SLOVENSKI STANDARD

SIST EN 1806:2006

01-oktober-2006

Nadomeģļ a:

SIST EN 1806:2001

Dimniki ï Keramiļ ne tuljave za enoslojne dimnike ï Zahteve in preskusne metode

Chimneys - Clay/ceramic flue blocks for single wall chimneys - Requirements and test methods

Abgasanlagen - Keramik - Formblöcke für einschalige Abgasanlagen - Anforderungen und Prüfmethoden

Conduits de fumée - Boisseaux en terre cuite/céramique pour conduits de fumée simple paroi - Exigences et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 1806:2006**

ICS:

91.060.40	Dimniki, jaški, kanali	Chimneys, shafts, ducts
91.100.25	Keramiļ ni gradbeni izdelki	Ceramic building products

SIST EN 1806:2006 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 1806

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ICS 91.060.40; 91.100.25

Supersedes EN 1806:2000

English Version

Chimneys - Clay/ceramic flue blocks for single wall chimneys - Requirements and test methods

Conduits de fumée - Boisseaux en terre cuite/céramique pour conduits de fumée simple paroi - Exigences et méthodes d'essai

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This European Standard was approved by CEN on 19 June 2006.

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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 Central Secretariat 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 1806:2006) 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of an identical text or by endorsement, at the latest by January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This document supersedes EN 1806:2000.

This document has been prepared under a mandate 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.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 specifies the requirements for clay/ceramic flue blocks with solid walls or walls with vertical perforations including bonding and non-bonding blocks and their fittings. Non-bonding flue blocks which have insulation in the vertical perforations or attached to the outer walls are also covered by this standard. This standard specifies the performance requirements for factory-made flue blocks.

When they are installed, they will form a part of a multi-wall chimney or a complete chimney which will serve to convey products of combustion from fireplaces or heating appliances to the atmosphere.

This standard includes components used for domestic and industrial chimneys which are not structurally independent (free-standing). Testing, marking and inspection requirements are covered by this standard.

NOTE 1 Flue blocks covered by this standard are manufactured in three forms :

a) single flue ;

b) multi-flue ;

c) flue/ventilation combination.

NOTE 2 Flue blocks may have flues which are either circular, square or rectangular. The joints may have a locating feature such as a rebate.

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 312, *Particleboards – Specifications*

EN 1443:2003, *Chimneys – General requirements*

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

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

EN 14297:2004, *Chimneys – Freeze-thaw resistance test method for chimney products*

EN ISO 6946, *Building components and building elements - Thermal resistance and thermal transmittance - Calculation method (ISO 6946:1996)*

EN ISO 7500-1, *Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

ISO 2859-1, *Sampling procedures for inspection by attributes – Part 1 : Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

