TECHNICAL REPORT

ISO/TR 5925-2

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Fire tests — Smoke-control door and shutter assemblies —

Part 2: Commentary on test method and the applicability of test conditions and the use of test data in a smoke containment strategy

Essais au feu — Assemblages porte et volet pare-fumée —

Partie 2: Commentaires sur la méthode d'essai et applicabilité des conditions d'essai et emploi des données d'essai dans une stratégie de confinement de la fumée

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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

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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.

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.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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/TR 5925-2 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 2, *Fire containment*.

This second edition cancels and replaces the first edition (ISO/TR 5925-2:1997), which has been technically revised.

ISO/TR 5925 consists of the following parts, under the general title *Fire tests — Smoke-control door and shutter assemblies*:

— *Part 1*[1)]*: Ambient and medium temperature leakage test procedure*

— *Part 2: Commentary on test method and the applicability of test conditions and the use of test data in a smoke containment strategy*

1) To be published. (Revision of ISO 5925-1:1981)

Introduction

Technical Committee ISO/TC92, *Fire Safety*, has prepared ISO 5925-1, a test specification for smoke control doors.

In a fire, the decomposition of materials results in the production of heat and fire gases containing smoke particles. The associated expansion of gases can lead to the creation of a pressure differential across door faces often influenced by wind pressures, mechanical or natural smoke extract systems, stack effect or a combination of these. This pressure differential induces the movement of smoke or air past any openings or gaps, including those in a door assembly. Schemes to keep areas within buildings free of smoke use various techniques, including barriers to its movement, exhausting, dilution, pressurization, either singly or in some suitable combination of all of these. Where the pressure differential across the door is positive, i.e. gases are being driven through any gap; standard tests have been developed to measure the leakage of smoke when such conditions exist. The test method does not deal generally with doors installed in conjunction with active smoke control methods, such as pressurization or exhaust, and this part of ISO/TR 5925 has been prepared to assist designers to specify doors that have the appropriate smoke control characteristics for the situation in which they are being used.

In addition to identifying when the door is likely to have a passive smoke control function, this part of ISO/TR 5925 tries to make it clear as to when ambient or medium temperature smoke control is appropriate, and when the threshold gap is significant.

Fire tests — Smoke-control door and shutter assemblies —

Part 2:
Commentary on test method and the applicability of test conditions and the use of test data in a smoke containment strategy

1 Scope

This Technical Report provides a commentary that explains the general philosophy and factors on which the test specified in Part 1 of ISO 5925 has been designed, to describe the limitations of its application and to provide some general guidance for those who use the result of the test. Smoke control-door and shutter assemblies can be used as part of a smoke containment strategy for the purposes of life safety or property protection.

2 Terms and definitions

For the purposes of this document, the terms and definitions given in Part 1 of ISO 5925 and the following apply.

2.1
door assembly
assembly comprising a fixed part (the door frame), one or more movable parts (the door leaves) and its hardware

NOTE The purpose of the door assembly is to allow or prevent access of persons and/or goods. The term hardware includes such items as hinges, latches, door handles, locks, keyholes (excluding keys), letter plates, sliding gear, closing devices, electrical wiring and any other items that can influence the performance of the assembly being tested.

2.2
shutter assembly
assembly comprising fixed parts, e.g. a barrel housing and vertical guides and one or more moveable parts, normally in the form of a curtain constructed from linked metal laths, or other flexible material and a barrel on which the curtain is wound together with any powered mechanism, e.g. an electric motor and its associate power supply

NOTE The shutter assembly is to allow the passage of goods, vehicles or persons, albeit where the shutter is normally closed in use, a personnel door should be provided for the passage of persons.

2.3
fire door
door or shutter assembly capable of maintaining for a specified period some, or all of the fire resistance criteria defined in ISO 3008, as appropriate for the door in use

2.4
smoke control door
door or shutter assembly whose primary function is to restrict the passage of smoke as determined by a test in accordance with Part 1 of ISO 5925