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STANDARD

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**Glass in building — Calculation of
steady-state U values (thermal
transmittance) of multiple glazing**

*Verre dans la construction — Calcul du coefficient de transmission
thermique U , en régime stationnaire des vitrages multiples*



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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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10292 was prepared by Technical Committee ISO/TC 160, *Glass in building*, Subcommittee SC 2, *Use considerations*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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Glass in building — Calculation of steady-state U values (thermal transmittance) of multiple glazing

1 Scope

This International Standard applies to glass, coated glass and materials opaque in the far infrared wavelengths. It gives the fundamental rules for calculating the thermal transmittance, U ¹⁾, in the glazing central area. The combined edge effects due to the thermal bridge of a glazing unit spacer and of the window frame are not included.

These rules are intended to enable the heat loss through glazing in a building to be estimated from the glazing U values and, together with heat losses through the opaque elements of the building, are used to determine the capacity of the heating or cooling plant.

In addition, U values for other purposes can be calculated using the same procedure, in particular for predicting:

a) conduction gains in summer;

b) condensation on glazing surfaces;

c) seasonal heat loss through glazing in determining overall energy use in buildings;

d) contribution of absorbed heat in determining the solar factor.

The rules have been made as simple as possible consistent with accuracy.

2 Definition

For the purposes of this International Standard, the following definition applies.

2.1 thermal transmittance of glazing, U : Value which characterizes the heat transfer through the central part of the glazing, i.e. without edge effects, and states the steady-state density of heat transfer rate per temperature difference between the ambient temperatures on each side. The U value is given in watts per square metre kelvin [W/(m²·K)].

1) In some countries the symbol k is used.