

# INTERNATIONAL STANDARD

**IEC**  
**60297-5-102**

First edition  
2001-01

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## **Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series –**

### **Part 5-102: Subracks and associated plug-in units – Electromagnetic shielding provision**

*Structures mécaniques pour équipement électronique –  
Dimensions des structures mécaniques de la série  
de 482,6 mm (19 in) –*

*Partie 5-102:  
Bacs et blocs enfichables associés –  
Dispositif pour le blindage électromagnétique*



Reference number  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – DIMENSIONS OF MECHANICAL STRUCTURES OF THE 482,6 mm (19 in) SERIES –

## Part 5-102: Subracks and associated plug-in units – Electromagnetic shielding provision

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60297-5-102 has been prepared by subcommittee 48D: Mechanical structures for electronic equipment, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

The text of this standard is based on the following documents:

| FDIS         | Report on voting |
|--------------|------------------|
| 48D/240/FDIS | 48D/249/RVD      |

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

IEC 60297-5 consists of the following parts under the general title: Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series:

- Part 5-100, Subracks and associated plug-in units – Design overview
- Part 5-101, Subracks and associated plug-in units – Injector/extractor handle
- Part 5-102, Subracks and associated plug-in units – Electromagnetic shielding provision
- Part 5-103, Subracks and associated plug-in units – Electrostatic discharge protection
- Part 5-104, Subracks and associated plug-in units – Keying

Part 5-105, Subracks and associated plug-in units – Alignment and/or earth pin

Part 5-107, Subracks and associated plug-in units – Rear mounted plug-in units

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

Withdrawn  
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## INTRODUCTION

This part of IEC 60297 is based on IEC 60297-3 (1984), its Amendment 1 (1992), and IEC 60297-4 (1995). It contains detail dimensions which ensure dimensional interchangeability of subracks and plug-in units with electromagnetic shielding provision.

This standard applies only to the mechanical structures for electronic equipment practices according to the IEC 60297 series.

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# MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – DIMENSIONS OF MECHANICAL STRUCTURES OF THE 482,6 mm (19 in) SERIES –

## Part 5-102: Subracks and associated plug-in units – Electromagnetic shielding provision

### 1 Scope and object

This part of IEC 60297 covers the extended features of electromagnetic shielding provision added to subracks and plug-in units with front panels according to IEC 60297-3, IEC 60297-4 and IEC 60297-5-107. By implementing this extended feature to the subracks and plug-in units, a new subrack and plug-in unit type (incompatible with IEC 60297-3 and IEC 60297-4) is created.

The purpose of this standard is to specify dimensions which will ensure dimensional interchangeability of subracks and associated plug-in units using the extended features of electromagnetic shielding protection added to IEC 60297-3, IEC 60297-4 and IEC 60297-5-107. For mechanical and climatic tests refer to IEC 61587-1. For electromagnetic shielding performance tests refer to IEC/TS 61587-3.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60297. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60297 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60297-3, *Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3: Subracks and associated plug-in units*

IEC 60297-4, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 4: Subracks and associated plug-in units – Additional dimensions*<sup>1</sup>

IEC 60297-5-100, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-100: Subracks and associated plug-in units – Design overview*

IEC 60297-5-105, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-105: Subracks and associated plug-in units – Alignment and/or earth pin*

IEC 60297-5-107, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-107: Subracks and associated plug-in units – Rear mounted plug-in units*

IEC 60917-1, *Modular order for the development of mechanical structures for electronic equipment practices – Part 1: Generic standard*

<sup>1</sup> There is a consolidated edition 1.1 (1999) that includes IEC 60297-4 (1995) and its amendment 1 (1999).



IEC 61587-1, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis*

IEC/TS 61587-3, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks*

### 3 Definitions

For the purpose of this part of IEC 60297, the definitions of IEC 60917-1 apply.

