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

*Normes de performance dans le bâtiment — Définition et calcul des
indicateurs de surface et de volume*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 15, *Framework for the description of housing performance*.

This third edition cancels and replaces the second edition (ISO 9836:2011), of which it constitutes a minor revision with the following changes plus other minor editorial modifications:

- in [Figure 1](#), the intra-muros area has been changed;
- in [5.1.7.3](#), ISO 6241:1984, Tables 1 and 2 has been changed to ISO 19208:2016, Table B.1;
- in [5.4](#), ISO 6241:1984, Table 2 has been changed to ISO 19208:2016;
- in Bibliography, references have been added;
- in [5.1.11 g](#)) and [A.2](#), the decimal point expression has been corrected.

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Introduction

The surface area and volume indicators derived from measuring spaces in buildings can be used to compare aspects of value, such as the proportion of space or volume which can be utilized functionally. As approximate values for planning, they can be a basis for further developments.

Reference to surface area and volume indicators when assessing buildings, which either already exist or which are in the planning stage, indirectly indicates certain economic characteristics of the buildings. Thus, the relationship between the area taken up by the building and the usable area indicates 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 and comparison of capital costs and for running costs 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.

NOTE Examples of using building loss factors for a new construction are given in [Annex A](#).