SLOVENSKI STANDARD

SIST EN 15287-2:2008

01-maj-2008

Dimniki - Projektiranje, vgradnja in pregled dimnikov - 2. del: Dimniki za kurilne naprave, ki delujejo neodvisno od zraka v prostoru

Chimneys - Design, installation and commissioning of chimneys - Part 2: Chimneys for roomsealed appliances

Abgasanlagen - Planung, Montage und Abnahme von Abgasanlagen - Teil 2: Abgasanlagen für raumluftunabhängige Feuerstätten

Conduits de fumée - Conception et mise en oevre des conduits de fumées - Partie 2 : Conduits de fumée pour appareils qui ne pas dependent de l'air dans la piece

Ta slovenski standard je istoveten z: EN 15287-2:2008

ICS:

91.060.40

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 15287-2

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ICS 91.060.40

English Version

Chimneys - Design, installation and commissioning of chimneys - Part 2: Chimneys for roomsealed appliances

Cheminées - Conception, installation et mise en service des conduits de fumée - Partie 2 : Conduits de fumée pour chaudières étanches

Abgasanlagen - Planung, Montage und Abnahme von Abgasanlagen - Teil 2: Abgasanlagen für raumluftunabhängige Feuerstätten

This European Standard was approved by CEN on 10 February 2008.

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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 Management Centre has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 15287-2:2008) has been prepared by Technical Committee CEN/TC 166 “Chimneys”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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 European Standard is one of a series of specifications as listed below.

Chimneys – Design, installation and commissioning of chimneys – Part 1: Chimneys for non-roomsealed heating appliances.

Chimneys – Design, installation and commissioning of chimneys – Part 2: Chimneys systems for roomsealed appliances.

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

1 Scope

This European Standard describes the method of specifying the design, installation and labelling criteria for chimney systems, connecting flue pipes and air supply pipes for roomsealed heating applications. It also gives information on commissioning of an installed chimney.

This standard does not cover:

— chimneys designated H (high positive pressure chimneys), and chimneys designated P (normal positive pressure chimneys) serving more than one appliance,

— chimneys which serve a mixture of fan assisted or forced draught burners or natural draught appliances,

— installations having a configuration of the type C_2.

This European Standard does not apply to freestanding chimneys covered by EN 13084-1.

This standard also specifies limitations for supporting a chimney, and the maximum unsupported chimney height for system chimneys and custom built chimneys.

NOTE Roomsealed gas appliances are classified as type C according to CEN/TR 1749.

2 Normative references

The following referenced documents are indispensable for the application 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 771-1, *Specification for masonry units - Part 1: Clay masonry units*

EN 771-2, *Specification for masonry units - Part 2: Calcium silicate masonry units*

EN 1443: 2003, *Chimneys – General requirements*

EN 1457, *Chimneys — Clay/ceramic flue liners — Requirements and test methods*

EN 1806, *Chimneys – Clay/ceramic flue blocks for single wall chimneys - 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 liners and connecting flue pipes*

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

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

EN 1993-3-2, *Eurocode 3: Design of steel structures – Part 3-2: Towers, masts and chimneys – Chimneys*

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

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

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

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 13384-1: 2002, *Chimneys – Thermal and fluid dynamic calculation methods – Part 1: Chimneys serving one appliance*

EN 13384-2, *Chimneys – Thermal and fluid dynamic calculation methods – Part 2: Chimneys serving more than one heating appliance*

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 14989-1, *Chimneys - Requirements and test methods for metal chimneys and material independent air supply ducts for roomsealed heating applications - Part 1: Vertical air/flue terminals for C6-type appliances*

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*

EN 15287-1:2007, *Chimneys - Design, installation and commissioning of chimneys - Part 1: Chimneys for non-roomsealed heating appliances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1443:2003, EN 15287-1:2007 and the following apply.

NOTE 1 Examples of balanced air/flue configurations for roomsealed applications are given in Figures 1 and 2. The configurations of Figure 1 and Figure 2 may be created from converting or relining an existing chimney.

NOTE 2 The European scheme for the classification of gas appliances is given in CEN/TR 1749.

3.1
air supply duct
duct in a chimney system only for conveying combustion air to a room-sealed appliance

3.2
balanced flue chimney configuration
configuration where the air entry to the combustion air supply duct is adjacent to the discharge of combustion products from the flue, the inlet and outlet being so positioned that wind effects are substantially balanced

3.3
concentric chimney configuration
configuration in which the chimney flue is fully surrounded by the air supply duct

NOTE This includes chimney configurations where the flue duct and air supply duct do not share a common axis.

