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GB/T 10295-2008 / ISO 8301:1991 (E)

Replacing GB/T 10295-1988

Thermal insulation - Determination of steady-state thermal resistance and related properties - Heat flow meter apparatus

绝热材料稳态热阻及有关特性的测定 热流计法

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Foreword

This Standard is identical to ISO 8301:1991(E), *Thermal insulation - Determination of steady-state thermal resistance and related properties - Heat flow meter apparatus*.

This Standard replaces GB/T 10295-1988, *Thermal insulation - Determination of steady-state thermal resistance and related properties - Heat flow meter apparatus*.

Compared with GB/T 10295-1988, the main changes of this Standard are as follows:

-- List the Introduction in the International Standard as the Introduction of this Standard;

-- In Clause 1, add the definitions of some terms; add symbols, physical quantities and unit descriptions; add factors affecting thermal performance, sampling, accuracy and reproducibility, calibration procedures, and limitations of instruments and test pieces;

-- Change the normative references to international standards referenced in ISO 8301:1991(E);

-- Delete the recommendation on the standard size of the heat flow meter apparatus in "Clause 5 Technical requirements for apparatus" of the original standard;

-- Modify some instruments and test parameters, mainly:

  a) Change "the diameter of the thermocouple shall be less than 0.2 mm" stipulated in 5.2.5 of the original standard to "the diameter of the thermocouple shall not exceed 0.2 mm";

  b) Change “departures less than 30 μm" stipulated in 6.2.1 of the original standard to "departures less than 25 μm";

  c) Change the humidity control ambient temperature "293±1K" recommended in 7.2.2 of the original standard to "296K±1K";

-- Rewrite the annex in accordance with ISO 8301:1991(E);

-- Add Annex NA.

Annex A of this Standard is a normative annex, and Annex B, Annex C, Annex D, Annex E and Annex NA are informative annexes.

Please note that some of the contents of this Standard may involve patents; the issuing organization of this Standard shall not be responsible for identifying these patents.

This Standard was proposed by China Building Materials Federation.

Thermal insulation - Determination of steady-state thermal resistance and related properties - Heat flow meter apparatus

1 Scope

1.1 Scope

1.1.1 This Standard defines the use of the heat flow method to measure the steady-state heat transfer through flat slab specimens and the calculation of the heat transfer properties of specimens.

This is a secondary or relative method since the ratio of the thermal resistance of the specimen(s) to that of a standard specimen(s) is measured.

Reports confirming to this standard test method shall refer to specimens with thermal resistance greater than 0.1 $m^2 \cdot K/W$ provided that thickness limits given in 1.7.2 are not exceeded.

1.1.2 If the specimens satisfy the requirements outlined in 1.8.1, the resultant properties shall be described as the thermal conductance and thermal resistance of the specimen.

1.1.3 If the specimens satisfy the requirements of 1.8.2, the resultant properties shall be described as the mean thermal conductivity of the specimen being evaluated.

1.1.4 If the specimens satisfy the requirements of 1.8.3, the resultant property may be described as the thermal conductivity or the transmissivity of the material being evaluated.

1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For dated references, all subsequent amendments (not including errata content) or revisions do not apply to this standard. However, parties to agreements that are based on this Standard are encouraged to study whether the latest versions of these documents can be used. For undated references, the latest edition applies to this Standard.

ISO 7345:1987, Thermal insulation - Physical quantities and definitions

ISO 8302:1991, Thermal insulation - Determination of steady-state thermal resistance and related properties - Guarded hot plate apparatus

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