SLOVENSKI STANDARD
SIST EN 13142:2013

01-junij-2013

Nadomešča:
SIST EN 13142:2004

Prezračevanje stavb - Komponente/izdelki za prezračevanje stanovanj - Zahtevane in nezahtevane 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: **EN 13142:2013**

ICS:

91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning

SIST EN 13142:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13142

March 2013

ICS 91.140.30

Supersedes EN 13142:2004

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

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Ref. No. EN 13142:2013: E

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Foreword

This document (EN 13142:2013) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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 document supersedes EN 13142:2004.

In comparison to EN 13142:2004 the following changes have been made:

— references to EN 13141-1 to 10 has been updated;

— reference to humidity controlled air transfer devices (EN 13141-9 and EN 13141-10) has been added;

— un-ducted mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for a single room (EN 13141-8) added in 4.10;

— creation of new classification and codification system for mechanical supply and exhaust ventilation units (EN 13141-7 and EN 1341-8), described in 4.9 and 4.10 and in Annex A;

— declaration of filters and materials used in the units has been added in 7.3;

— an example for a possible national annex has been added in Annex C.

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

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.

There are many possible arrangements of balanced ventilation units with heat exchanger intended for a single family dwelling (EN 13141-7) or a single room (EN 13141-8). Additionally all kinds of units might have a heat exchanger, a heat pump or both.

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 European Standard defines also a classification for balanced ventilation units which may be used for the determination of minimum and optional product characteristic in national building regulations and standards.

The structure of this document is based on the type of products that are given in Table 1.

Table 1 — List of the type of 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	—	—
Fans in residential ventilation systems	X	—	—
Cowls and roof outlet terminals	X	—	—
Exhaust ventilation system packages	X	—	—
Mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings	X	X	X
Un-ducted mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for a single room	X	X	X

This European Standard (EN 13142:2013) is one of a series of standard on residential ventilation. It is referring to the performance testing of the components/products for residential ventilation.

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

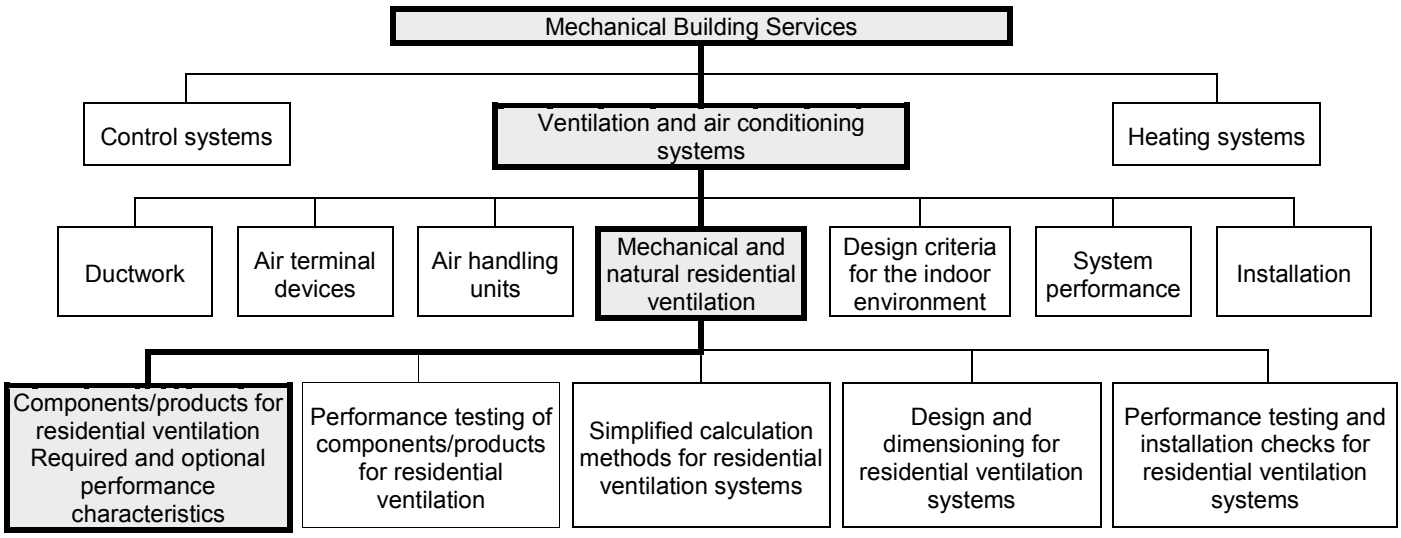

Figure 1 — Position of EN 13142 in the field of the mechanical building services

1 Scope

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

It defines those performance characteristics (mandatory or optional) which shall be 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 EN Standards and gives an overview of the Test Standards. Distinction between mandatory and optional requirement is left to each national regulations.

The codification part in Annex A and the classification part in Clause 4 apply to the following products:

— mechanical supply and exhaust ventilation units for single dwellings according to EN 13141-7;

— un-ducted mechanical supply and exhaust ventilation units for a single room according to EN 13141-8.

