SLOVENSKI STANDARD
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Dimovodne naprave - Oprema - 4. del: Dimovodne lopute - Zahteve in preskusne metode

Chimneys - Accessories - Part 4: Flue dampers - Requirements and test methods

Abgasanlagen - Zubehörteile - Teil 4: Abgasklappen - Anforderungen und Prüfverfahren

Conduits de fumée - Accessoires - Partie 4: Clapets de gaz de fumées - Exigences et méthodes d'essai

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Chimneys - Accessories - Part 4: Flue dampers - Requirements and test methods

Conduits de fumée - Accessoires - Partie 4: Clapets de gaz de fumées - Exigences et méthodes d'essai

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

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European foreword

This document (prEN 16475-4:2017) has been prepared by Technical Committee CEN/TC 166 “Chimneys”, the secretariat of which is held by ASI.

This document is currently submitted to the CEN Enquiry.

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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Introduction

This document forms a part of the series of standards EN 16475, Chimneys – Accessories, comprising the following parts:

— *Part 1: Silencers — Requirements and test methods;*

— *Part 2: Chimney fans — Requirements and test methods;*

— *Part 3: Draught regulators, standstill opening devices and combined secondary air devices — Requirements and test methods;*

— *Part 4: Flue dampers — Requirements and test method* (this part)*;*

— *Part 6: Access components — Requirements and test methods;*

— *Part 7: Rain caps — Requirements and test methods.*

The main purpose of flue dampers is to close or partially close a flue.

1 Scope

This document specifies the requirements and test methods for flue dampers that are used as components, carrying flue gas, in order to limit the flow in a chimney.

Flue dampers may be manually adjusted, sited in connecting flue pipes or chimneys, in order to reduce the burning rate (solid fuel stoves/fireplaces) or to work as a shut-off slide preventing back flow of soot during cleaning of the chimney, or mechanically driven for reducing/closing the flue, in order to reduce the stand-by losses or to prevent the backflow of the flue gas e.g. in case of multi-served chimneys.

This document covers only flue dampers incorporated in a housing and installed inside a building.

Flue dampers already tested together with system chimney products or other chimney components, e.g. flue liners, connecting flue pipes, are not covered by this document.

This document also specifies the requirements for marking, manufacturers' instruction, product information, Assessment and Verification of Constancy of Performance (AVCP), cleaning and maintenance.

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.

prEN 1443:2017, *Chimneys — General requirements*

EN 1561, *Founding - Grey cast irons*

EN 1563, *Founding - Spheroidal graphite cast irons*

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

EN 1856-2:2009, *Chimneys - Requirements for metal chimneys - Part 2: Metal flue liners and connecting flue pipes*

EN 1859, *Chimneys — Metal chimneys — Test methods*

EN 10025-1, *Hot rolled products of structural steels - Part 1: General technical delivery conditions*

EN 10088-1, *Stainless steels - Part 1: List of stainless steels*

EN 10346, *Continuously hot-dip coated steel flat products for cold forming - Technical delivery conditions*

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

EN 14241-1, *Chimneys — Elastomeric seals and elastomeric sealants — Material requirements and test methods — Part 1: Seals in flue liners*

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

EN 16516, *Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air*

EN 50156-1, *Electrical equipment for furnaces and ancillary equipment - Part 1: Requirements for application design and installation*

EN 60730-2-14, *Automatic electrical controls for household and similar use - Part 2-14: Particular requirements for electric actuators (IEC 60730 2 14)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61058-1, *Switches for appliances - Part 1: General requirements (IEC 61058 1)*

EN 15502-2-1, *Gas-fired central heating boilers — Part 2-1: Specific standard for type C appliances and type B2, B3 and B5 appliances of a nominal heat input not exceeding 1 000 kW*

prEN 16510-1, *Residential solid fuel burning appliances — Part 1: General requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1443, EN 1856-1, EN 1856-2 and EN 1859 and the following 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 http://www.iso.org/obp

3.1
flue damper
device used to close or partially close the flue, comprising a rotating or sliding flue damper flap, including fastening elements, in a flue damper housing that may be a section of connecting flue pipe or a section of chimney (single or multi wall)

Note 1 to entry: Examples given in Annex D.

