptors.</p> <p>NOTE 2: A = Actual dimension. Tolerances needed for W3 and S shall be as specified in IEC 60917-2-2 [1]. C = Coordination dimension.</p> <p>NOTE 3: n = 0, 1, 2, 3, etc. (the value of n can be different for H, R and S).</p> <p>Definition: A coordination dimension is a reference dimension used to coordinate mechanical interfaces. This is not a manufacturing dimension with a tolerance. An aperture dimension is a special coordination dimension for a usable space between features. An actual outside dimension corresponding to a coordination dimension can only decrease. An actual inside dimension corresponding to an aperture dimension can only increase.</p>					

Annex A (informative): Illustrative figures

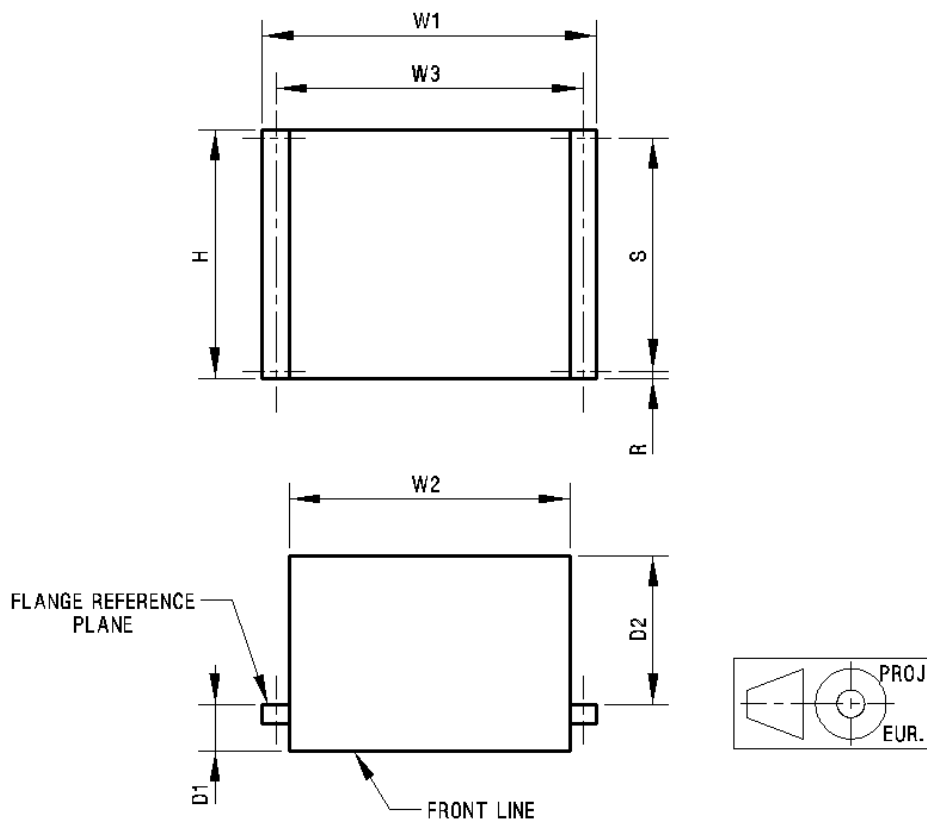


Figure A.1: Subrack

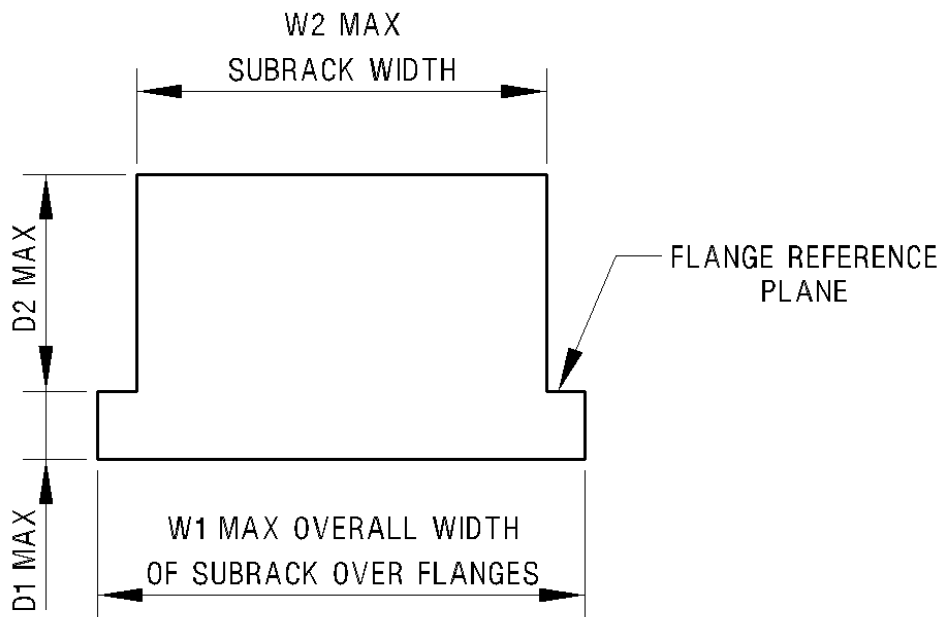
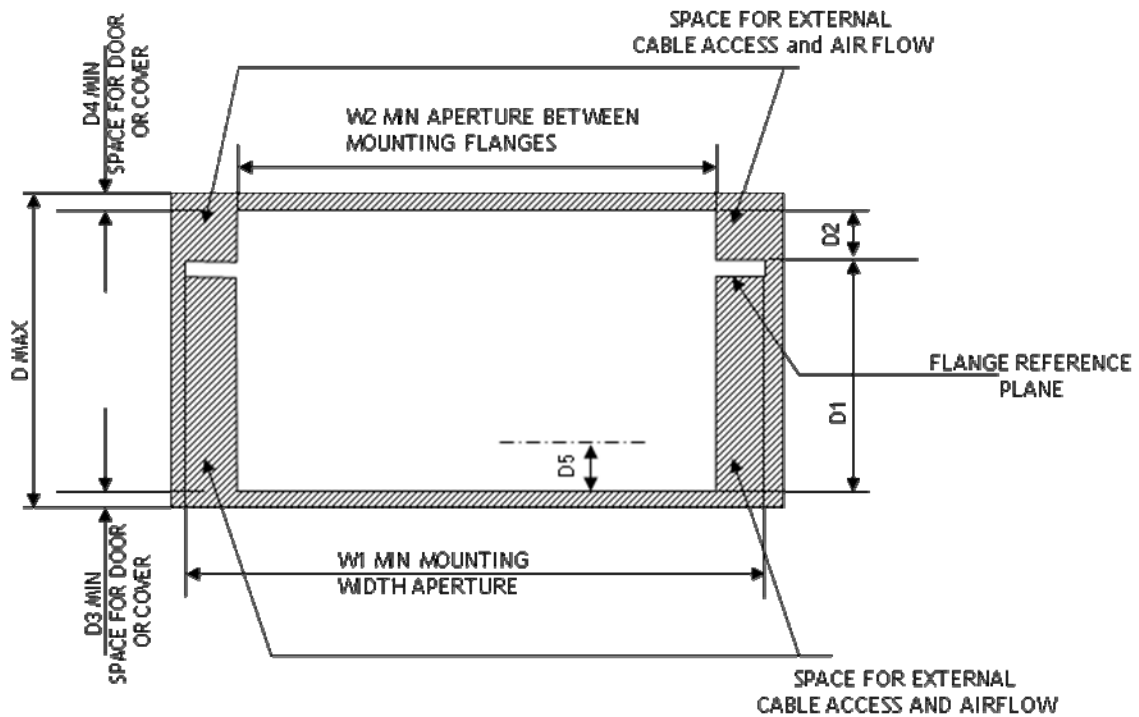


Figure A.2: Subrack



D5 = SPACE FOR CABLE MANAGEMENT (>60mm RECOMMENDED)

NOTE: *: Space to be available for equipment, e.g. subracks.

