



**SLOVENSKI STANDARD**  
**oSIST prEN 1856-1:2021**  
**01-september-2021**

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**Dimovodne naprave - Zahteve za kovinske dimovodne naprave - 1. del: Proizvodi za sistemske dimovodne naprave**

Chimneys - Requirements for metal chimneys - Part 1: System chimney products

Abgasanlagen - Anforderungen an Metall-Abgasanlagen - Teil 1: Bauteile für System-Abgasanlagen

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Conduits de fumée - Prescriptions pour les conduits de fumée métalliques - Partie 1 : Composants de systèmes de conduits de fumée

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**Ta slovenski standard je istoveten z: prEN 1856-1**  
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**ICS:**

91.060.40      Dimniki, jaški, kanali      Chimneys, shafts, ducts

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**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 1856-1**

May 2021

ICS 91.060.40

Will supersede EN 14989-1:2007, EN 14989-2:2007,  
EN 1856-1:2009, EN 1859:2009+A1:2013

English Version

## Chimneys - Requirements for metal chimneys - Part 1: System chimney products

Conduits de fumée - Prescriptions pour les conduits de  
fumée métalliques - Partie 1 : Composants de systèmes  
de conduits de fumée

Abgasanlagen - Anforderungen an Metall-  
Abgasanlagen - Teil 1: Bauteile für System-  
Abgasanlagen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 166.

If this draft becomes a European Standard, 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.

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

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

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## prEN 1856-1:2021 (E)

### European foreword

This document (prEN 1856-1:2021) 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 will supersede EN 1856-1:2009, EN 1859:2009+A1:2013, EN 14989-1:2007 and EN 14989-2:2007.

The main changes to EN 1856-1:2009 are:

- adoption of the template for harmonized standards under the EU Construction Products Regulation (305/2011/EU) meaning a clearer definition of the Scope, rewording in Clause 4 “Product characteristics”, Clause 5 “Testing, assessment and sampling methods” and Clause 7 “Product classification and designation”, and adoption of the template for Clause 6 “Assessment and verification of constancy of performance”;
- the main test references are made to EN 13216-1:2019 and the metal chimney specific tests of EN 1859:2009+A1:2013, and the terminal specific tests of EN 14989-1:2007 and EN 14989-2:2007 have been incorporated into this document;
- adoption of a new revised Annex A “Corrosion tests”. The material table with minimum material specification of the former edition has been taken over,
- deletion of Annex E, as reference is made to the calculation method of EN 13384-1:2015+A1:2019, Annex A throughout the document.

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 Regulation(s).

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



## 1 Scope

This document specifies the characteristics of performance for single and multi-wall system chimneys with rigid metal liners composed of chimney sections, chimney fittings, terminals and supports with nominal diameter up to and including 1 200 mm, used to convey the products of combustion from appliances to the outside atmosphere.

This document also specifies characteristics for the air supply ducts of concentric chimneys for room-sealed application, made out of metal or plastic (without fibre stabilization).

Additionally, it specifies assessment and verification of constancy of performance (AVCP).

NOTE 1 Metal liners and metal connecting flue pipes, not covered, are included in prEN 1856-2:2021.

NOTE 2 This document does not apply to structurally independent chimneys.

## 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 573-3:2013, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

EN 1443:2019, *Chimneys - General requirements*

EN 1366-13:2019, *Fire resistance tests for service installations - Part 13: Chimneys*

EN 10088-1:2014, *Stainless steels - Part 1: List of stainless steels*

EN 13216-1:2019, *Chimneys - Test methods for system chimneys - Part 1: General test methods*

EN 13384-1:2015+A1:2019, *Chimneys - Thermal and fluid dynamic calculation methods - Part 1: Chimneys serving one combustion appliance*

EN 13501-1:2018, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 14241-1:2013, *Chimneys - Elastomeric seals and elastomeric sealants - Material requirements and test methods - Part 1: Seals in flue liners*

EN 14471:2013+A1:2015, *Chimneys - System chimneys with plastic flue liners - Requirements and test methods*

EN 60068-2-57:2013, *Environmental testing - Part 2-57: Tests - Test Ff: Vibration - Time-history and sine-beat method (IEC 60068-2-57:2013)*

EN ISO 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels - Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid (ISO 3651-2:1998)*

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ISO 2859-1:1999,<sup>1)</sup> *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 terms and definitions given in EN 1443:2019 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

**3.1****appliance outlet**

position where the products of combustion exit from the appliance

**3.2****balanced flue terminal**

terminal where the air entry to the combustion air supply duct is adjacent to the discharge of combustion products from the flue

Note 1 to entry: The inlet and outlet being so positioned that wind effects are substantially balanced.

