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BSI Standards Publication

Fire resistance tests for non-loadbearing elements

Part 5: Air transfer grilles

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National foreword

This British Standard is the UK implementation of EN 1364-5:2017.

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A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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European foreword

This document (EN 1364-5:2017) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 1364 ‘Fire resistance tests for non-loadbearing elements’ consists of the following parts:

— *Part 1: Walls*

— *Part 2: Ceilings*

— *Part 3: Curtain walling - Full configuration (complete assembly)*

— *Part 4: Curtain walling - Part configuration*

— *Part 5: Air transfer grilles*

— *Part 6: Cavity Barriers*

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Introduction

The purpose of this test is to measure the ability of a representative specimen of an air transfer grille to resist the spread of fire from one side to another.

A representative sample of the air transfer grille is exposed to a specified regime of heating and the performance of the test specimen is monitored on the basis of criteria given in this standard. Fire resistance of the test specimen is expressed as the time for which the appropriate criteria have been satisfied. The times so obtained are a measure of the adequacy of the construction in a fire but have no direct relationship with the duration of a real fire.

CAUTION - The attention of all persons concerned with managing and carrying out this furnace testing is drawn to the fact that fire testing can be hazardous and that 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.

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

1 Scope

This European Standard specifies a method for determining the fire resistance of air transfer grilles (ATG).

It is applicable to air transfer grilles intended for installation in building components (typically walls, floors or ceilings). The orientation of the installation of the air transfer grille can be vertical or horizontal.

The closing mechanism of the air transfer grille can come from expansion of material and/or from any mechanical or electrical closing device.

This test method is valid for fire resistant or fire resistant and smoke control air transfer grilles.

An additional test configuration is valid for fire resistant or fire resistant and smoke control air transfer grilles in applications where flame impingement is a risk during open state from start of fire (Annex A).

This test method evaluates the behaviour of the air transfer grille when exposed to the standard fire curve described in EN 1363-1 and the standard pressure described in EN 1363-1. It is not the intention of this test to provide quantitative information on the rate of leakage of smoke and/or hot gases or on the transmission or generation of fumes under fire conditions. Such phenomena are only to be noted in describing the general behaviour of test specimens during the test.

The rate of leakage of smoke at ambient temperature or at 200 °C as an optional requirement for ATG with declared smoke control will be confirmed in accordance with standard EN 1634-3.

This test method is not valid for determining the fire resistance of air transfer grilles that are used in ducts because ATG are considered as separating elements. The test method for ATG, used in ducts is described in the corresponding duct standards.

This test method is not valid for determining the fire resistance of a fire damper or a fire barrier connected to a duct on either or both sides because an ATG is tested as a fire-separating element on its own. Fire dampers are tested according to EN 1366-2. Non-mechanical fire barriers are tested according to EN 1366-12.

This test method is not valid for determining the fire resistance of air transfer grilles in fire doors, shutters and openable windows as specified in EN 1634-1 and EN 1364-2, because the deformation of fire doors, shutters and openable windows in fire conditions differs from the deformation of flexible/rigid walls. Moreover the location of thermocouples in the door standard is too specific to be handled in this standard.

All values given in this standard are nominal unless otherwise specified.

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.

EN 1363-1, *Fire resistance tests - Part 1: General Requirements*

EN 1363-2, *Fire resistance tests - Part 2: Alternative and additional procedures*

EN ISO 13943, *Fire safety - Vocabulary (ISO 13943)*