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Fire resistance tests for service installations - Part 13: Chimneys

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This standard includes the English version of the European Standard.

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Feuerwiderstandsprüfungen für Installationen - Teil 13: Abgasanlagen

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European foreword

This document (EN 1366-13:2019) 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of an identical text or by endorsement, at the latest by October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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 1366 “Fire resistance tests for service installations” consists of the following parts:

— Part 1: Ventilation ducts

— Part 2: Fire dampers

— Part 3: Peetration seals

— Part 4: Linear joint seals

— Part 5: Service ducts and shafts

— Part 6: Raised access and hollow core floors

— Part 7: Conveyor systems and their closures

— Part 8: Smoke extraction ducts

— Part 9: Single compartment smoke extraction ducts

— Part 10: Smoke control dampers

— Part 11: Fire protective systems for cable systems and associated components

— Part 12: Non-mechanical fire barrier for ventilation ductwork

— Part 13: Chimneys

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Introduction

The purpose of this test is to measure the ability of a representative chimney construction to resist the spread of fire from one fire compartment to another.

The fire can attack

— only from outside the chimney;

— as well as from outside the chimney entering into the chimney.

The test method is applicable to vertical and horizontal chimneys, taking into account joints and openings as parts of the system chimney assembly.

The fire resistance from inside the chimney as a result of a sootfire (considered as resistance to fire internal to external, according to EN 1443) has to be tested in accordance to the relevant product standards and is not covered by this standard.

The test measures the length of time for which chimneys of specified dimensions, supported as they would be in practice, satisfy defined criteria when exposed to fire only from outside or from both inside and outside the chimney.

It is in the responsibility of the member states to require whether test specimen A or B (see 3.4) is to be tested.

Caution: The attention of all persons concerned with managing and carrying out this fire resistance test is drawn to the fact that fire testing may be hazardous and that there is a possibility that toxic and/or harmful smoke and gases may be evolved during the test. Mechanical and operational hazards may 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 document specifies a procedure to determine the fire resistance time for chimney constructions (see normative references), shafts of chimneys or penetration elements as part of a chimney construction under standardized fire conditions. The test examines the behaviour of chimney products exposed to fire only from the outside or fire from the outside entering into the chimney. This standard is used in conjunction with EN 1363-1. In chimneys combustion air supply ducts can also be included. The standard also applies to such chimneys. Slanted chimneys are not included.

Annex A provides general guidance and background information. This document is not applicable to:

— sootfire resistance conditions;

— accessories unless they are included in the system chimney to be tested;

— one, two or three sided enclosures.

If the pressure inside the chimney can in practice decrease to lower values than - 40 Pa or increase to higher values than + 5000 Pa it shall be considered that this cannot be covered by the test prescribed in this standard.

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.

EN 1363-1:2012, *Fire resistance tests - Part 1: General Requirements*

EN 1443, *Chimneys - General requirements*

EN 1457-1, *Chimneys - Clay/ceramic flue liners - Part 1: Flue liners operating under dry conditions - Requirements and test methods*

EN 1457-2, *Chimneys - Clay/ceramic flue liners - Part 2: Flue liners operating under wet conditions - Requirements and test methods*

EN 1856-1, *Chimneys - Requirements for metal chimneys - Part 1: System chimney products*

EN 1856-2, *Chimneys - Requirements for metal chimneys - Part 2: Metal flue liners and connecting flue pipes*

EN 1857, *Chimneys - Components - Concrete flue liners*

EN 1858, *Chimneys - Components - Concrete flue blocks*

EN 12446, *Chimneys - Components - Concrete outer wall elements*

EN 13063-1, *Chimneys - System chimneys with Part 1: Requirements and test methods for soot fire resistance clay/ceramic flue liners*

EN 13063-2, *Chimneys - System chimneys with Part 2: Requirements and test methods under wet conditions clay/ceramic flue liners*

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EN 13063-3, *Chimneys - System chimneys with clay/ceramic flue liners - Part 3: Requirements and test methods for air flue system chimneys*

EN 13069, *Chimneys - Clay/ceramic outer walls for system chimneys - Requirements and test methods*

EN 13084-1, *Free-standing chimneys - Part 1: General requirements*

EN 13084-2, *Free-standing chimneys - Part 2: Concrete chimneys*

EN 13084-4, *Free-standing chimneys - Part 4: Brick liners - Design and execution*

EN 13084-5, *Free-standing chimneys - Part 5: Material for brick liners - Product specifications*

EN 13084-6, *Free-standing chimneys - Part 6: Steel liners - Design and execution*

EN 13084-7, *Free-standing chimneys - Part 7: Product specifications of cylindrical steel fabrications for use in single wall steel chimneys and steel liners*

EN 13216-1, *Chimneys - Test methods for system chimneys - Part 1: General test methods*

EN 13502, *Chimneys - Requirements and test methods for clay/ceramic flue terminals*

EN 14471, *Chimneys - System chimneys with plastic flue liners - Requirements and test methods*

EN 14989-2, *Chimneys - Requirements and test methods for metal chimneys and material independent air supply ducts for roomsealed heating applications - Part 2: Flue and air supply ducts for room sealed appliances*