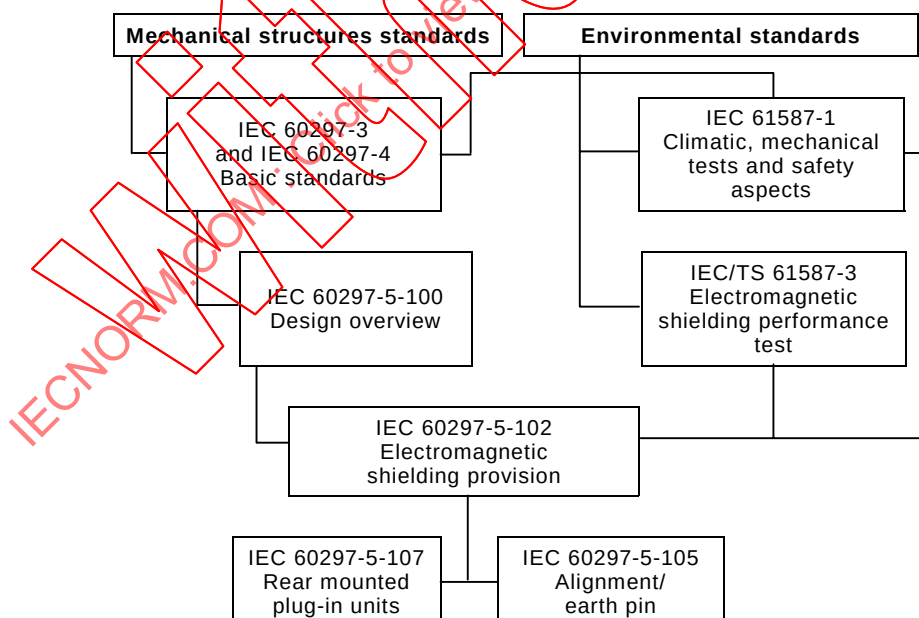
### 4 Extended feature added to IEC 60297-3 and IEC 60297-4

This standard gives dimensions only where they differ from or supplement those to be found in IEC 60297-3 and 60297-4. The dimensions used in this standard shall take precedence over those of IEC 60297-3 and 60297-4 when conformance to this standard is claimed. Dimensions shown in brackets are for reference only and are found in the stated standards.

The drawings in this standard are not intended to indicate product design.

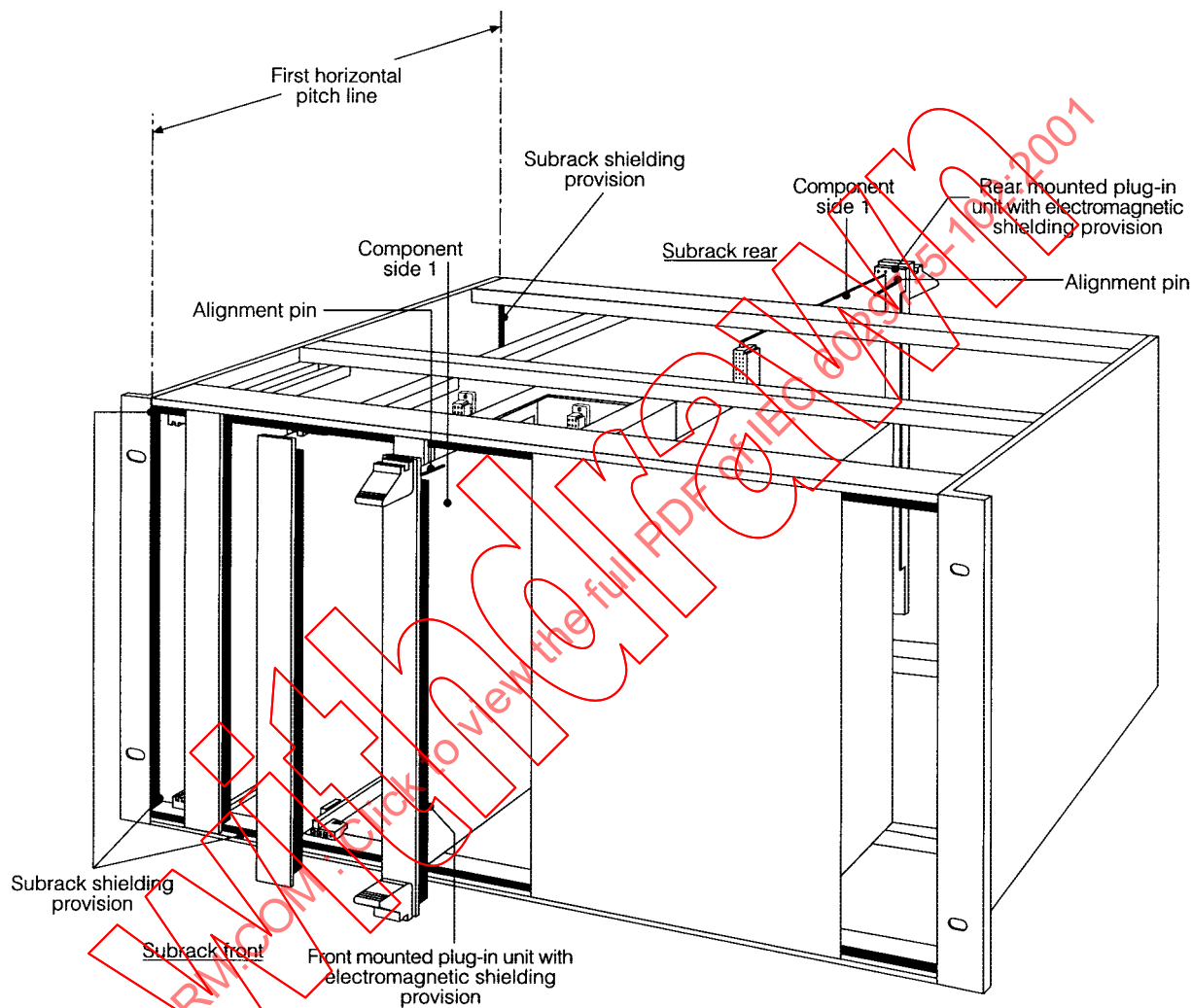
| Extended feature                    | Basic standards            | Extended standards                                    | Environmental standards       |
|-------------------------------------|----------------------------|-------------------------------------------------------|-------------------------------|
| Electromagnetic shielding provision | IEC 60297-3<br>IEC 60297-4 | IEC 60297-5-102<br>IEC 60297-5-105<br>IEC 60297-5-107 | IEC 61587-1<br>IEC/TS 61587-3 |

