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**Reaction-to-fire tests for façades —**  
**Part 1:**  
**Intermediate-scale test**

*Essais de réaction au feu des façades —*

*Partie 1: Essai à échelle intermédiaire*

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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 3.

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 part of ISO 13785 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 13785-1 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 1, *Fire initiation and growth*.

ISO 13785 consists of the following parts, under the general title *Reaction-to-fire tests for façades*:

- *Part 1: Intermediate-scale test*
- *Part 2: Large-scale test*

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## Introduction

Fire is a complex phenomenon. Its behaviour and effects depend on a number of interrelated factors. The behaviour of materials and products depends on the characteristics of the fire, the method of use of the materials and the environment in which they are exposed. The theory of “reaction to fire tests” is explained in ISO/TR 3814<sup>[2]</sup>.

The need for improved thermal insulation of buildings both for single and multi-storey dwellings and for industrial buildings has led to an increased use of insulated and often ventilated façades.

With these types of construction products, there are three primary fire threats to the walls and ceilings/roofs of a building:

- a) an interior compartment fire venting through a window on to a façade;
- b) an exterior fire in combustibles accumulated near a wall (e.g. rubbish, vegetation);
- c) fire in an adjacent building.

Item a) is generally the most severe and substantially the most significant.

Fire can spread in several ways. The most significant is by spread over a combustible exterior surface or the fire travelling vertically and horizontally through air cavities between claddings or façades, or through the core of insulation itself.

The results may not, however, reflect the actual performance of exterior wall assemblies under all fire exposure conditions.

The test specified in this part of ISO 13785 covers a simple representation of one fire scenario with façade products, typified by a fire within a building venting through a window and impinging directly on to a façade.

The two parts of ISO 13785 provide two methods of test: an intermediate scale test specified in this part, which should only be used for screening or evaluation of sub-components or “families of products”, and a large scale test specified in Part 2, which should be used to provide the end-use evaluation of all aspects of the façade system.

These test methods are intended to evaluate assemblies that are not intended for use as an internal lining.

The test specified in this part of ISO 13785 may be used for comparative purposes or to ensure the existence of a certain quality of performance considered to have a bearing on the fire performance of the façades generally. No other meaning is attached to performance in this test. The large-scale test in Part 2 of ISO 13785 should be used to give a more realistic end-use assessment of performance.

The test specified in this part of ISO 13785 does not rely on the use of asbestos-based materials.

