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AMENDMENT 2
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Fire-resistance tests — Elements of building construction —

Part 1: General requirements

AMENDMENT 2

Essai de résistance au feu — Éléments de construction —
Partie 1: Exigences générales
AMENDEMENT 2

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Foreword

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This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 2, *Fire containment*.

A list of all parts in the ISO 834 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Normative references

Add the following reference:

ISO 834-2, *Fire-resistance tests — Elements of building construction — Part 2: Requirements and recommendations for measuring furnace exposure on test samples*

Update references

ISO 13943, *Fire safety — Vocabulary*

IEC 60584-1, *Thermocouples — Part 1: EMF specifications and tolerances*

6.7

Replace the existing subclause with the following:

6.7 Calibration

6.7.1 Calibration of furnaces used to test horizontal separating elements and vertical separating elements is monitored by results of tests conducted in accordance with ISO 834-2.

6.7.2 The effective area of the furnace opening shall be equal to or greater than the area required to measure unexposed surface temperatures as defined in 8.1.2.

NOTE The effective area of a furnace opening is defined in ISO 834-2:2019, 3.1.

6.7.3 The test method described in ISO 834-2 shall be conducted when either of the following two conditions occurs:

a) a 5-year period has elapsed from the conduct of the previous test; or

b) completion of a major modification to the furnace.

NOTE A major modification would consist of replacement of burners, furnace linings or combustion control equipment.

6.7.4 Results of the test conducted in accordance with ISO 834-2 shall comply with the following:

— After the initial 10 min exposure, the maximum temperature difference recorded by the plate thermometers attached on the exposed surface of the supporting construction shall not exceed 100 °C during a 45 min test.

— After the initial 10 min exposure, the oxygen content shall not be less than 1 % during a 45 min test. The oxygen content measurement shall be determined from samples obtained from the probe mounted on the supporting construction.

10.2.1

Replace the existing subclause with the following:

10.2.1 Loadbearing capacity

10.2.1.1 The loadbearing capacity is the elapsed time for which the test specimen continues to maintain its ability to support the test load during the test. Support of the test load is determined by both the amount and the rate of deflection, calculated from the measurements taken in 9.4.3.

10.2.1.2 The following definitions are used for horizontal loadbearing test specimens:

Limiting deflection, D_l, measured in mm:

$$D_l = L^2 / (400\ d)$$

Limiting rate of deflection, measured in mm/min:

$$(dD/dt)_l = L^2 / (9\ 000\ d)$$

where

L is the clear span of the test specimen, in mm;

d is the distance from the extreme fibre of the cold design compression zone to the extreme fibre of the cold design tension zone of the structural section, in mm.

10.2.1.3 For the purposes of this document, failure to support the test load on a horizontal loadbearing test specimen is deemed to have occurred when one of the following two criteria have occurred:

a) the measured deflection ≥ 1,5 × D_l; or

b) when D_l and $(dD/dt)_l$ are both exceeded.

10.2.1.4 The following definitions are used for vertical loadbearing test specimens.

Limiting vertical contraction (negative elongation), C_l, measured in mm:

$$C_l = h / 100 \text{ or}$$

Limiting rate of vertical contraction (negative elongation), measured in mm/min:

$$(dC/dt)_l = 3\ h / 1\ 000$$

where h is the initial height (in mm) of the test specimen once the load has been applied.

10.2.1.5 For the purposes of this document, failure to support the test load on a vertical loadbearing test specimen is deemed to have occurred when one of the following two criteria have been exceeded:

a) the limiting vertical contraction;

b) the limiting rate of vertical contraction.