

International Standard



5657

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Fire tests — Reaction to fire — Ignitability of building products

Essais au feu — Réaction au feu — Allumabilité des produits de bâtiment

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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.

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 5657 was prepared by Technical Committee ISO/TC 92, *Fire tests on building materials, components and structures*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Fire tests — Reaction to fire — Ignitability of building products

0 Introduction

0.1 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.

0.2 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 and a 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.

0.3 The term "ignitability" is defined in ISO 3261 as the capability of a material of being ignited. 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.

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

0.5 The attention of all users of the test is drawn to the following warning.

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 and field of application

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 70 mm in thickness, when placed horizontally and subjected to specified levels of thermal irradiance.

2 References

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

ISO 3261, *Fire tests — Vocabulary*.

ISO/TR 3814, *The development of tests for measuring "reaction to fire" of building materials*.

ISO 5725, *Precision of test methods — Determination of repeatability and reproducibility by inter-laboratory tests*.

ISO/TR 6585, *Fire hazard and the design and use of fire tests*.

3 Definitions

(See also clause A.1 in annex A.)

For the purposes of this International Standard, the definitions given in ISO 3261 apply, together with the following:

3.1 product: Material, composite or assembly about which information is required.

3.2 material: Single substance or uniformly dispersed mixture, for example metal, stone, timber, concrete, mineral fibre, polymers.

3.3 composite: Combination of materials which are generally recognized in building construction as discrete entities, for example coated or laminated materials.

3.4 assembly: Fabrication of materials and/or composites, for example sandwich panels. This may include an air gap.

3.5 exposed surface: That surface of the product subjected to the heating conditions of the test.

3.6 specimen: Representative piece of the product which is to be tested together with any substrate or treatment. This may include an air gap.

3.7 essentially flat surface: Surface whose irregularity from a plane does not exceed ± 1 mm.

3.8 irradiance (at a point of a surface): Quotient of the radiant flux incident on an infinitesimal element of surface containing the point, by the area of that element.