Figure A.3: Harmonized Subrack for 300 mm deep Rack/Cabinet with extended Features

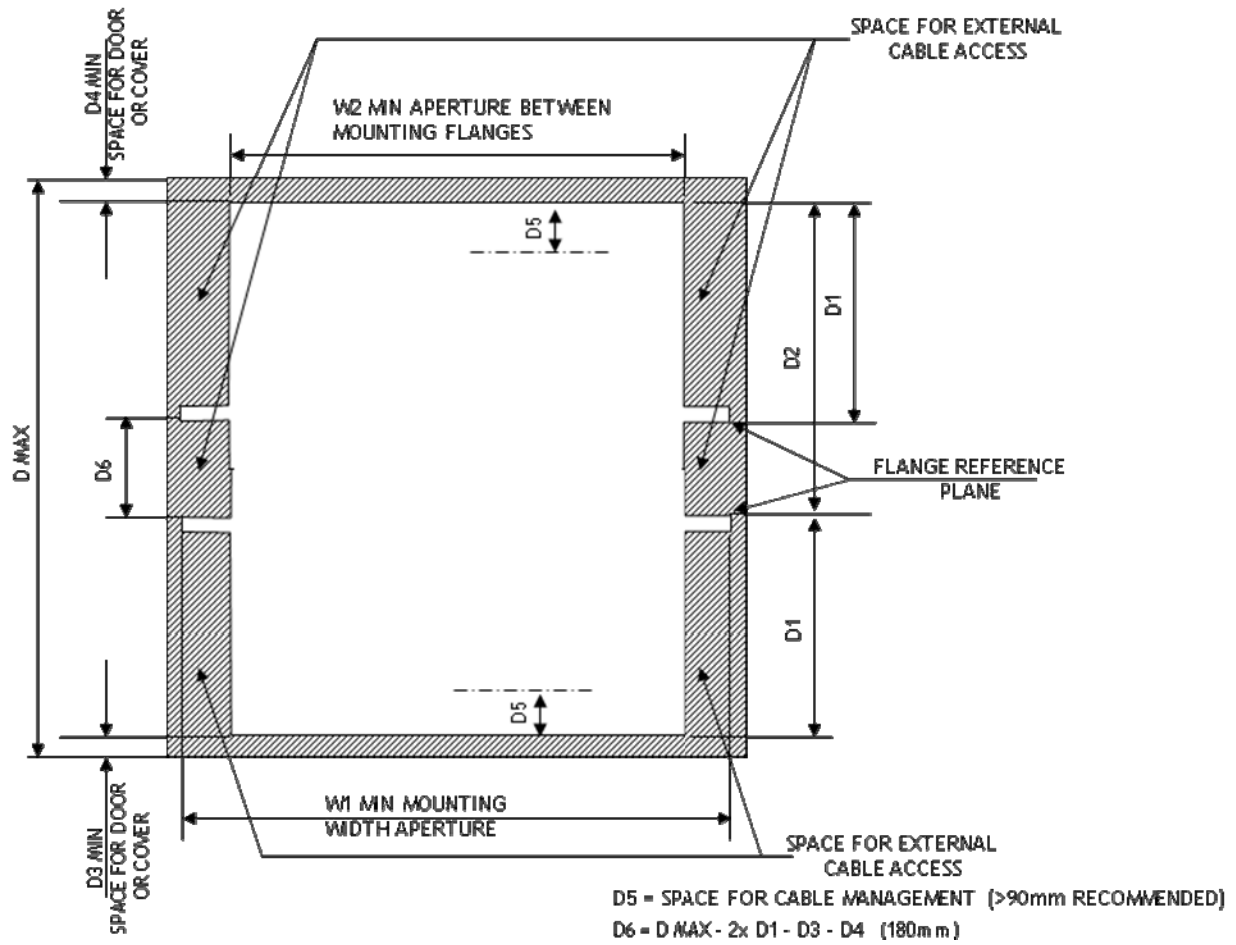


Figure A.4: Harmonized Subrack for 600 mm deep Rack/Cabinet with extended Features

Annex B (informative): Bibliography

- ETSI EN 300 019: "Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment".
- IEC 61587-1: "Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 series - Part 1: Environmental requirements, test set-up and safety".
- IEC 61587-2: "Mechanical structures for electronic equipment - Tests for IEC 60917 and 60297 - Part 2: Seismic tests for cabinets and racks".

History

Document history		
V1.0.0	October 2014	EN Approval Procedure AP 20150219: 2014-10-22 to 2015-02-19