#### Electromagnetic shielding provision for IEC 60297-3 and IE 60297-4



## 5 General equipment arrangement

Generally these are subracks featuring front and/or rear subrack mounted plug-in units with electromagnetic shielding provision.



IEC 2820/2000

**Figure 1 – General equipment arrangement – Typical 6U subrack front and/or rear mounted plug-in units featured with electromagnetic shielding provision**

## 6 Subrack and plug-in units with electromagnetic shielding provisions

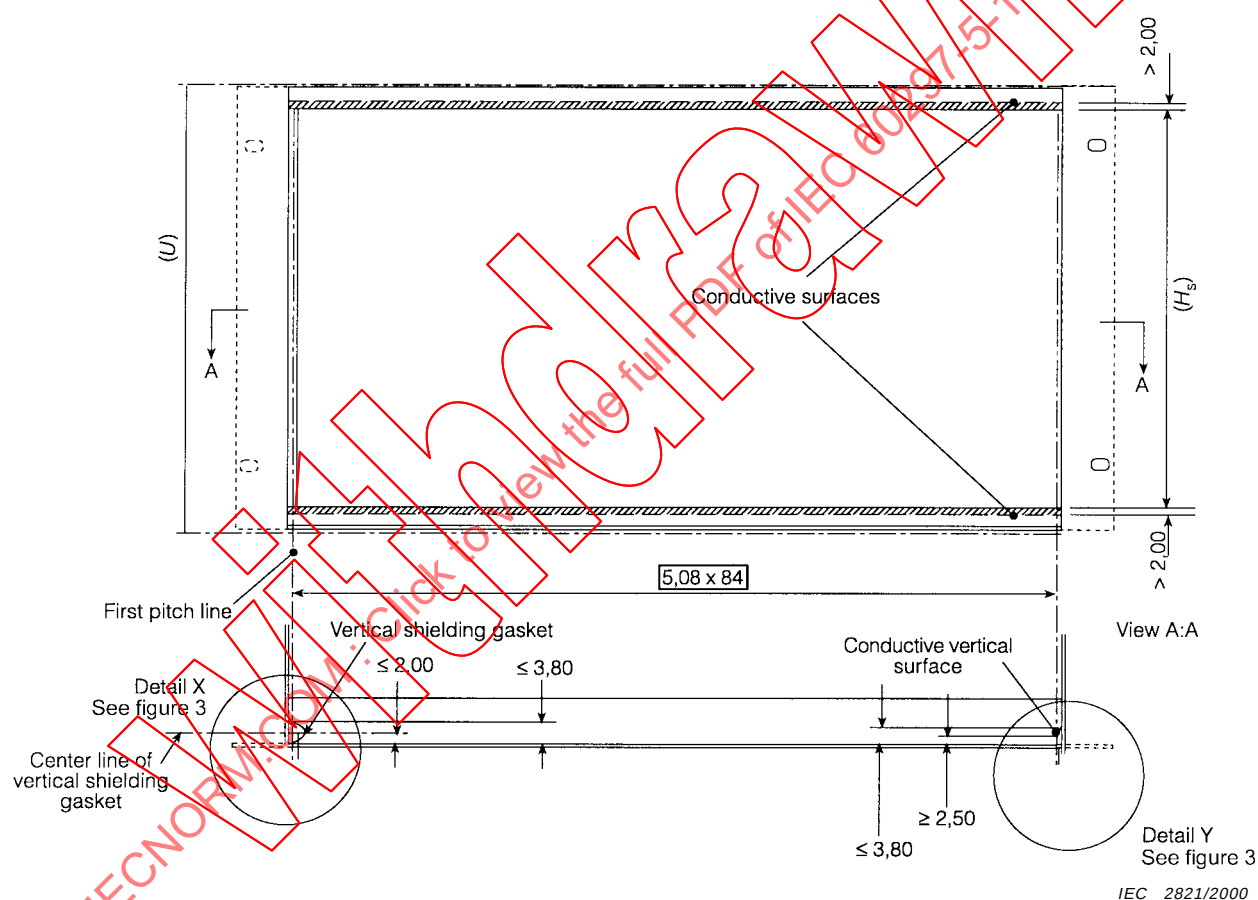
The dimensional specification of electromagnetic shielding provisions for subracks and associated plug-in units are restricted to the subrack and plug-in unit interfaces.

