INTERNATIONAL STANDARD

ISO 12468-2

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External fire exposure to roofs —

Part 2: Classification of roofs

Exposition des toitures à un feu extérieur —

Partie 2: Classification des toitures

Reference number
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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 12468-2 was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 2, *Fire containment*.

ISO 12468 consists of the following parts, under the general title *External fire exposure to roofs*:

— *Part 1: Test method*

— *Part 2: Classification of roofs*

Introduction

This part of ISO 12468 establishes a classification for roofs tested in accordance with ISO 12468-1. The classifications described in this part of ISO 12468 consider the two levels of fire exposure as defined in ISO 12468-1.

— Level A: A large burning brand coming from a nearby building and falling onto the roof. Level A considers the effects of wind and additional radiant heat.

— Level B: A small burning brand transported by the wind from a remote fire and falling onto the roof. Level B considers the effect of wind but without additional radiant heat.

External fire exposure to roofs —

Part 2:
Classification of roofs

1 Scope

This part of ISO 12468 establishes the classification of roofs tested in accordance with ISO 12468-1. Performance criteria are established with respect to the following:

— fire penetration or openings;

— external fire spread;

— falling of flaming droplets or debris.

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 12468-1, *External exposure of roofs to fire — Part 1: Test method*

ISO 13943:2000, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12468-1 and ISO 13943:2000 apply.

4 Classification

4.1 The classification scheme in Table 1 is based on the results of testing a roof in accordance with ISO 12468-1. (Fire exposures: Level A test conditions include a large burning brand with radiation and wind; Level B test conditions include a small brand with wind.)

4.2 Four classes are established in the rank order: A1, A2, B1 and B2 with A1 being the highest performance. (Level A exposures result in A1 or A2 classes and Level B exposures result in B1 or B2 classes.)

5 Test results

Table 1 gives the test results.

Table 1 — Classification scheme

Test results	Classes			
	A1	A2	B1	B2
Fire penetration or openings	None	None within 15 min	None within 30 min	None within 15 min
External fire spread	Does not reach the limits of the measuring zone in any direction, within 30 min	Does not reach the limits of the measuring zone in any direction, within 15 min	Does not reach the limits of the measuring zone in any direction, within 30 min	Does not reach the limits of the measuring zone in any direction, within 15 min
Falling of flaming droplets or debris	None within 30 min	None within 15 min	None within 30 min	None within 15 min

6 Field of application

There are three parameters (pitch, nature of deck and level of fire exposure) in the test method that define the field of application.

6.1 Pitch

Classification obtained in a horizontal position shall apply to roof systems having a pitch of less than 5°.

Test results obtained at 15° shall apply to roof systems having a pitch of from 5° to 20°.

Test results obtained at 30° shall apply to roof systems having a pitch of greater than 20° up to 70°.

Roof systems having a pitch greater than 70° are outside the scope of this part of ISO 12468.

When two tests carried out at 0° and 30° give the same classification, that classification applies to any pitch from 0° to 70°.

Test results obtained at an alternative specified pitch shall apply to the roof system for that pitch only.

6.2 Nature of the deck

6.2.1 Test with standard supporting decks

Test results obtained with a standard supporting deck shall apply to all systems with the same components (including the thicknesses) installed in the same way, but with different decks as follows.

6.2.1.1 Test results obtained with a wood particleboard deck as defined in ISO 12468-1, with gaps between planks not exceeding 0,5 mm, shall apply to the following:

— any continuous wooden deck with a minimum thickness of 12 mm and with gaps not exceeding 0,5 mm;

— any non-combustible continuous deck with a minimum thickness of 10 mm.

6.2.1.2 Test results obtained with a wood particle board deck as defined in ISO 12468-1, with gaps of 5,0 mm + 0,5 mm between planks, shall apply to the following:

— any continuous wooden deck;

— any deck made from wooden planks with plain edges;

— any non-combustible deck with gaps not exceeding 5,0 mm.

6.2.1.3 Test results obtained with a trapezoidal profiled steel deck as defined in ISO 12468-1 shall apply to the following:

— any profiled steel deck;

— any non-combustible continuous deck with a minimum thickness of 10 mm.