[SOURCE: CEN/TS 16134:2011, 3.11]

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**3.3****chimney**

structure consisting of a wall or walls enclosing a flue or flues conveying the products of combustion into the outside atmosphere

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Note 1 to entry: The generic word “chimney”, when used in this document, refers to chimneys used to convey the products of combustion from any combustion appliance to the outside atmosphere, and thus includes all other terms of common use, such as: vents, flues, shafts, exhaust systems, flue ducts, etc.

[SOURCE: EN 1443:2019, 3.5]

**3.4****chimney component**

any part of a chimney, of a flue liner or of a connecting flue pipe

**3.5****chimney designation**

shortened description of a specific chimney type, which clearly distinguishes it from any other types

**3.6****chimney fitting**

component of a chimney, of a flue liner or of a connecting flue pipe conveying products of combustion except a section

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<sup>1)</sup> This document is impacted by the amendment ISO 2859-1:1999/AMD 1:2011 and the corrigendum ISO 2859-1:1999/COR 1:2001.

**3.7****chimney section**

straight chimney component of a flue liner or of a connecting flue pipe, conveying products of combustion

**3.8****cladding**

additional non-structural outer wall around a chimney for protection against heat transfer or weathering, or for decorative purposes

**3.9****concentric chimney**

flue duct fully surrounded by the air supply duct

**3.10****connecting flue pipe**

component or components connecting the heating appliance outlet and the chimney

[SOURCE: EN 1443:2019, 3.8]

**3.11****corrosion load**

combination of condensate and corrosion resistance classes necessary for the different operating conditions and types of fuel

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**3.12****custom built chimney**

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chimney that is installed or built on-site using a combination of compatible chimney components that may be from one or different sources [oSIST prEN 1856-1:2021](https://standards.iteh.ai/catalog/standards/sist/43ed6aa5-4e51-4959-9539-1c9043b0a893/osist-pren-1856-1-2021)

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**3.13****design load**

load which a chimney or its components are designed to be subjected to, under normal operating conditions, when installed as per manufacturer's installation instruction

**3.14****dry operating condition**

condition when the chimney is designed to operate normally with the temperature of the inner surface of the flue liner at or above the water dew point

Note 1 to entry: Dry operating condition is designated "D".

[SOURCE: EN 1443:2019, 3.29]

**3.15****enclosure**

additional structure, combustible or non-combustible, built around a chimney

Note 1 to entry: An enclosure which is specified as a part of the chimney is considered an "outer wall" of the chimney.

Note 2 to entry: Enclosures can for example give additional safety in case of fire, provide additional heat transfer resistance, prevent accidental human contact, prevent impact damage and can be used for decorative purposes.

**prEN 1856-1:2021 (E)**

[SOURCE: EN 1443:2019]

**3.16****external installation**

part of a chimney, which is located outside the building

**3.17****firestops**

chimney component to prevent the spread of fire

**3.18****flexible pipe**

metal liner, or metal connecting flue pipe having a single or double skin construction, designed to bend in any direction without permanent deformation

Note 1 to entry: For the purpose of Annex A (Corrosion test).

**3.19****flue**

passage for conveying the products of combustion to the outside atmosphere

[SOURCE: EN 1443:2019, 3.2]

**3.20****flue gas**

gaseous portion of the products of combustion conveyed in a flue

[SOURCE: EN 1443:2019, 3.3]

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**3.21****metal flue liner**

inner wall of a chimney consisting of components the surface of which is in contact with products of combustion

**3.22****combustion appliances**

unit generating products of combustion which need to be conveyed to the outside atmosphere

EXAMPLE Heating appliances, cooking appliances, motors, CHPs (Combined Heat and Power).

**3.23****insulation**

material or air gap between the flue liner and the outer wall, designed to increase thermal resistance of the chimney

**3.24****internal installation**

part of a chimney which is located inside a building

**3.25****joint**

connection between two components

[SOURCE: EN 1443:2019, 3.15]

**3.26****installation instructions**

written product information that outlines the installation procedure which is provided to the user

**3.27****minimum declared wall thickness**

value declared for the minimum thickness, after manufacturing of the walls

**3.28****multi-wall chimney**

chimney consisting of a flue liner and at least one additional wall

[SOURCE: EN 1443:2019, 3.18]

**3.29****negative pressure chimney**

chimney designed to operate with the pressure inside the flue equal or less than the pressure outside the flue

Note 1 to entry: The class for negative pressure is “N”.