The basic dimensions of the subrack and the plug-in units are in accordance with IEC 60297-3 for subrack front mounted plug-in units and IEC 60297-5-107 for rear mounted plug-in units. Only the extended dimensions of the subrack and plug-in units are specified in this clause.

### 6.1 Subrack interface dimensions for electromagnetic shielding provisions

For corresponding plug-in unit dimensions see 6.2.

( ) See IEC 60297-3.

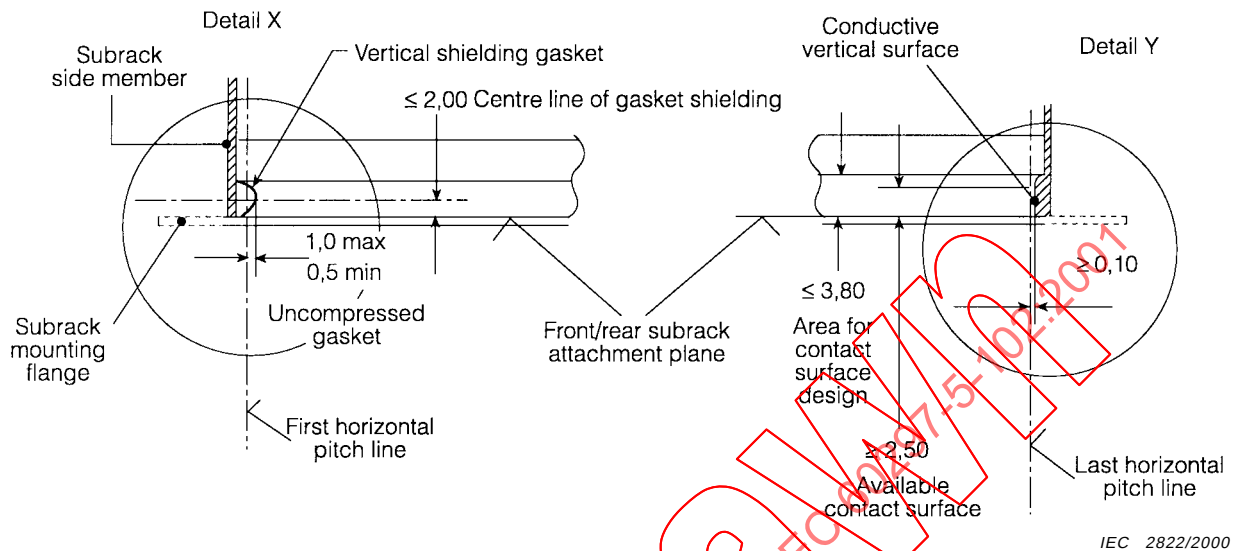


NOTE The front section only is shown. The rear section is of mirror image (see IEC 60297-5-107).

*Dimensions in millimetres*

**Figure 2 – Subrack dimensions for electromagnetic shielding provisions  
(front/rear of the subrack is of mirror image)**

By implementing these extended features to the subracks and plug-in units according to IEC 60297-3 and IEC 60297-4 a new subrack and plug-in unit (incompatible to IEC 60297-3 and IEC 60297-4) type is created.



