

**Termiska egenskaper hos fönster och dörrar –
Bestämning av värmegenomgångskoefficient
med varmlåda –**

Del 2: Takfönster och andra utskjutande fönster
(ISO 12567-2:2005)

**Thermal performance of windows and doors –
Determination of thermal transmittance by hot
box method –**

Part 2: Roof windows and other projecting windows
(ISO 12567-2:2005)

Europastandarden EN ISO 12567-2:2005 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 12567-2:2005.

EN ISO 12567-2 har tagits fram inom ISO/TC 163, Thermal performance and energy use in the built environment, i samarbete med CEN/TC 89, Thermal performance of buildings and building components.

Allmänna principer och förutsättningar enligt huvudstandarden EN ISO 12567-1 gäller. I denna del 2 beskrivs en procedur för att mäta på takfönster och andra utskjutande fönster (fönster där den yttre glasytan skjuter ut utanför fasadytan). För produktjämförelse monteras fönstret vertikalt i den omgivande väggen enligt tillverkarens instruktioner.

The European Standard EN ISO 12567-2:2005 has the status of a Swedish Standard. This document contains the official English version of EN ISO 12567-2:2005.

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English Version

Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 2: Roof windows and other projecting windows (ISO 12567-2:2005)

Isolation thermique des fenêtres et portes - Détermination de la transmission thermique par la méthode à la boîte chaude - Partie 2: Fenêtres de toit et autres fenêtres en saillie (ISO 12567-2:2005)

Wärmetechnisches Verhalten von Fenstern und Türen - Bestimmung des Wärmedurchgangskoeffizienten des Heizkastenverfahrens - Teil 2: Dachflächenfenster und andere auskragende Fenster (ISO 12567-2:2005)

This European Standard was approved by CEN on 14 October 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EN ISO 12567-2:2005 (E)

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Foreword

This document (EN ISO 12567-2:2005) has been prepared by Technical Committee ISO/TC 163 "Thermal insulation" in collaboration with Technical Committee CEN/TC 89 "Thermal performance of buildings and building components", the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 12567-2:2005 has been approved by CEN as EN ISO 12567-2:2005 without any modifications.

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Introduction

This part of ISO 12567 should be read together with ISO 12567-1:2000 *Thermal performance of windows and doors — Determination of thermal transmittance by hot box method — Part 1: Complete windows and doors*. These two parts were jointly developed by ISO and CEN. They are designed to provide standardised thermal transmittance test values, to enable product comparisons to be made. ISO 12567-1:2000 specifies standardised specimen sizes and applied test criteria.

It is recognised that the thermal performance of products will vary with heat flow direction and so it is preferable to test these products at the orientation in which they will be installed. However, as there are only a few hot boxes capable of carrying out such measurements, this measurement procedure specifies that it is acceptable to measure the thermal transmittance of roof windows mounted vertically to facilitate the fair comparison of products.

It should be noted that measurements with the specimen mounted vertically will generally produce U -values lower than those measured at other orientations with heat flow up. An alternative to measuring at the actual orientation that will be used in practice is to carry out calculations of convective and radiant heat transfer using the procedures specified in ISO 15099, ISO 10077-1, ISO 10077-2 and EN 673.

Thermal performance of windows and doors — Determination of thermal transmittance by hot box method —

Part 2: Roof windows and other projecting windows

1 Scope

This part of ISO 12567 specifies a method to measure the thermal transmittance of roof windows and projecting windows.

It does not include:

- edge effects occurring outside the perimeter of the specimen;
- energy transfer due to solar radiation on the specimen;
- effects of air leakage through the specimen.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7345:1987, *Thermal insulation — Physical quantities and definitions*

ISO 8990:1994, *Thermal insulation — Determination of steady-state thermal transmission properties — Calibrated and guarded hot box*

ISO 12567-1:2000, *Thermal performance of windows and doors — Determination of thermal transmittance by hot box method — Part 1: Complete windows and doors*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7345 and ISO 12567-1 and the following apply.

3.1

projecting windows

product, where any glazing layer projects beyond the outside surface of the building envelope

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3.2

roof windows

any framed glazed product installed in a sloped or horizontal building envelope

NOTE 1 Roof windows are treated as projecting windows.

NOTE 2 See also Reference [1] in Bibliography.