6.2.1.4 Test results obtained with a trapezoidal aluminium deck as defined in ISO 12468-1 shall apply to the following:

— any profiled aluminium deck with thickness ⩾ than tested thickness;

— any profiled steel deck;

— any non-combustible continuous deck with a minimum thickness of 10 mm.

6.2.1.5 Test results obtained with a reinforced calcium silicate board as defined in ISO 12468-1 shall apply to the following:

— any non-combustible continuous deck with a minimum thickness of 10 mm.

6.2.2 Test with alternative supporting deck

Test results obtained with an alternative supporting deck shall apply only to that roof system.

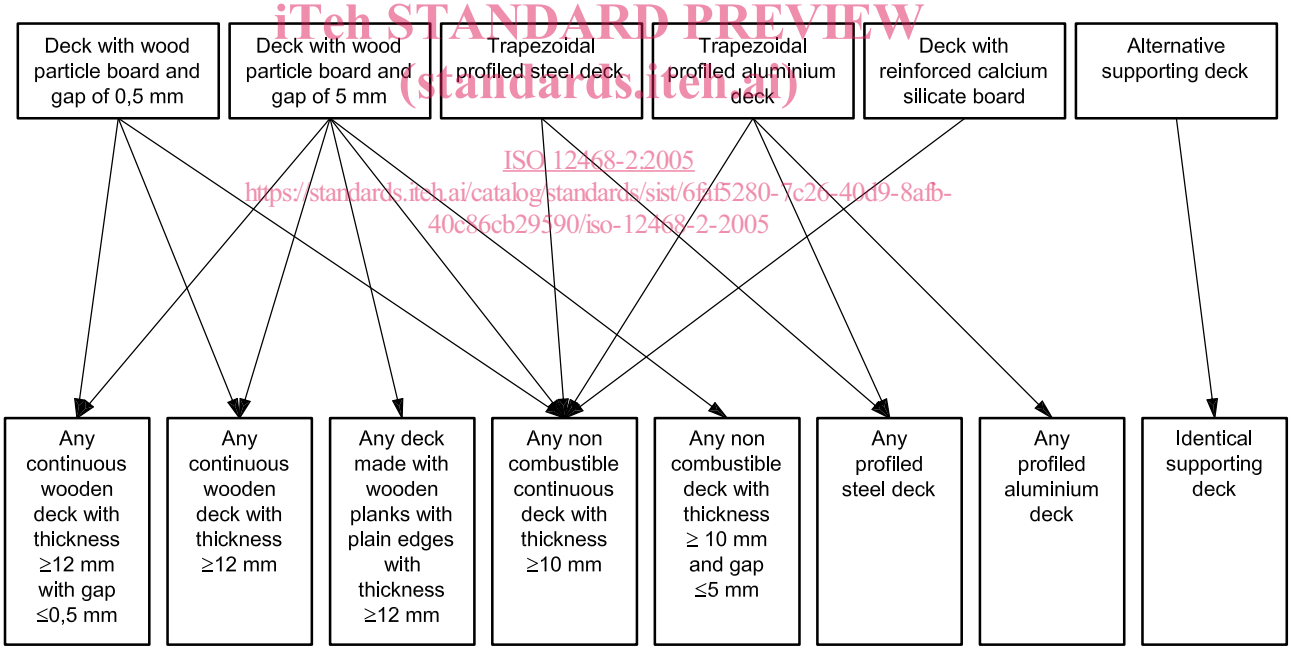

Figure 1 — Illustration of the field of application for the type of deck versus the standard supporting deck used for the construction of the test specimen

Any roof system that satisfies requirements related to level A1 is deemed to satisfy the same requirements at levels A2, B1 and B2 without any supplementary test.

Any roof system that satisfies requirements related to level A2 is deemed to satisfy the same requirements at levels B1 and B2 without any supplementary test.

Any roof system that satisfies requirements related to level B1 is deemed to satisfy the same requirements at level B2 without any supplementary test.