SLOVENSKI STANDARD
oSIST prEN 13142:2026

01-julij-2026

Prezračevanje stavb - Sestavni deli/izdelki za prezračevanje stanovanjskih stavb - Zahtevane in izbirne lastnosti

Ventilation for buildings - Components/products for residential ventilation - Required and optional performance characteristics

Lüftung von Gebäuden - Bauteile/Produkte für die Lüftung von Wohnungen - Geforderte und frei wählbare Leistungskenngrößen

Ventilation des bâtiments - Composants/produits pour la ventilation des logements - Caractéristiques de performances exigées et optionnelles

Ta slovenski standard je istoveten z: **prEN 13142**

ICS:

91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

oSIST prEN 13142:2026 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 13142

May 2026

ICS 91.140.30

Will supersede EN 13142:2021

English Version

Ventilation for buildings - Components/products for residential ventilation - Required and optional performance characteristics

Ventilation des bâtiments - Composants/produits pour la ventilation des logements - Caractéristiques de performances exigées et optionnelles

Lüftung von Gebäuden - Bauteile/Produkte für die Lüftung von Wohnungen - Geforderte und frei wählbare Leistungskenngrößen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 156.

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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Ref. No. prEN 13142:2026 E

Contents

Page

European foreword

This document (prEN 13142:2026) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13142:2021.

In addition to a number of editorial revisions, the following main changes have been made:

— update of Annex ZA and Annex ZB;

— update of references;

— moving of the contents of Annex ZA to the new Annex H.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA and Annex ZB, which are integral parts of this document.

Introduction

A combination of components and/or products is required to provide ventilation. These components/products interact to achieve a renewal of the air in a dwelling.

It is important to consider each product not only individually but also as part of the whole system: for example, from the outdoor canopy of an externally mounted air transfer device to the roof outlet terminal at the end of an exhaust duct. To enable good design, it is essential that certain performance characteristics for each product are available in a simple and comparable form.

This document defines a classification for balanced ventilation units which may be used for the determination of minimum and optional product characteristics in national building regulations and standards.

The structure of this document is based on the type of products that are given in Table 1, which specifies the type of information for them.

Table 1 — Type of information for products

Product	Declaration	Classification	Codification
Externally mounted air transfer devices	X	—	—
Internally mounted air transfer devices	X	—	—
Exhaust and supply air terminal devices	X	—	—
Range hoods	X	—	—
Exhaust or supply unidirectional ventilation units in residential ventilation systems	X	X	X
Cowls and roof outlet terminals	X	—	—
Unidirectional exhaust ventilation system packages	X	—	—
Ducted mechanical bidirectional ventilation units (including heat recovery)	X	X	X
Non-ducted bidirectional ventilation units (including heat recovery)	X	X	X

This document is one of a series of standards on residential ventilation. It is referring to the performance testing of the components/products for residential ventilation.

The position of this document in the field of the mechanical building services is shown in Figure 1.