4 Principle

This part of ISO 12567 is based on a measurement procedure for roof windows and other projecting windows, in accordance with the procedure specified in ISO 12567-1:2000, except for the deviations specified below:

- the window is installed in the surround panel flush to the cold side (insert- or kerb-mounted as shown in Figure 1), to reflect the installation in practice;
- the calibration procedure and the specimen tests shall be carried out at the same orientation;
- for practical reasons, vertical mounting of the specimen is acceptable for product declaration purpose.

Although the evaluation of the thermal performance of these types of products will be made for a variety of reasons, it is important that when measurements are made for purposes of product comparison, they are carried out at the same orientation.

NOTE For building load or energy calculations, the value may be corrected for the effect of the sloped glazing position using suitable national procedures.

5 Requirements for test specimens and apparatus

5.1 General

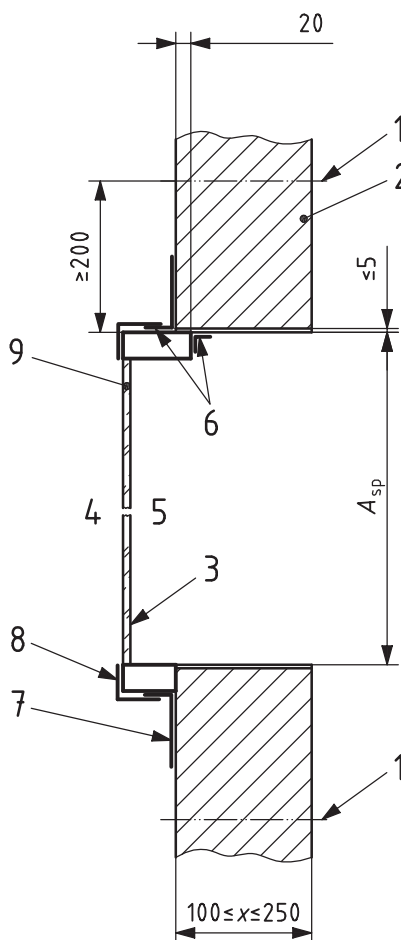
The construction and operation of the apparatus shall comply with the requirements specified in ISO 8990:1994 except where modified by ISO 12567-1:2000 and this document.

5.2 Test specimen location

The test specimen shall be mounted in the surround panel aperture according to the manufacturer's instructions. If the method of installation of the roof window in the hot box cannot be unambiguously determined from the manufacturer's installation instructions, the window shall be installed as shown in Figure 1. Flashings and/or kerb (curb) shall be included as the windows are normally installed (see Figure 1).

NOTE Kerb and curb are synonymous.

Dimensions in millimetres



Key

- 1 border of metering area
- 2 surround panel, $\lambda \leq 0.04 \text{ W/(m}\cdot\text{K)}$
- 3 glazing
- 4 cold side
- 5 warm side
- 6 to be sealed with non-metallic tape or mastic material
- 7 flashing
- 8 kerb-mounted roof window
- 9 insert-mounted roof window

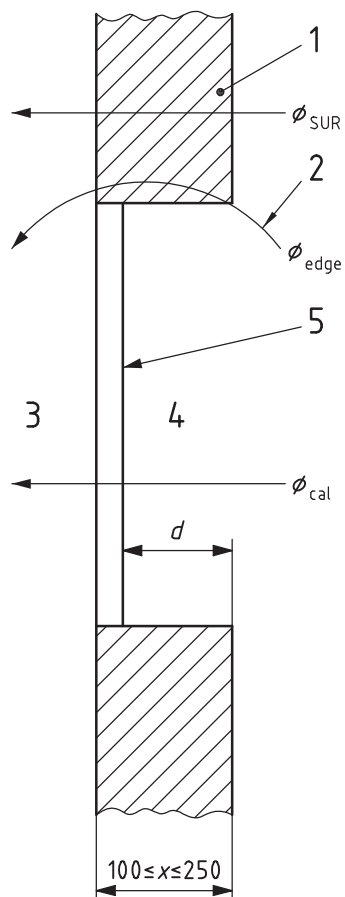
Figure 1 — Roof window in surround panel (top part: insert-mounted; bottom part: kerb-mounted)

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5.3 Calibration panels

The calibration panels or CTS (calibration transfer standard) shall be mounted in the surround panel aperture flush with the cold face as shown in Figure 2.