3.4
connecting air supply pipe
component or components connecting the heating appliance air supply to the chimney system air supply duct

3.5
connecting flue pipe
component or components connecting the heating appliance flue outlet to the flue duct of the chimney system

3.6
converted chimney
existing chimney for non roomsealed applications changed to a roomsealed chimney configuration

3.7
custom-built chimney for roomsealed heating applications
chimney configuration that is installed or built on-site using a combination of compatible components that may be from one or different sources

3.8
flue duct
the duct containing the flue of the chimney system

3.9
relined chimney
existing chimney where a liner is restored or replaced

NOTE The process of inserting a new liner into an existing chimney without a change of the air/flue configuration is also regarded as relining the chimney

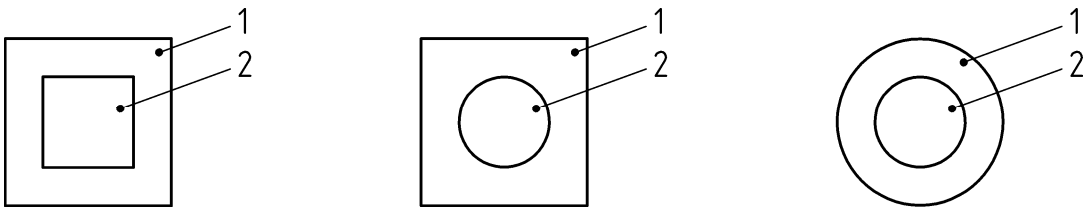
3.10
roomsealed appliance
appliance in which the combustion circuit (air supply, combustion chamber, heat exchanger and evacuation of the products of combustion) is sealed with respect to the room in which the appliance is installed

3.11
roomsealed chimney configuration
combination of both a flue duct and an air supply duct for roomsealed applications

3.12
separate chimney configuration
configuration in which the air supply duct and the chimney flue are separate

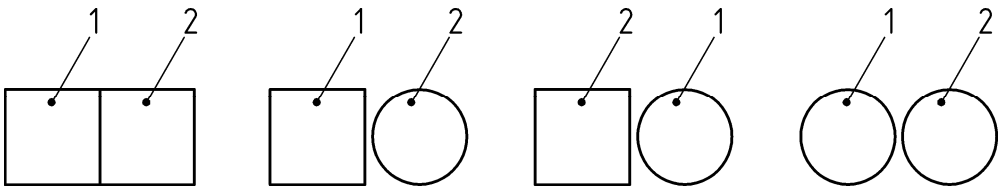
3.13
system chimney for roomsealed heating applications
chimney configuration that is installed using a combination of compatible components, obtained or specified from one manufacturing source with product responsibility for the whole roomsealed chimney configuration

NOTE This product is understood to constitute a kit under the Mandate M 105.



Key
1 flue gas
2 combustion air

Figure 1 — Concentric configurations



Key

1 flue gas

2 combustion air

Figure 2 — Separate configurations

4 Design

4.1 General

In order to design a chimney system installation, the following steps should be followed to achieve a safe chimney installation.

Specify whether the chimney system design is for a single appliance or multiple appliance application. Specify the type of multiple appliance configuration, i.e. whether cascade or multiple inlet.

The design shall specify whether the chimney configuration to be installed shall comprise two concentric or separate ducts.

Chimney system shall comply with national regulations and nationally accepted rules.

NOTE Where a chimney is approved together with the heating appliance, the information for flue sizing or the designation parameters not associated with the installation aspects are not necessary as the combination of appliance and chimney has been certificated together.

4.2 Data requirements

4.2.1 Sources of data and information

The data and information specified in 4.2.2 to 4.2.5 shall be obtained and documented as appropriate.

NOTE The sources may be:
-heating appliance manufacturer‘s literature,
-chimney manufacturer‘s literature including installation instructions,
-architects drawings or plans and/or site surveys,
-Annexes of this document (e.g. material characteristics),
-local building rules.

A possible source of typical or average data is EN 13384-1, and Annex A of this document.

4.2.2 Heating appliance information

The information for the heating appliance(s) in Annex B shall be obtained from the documentation of the heating appliance manufacturer or if not available, default values may be used (see Annex B of EN 13384-1:2002), but the source of the data shall be documented in the design (see 4.2.1).