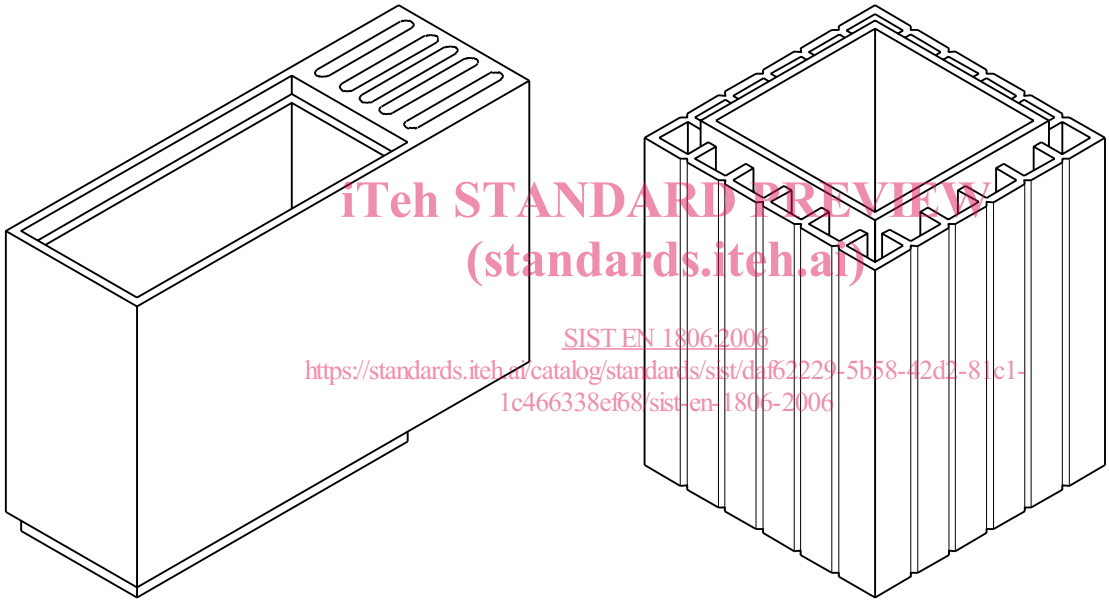
3 Terms and definitions

For the purposes of this document, the following terms and definitions apply together with those given in EN 1443:2003.

3.1
angle flue block
flue blocks designed to facilitate a change in angle of the axis of a flue (see Figure 2).

3.2
bonding extension
part of a flue block which is designed to be bonded into adjacent masonry walls, and forms no part of the chimney

3.3
bonding flue block
flue blocks designed to be built wholly or partially into a masonry wall and having a bonding extension



Bonding flue block Non-bonding flue block

Figure 1 — Examples of flue block shape

3.4
entry flue block
flue block connecting the chimney to the connecting flue pipe or the chimney to the appliance (see Figure 6)

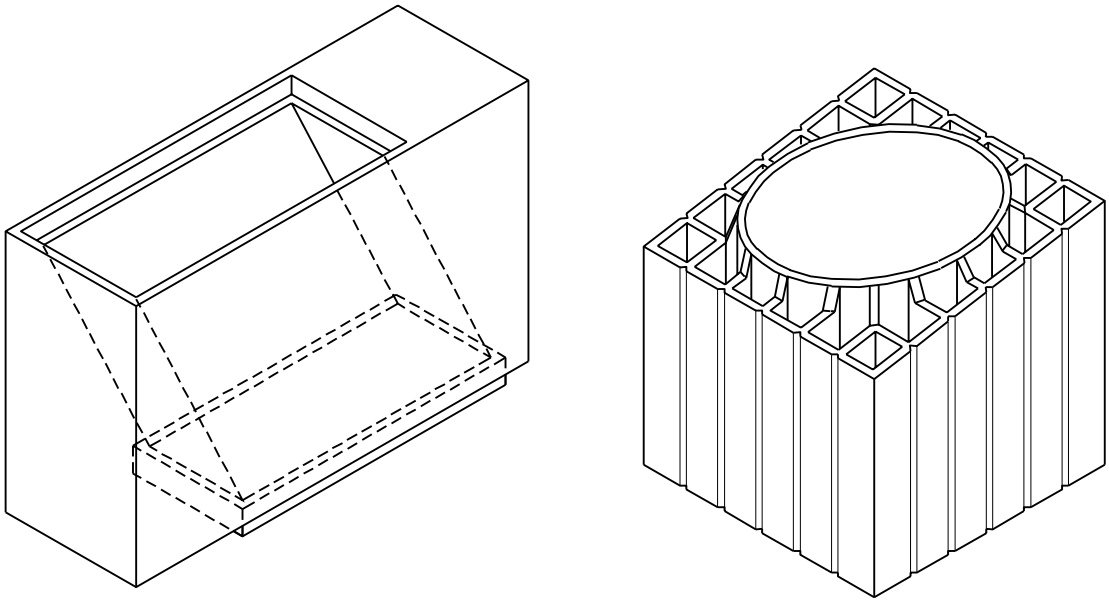


Figure 2 — Examples of angle flue block

3.5
family
group of products for which the test for one or more characteristics from any one product within the family are valid for all other products within the family

3.6
flue blocks with attached insulation
flue blocks with insulation factory-fitted to the outer walls (see Figure 5).

