First edition
2010-08-15

Glass in buildings — Insulating glass —

Part 3: Gas concentration and gas leakage

Verre dans la construction — Verre isolant —

Partie 3: Concentration de gaz et fuite de gaz

Reference number
ISO 20492-3:2010(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20492-3 was prepared by Technical Committee ISO/TC 160, *Glass in building*, Subcommittee SC 1, *Product considerations*.

ISO 20492 consists of the following parts, under the general title *Glass in buildings — Insulating glass*:

— *Part 1: Durability of edge seals by climate tests*

— *Part 2: Chemical fogging tests*

— *Part 3: Gas concentration and gas leakage*

— *Part 4: Methods of test for the physical attributes of edge seals*

Introduction

This International Standard consists of a series of procedures for testing the performance of pre-assembled, permanently sealed insulating glass units or insulating glass units with capillary tubes that have been intentionally left open. This International Standard is intended to help ensure that

— energy savings are made, as the U value and solar factor (solar heat gain coefficient) do not change significantly;

— health is preserved, because sound reduction and vision do not change significantly;

— safety is provided because mechanical resistance does not change significantly.

This International Standard also covers additional characteristics that are important to the trade, and marking of the product (i.e. CE marking or other regulatory groups).

There are distinct markets to consider for insulating glass. Within each market there are technical differences with respect to rebate sizes, vision lines and methods of application; two approaches are included in this International Standard. Approach 1 addresses requirements for markets such as North America. Approach 2 addresses requirements for markets such as Europe. Each approach includes separate test methods and specifications pertaining to minimum requirements for durability of edge seals by climate tests.

This International Standard does not cover physical requirements of sealed glass insulating units such as appearance, thermo-physical properties, heat and light transmission, and glass displacement.

The main intended uses of the insulating glass units are installations in buildings and constructions such as in windows, doors, curtain walling, skylights, roofs and partitions where protection against direct ultraviolet radiation exists at the edges.

The use of insulating glass in cases where there is no protection against direct ultraviolet radiation at the edges, such as structural glazing systems, can be suitable. However, it can be necessary to review factors such as sealant longevity when exposed to long-term ultraviolet light and the structural properties of the sealant for these applications.

NOTE 1 For more information on the requirements for structural sealant glazing applications, reference can be made to ASTM C1369, ASTM C1249 and ASTM C1265 and CEN technical specifications.

NOTE 2 IG units whose function is artistic only are not part of this International Standard.

The test methods in this International Standard are intended to provide a means for testing the performance of the sealing system and construction of sealed insulating glass units.

Sealed insulating glass units tested in accordance with these methods are not intended for long-term immersion in water.

The options for testing apply only to sealed insulating glass units that are constructed with glass.

In certain cases such as insulating glass units containing spandrel glass or absorptive coatings, these methods might not be applicable, as these products can experience field temperatures that exceed the temperature limitations of the sealant.