
**Thermal insulation — Test method
for thermal diffusivity — Periodic
heat method**

*Isolation thermique — Méthode d'essai pour la diffusivité thermique
— Méthode de chauffage périodique*



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Foreword

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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.

Thermal insulation — Test method for thermal diffusivity — Periodic heat method

1 Scope

This document specifies a periodic heat method for measurement of the thermal diffusivity of thermal insulation material in the shape of a flat plate.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 8302:1991, *Thermal insulation — Determination of steady-state thermal resistance and related properties — Guarded hot plate apparatus*

3 Terms and definitions

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

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

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

3.1

phase

quantity that shows the stage of progress in one *period* (3.5) of wave motion and other periodic phenomenon

EXAMPLE $\omega t + \varphi_1$ in $y = A \sin(\omega t + \varphi_1)$ is the phase.

3.2

phase lag

difference between two *phases* (3.1) provided by periodic temperature changes measured at two different points on the surface and inside a test specimen

EXAMPLE When the periodic temperature changes 1 and 2 are given by $y_1 = A_1 \sin(\omega t + \varphi_1)$ and $y_2 = A_2 \sin(\omega t + \varphi_2)$, respectively, the phase lag between them is $\varphi_2 - \varphi_1$.

3.3

amplitude

half of the difference between the maximum and minimum values of the amount of displacement in a periodic temperature change

EXAMPLE A in a sine wave given by $A \sin(\omega t + \varphi)$ or $A \exp[i(\omega t + \varphi)]$ refers to the amplitude.