[SOURCE: EN 1443:2019, 3.26]

**3.30****nominal size**

whole number representing the value of the internal diameter of the flue liner, expressed in millimetres

**3.31****non enclosed chimney**

chimney which is installed without any enclosure or cladding

**3.32****outer wall**

external wall of a chimney from the surface of which the distance to combustible material is measured

**3.33****positive pressure chimney**

chimney designed to operate with the pressure inside the flue greater than the pressure outside the flue

Note 1 to entry: Classes for positive pressure are e.g. “P”, “M”, “H”.

[SOURCE: EN 1443:2019, 3.27]

**3.34****resistance to fire**

ability of a chimney to prevent ignition of adjacent combustible material, and to prevent the spread of fire to adjacent areas

**3.35****single-wall chimney**

chimney with only one wall

[SOURCE: EN 1443:2019, 3.17]

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**prEN 1856-1:2021 (E)****3.36****sootfire**

combustion of the flammable residue deposited on the flue liner

[SOURCE: EN 1443:2019, 3.31]

**3.37****structurally independent chimney**

chimney which is not attached to buildings, masts or other support structure

**3.38****support**

chimney component used to fix, or transfer the load of, chimney components to structural elements (building, mast, etc.)

**3.39****system chimney**

chimney that is installed using a combination of compatible chimney components, obtained or specified as a kit from one manufacturing source with product responsibility for the whole chimney

[SOURCE: EN 1443:2019, 3.19]

**3.40****terminal**

component installed at the outlet of a chimney or a flue liner

Note 1 to entry: There are terminals only for decorative purposes or terminals intended for specified performances.

[SOURCE: EN 1443:2019, 3.14]

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**3.41****test assembly**

complete assembly of all parts necessary to enable the specific performance criteria to be assessed, comprising test chimney, test structures, and measuring equipment

**3.42****test chimney**

assembly of the chimney components (as specified in the test method), necessary to the assessment of a specific performance criteria of a metal system chimney product

**3.43****test structure**

assembly of the additional materials (non-chimney components) to enable the test chimney to be assessed for the specific performance criteria

**3.44****thermal resistance of a chimney**

resistance to heat transfer through the wall or walls of the chimney

Note 1 to entry: The thermal resistance of a chimney is given as  $(1/\Lambda)$ .

[SOURCE: EN 1443:2019, 3.36]

**3.45****wet operating condition**

condition when the chimney is designed to operate normally with the temperature of the inner surface of the flue liner below the water dew point

Note 1 to entry: Wet operating condition is designated "W".

Note 2 to entry: The characteristic "W" is not related to rainwater ingress.

[SOURCE: EN 1443:2019, 3.30]

**3.46****nominal working temperature**

flue gas temperature under normal operating conditions of the combustion appliance at maximum heat input as specified in the appliance product standards

[SOURCE: EN 1443:2019, 3.2.5]

**3.47****multi-served chimney**

chimney serving several heating appliances located on different floors and/or compartments of a building and individually connected to the chimney

Note 1 to entry: For room-sealed appliances the air supply can be concentric or by means of a separate air supply duct.

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**4 Product characteristics****4.1 Mechanical resistance and stability**

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**4.1.1 Compressive strength****4.1.1.1 Chimney sections and fittings**

The compressive strength of chimney sections and fittings shall be tested according to the test method described in 5.2.1, and shall be expressed in kg of chimney or preferably equivalent meters of sections length.

**4.1.1.2 Chimney supports**

The compressive strength of chimney supports shall be tested according to the test method described in 5.2.2, and shall be expressed in kg of chimney or preferably equivalent meters of sections length.

**4.1.2 Tensile strength**

The tensile strength of chimney sections and fittings shall be tested according to the test method described in 5.3, and shall be expressed in kg of chimney or preferably equivalent meters of sections length.

**4.1.3 Lateral strength****4.1.3.1 Non-vertical installation**

The non-vertical installation of chimney sections and fittings shall be tested according to the test method described in 5.4.1, and expressed as maximum length between the supports.