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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20311-2021

**Building components and building elements - Thermal
resistance and thermal transmittance - Calculation methods**

Issued on: August 20, 2021

Implemented on: March 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document replaces GB/T 20311-2006 "Calculation Method for Thermal Resistance and Heat Transfer Coefficient of Building Components and Building Units", and

Compared with GB/T 20311-2006, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Added the term "EPB Standard" and its definition (see 3.6);

--- Modified the table of symbols and units (see Chapter 4, 3.2 of the 2006 edition);

--- The calculation method has increased the detailed algorithm (see Chapter 5, 6.5.1);

--- Add input values, output results, constants and other tables (see Chapter 6);

--- Modified the principle of the simplified algorithm (see Chapter 6.4, Chapter 4 of the 2006 edition);

- Adjusted the order of the simplified algorithm chapters (see Chapter 6, Chapter 5, Chapter 6, and Chapter 7 of the.2006 edition);
- Added a normative appendix "input and method selection tabulation" (see Appendix A);
- Added an informative appendix "input and method selection reference" (see appendix B);
- Modified part of the calculation content of surface thermal resistance and adjusted it to a normative appendix (see Appendix C, Appendix A of the.2006 edition);
- Modified the calculation content of the thermal resistance part of the air space and adjusted it to the normative appendix (see Appendix D, Appendix B of the.2006 edition, Appendix F);
- Modified the calculation of the thermal resistance of components with wedge-shaped layers and adjusted it to a normative appendix (see Appendix E, Appendix C of the.2006 edition);
- Modified part of the content of the heat transfer coefficient correction, and adjusted to a normative appendix (see Appendix F, Appendix D of the.2006 edition).

This document uses the translation method equivalent to ISO 6946.2017 "Calculation of thermal resistance and heat transfer coefficient of building components and building units method".

This document was proposed by the China Building Materials Federation.

This document is under the jurisdiction of the National Thermal Insulation Material Standardization Technical Committee (SAC/TC191).

Drafting organizations of this document. Nanjing Fiberglass Research and Design Institute Co., Ltd., Anhui Hongchang New Materials Co., Ltd., Henan Chengjian Inspection

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Limited company, the national glass fiber product quality supervision and inspection center.

Introduction

The series of international standards for building energy efficiency assessment is also known as the "EPB series of standards." EPB series standards follow the same rules to ensure

Consistency, continuity and openness among the standards in the series.

ISO 6946.2017 is one of the EPB series of international standards. The standardization

goal is to achieve building energy efficiency through building energy efficiency assessment

Rating, the position in the series of standards is shown in Table 1. The main target audiences of the standards are architects, engineers and regulatory agencies.

Table 1 The position of ISO 6946.2017 (M2-5) in the module structure of the EPB standard group

General Building System Technology

Sub-module description description description heating, cooling, ventilation, humidification, dehumidification, hot water lighting

Building from

Dynamic and

control

Photovoltaic

Wind energy

Subject M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11

1 General General General Purpose

Common terms and

Definition; symbol,

Unit and subscript

Building energy

need

Demand a

3 Application

No system

Indoor conditions

Maximum load

And power

4 Energy expression method

Energy expression

Way

Energy expression

Way

Building category and
boundary

Heat transfer coefficient

ISO

Launch and

control

6 Convective heat transfer under operating conditions

Distribution and

control

Energy services and

Energy carrier

polymerization

Heat Conduction

Storage and

control

8 Increased solar heat in building zones

Generate and

control

9 Energy efficiency calculation heat mass

Load scheduling and

Operating condition

11 Inspection inspection inspection

Indoor comfort

Express