INTERNATIONAL STANDARD

ISO 12468-2

Second edition
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External exposure of roofs to fire —

Part 2: Classification of roofs

Exposition des toitures à un feu extérieur —

Partie 2: Classification des toitures

Reference number
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 92, *Fire Safety*, Subcommittee SC 2, *Fire containment*.

This second edition cancels and replaces the previous edition (ISO 12468-2:2005), of which it constitutes a minor revision.

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

— *Part 1: Test method*

— *Part 2: Classification of roofs*

The following parts are under preparation:

— *Part 3: Commentary*

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 three levels of fire exposure as defined in ISO 12468-1.

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

— Level B: A medium burning brand coming from a fire in a neighbourhood and falling onto the roof. Level B considers the effect of wind but without additional radiant heat.

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

External exposure of roofs to fire —

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 documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 13943:2008, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12468-1 and ISO 13943:2008 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 medium brand with wind; Level C test conditions include a small brand with wind.)

4.2 Six classes are established in the rank order: A1, A2, B1, B2, C1, and C2 with A1 being the highest performance. (Level A exposures result in A1 or A2 classes, Level B exposures result in B1 or B2 classes, and Level C exposures result in C1 or C2 classes.)

5 Test results

Table 1 gives the test results.

Table 1 — Classification scheme

Test results	Classes					
	A1	A2	B1	B2	C1	C2
Fire penetration or openings	None within 30 min	None within 15 min	None within 30 min	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	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	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 5° to 20°.

Test results obtained at 30° shall apply to roof systems having a pitch 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 greater than or equal to the 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.