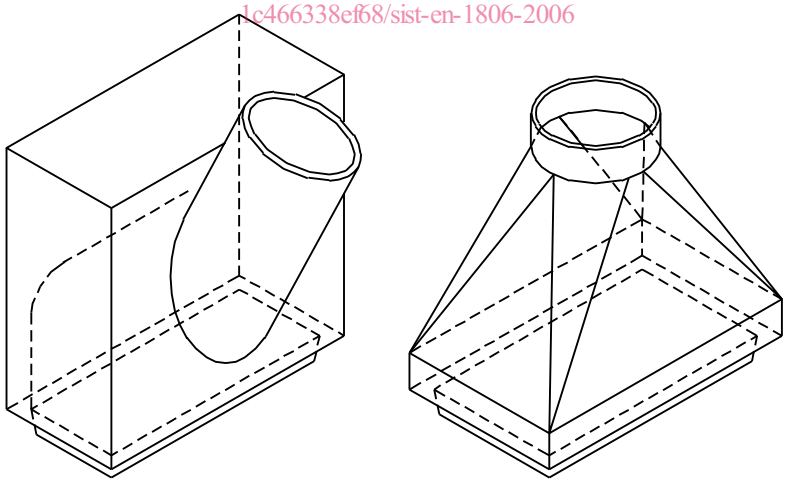


Figure 3 — Examples of transfer flue blocks

3.7
flue blocks with insulation in vertical perforations
flue blocks with perforations within the wall specially designed to house rigid insulation (see Figure 4).

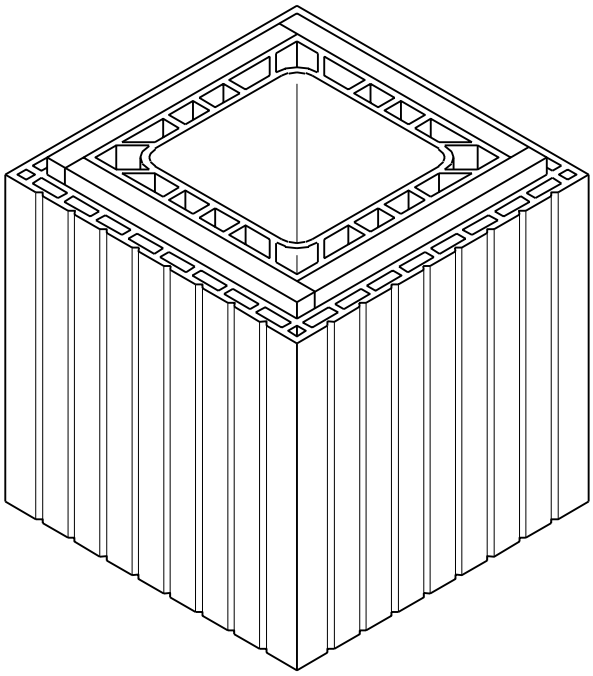


Figure 4 — Example of flue block with insulation in vertical perforations

3.8
nominal height
numerical designation of the height in millimetres of a standard flue block excluding any projecting spigot, which is a convenient round number

NOTE For a bonding flue block, this is the co-ordinating height which equates to the nominal height of masonry building blocks for walls into which such a flue block is designed to be built.