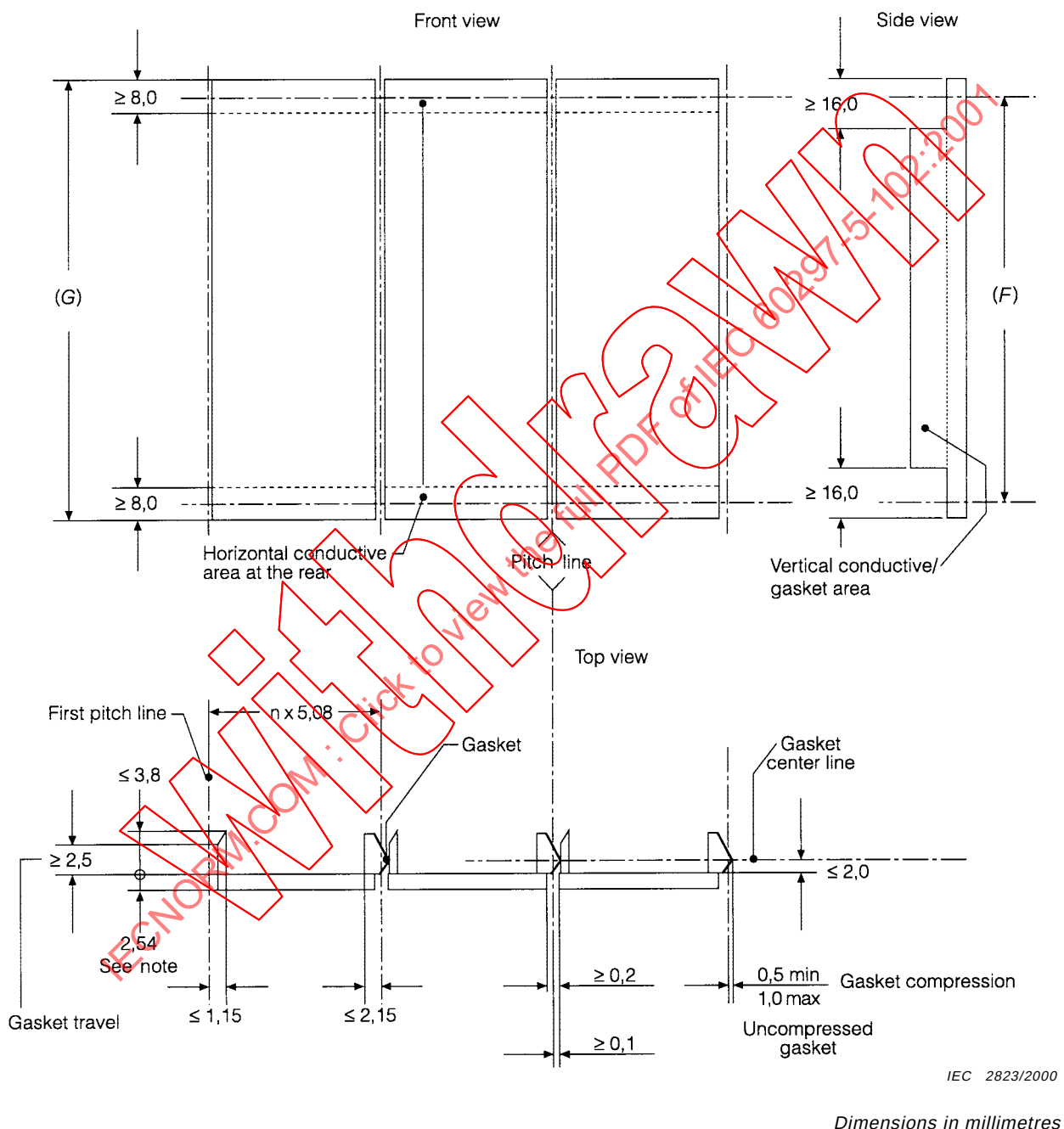
NOTE The front/rear subrack attachment plane is used to attach front/rear subrack mounted plug-in unit front panels.

Figure 3 – Detail X and detail Y of figure 2

## 6.2 Plug-in unit front panels and filler panels with electromagnetic shielding provisions

Plug-in unit front panel handles, printed boards, etc are not shown. For the correct positioning of the front panels within the pitch lines of the subrack measures shall be considered to meet the minimum/maximum gasket travel and compression (see IEC 60297-5-105).

( ) See IEC 60297-3 and IEC 60297-4.



NOTE Front mounted plug-in units are shown. Rear mounted plug-in units are mirror images (see IEC 60297-5-107).

The recommended front panel thickness is 2,54 mm.

**Figure 4 – Plug-in unit front panel and filler panel dimensions for electromagnetic shielding provisions**

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