Tulepüsivuse katsed. Osa 1: Üldnõuded

Fire resistance tests - Part 1: General Requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1363-1:2012 sisaldab Euroopa standardi EN 1363-1:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 1363-1:2012 consists of the English text of the European standard EN 1363-1:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.07.2012.	Date of Availability of the European standard is 25.07.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Fire resistance tests - Part 1: General Requirements

Essais de résistance au feu - Partie 1: Exigences générales

Feuerwiderstandsprüfungen - Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 9 June 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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Foreword

This document (EN 1363-1:2012) 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 January 2013, and conflicting national standards shall be withdrawn at the latest by January 2013.

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

This document supersedes EN 1363-1:1999.

The main changes compared to EN 1363-1:1999 are:

a) a tolerance is specified for the thickness of the thermocouple wire in the furnace thermocouple;

b) a small variation to the layout of the unexposed surface thermocouples;

c) a tolerance to the maximum pressure is specified;

d) a redefinition of standard supporting constructions;

e) a change to the required distance of thermocouples to a discontinuity from 15 mm into 20 mm;

f) a redefinition of the commencement of the fire test;

g) a redefinition for the load bearing capacity criterion;

h) specifications for the short form test report are removed.

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

This European Standard is technically related to ISO 834-1 prepared by ISO/TC92/SC2 "Fire resistance tests".

EN 1363, *Fire resistance tests*, consists of the following parts:

— *Part 1: General requirements* (this European Standard);

— *Part 2: Alternative and additional procedures*;

— *Part 3: Verification of furnace performance* (published as an ENV).

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The objective of determining fire resistance is to assess the behaviour of a specimen of an element of building construction when subjected to defined heating and pressure conditions. The method provides a means of quantifying the ability of an element to withstand exposure to high temperatures. It does so by setting criteria against which the loadbearing capacity, the fire containment (integrity) and the thermal transmittance (insulation) functions amongst other characteristics can be evaluated.

A representative sample of the element is exposed to a specified regime of heating and the performance of the test specimen is monitored on the basis of criteria described in the standard. Fire resistance of the test element 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 they have no direct relationship with the duration time of a real fire.

Caution

The attention of all persons concerned with managing and carrying out fire resistance testing is drawn to the fact that fire testing might be hazardous and that there is a possibility that toxic and/or harmful smoke and gases will be emitted during the test. Mechanical and operational hazards might 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 needs to be made and safety precautions need to be identified and provided. Written safety instructions will be issued. Appropriate training will be given to relevant personnel. Laboratory personnel will ensure that they follow written safety instructions at all times.

Uncertainty of measurement of fire resistance

There are many factors which can affect the result of a fire resistance test. Those concerned with the variability of the specimen including its materials, manufacture and installation are not related to the uncertainty of measurement. Of the remainder, some, such as the different thermal dose provided by different furnaces, are much more significant than others such as the accuracy of calibration of the data logging system.

Because of the very labour intensive nature of the test, many of the factors that have a bearing on the result are operator-dependent. The training, experience and attitude of the operator is thus crucial to eliminate such variables which can significantly affect the degree of uncertainty of measurement. Unfortunately, it is not possible to numerically quantify these factors and therefore any attempt to determine uncertainty of measurement that does not take into account operator-dependent variables is of limited value.

1 Scope

This European Standard establishes the general principles for determining the fire resistance of various elements of construction when subjected to standard fire exposure conditions. Alternative and additional procedures to meet special requirements are given in EN 1363-2.

The principle that has been embodied within all European Standards relating to fire resistance testing is that where aspects and procedures of testing are common to all specific test methods e.g. the temperature/time curve, then they are specified in this test method. Where a general principle is common to many specific test methods but the details vary according to the element being tested (e.g. the measurement of unexposed face temperature), then the principle is given in this document, but the details are given in the specific test method. Where certain aspects of testing are unique to a particular specific test method (e.g. the air leakage test for fire dampers), then no details are included in this document.

The test results obtained might be directly applicable to other similar elements, or variations of the element tested. The extent to which this application is permitted depends upon the field of direct application of the test result. This is restricted by the provision of rules which limit the variation from the tested specimen without further evaluation. The rules for determining the permitted variations are given in each specific test method.

Variations outside those permitted by direct application are covered under extended application of test results. This results from an in-depth review of the design and performance of a particular product in test(s) by a recognised authority. Further consideration on direct and extended application is given in Annex A.

The duration for which the tested element, as modified by its direct or extended field of application, satisfies specific criteria will permit subsequent classification.

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 520, *Gypsum plasterboards — Definitions, requirements and test methods*

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

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN ISO 13943:2010, *Fire safety — Vocabulary (ISO 13943:2008)*

EN 60584-1, *Thermocouples — Part 1: Reference tables (IEC 60584-1)*

EN 60584-2, *Thermocouples — Part 2: Tolerances (IEC 60584-2)*