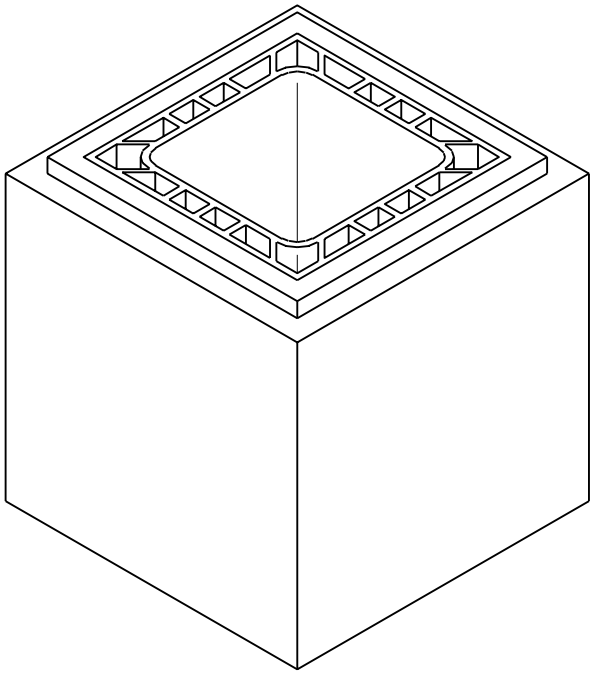


Figure 5 — Example of flue block with attached insulation

3.9
nominal size
numerical designation of size which is a convenient round number equal to or approximately equal to either:

— the internal diameter in millimetres of flue blocks with circular section flue; or

— the internal width in millimetres of flue blocks with square section flue; or

— the internal width and breadth in millimetres of the internal transverse dimensions of flue blocks with rectangular section flue.

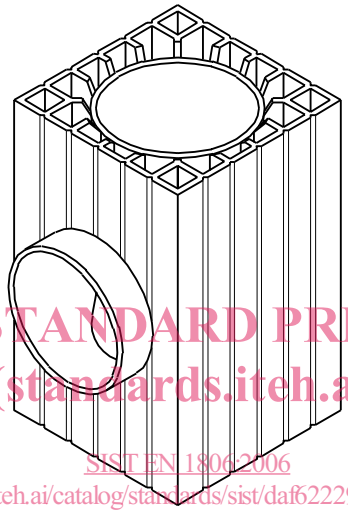


Figure 6 — Example of entry flue block

3.10
non-bonding flue block
flue blocks designed not to be built into a masonry wall with a bonding extension

3.11
straight flue block
flue blocks designed to be used in a vertical section of a chimney having the ends perpendicular to the axis of the flue (see Figure 1).

3.12
transfer flue block
flue block which changes the cross-section of the flue from rectangular to circular (see Figure 3).

4 Types of flue blocks

Clay/ceramic flue blocks shall be designated according to Clause 19.

A non-exhaustive list of abbreviated designation for clay/ceramic flue blocks, according to temperature, pressure, sootfire resistance and condensate resistance (wet and dry conditions) is given in Table 1.

Table 1 — Examples of abbreviated designation for clay/ceramic flue blocks, conditions of use, air test pressures and maximum air permeability rates after thermal testing

Type	Block type	Temperature		Negative pressure	Soot fire resistance	Wet or dry conditions	Test pressure	Maximum air leakage rate
		working °C	test °C				Pa	$m^3 .s^{-1}.m^{-2} x10^{-3}$
FB1 N2	Non-bonding	600	1 000	N2	Yes	Dry	20	3
FB1 N1	Non-bonding	600	1 000	N1	Yes	Dry	40	2
FB2 N2	Non-bonding	600	700	N2	No	Dry	20	3
FB2 N1	Non-bonding	600	700	N1	No	Dry	40	2
FB3 N2	Non-bonding	400	500	N2	No	Dry & wet	20	3
FB3 N1	Non-bonding	400	500	N1	No	Dry & wet	40	2
FB4 N2	Non-bonding	300	350	N2	No	Dry & wet	20	3
FB4 N1	Non-bonding	300	350	N1	No	Dry & wet	40	2
FB5 N2	Non-bonding	200	250	N2	No	Dry & wet	20	3
FB5 N1	Non-bonding	200	250	N1	No	Dry & wet	40	2
FB6	Bonding	300	350	N2	No	Dry	20	3

NOTE A flue block may be designated in one or more types provided that it complies with the appropriate requirements of each type.

