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Reaction to fire tests for floorings —

Part 2:

Determination of flame spread at a heat flux level of 25 kW/m²

Essais de réaction au feu des revêtements de sol —

*Partie 2: Détermination de la propagation de flamme à un niveau de
flux énergétique de 25 kW/m²*



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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.

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 9239-2 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 1, *Fire initiation and growth*.

ISO 9239 consists of the following parts, under the general title *Reaction to fire tests for floorings*:

- *Part 1: Determination of the burning behaviour using a radiant heat source*
- *Part 2: Determination of flame spread at a heat flux level of 25 kW/m²*

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Introduction

ISO/TR 5658-1 describes the development of standard tests for flame spread and explains the theory of flame spread, including horizontal flame spread over floorings.

Floorings are not readily involved in fires but if fire develops due to other contents of a building burning, then floorings may ignite and it is necessary to be able to determine whether the flooring will propagate flames.

This part of ISO 9239 provides a simple method by which horizontal surface spread of flame on a horizontal specimen can be determined for comparative purposes.

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 the 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 part of ISO 9239 deals only with a simple representation of a particular aspect of the potential fire situation typified by a radiant heat source and flame; it cannot alone provide any direct guidance on behaviour or safety in fire.

CAUTION:

The possibility of a gas-air fuel explosion in the test chamber should be recognized. Suitable safeguards consistent with sound engineering practice should be installed in the panel fuel supply system. These should include at least the following:

- a gas feed cut-off which is immediately activated when air and/or gas supply fail;
- a temperature sensor or a flame detection unit directed at the panel surface that stops fuel flow when the panel flame goes out.

Attention is drawn to the possibility that toxic or harmful gases may be produced during exposure of the specimens. In view of the potential hazard from products of combustion, the exhaust system shall be designed and operated so that the laboratory environment is protected from smoke and gas. The operator shall be instructed to minimize his exposure to combustion products by following sound safety practice, e.g., ensuring that the exhaust system is working properly, wearing appropriate clothing etc. The operator should also be aware that the walls and fittings of the test chamber become hot during the test and gloves should be worn to avoid burns.