

Performance standards in building — Definition and calculation of area and space indicators

UDC 69.004.15:72.01.2.001.24:006.83

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Technical Sector Board for Building and Civil Engineering (B/-) to Technical Committee B/500, upon which the following bodies were represented:

- Building Employers' Confederation
- Consumer Policy Committee of BSI
- Convention of Scottish Local Authorities
- Department of Education and Science
- Department of the Environment
- Department of the Environment (Building Research Establishment)
- Incorporated Association of Architects and Surveyors
- Meteorological Office
- National Building Specification Ltd.
- National Council of Building Material Producers
- National House-Building Council
- Royal Institute of British Architects
- Society of Chief Architects of Local Authorities

This British Standard, having been prepared under the direction of the Technical Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 March 1993

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The following BSI references relate to the work on this standard:
Committee reference B/500
Draft for comment 90/18062 DC

ISBN 0 580 21639 X

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This British Standard has been prepared under the direction of Technical Committee B/500, Basic data, and is identical with ISO 9836:1992 *Performance standards in building — Definition and calculation of area and space indicators*, published by the International Organization for Standardization (ISO).

ISO 9836 was prepared by Subcommittee 3, Functional/user requirements and performance in building construction, with the active participation and approval of the United Kingdom.

Cross-references. The Technical Committee has reviewed the provisions of ISO 6241:1984 and ISO 6707-1:1989, to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

The surface area and volume indicators derived from spaces in existing buildings can give their utilization values, such as the spatial proximity of connected functional uses. As approximate values for planning they can be a basis for further developments.

The same is true of those surface area and volume indicators which represent the use of materials. Such indicators enable an increase or reduction in the quantity of materials to be obtained when planning other constructions.

Reference to surface area and volume indicators when assessing buildings which either already exist or which are in the planning stage indirectly indicates the economic characteristics of the buildings. Thus the relationship between the area taken up by the building and the usable area shows whether the building costs and materials have been used to their best advantage.

In the same way the relationship between the area of the building envelope and the usable area shows the extent to which basic savings have been made on the envelope and the running costs of the heating and air-conditioning systems.

As far as the determination of the economic performance of whole buildings is concerned, surface area and volume indicators contain basic data for calculation of capital costs for running and maintenance. They give a basis for the minimization of running costs by limiting the amount of space and the cost of individual materials. For example, if the area of the external walls is small compared to the usable area, this would indicate not only relatively low energy costs but also relatively low cleaning and maintenance costs for facades.

1 Scope

This International Standard deals with the definition and calculation of surface area and volume indicators.

In defining area measurement, this International Standard uses the intra-muros and extra-muros concept. The wall centre method of measurement used in many parts of the world, or for particular types of buildings, is not considered in this International Standard.

The surface area and volume indicators defined in this International Standard are intended for practical use, as a basis for measuring various aspects of the performance of buildings or as a planning aid. In other words, they should enable judgement to be made on functional, technical and economic aspects.

This International Standard is intended to be used when establishing:

- specifications for the geometric performance of a building and its spaces (e.g. in design, purchasing procedures, etc., or in building regulations where appropriate);
- technical documentation relating to the performance of whole buildings prepared by designers, contractors and manufacturer's.
- evaluation, comparison or control of the properties of a building which are connected to its geometric performance.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6241:1984, *Performance standards in building — Principles for their preparation and factors to be considered*.

ISO 6707-1:1989, *Building and civil engineering — Vocabulary — Part 1: General terms*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 6707-1 and the following definitions apply.

3.1 surface area indicators

these measure individual types of area (e.g. usable area) and the relationship between different types of area (e.g. area occupied by structure/usable area)

3.2 volume indicators

these measure individual types of volume (e.g. net volume) and the relationship between different types of volume (e.g. gross volume/net volume)

3.3 mixed surface area and volume indicators

these relate the types of volume to the types of area (e.g. gross volume/usable area) and the types of area to types of volume (e.g. area of building envelope/net volume)

NOTE 1 Clause 5 gives further definitions of the different surface areas, volumes and indicators, together with the appropriate calculation methods.