Dimensions in millimetres



Key

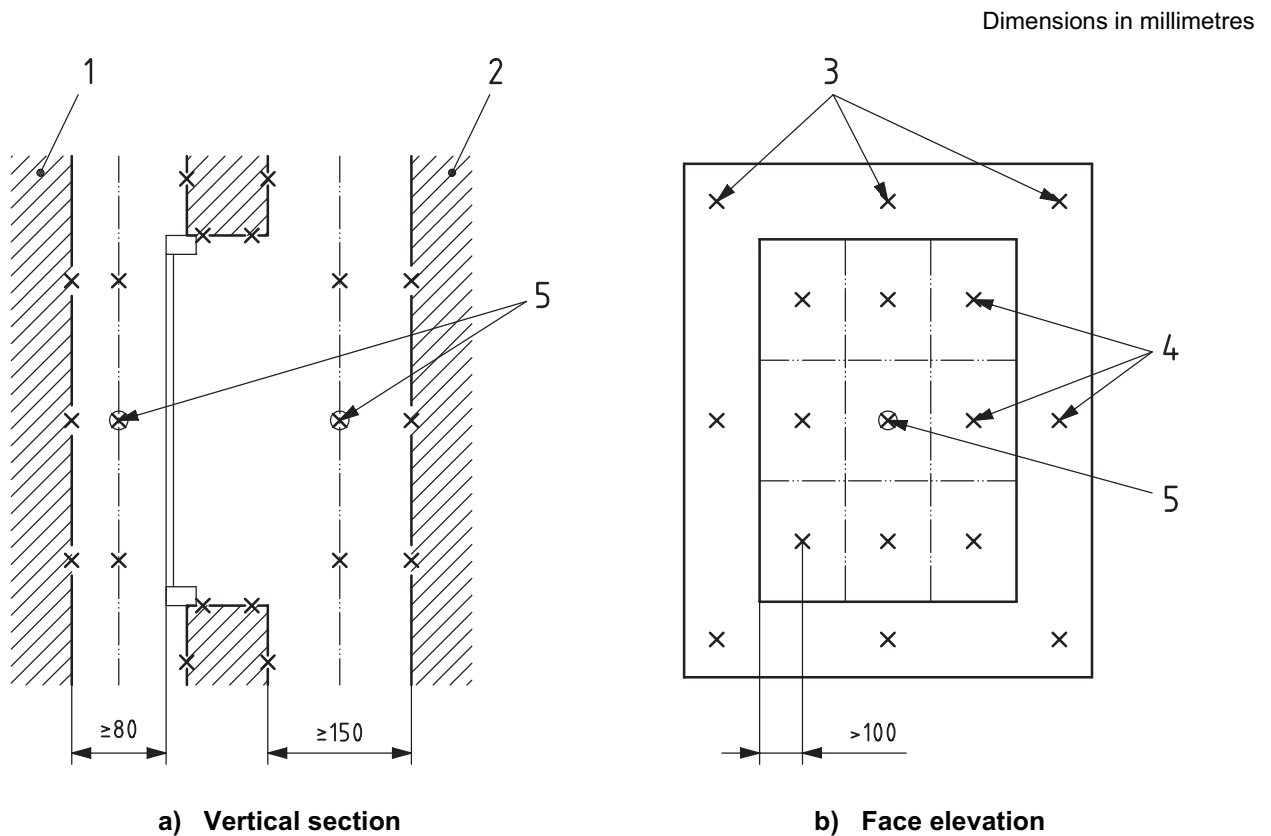
- 1 surround panel
- 2 boundary effects
- 3 cold side
- 4 warm side
- 5 calibration panel

Figure 2 — Mounting of calibration panel in aperture

5.4 Baffle position

The distance between the baffle on the cold side and the glazing of the test specimen shall not be less than 80 mm, see Figure 3.

For air speeds greater than 2 m/s, the distance between baffle and specimen shall be greater than 80 mm in order to ensure free stream conditions.



Key

- 1 cold side baffle
- 2 warm side baffle
- 3 all surround panel thermocouples located centrally
- 4 air temperature sensors
- 5 recommended position of air speed sensor aligned in the centre

Figure 3 — Location of temperature sensors and air speed sensor