4.2.3 Chimney system product specification

The following information about the chimney product specification shall be obtained:

— identification and designation of the system chimney or of the components for custom built chimneys or for relining an existing chimney (see also Annexes C, D and E);

— design load or maximum allowed chimney height to be supported by lengths, fittings and supports;

— weight of components where appropriate;

— manufacturer's installation instructions;

— terminals characteristics;

— condensate drainage system.

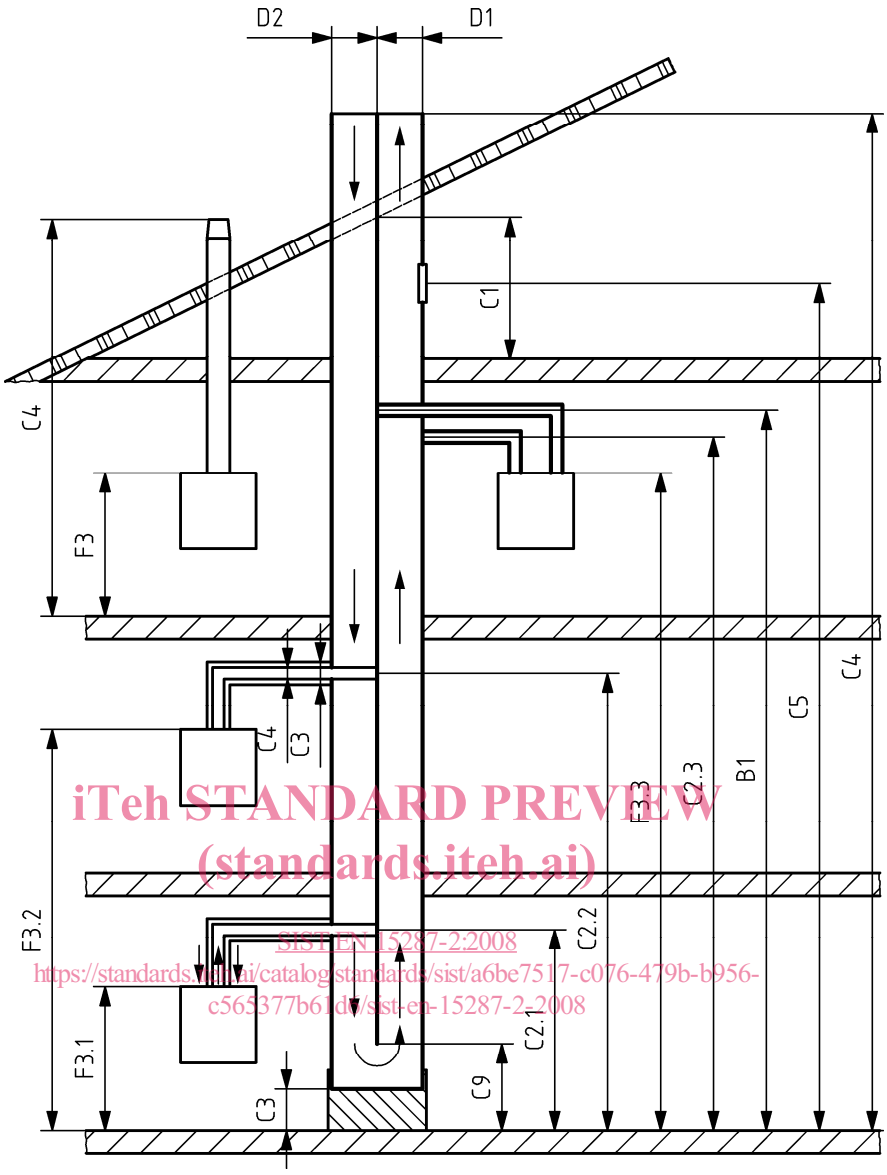
Additional information may be required for chimney sizing (see EN 13384-1 or EN 13384-2).

4.2.4 Building construction and chimney system route information

In order to allow the chimney route to be determined, the relevant details of the building or support structure shall be obtained (see Figure 3 and 4).

