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Reaction to fire tests — Fire growth — Full-scale test for stairs and stair coverings

Essais de réaction au feu — Évolution du feu — Essai en vraie grandeur pour les escaliers et les revêtements d'escaliers

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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 other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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/TS 22269 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 1, *Fire initiation and growth*.

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Introduction

This document is being issued in the Technical Specification series of publications (according to the ISO/IEC Directives, Part 1, 3.1.1) as a “prospective standard for provisional application” because the current experience of full-scale fire testing of stairs is limited to laboratories in four countries. Further development of the procedures used is possible and some additional inter-laboratory studies will be encouraged so that the precision of this potential International Standard may be determined.

This document is not to be regarded as an “International Standard”. It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to the ISO/TC 92/SC 1 Secretary.

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Reaction to fire tests — Fire growth — Full-scale test for stairs and stair coverings

WARNING — So that suitable precautions can be taken to safeguard health, the attention of all concerned in fire tests is drawn to the possibility that toxic or harmful gases can be evolved during combustion of test specimens.

The test procedures involve high temperatures and combustion processes from ignition to a fully developed room fire. Therefore, hazards can exist for burns, ignition of extraneous objects or clothing. The operators should use protective clothing, helmet, face-shield and equipment for avoiding exposure to toxic gases.

Means for extinguishing a fully developed fire should be available.

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1 Scope

This test method describes a full-scale reference scenario procedure for assessing the burning behaviour of stairs or stair coverings, when exposed to a defined ignition source. The risks addressed in this scenario are essentially those of a deliberate rather than an accidental fire. The ignition sources specified include a wood crib to represent a local attack with burning crumpled newspaper and a gas burner to represent a more severe attack when the whole width of the bottom step is attacked.

The observations of burning behaviour provide a basis for assessing the fire exposure behaviour of stair coverings installed over different stair substrates.

This method is applicable to all types of stair coverings that can be installed on stairs or to the stairs themselves. The results obtained from this method reflect the performance of the total stair covering system together with the stair substrate, as tested, and are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. Modifications to the stair covering, underlay, fixing system, stair substrate or other changes to the system can affect test results.

Tests are performed with an enclosed or open-sided staircase. In this test method, there is no closure at the top of the stairs to represent a ceiling on a stairs landing. The top of the stairs assembly is open so that the tests are conducted under well-ventilated conditions.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 13943, *Fire safety — Vocabulary*

ISO/TR 14697, *Fire tests — Guidance on the choice of substrates for building products*

ISO 13785-1, *Reaction-to-fire tests for facades — Part 1: Intermediate-scale test*

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