This European Standard 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 European Standard does not cover requirements raised by European Directives, for example: low voltage directive, EMC directive and other requirements such as corrosion, resistance and snow penetration.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 779, *Particulate air filters for general ventilation — Determination of the filtration performance*

EN 12097, *Ventilation for buildings — Ductwork — Requirements for ductwork components to facilitate maintenance of ductwork systems*

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

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

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

EN 13141-3, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 3: Range hoods for residential use*

EN 13141-4, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 4: Fans used in residential ventilation systems*

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

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

EN 13141-7:2010, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 7: Performance testing of mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings*

EN 13141-8, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 8: Performance testing of un-ducted mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for a single room*

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

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

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

EN 60355-2-31, *Household and similar electrical appliances — Safety — Part 2-31: Particular requirements for range hoods and other cooking fume extractors*

EN ISO 10140-1, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products (ISO 10140-1)*

EN ISO 10140-2, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation (ISO 10140-2)*

EN ISO 10140-3, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 3: Measurement of impact sound insulation (ISO 10140-3)*

EN ISO 10140-5, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 5: Requirements for test facilities and equipment (ISO 10140-5)*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

3.1.1
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]

3.1.2
internally mounted air transfer device
device designed to allow the passage of air between two internal spaces

[SOURCE: EN 12792:2003, definition 232]

3.1.3
exhaust air terminal device
device through which air leaves the treated space

3.1.4
supply air terminal device
device through which air enters the treated space

Note 1 to entry: Adapted from EN 12792:2003, definition 349.

3.1.5
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]

3.1.6
cowl
air terminal device, with or without moving components, which is intended to use the wind to create negative pressures above the roof in order to avoid reverse flow in the duct

Note 1 to entry: Adapted from EN 12792:2003, definition 92.

3.1.7
roof outlet
air terminal device used for mechanical ventilation systems

Note 1 to entry: Roof outlet terminals are not primarily intended to use the wind to create negative pressures above the roof.

Note 2 to entry: Adapted from EN 12792:2003, definition 314.

3.1.8
ventilation system package (for a single dwelling)
combination of compatible components which are tested, delivered and installed as specified by the manufacturer, 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.

3.1.9
humidity control air device
device designed to allow the passage of air, with moving parts which interact with a change in local humidity conditions

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

AEQ	Codification of Additional Equipment
DIU	Declared Intended Use
HRS	Humidity Ratio on Supply air side
LWC	Casing sound power level
MFB	Mass Flow Balance
NTPF	Nominal Temperature Performance Factor
POM	Power input in Operable Mode

PES	Primary Energy Saving
PSM	Power input in Standby Mode
TRE	Temperature Ratio on the Exhaust air side
TRS	Temperature Ratio on Supply air side
VUE	Ventilation Unit Efficiency

4 Performance characteristics for residential ventilation components/products

4.1 General

The results of product performance tests reflect the performance which is achieved by the product in service. A product shall therefore be tested as a complete assembly with all necessary components which affect performance.

Accessories are sometimes available for a product as an option. Where accessories could affect performance, the product shall be tested both with and without those accessories.

If any insect screen, filter or similar device is intended to be fitted in the product, then it shall be in position when the product is tested.

4.2 Externally mounted air transfer devices

4.2.1 Aerodynamic characteristics

The aerodynamic characteristics (pressure/flow rate curve), shall be measured and stated in accordance with EN 13141-1 and EN 13141-9.

4.2.2 Equivalent area

The equivalent area shall be calculated and stated in accordance with EN 13141-1 and EN 13141-9.

4.2.3 Free area

The free area shall be calculated according to EN 13141-1 and EN 13141-9 with the product in the fully open position and installed according to the manufacturer's instruction.

4.2.4 Controls

The manufacturer shall state which type of control is incorporated; e.g. manual control or automatic control according to pressure difference.

For manual control the pressure/flow rate curve, equivalent area and free area when fully closed shall be stated under the same test conditions as for the fully open results. If the device is not closable then this shall be stated.

NOTE Automatic control by humidity, occupancy or other stimuli is possible, but there is no agreed test method for products with these types of control.

4.2.5 Air diffusion

These characteristics shall be measured and the results presented in accordance with EN 13141-1 and EN 13141-9.

4.2.6 Acoustic characteristics

These characteristics shall be measured and the results presented in accordance with EN 13141-1 and EN 13141-9.

4.2.7 Water penetration

Products shall be tested when closed in accordance with EN 13141-1 and EN 13141-9.

NOTE In the future, further tests may be carried out to assess thermal insulation and condensation characteristics but the test methods are not yet available.

4.3 Internally mounted air transfer devices

4.3.1 Aerodynamic characteristics

The aerodynamic characteristics (pressure/flow rate curve) shall be measured and the results presented in accordance with EN 13141-1.

4.3.2 Equivalent area

The equivalent area shall be calculated and stated in accordance with EN 13141-1.

4.3.3 Free area

The free area shall be calculated according to EN 13141-1 with the product installed according to the manufacturer's instructions.

4.3.4 Acoustic characteristics

These characteristics shall be measured and the results presented in accordance with EN 13141-1.

4.4 Exhaust and supply air terminal devices

4.4.1 Aerodynamic characteristics

The aerodynamic characteristics (pressure/flow rate curve and pressure loss coefficient) shall be measured and the results presented in accordance with EN 13141-2 and EN 13141-10.

4.4.2 Acoustic characteristics

The acoustic characteristics shall be measured and the results presented in accordance with EN 13141-2 and EN 13141-10.

4.4.3 Controls

Manually controllable devices shall be tested for aerodynamic characteristics in both fully open and fully closed positions.

Pressure or flow controlled devices shall be tested with the control allowed to operate normally.

NOTE Automatic control by humidity, occupancy or other stimuli is possible but there is no agreed test method for products with these types of control.