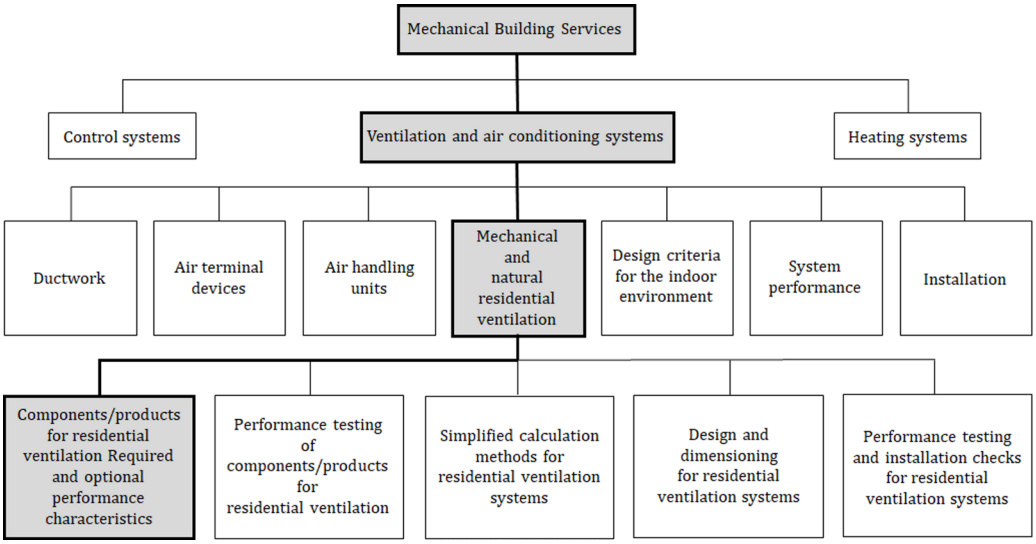

Figure 1 — Position of EN 13142 in the field of the mechanical building services

EN 13142:2021 has been revised to include new requirements according to Ecodesign requirements for ventilation units[1].

[1] Ecodesign requirements for ventilation units are given in EU Commission Delegated Regulation No EU 1253/2014 and No EU 1254/2014.

1 Scope

This document specifies and classifies the component/product performance characteristics, which may be necessary for the design, rating and dimensioning, placing on the market of residential ventilation products and systems to provide the predetermined performance, comfort conditions of temperature, air velocity, humidity, hygiene and sound in the occupied zone.

It defines those performance characteristics (mandatory or optional) which are determined, measured and presented according to relevant test methods. It provides a classification scheme, which leads to a full definition of product properties based on test methods described in various European Standards, and gives an overview of the test standards. Distinction between mandatory and optional requirements is left to each European and national regulation(s).

The codification part in Annex B and the classification part in Clause 8 apply to the following products:

— unidirectional mechanical supply and exhaust residential ventilation units according to EN 13141-4:2021 and EN 13141-6:2014;

— ducted mechanical bidirectional residential ventilation units according to EN 13141-7:2021;

— non-ducted mechanical bidirectional residential ventilation units according to EN 13141-8:2022.

This document does not apply to other products such as filters, fire dampers, ducts, control devices and sound attenuators, which may also be incorporated in residential ventilation.

This document specifies in Annex ZA and Annex ZB the requirements of EU 1253/2014 and EU 1254/2014 for residential ventilation units below 1 000 m^3/h air volume flow.

This document does not cover requirements raised by European Directives (e.g. low voltage directive, EMC directive) and other requirements such as corrosion, reaction to fire and snow penetration.

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 12792:2003, *Ventilation for buildings — Symbols, terminology and graphical symbols*

EN 13141-1:2019, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 1: Externally and internally mounted air transfer devices*

EN 13141-2:2010, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 2: Exhaust and supply air terminal devices*

EN 13141-3:2017, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 3: Range hoods for residential use without fan*

EN 13141-4:2021, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 4: Aerodynamic, electrical power and acoustic performance of unidirectional ventilation units*

EN 13141-5:2020, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 5: Cowls, assisted cowls and roof outlet terminal devices*

EN 13141-6:2014, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 6: Exhaust ventilation system packages used in a single dwelling*

EN 13141-7:2021, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 7: Performance testing of ducted mechanical supply and exhaust ventilation units (including heat recovery)*

EN 13141-8:2022, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 8: Performance testing of non-ducted mechanical supply and exhaust ventilation units (including heat recovery)*

EN 13141-9:2008, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 9: Externally mounted humidity controlled air transfer device*

EN 13141-10:2008, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 10: Humidity controlled extract air terminal device*

EN IEC 61591:2023, *Cooking fume extractors — Methods for measuring performance (IEC 61591:2023)*

EN ISO 16890-1:2016, *Air filters for general ventilation — Part 1: Technical specifications, requirements and classification system based upon particulate matter efficiency (ePM) (ISO 16890-1:2016)*

EN ISO 16890-2:2022, *Air filters for general ventilation — Part 2: Measurement of fractional efficiency and air flow resistance (ISO 16890-2:2022)*

EN ISO 16890-3:2024, *Air filters for general ventilation — Part 3: Determination of the gravimetric efficiency and the air flow resistance versus the mass of test dust captured (ISO 16890-3:2024)*

EN ISO 16890-4:2022, *Air filters for general ventilation — Part 4: Conditioning method to determine the minimum fractional test efficiency (ISO 16890-4:2022)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792:2003 and the following apply.

