

INTERNATIONAL STANDARD

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1989-12-01

Thermal insulation — Heat transfer by radiation — Physical quantities and definitions

*Isolation thermique — Transfert de chaleur par rayonnement — Grandeurs
physiques et définitions*



Reference number
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International Organization for Standardization

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9288 was prepared by Technical Committee ISO/TC 163, *Thermal insulation*.

Annex A of this International Standard is for information only.

Introduction

This International Standard forms part of a series of vocabularies related to thermal insulation.

The series will include

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

ISO 9229 : —¹⁾, *Thermal insulation — Thermal insulating materials and products — Vocabulary.*

ISO 9251 : 1987, *Thermal insulation — Heat transfer conditions and properties of materials — Vocabulary.*

ISO 9346 : 1987, *Thermal insulation — Mass transfer — Physical quantities and definitions.*

1) To be published.

Thermal insulation — Heat transfer by radiation — Physical quantities and definitions

1 Scope

This International Standard defines physical quantities and other terms in the field of thermal insulation relating to heat transfer by radiation.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

3 General terms

3.1 thermal radiation: Electromagnetic radiation emitted at the surface of an opaque body or inside an element of a semi-transparent volume.

The thermal radiation is governed by the temperature of the emitting body and its radiative characteristics. It is interesting from a thermal viewpoint when the wavelength range falls between $0,1 \mu\text{m}$ and $100 \mu\text{m}$ (see figure 1).

3.2 heat transfer by radiation: Energy exchanges between bodies (apart from one another) by means of electromagnetic waves.

These exchanges can occur when the bodies are separated from one another by vacuum or by a transparent or a semi-transparent medium. To evaluate these radiation heat exchanges it is necessary to know how opaque and semi-transparent bodies emit, absorb and transmit radiation as a function of their nature, relative position and temperature.

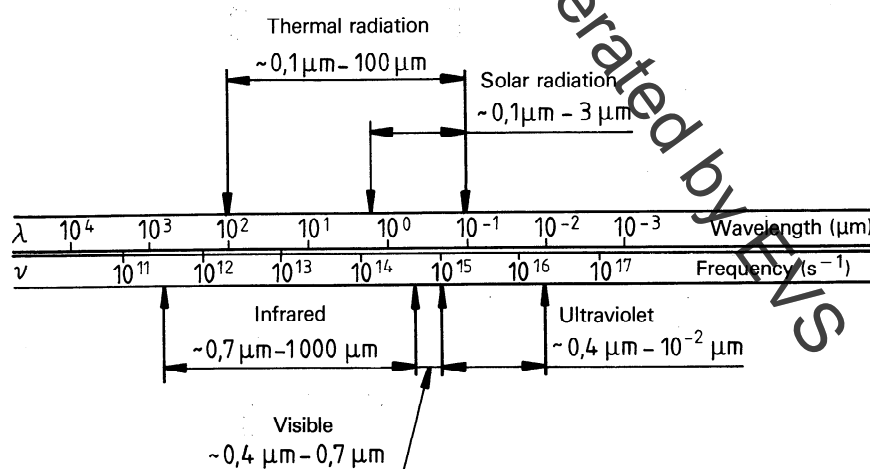


Figure 1 — Electromagnetic wave spectrum