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(JTCCM/JSA)

**Windows and doorsets—Thermal
resistance test**

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In the event of any doubts arising as to the contents,
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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Testing Center for Construction Materials (JTCCM)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS A 4710:2004** is replaced with this Standard.

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Windows and doorsets—Thermal resistance test

Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **ISO 12567-1** published in 2010 with some modifications of the technical contents so that it can be used in Japan.

The portions given sidelines or dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JD. The comparison table between previous and current editions of this Standard on technically significant revisions is given in Annex JE.

1 Scope

This Standard specifies the test method for the thermal resistance of windows and doorsets.

This Standard, however, does not apply to the following:

- a) edge effects occurring outside the perimeter of the specimen;
- b) energy transfer due to solar radiation on the specimen;
- c) effects of air leakage through the specimen;
- d) roof windows and projecting windows.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 12567-1:2010 *Thermal performance of windows and doors—Determination of thermal transmittance by the hot-box method—Part 1: Complete windows and doors* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent edition of the standards (including amendments) indicated below shall be applied.

JIS A 0202 *Thermal insulation—Vocabulary*

NOTE : Corresponding International Standards: ISO 7345 *Thermal insulation—Physical quantities and definitions*, ISO 9288 *Thermal insulation—Heat transfer by radiation—Physical quantities and definitions* (MOD)

JIS A 1412-1 *Test method for thermal resistance and related properties of thermal insulations—Part 1: Guarded hot plate apparatus*

NOTE : Corresponding International Standard: ISO 8302 *Thermal insulation—Determination of steady-state thermal resistance and related properties—Guarded hot plate apparatus* (MOD)

JIS A 1412-2 *Test method for thermal resistance and related properties of thermal insulations—Part 2: Heat flow meter apparatus*

NOTE : Corresponding International Standard: ISO 8301 *Thermal insulation—Determination of steady-state thermal resistance and related properties—Heat flow meter apparatus* (MOD)

JIS A 1420 *Determination of steady-state thermal transmission properties—Hot box method*

NOTE : Corresponding International Standard: ISO 8990 *Thermal insulation—Determination of steady-state thermal transmission properties—Calibrated and guarded hot box* (MOD)

JIS C 1602 *Thermocouples*

NOTE : Corresponding International Standard: IEC 60584-1 *Thermocouples—Part 1: EMF specifications and tolerances* (MOD)

JIS R 3106 *Testing method on transmittance, reflectance and emittance of flat glasses and evaluation of solar heat gain coefficient*

3 Terms, definitions, symbols and units

3.1 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS A 0202**, and the following apply.

3.1.1 heat transfer aperture dimensions

width and height dimensions excluding protruding sections e.g. a fin for mounting fittings to the building frame, a rail receptacle

In this Standard, it refers to heat transfer dimension of test specimen.

3.1.2 heat transfer area

product of width and height dimensions of heat transfer aperture

NOTE : Annex JA specifies the method to measure heat transfer aperture dimensions.

3.2 Symbols and units

Symbols and units shall be in accordance with **JIS A 0202**, and Tables 1 to 3.

Table 1 Symbols and units

Symbol	Physical quantity	Unit
A	Heat transfer area	m^2
d	Thickness (depth)	m
F	Convective fraction	—
f	View factor	—
h	Surface coefficient of heat transfer	$\text{W}/(\text{m}^2 \cdot \text{K})$
H	Height	m
L	Perimeter length	m
q	Density of heat flow rate	W/m^2
R	Thermal resistance or surface thermal resistance	$\text{m}^2 \cdot \text{K}/\text{W}$
T	Thermodynamic temperature	K
U	Thermal transmittance	$\text{W}/(\text{m}^2 \cdot \text{K})$
w	Width	m
α	Radiant factor	—
$\Delta T, \Delta \theta$	Temperature difference	K
ε	Total hemispherical emissivity	—
θ	Celsius temperature	$^{\circ}\text{C}$
λ	Thermal conductivity	$\text{W}/(\text{m} \cdot \text{K})$
σ	Stefan-Boltzmann constant 5.67×10^{-8}	$\text{W}/(\text{m}^2 \cdot \text{K}^4)$
Φ	Heat flow rate	W
Ψ	Linear thermal transmittance	$\text{W}/(\text{m} \cdot \text{K})$