5 Materials

5.1 Flue blocks

Flue blocks shall be manufactured from suitable clay/ceramic material which, when fired, meet the performance requirements given in this standard.

Flue blocks may be unglazed or glazed on the interior and/or exterior. When glazed, they need not be glazed on the jointing surfaces.

5.2 Insulation

5.2.1 General

All information on reaction to fire shall be made available according to the relevant European product standard.

5.2.2 Shape

The insulation shall have a permanent shape (e.g. blocks or bonded loose material). It shall not comprise loose material.

5.2.3 Thermal conductivity of insulation

The manufacturer shall declare the thermal conductivity of the insulation in accordance with the relevant European product standard.

5.2.4 Resistance to heat

When tested in accordance with 18.8.2.3, the change in the surface temperature after the fourth cycle of heating shall not exceed 10 % of the maximum surface temperature of the first cycle.

6 Tolerances on dimensions

6.1 Internal transverse dimensions

When tested in accordance with 18.1, the internal diameter of flue blocks with circular section flue measured on any diameter shall not deviate more than ± 3 % of the manufacturer's stated nominal internal diameter. For flue blocks with square and rectangular section flue, all dimensions shall not deviate more than ± 3 % of the manufacturer's stated nominal internal length of the side. Corners of the flue may be rounded.

6.2 Height

When tested in accordance with 18.2, the height of a flue block shall not deviate more than ± 3 % of the manufacturer's stated nominal height subject to a maximum value of 10 mm.

6.3 Angles

When tested in accordance with 18.3, the angle between the axes of a flue block and an angle flue block or between the axes of a transfer flue block shall not be greater than 45° and shall not deviate more than ± 5° of the manufacturer's stated nominal value.

6.4 Straightness

When tested in accordance with 18.4, the permissible deviation from straightness of straight flue blocks shall be 1 % of the test length.

6.5 Squareness of ends

When tested in accordance with 18.5, the permissible deviation from square of the ends of straight flue blocks shall be not greater than an angle of slope 30 mm/m.

6.6 Squareness of angles and flatness of walls

When tested in accordance with 18.6, the permissible deviation from square of the angles of, and flatness of walls for square or rectangular shape straight flue blocks, shall be not greater than 5 % of the manufacturer's stated nominal internal width or breadth.

6.7 Joints

The design and dimensions of the joints shall be as specified by the manufacturer.

6.8 Bonding extension

Any bonding extension, which may be solid or contain vertical perforations, shall be designed to extend into the adjacent masonry wall by not less than 75 mm (see Figure 1).

6.9 Tolerance on insulation thickness

The thickness of factory-fitted insulation on the outer walls of flue blocks shall not be less than the nominal value declared by the flue block manufacturer.

7 Proof load

7.1 Straight flue blocks

When tested in accordance with 18.7, straight flue blocks shall withstand an intensity of loading of 10 MN/m^2.

7.2 Angle flue blocks

Where angle flue blocks are fired in a plant alongside straight flue blocks, using the same materials and firing process, the proof load of these angle flue blocks is deemed to be that of the straight flue blocks when tested in accordance with 18.7.

If angle flue blocks are not normally fired alongside straight flue blocks, straight flue blocks or short lengths of straight flue blocks made for test purposes, using the same materials and firing process as for angle flue blocks, shall be tested for compliance with the requirements of 7.1.

7.3 Minimum load for inspection opening sections

When tested in accordance with 18.7, the minimum load shall be as given in Table 2.

Table 2 — Minimum load

Height of chimney m	Minimum load kN
$H \leq 12{,}5$	25
$12{,}5 < H \leq 25$	50
$25 < H \leq 50$	100

For flue blocks with internal section greater than 0,04 m^2 the following equation shall be used:

$$F = \chi \, . \, H \, . \, G / 100 \qquad (1)$$

where

F is the minimum load in kN;

χ is the safety factor equal to 5;

H is the height of chimney in m;

G is the weight per metre in kg/m.