3.2
shut-off slide
flue damper type 1
flue damper which is intended to prevent the escape of dust out of the chimney during sweeping the chimney

3.3
internal leakage rate
leakage rate inside the flue caused by the closed flap

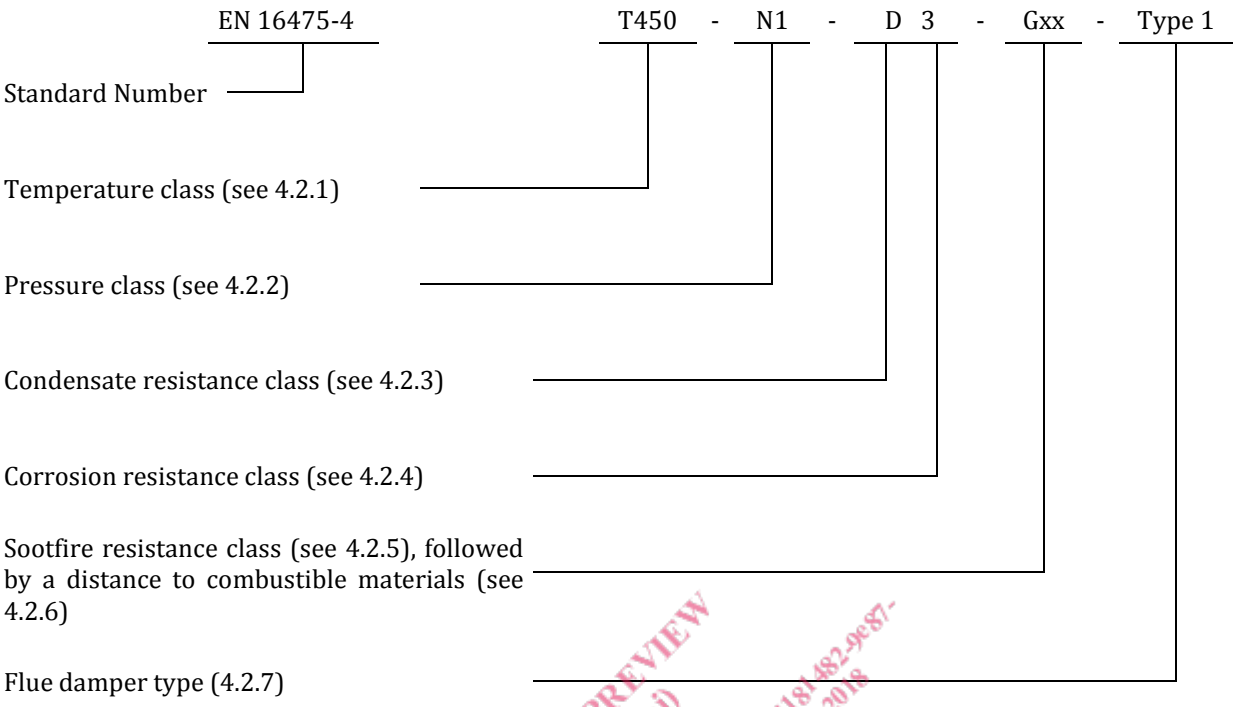
3.4
external leakage rate
leakage rate from the inside of the component to the outside atmosphere

4 Product characteristics

4.1 General

In order to identify the intended use of the flue damper the product shall be designated in accordance with the following designation string:

EXAMPLE of a flue damper designation:



In addition information on the following characteristics shall be given:

— reaction to fire (see 4.3.1);

— thermal resistance (see 4.3.2);

— flow resistance (see 4.3.3);

— freeze–thaw resistance (see 4.3.4).

In addition the following requirements shall be fulfilled:

— mechanical resistance and stability (see 4.4.1);

— safety in use (see 4.4.2);

— dangerous substances (see 4.4.3);

— electrical requirements (see 4.4.4).

4.2 Classes

4.2.1 Temperature classes

The temperature class shall be declared in accordance with prEN 1443:2017, Table 1.

All flue dampers shall be capable of withstanding thermal loads. Therefore the products shall be tested in accordance with Clause 5.3 to steady-state at a test temperature given in prEN 1443:2017, Table 2, appropriate to the product characteristics.

The requirements are:

— the gas tightness requirement of the declared pressure class (see 4.2.2) shall be met before and after the test;

— the maximum temperature of adjacent combustible materials shall not exceed 85 °C when related to an ambient temperature of 20 °C at the distance declared by the manufacturer when tested at the declared temperature class.

4.2.2 Pressure classes

The pressure class shall be declared in accordance with prEN 1443:2017, Table 3.

For flue dampers the external gas tightness shall be verified by a test in accordance with 5.4.1 at a test pressure given in Table 1, appropriate to the type of use.

Table 1 — External leakage rate

Class	Test pressure[a]	Leakage rate[b] $l \cdot s^{-1} \cdot m^{-1}$
N 1	40	≤ 2,0
N 2	20	≤ 3,0
P 1	200	≤ 0,006
P 2	200	≤ 0,120
M 1	1 500	≤ 0,006
M 2	1 500	≤ 0,120
H 1	5 000	≤ 0,006
H 2	5 000	≤ 0,120

a Pressure at steady-state condition under normal operating conditions.

b Leakage rate related to the nominal flue damper diameter.

The leakage rate in litres per second per meter of the nominal diameter of the flue damper before and after any test shall not exceed the values given in Table 1.

4.2.3 Condensate resistance classes

The condensate resistance class shall be declared in accordance with prEN 1443:2017, 4.2.3.

For flue dampers designated to wet operating conditions (W) the condensate resistance shall be verified by a test in accordance with 5.5.