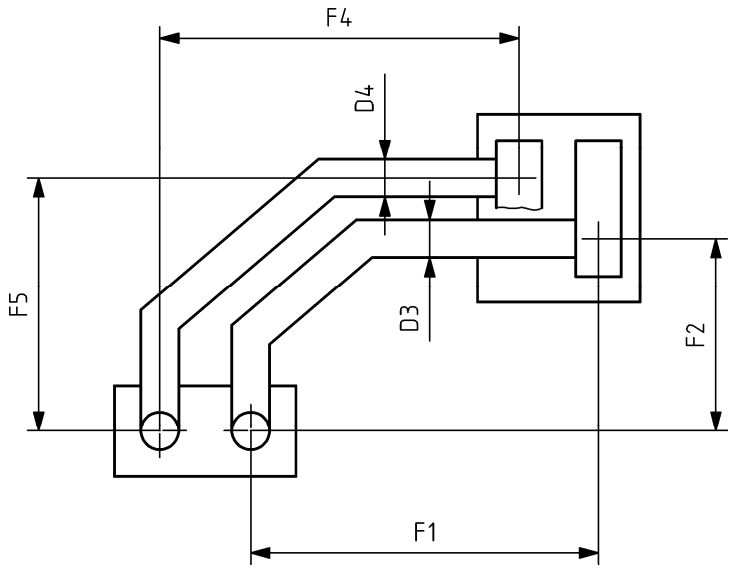
If the chimney is to be supported by the building structure, the construction of the building and the materials used shall be capable of supporting the loads imposed upon it by the chimney. The fixings shall be compatible with the materials of construction of the building. This shall be checked before installing the chimney.

Figure 3 is an example of a gas appliance type C_3 and a type C_4 installation, and Figure 4 is an example for connecting flue pipe and connecting air supply pipe dimensions for a C_4 application with separate ducts.



Key
See 4.2.4

Figure 3 - Example for roomsealed installations – dimensions



Key

See 4.2.4

Figure 4 — Example for connecting flue pipe and connecting air supply pipe dimensions for C_4 application with separate ducts

The following is a check list of information from which details of the building construction and chimney system construction and route shall be obtained.

The following list of information should be supplied where appropriate (see Figures 3 and 4):

— H1 height from ground to ceiling (structural or finished);

— H2 height from intermediary floor to ceiling (structural or finished);

— H3 height of ridge;

— γ pitch of roof;

— T1 depth and thickness of intermediate floor joist timbers and distances between centres;

— T2 depth and thickness of roof space floor joist timbers and distances between centres;

— T3 depth and thickness of roof timbers (rafters) and distance between centres;

— L1 horizontal distance between the centre line of the chimney above roof level and the gable end of the building;

— L2 horizontal distance between the centre line of the chimney above roof level and the ridge of the roof;

— C1 distance through loft measured at centre line of the chimney system;

— C2 height from the ground to the centre line of each flue inlet;

— C3 height from the ground to the bottom of the liner;

— C4 total chimney height from the ground to the chimney system outlet;

— C5 height from the ground to the centre of each access opening;

— C6 height from the ground to the lower bend of each offset where the centre line of the liner changes the direction;

— C7 vertical distance between the lower and upper bends of each offset where the centre line of the liner changes the direction;

— C8 horizontal distance between the vertical centre lines of each offset;

— C9 height from the ground to the centre line of the pressure equalising opening;

— B1 height from the ground to the centre line of each air inlet;

— F1 horizontal distance from the centre of appliance-outlet to the centre of the chimney;

— F2 horizontal distance from the centre of appliance-outlet to the centre of the inlet into the chimney;

— F3 height from ground to the centre of appliance outlet;

— F4 horizontal distance from the centre of the appliance air inlet to the centre of the vertical air supply duct;

— F5 horizontal distance from the centre of the appliance air inlet to the centre of the outlet of the vertical air supply duct;

— D1 internal dimensions of cross section of the flue throughout its length;

— D2 internal dimensions of cross section of the air supply duct throughout its length;

— D3 internal dimensions of cross section of the connecting flue pipe;

— D4 internal dimensions of cross section of the connecting air supply duct;

— materials of each floor;

— materials of each ceiling;

— roof finish.

Existing chimney details for relined and converted chimney:

— construction materials to determine thermal performance;

— condition and nature of inner flue surface of the existing chimney;

— structural details, e.g. position of inspection/cleaning access;

— proximity of chimney outlet position to adjacent buildings, obstructions and other building openings, e.g. windows/skylights, etc.

4.2.5 Local conditions

Topographical (e.g. altitude, outside temperature) particulars of the site shall be obtained as required in EN 13384-1.