International Standard

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Fire tests for building elements and components — Fire testing of service installations —

Part 1: Penetration seals

Essais au feu pour les éléments et composants de bâtiment — Essai au feu des installations de service —

Partie 1: Joints d'étanchéité

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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.

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

This second edition cancels and replaces the first edition (ISO 10295-1:2007), which has been technically revised.

The main changes are as follows:

— details of an optional water leakage test and an optional air leakage test have been added in Annex A;

— the Terms and definitions have been revised (Clause 3);

— Clause 8, Test construction, has been updated to include language for both specific construction and standard construction;

— typical thermocouple location figures have been updated;

— the direct field of application for pipe services has been revised.

A list of all parts in the ISO 10295 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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Introduction

This document has been prepared to provide a test method for assessing the contribution of a penetration sealing system to the fire resistance of separating elements when they have been penetrated by a service. It should be read in conjunction with ISO 834-1. This document contains specific requirements for fire resistance testing that are unique to the elements of building construction described as a penetration sealing system. The requirements for these penetration sealing systems are intended to be applied as appropriate in conjunction with the detailed and general requirements contained in ISO 834-1.

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Fire tests for building elements and components — Fire testing of service installations —

Part 1: Penetration seals

WARNING 1 — The attention of all persons concerned with managing and carrying out this fire resistance test is drawn to the fact that fire testing can be hazardous and there is a possibility that toxic and/or harmful smoke and gases can be evolved during the test. Mechanical and operational hazards can also arise during the construction of the test elements or structures, their testing and disposal of test residues.

WARNING 2 — An assessment of all potential hazards and risks to health shall be made and safety precautions shall be identified and provided. Written safety instructions shall be issued. Appropriate training shall be given to relevant personnel. Laboratory personnel shall ensure that they follow written safety instructions at all times.

1 Scope

This document specifies the heating condition, method of test and criteria for the evaluation of the ability of a penetration sealing system to maintain the integrity and insulation of a fire-separating element at the position at which it has been penetrated.

This document assesses:

a) the effect of such penetrations on the integrity and insulation performance of the element concerned,

b) the integrity and insulation performance of the penetration sealing system, and

c) the insulation performance of the penetrating service or services, and where appropriate, the integrity failure of a service.

NOTE 1 Optional water and air leakage tests are included in Annex A.

NOTE 2 Explanatory notes are included in Annex B.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 834-1, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 13943, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13943, ISO 834-1 and the following apply.

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