ISO and IEC maintain terminology databases for the 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
externally mounted air transfer device
device designed to allow the passage of air through the building envelope with the minimum ingress of rain, snow, foreign bodies, etc.

[SOURCE: EN 12792:2003, definition 144]

3.2
internally mounted air transfer device
device designed to allow the passage of air between two internal spaces

[SOURCE: EN 12792:2003, definition 232]

3.3
exhaust air terminal device
device through which air leaves the treated space

3.4
supply air terminal device
device through which air enters the treated space

[SOURCE: EN 12792:2003, definition 349, modified — The second sentence has been removed.]

3.5
range hood
cooker hood
device intended to collect contaminated air from above a cooking appliance and either discharge it into the room or remove it from the room

Note 1 to entry: It may or may not incorporate one or more of the following components:

— filter (essential when the contaminated air is discharged into the room);

— fan;

— fire damper;

— non return flow damper.

[SOURCE: EN 12792:2003, definition 85]

3.6
cowl
air terminal device with or without moving component, intended to be fitted on top of an exhaust duct, with aim, by creating negative pressure depending on the wind speed, to avoid reverse flow and to increase the extracted flow rate in presence of wind

[SOURCE: EN 12792:2003, 92, modified — Reformulation of the definition in a single sentence.]

3.7
roof outlet
air terminal device without moving component, intended to be fitted on top of an exhaust duct

[SOURCE: EN 13141-5:2020, definition 3.4]

3.8
ventilation system package
combination of compatible components which are tested, delivered and installed as specified, to complete a residential ventilation system when sold as a single product

Note 1 to entry: It may exclude minor parts such as tapes, sealants and screws.

Note 2 to entry: This definition applies for single dwelling.

3.9
bidirectional ventilation unit
ventilation unit which produces an air flow between indoors and outdoors and is equipped with both exhaust and supply fans

3.10
unidirectional ventilation unit
ventilation unit with a fan assisted air volume flow in only one direction (either supply or exhaust)

Note 1 to entry: The balancing air volume flow is provided by air transfer devices or another mechanical unit.

4 Symbols and abbreviations

For the purposes of this document, the symbols given in EN 12792:2003 and the following apply.

Symbol	Designation	Unit
c_{air}	specific heat capacity of air at constant pressure and density	kWh/(kg·K)
d_i	thickness of the layer "i"	m
COP	coefficient of performance	—
$CTRL$	ventilation control factor	—
DIS	disbalance	%
$D_{n,e,w} + C_{tr}$	airborne sound insulation	dB
E_{AEC}	annual electricity consumption	kWh/(m²·a)
E_{defr}	annual electricity consumption for defrosting	kWh/(m²·a)
$E_{el,preh}$	annual electricity consumption due to internal pressure loss during frost periods	kWh/(m²·a)
EE_w	weighted energy efficiency	—
E_{preh}	annual electricity consumption for an electric preheater	kWh/(m²·a)
$E_{pump,defr}$	annual electricity consumption use for defroster pump	kWh/(m²·a)
$E_{\Delta p,ext,defr}$	annual electricity consumption use due to external pressure losses of external defrosting devices	kWh/(m²·a)
$E_{\Delta p,int,defr}$	annual electricity consumption due to internal pressure loss during frost growing	kWh/(m²·a)
f_c	conversion factor between electrical and primary energy	—
$f_{ctrl,defr}$	factor of the defrosting control	—
f_{insu}	correction value for the casing insulation	—
f_{pump}	factor for the type of the defroster	—
f_0	factor for units conversion	—
FC	filter compensation factor	—
F_i	value of occurrence frequency for part load weighting	—
L_{WA}	A-weighted sound power levels	dB(A)
$MISC$	aggregated general typology factor, incorporating factors for ventilation effectiveness, duct leakage and extra infiltration	—
pef	primary energy factor	—
p_{qvmax}	pressure at maximum air volume flow	Pa
p_{ref}	reference pressure	Pa
P_E	electrical power input	W
$P_{E,ref}$	electric power input at the reference volume flow	W

