



BSI Standards Publication

Integrative design of the building envelope — General principles

National foreword

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Integrative design of the building envelope — General principles

*Conception intégrée de l'enveloppe du bâtiment — Principes
généraux*

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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 document 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 205, *Building environment design*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The building envelope is either a boundary or a space, or both, separating the indoor and outdoor environments of a building. It is comprised of roofs, walls (above grade and under grade), windows, doors and foundation. Windows and other openings for daylighting and ventilation are deemed to be an interface between the indoor and outdoor environments. They transfer physical environment elements such as air, heat and cold, light, sound and water. A good building envelope secures high environmental performance in the building with low energy use as well as structural soundness and an aesthetically pleasing appearance.

The building envelope bears a direct relationship to the design and construction of the building. Designing the building envelope requires a wide range of considerations covering structural, environmental and aesthetic functions. A comprehensive approach is essential and achieved through an integrated design process for buildings. This document focuses on the environmental factors and provides design principles for the quality and energy-efficient building envelope.

The building envelope can also meet structural and safety requirements including earthquake protection, wind resistance, flood resistance, fire resistance, durability, maintainability and security. However, those requirements are out of the scope of this document, and can be found in other international standards, guides and reports.

Integrative design of the building envelope — General principles

1 Scope

This document provides an overview of the design principles for the building envelope in order to achieve a high quality and energy efficient built environment. The design principles include:

- thermal performance;
- daylight and visual environment;
- air quality;
- provisions of natural and mechanical ventilation;
- air barrier (airtightness);
- watertightness;
- moisture proof;
- soundproofing;
- sustainability and integration with technical building systems and controls.

This document is applicable to new buildings and the retrofit of existing buildings.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

building envelope

elements of a building as a boundary or barrier separating the interior volume of a building from the outside environment

[SOURCE: ISO 12569:2017, 3.5, modified — The words “elements of a building as a” have been added to the beginning of the definition.]