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Fire resistance tests — Fire dampers for air distribution systems —

Part 1: Mechanical dampers

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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 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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

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

This first edition of ISO 21925-1 cancels and replaces ISO 10294-1:1996, ISO 10294-2:1999, ISO 10294-3:1999 and ISO 10294-4:2001, which have been technically revised.

The main changes are as follows:

— integration of the requirements for mechanical dampers, which were published as four separate parts in the former ISO 10294-series, into a single document.

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.

Introduction

The material in the former ISO 10294-series was used to assess the fire resistance of mechanical fire dampers. The separate publications required multiple maintenance work and resources to keep them current and up-to-date. By having the requirements in a single volume, ISO 21925-1 is intended to improve efficiency and to be more user friendly. It is also anticipated that a single volume will serve the continued efforts to promote the alignment of the requirements contained in regional and national standards for testing fire dampers against this document.

ISO 10294-1:1996 addressed the spread of fire and smoke in buildings through ventilation ducts and other openings in fire-separating walls and floors.

ISO 10294-2:1999 provided classification, criteria and field of application for the test method given in ISO 10294-1:1996.

ISO 10294-3:1999 provided a background to the test method and a rationale to the procedures and the criteria selected with respect to the testing of fire dampers, as given in ISO 10294-1:1996.

ISO 10294-4:2001 provided a test method to evaluate the performance of fire damper-operating mechanisms.

A list of all parts in the ISO 21925-series can be found on the ISO website.

Fire resistance tests — Fire dampers for air distribution systems —

Part 1: Mechanical dampers

SAFETY WARNING — For suitable health precautions to be taken, the attention is drawn to the possibility that toxic or harmful gases can be released while the test is being conducted.

1 Scope

This document specifies a test method for the determination of the resistance of fire dampers to heat, and for the evaluation of their ability to prevent fire and smoke spreading from one fire compartment to another through an air distribution system.

It is applicable to mechanical fire dampers. It is not intended to be used for dampers used only in smoke control systems, for testing fire protection devices which only deal with air transfer applications, or for dampers used in suspended ceilings, as the installation of the damper and duct can have an adverse effect on the performance of the suspended ceiling, requiring other methods of evaluation.

NOTE "Air transfer" is a low-pressure application through a fire separation door (or wall, floor) without any connection to an air duct.

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 5167-7, *Measurement of fluid flow by means of pressure differential devices — Part 7: Orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
test construction
complete test assembly, consisting of the separating element, damper and duct sections and penetration seals (if any)

3.2
supporting construction
wall partition or floor into which the damper and duct section are installed for the test