Symbol	Designation	Unit
PES	primary energy saving	kJ/m³ [a]
P_i	electrical power measured at q_{vi}	W
$P_{E,max}$	maximum electrical power input	W
P_{pump}	electrical power input of the defroster pump	W
q_0	measured air volume flow	m³
q_m	mass flow rate	kg/s
q_{net}	net ventilation rate demand	m³/(h·m²)
q_{ref}	reference natural ventilation	m³/(h·m²)
q_{ve}	external leakage (ducted units only)	%
q_{vfc}	air flow with an additional pressure drop of 1,5 times the initial pressure drop of the filter	m³
q_{vi}	internal leakage	%
q_{vio}	indoor/outdoor airtightness (non-ducted units only)	m³/s [b]
q_{vmax}	maximum air volume flow	m³/s
q_{vn}	nominal air volume flow	m³/s
q_{vref}	reference air volume flow	m³/s
Q_{defr}	annual energy for defrosting	kWh/(m²·a)
R	thermal resistance of the casing wall	m²·K/W
R_{mi}	indoor mixing	%
R_{mr}	outdoor mixing	%
R_s	transfer ratio of recirculated air in the supply air stream	%
$R_{s,int}$	internal transfer ratio from extract to supply air	%
$R_{s,tot}$	total transfer ratio in supply air	%
SPI	specific power input	W/(m³/s)
SPI_w	weighted specific power input part load	W/(m³/s)
ta	annual operating hours	h/a
t_{defr}	annual operating time in defrosting mode	h/a
t_h	total hours heating season	h
v	air flow sensitivity	%
w	internal leakage	%
o	outdoor mixing	%
x	exponent that takes into account nonlinearity between thermal energy and electricity saving, depending on motor and drive characteristics	—
x_i	value of part load of rated air volume flow	—
y	indoor mixing	%

Symbol	Designation	Unit
z	external leakage	%
ΔE_{AHS}	annual saving in consumption of energy	kWh/(m²·a)
$\Delta E_{\mathrm{AH,defr}}$	annual heating energy consumption for defrosting	kWh/(m²·a)
ΔE_{by}	annual heating energy consumption for bypassing the heat recovery	kWh/(m²·a)
$\Delta E_{\mathrm{earth}}$	annual heating energy reduction by an earth to air heat exchanger	kWh/(m²·a)
$\Delta E_{\mathrm{el,preh}}$	annual heating energy reduction by an electric preheater	kWh/(m²·a)
ΔE_{ex}	annual heating energy consumption for increasing of the exhaust air flow rate	kWh/(m²·a)
$\Delta E_{\mathrm{h,preh}}$	annual heating energy consumption for preheating (by space heating generation)	kWh/(m²·a)
ΔE_{su}	annual heating energy consumption for lowering of the supply air flow rate	kWh/(m²·a)
ΔE_{vent}	annual heating energy reduction by ventilator heat	kWh/(m²·a)
$\Delta p_{\mathrm{ext,defr}}$	pressure loss of the external defrosting devices	Pa
Δp_{fc}	pressure drop	Pa
$\Delta p_{\mathrm{frost}}$	average additional internal pressure due to frost growing	Pa
$\Delta p_{\mathrm{initial}}$	initial pressure drop of the filter	Pa
Δp_{ref}	total rated pressure	Pa
ΔT_{defr}	average difference between the outdoor temperature and the defrost mode set point during the defrosting period	K
ΔT_{h}	average difference in indoor and outdoor temperature over a heating season, minus correction for solar and internal gains	K
$\Delta \theta_{\mathrm{g,h,avg}}$	correction for solar and internal gains	°C
η_{t}	temperature ratio [c]	%
η_{θ}	temperature ratio	—
η_{g}	overall efficiency of the heating system	—
η_{h}	average space heating efficiency	—
η_{t}	thermal efficiency of heat recovery	—
$\Delta \eta_{\mathrm{t,by}}$	difference in thermal efficiency of heat recovery with a bypass compared to balanced mass flows	—
$\Delta \eta_{\mathrm{t,dec}}$	difference in thermal efficiency of heat recovery with an increased exhaust air flow rate compared to balanced mass flows	—
$\Delta \eta_{\mathrm{t,low}}$	difference in thermal efficiency of heat recovery with a lowered supply air flow rate compared to balanced mass flows	—
η_{vent}	ventilator efficiency	—