

Extended application of results from fire resistance tests for service installations - Part 2: Fire dampers

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15882-2:2022 sisaldab Euroopa standardi EN 15882-2:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 15882-2:2022 consists of the English text of the European standard EN 15882-2:2022.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.09.2022.	Date of Availability of the European standard is 21.09.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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

ICS 13.220.99

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Extended application of results from fire resistance tests for service installations - Part 2: Fire dampers

Application étendue des résultats des essais de
résistance au feu des installations de service - Partie 2 :
Clapets résistant au feu

Erweiterter Anwendungsbereich der Ergebnisse aus
Feuerwiderstandsprüfungen für Installationen - Teil 2:
Brandschutzklappen

This European Standard was approved by CEN on 15 August 2022.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword	3
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Test requirements for assessment of design changes and modification of the manufacturing process	7
4.1 General.....	7
4.2 Design and manufacturing changes	7
4.2.1 Pre-test	7
4.2.2 Fire test.....	8
4.2.3 Extended field of application.....	8
4.3 Actuators, remote triggering devices, actuating mechanisms, fusible links and sensing elements.....	8
4.3.1 Actuators.....	8
4.3.2 Actuators with an associated thermal element device that controls the action of the actuator to close the fire damper in the event of fire	9
4.3.3 Remote triggering device (e.g. magnet).....	10
4.3.4 Actuating mechanism.....	10
4.3.5 Fusible links and elements (not associated with the actuator supplier)	11
5 Determination of worst case.....	12
6 Conditions and application rules	13
6.1 Change of fixing damper to supporting construction	13
6.2 Multiple damper assemblies.....	13
6.2.1 E Classification only	13
6.2.2 EI, E-S, EI-S classifications	15
6.2.3 Field of application.....	15
6.3 Alternative penetration seals.....	16
7 Influence of parameters and factors on fire damper performance.....	16
8 Critical parameters and factors.....	16
8.1 General.....	16
8.2 Common operational parameters and factors	17
9 Constructional parameters	17
9.1 General.....	17
9.2 Parameters of components of damper	18
9.3 Parameters for installation	19
10 Methodology	19
11 Extended field of application report.....	42
Bibliography	45

European foreword

This document (EN 15882-2:2022) 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 March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 supersedes EN 15882-2:2015.

In comparison with the previous edition, the following technical modifications have been made:

- Clause 4 was expanded and re-titled “Test requirements for assessment of design changes and modification of the manufacturing process”. This defines options for EXAP where changes are proposed, what needs to be done pre-test, fire tests that need to be done etc. This is supported by the new rule X.65 where such changes are proposed.
- Provisions on how to handle the replacement or new actuators, operating mechanisms and fusible elements have become more detailed. Further support is also given in the rules.
- Clause 5 now details more comprehensively the selection of the worst case.
- Clause 6 now contains more details on hangers and fixing flanges and on the testing of multiple units. It also covers the use of alternative penetration seals.
- The rules are similar (some are new, some changed); the numbering changed.
- Changes were made with respect to the use of different materials (particularly stainless steels) and the positioning of flanges, brackets etc.

EN 15882, *Extended application of results from fire resistance tests for service installations*, consists of the following parts:

- Part 1: Ducts
- Part 2: Fire dampers
- Part 3: Penetration seals
- Part 4: Linear joint seals

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

This document is a preview generated by EVS

Introduction

It should be noted that fire resisting dampers are special products that are exposed to different conditions than other elements of construction; in particular they are subjected to significantly different pressure regimes. Integrity is also evaluated through leakage measurements. Consequently, this document may adopt a different approach to other extended field of application standards, with more emphasis on testing.

Some rule references and content have changed from the previous version of this document and some conclusions to the previous version may not be acceptable in the light of this new information.

1 Scope

This document provides guidance and rules to notified bodies (for fire dampers) allowing them to produce/validate an extended field of application report for fire dampers based on testing undertaken in accordance with EN 1366-2. This document identifies the parameters that affect the fire resistance of fire dampers. It also identifies the factors that need to be considered when deciding whether, or by how much, the parameter can be extended when contemplating the fire resistance performance of an untested, or untestable variation in the construction.

This document explains the principles behind how a conclusion on the influence of specific parameters/constructional details relating to the relevant criteria (E, I, S) can be achieved.

This document does not cover dampers used for smoke control or non-mechanical fire barriers.

It is the intention that the application of this document makes it possible to identify which specifications to test to maximize the field of application. Some information on test programmes is given for guidance purposes.

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 1751, *Ventilation for buildings - Air terminal devices - Aerodynamic testing of damper and valves*

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

EN 1366-1, *Fire resistance tests for service installations — Part 1: Ventilation ducts*

EN 1366-2, *Fire resistance tests for service installations - Part 2: Fire dampers*

EN 1366-3, *Fire resistance tests for service installations - Part 3: Penetration seals*

EN 13501-3, *Fire classification of construction products and building elements — Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers*

EN 15882-1, *Extended application of results from fire resistance tests for service installations — Part 1: Ducts*

EN 15650:2010, *Ventilation for buildings - Fire dampers*

ISO 21925-1, *Fire resistance tests — Fire dampers for air distribution systems — Part 1: Mechanical dampers*