INTERNATIONAL STANDARD

ISO 5657

Second edition
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Reaction to fire tests — Ignitability of building products using a radiant heat source

Essais de réaction au feu — Allumabilité des produits de bâtiment avec une source de chaleur rayonnante

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Contents

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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 5657 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommitte SC 1, *Reaction to fire*.

This second edition cancels and replaces the first edition (ISO 5657:1986), which has been technically revised.

Annexes A to E of this International Standard are for information only.

Introduction

Fire is a complex phenomenon: its behaviour and its effects depend upon a number of interrelated factors. The behaviour of materials and products depends upon the characteristics of the fire, the method of use of the materials and the environment in which they are exposed. The philosophy of "reaction to fire" tests is explained in ISO/TR 3814.

A test such as is specified in this International Standard deals only with a simple representation of a particular aspect of the potential fire situation typified by a radiant heat source in the presence of a pilot flame; it cannot alone provide any direct guidance on behaviour or safety in fire. A test of this type may, however, be used for comparative purposes or to ensure the existence of a certain quality of performance (in this case ignitability) considered to have a bearing on fire performance generally. It would be wrong to attach any other meaning to performance in this test.

The term "ignitability" is defined in ISO/IEC Guide 52 as the measure of the ease with which a specimen can be ignited due to the influence of an external heat source, under specific test conditions. It is one of the first fire properties to be manifest and should almost always be taken into account in any assessment of fire hazard. It may not, however, be the main characteristic of the material which affects the subsequent development of fire in a building.

This test does not rely upon the use of asbestos-based materials.

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SAFETY WARNING - So that suitable precautions may be taken to safeguard health, the attention of all concerned in fire tests is drawn to the possibility that toxic or harmful gases may be evolved during exposure of test specimens. The advice on safety given in annex A clause A.7 should also be noted.

1 Scope

This International Standard specifies a method for examining the ignition characteristics of the exposed surfaces of specimens of essentially flat materials, composites or assemblies not exceeding 70mm in thickness, when placed horizontally and subjected to specified levels of thermal irradiance.

Annex A gives a commentary on the text and guidance notes for operators. Advice on the limitations of the test is given in annex B.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 291:1997, *Plastics — Standard atmospheres for conditioning and testing.*

ISO/IEC Guide 52:1990, *Glossary of fire terms and definitions.*

ISO/TR 14697:1997, *Reaction to fire tests — Guidance on the choice of substrates for building products.*

3 Definitions

NOTE — See also A.1.

For the purposes of this International Standard, the definitions given in ISO/IEC Guide 52, together with the following, apply.