

Ventilation i bygninger – Komponenter/ produkter til boligventilation – Krævede og valgfri ydeevneegenskaber

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

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EUROPEAN STANDARD

EN 13142

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2021

ICS 91.140.30

Supersedes EN 13142:2013

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 European Standard was approved by CEN on 25 January 2021.

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European foreword

This document (EN 13142:2021) 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of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13142:2013.

In addition to a number of editorial revisions, the following main changes have been made with respect to EN 13142:2013:

- a new Annex ZA considering EU 1253/2014 and a new Annex ZB considering EU 1254/2014 have been added;
- aspects of outdoor and indoor mixing have been added in 5.1;
- unidirectional ventilation units have been added in 5.6 and fans used in residential ventilation units have been removed. Clear reference to EN 13141-4:2021 to specify the aspects of eco-design regulation for UVU has been added in 5.6;
- 5.8 has been updated with classification aspects for energy and acoustics;
- 5.9 has been updated with link to EN 13141-7:2021:
 - data input, declaration, leakage in 5.9.4.2, energy in 5.9.6;
 - nominal temperature performance factor, NTPF, has been deleted;
 - classification of humidity ratio has been reviewed;
 - acoustic classification at reference volume flow;
- 5.10 has been updated with link to prEN 13141-8:2020:
 - air flow sensitivity classification;
 - classification of humidity ratio has been reviewed;
 - nominal temperature performance factor, NTPF, has been deleted;
- Annex A has been split into a normative part Annex A and informative part Annex B;
- a new informative Annex D about filter clogging compensation has been added;
- a new informative Annex E for extended SEC calculations for defrosting aspects has been added;
- a new informative Annex F for extended SEC calculation considering infiltration has been added;

- a new informative Annex G for SEC examples has been added;
- a new Annex ZA and a new Annex ZB for eco-design aspects have been added.

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.

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, 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.

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 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 that 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 standard 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.

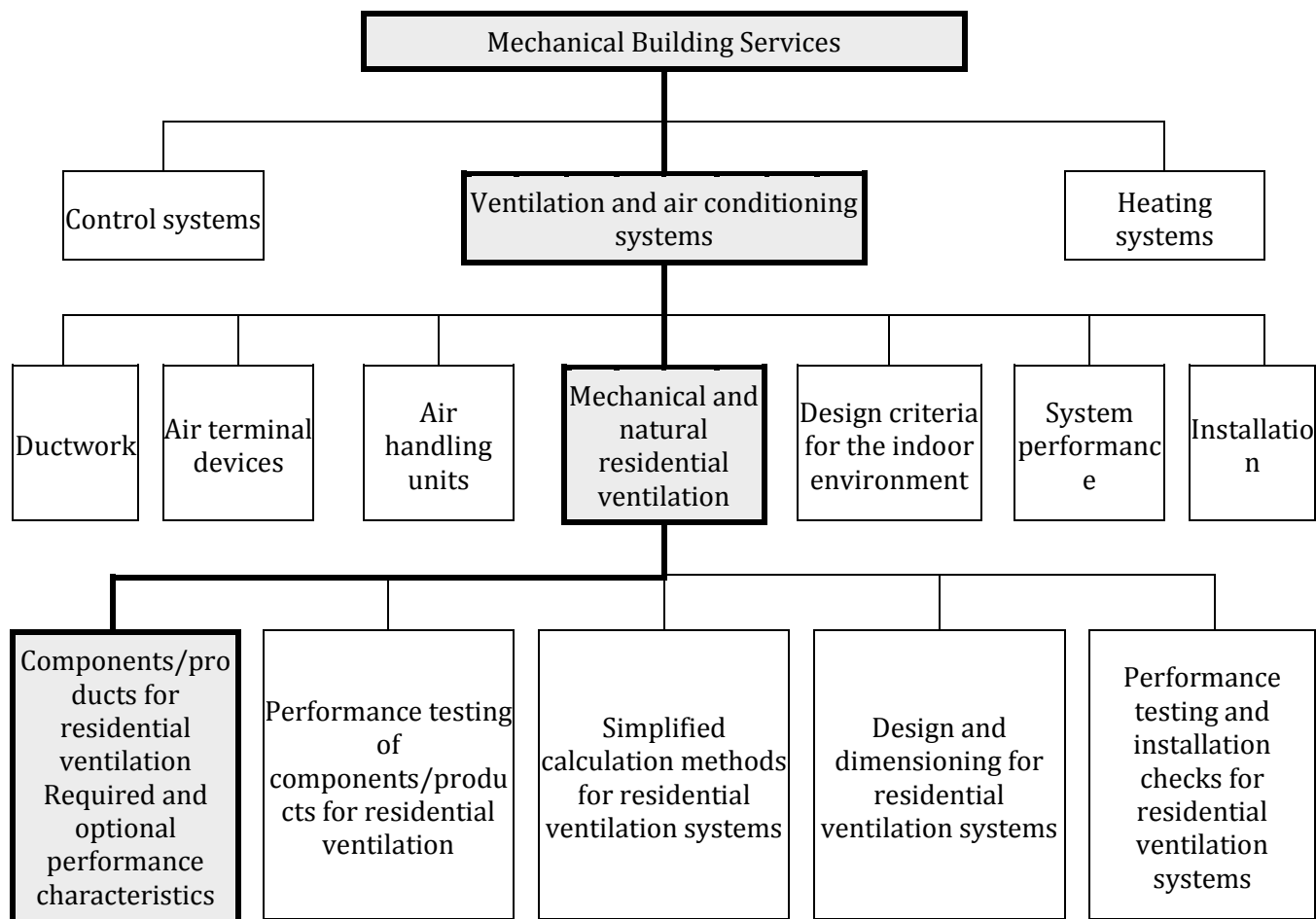


Figure 1 — Position of EN 13142 in the field of the mechanical building services

EN 13142:2013 has been revised to include new requirements according to Ecodesign requirements for ventilation units 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 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 European and national regulations.

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, EN 13141-6:2014 and EN 13141-11;
- ducted mechanical bidirectional residential ventilation units according to EN 13141-7:2021;
- non-ducted mechanical bidirectional residential ventilation units according to prEN 13141-8:2020.

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 m³/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*

prEN 13141-5:2019, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 5: 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)*

prEN 13141-8:2020, *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 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 60335-2-31:2014, *Household and similar electrical appliances — Safety — Part 2-31: Particular requirements for range hoods and other cooking fume extractors (IEC 60335-2-31:2012)*

EN 61591:2019, *Household range hoods and other cooking fume extractors — Methods for measuring performance (IEC 61591:2019)*

EN ISO 5801:2017, *Fans — Performance testing using standardized airways (ISO 5801:2017)*

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 16890-2:2016, *Air filters for general ventilation — Part 2: Measurement of fractional efficiency and air flow resistance (ISO 16890-2:2016)*

EN ISO 16890-3:2016, *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 16890-3:2016)*

EN ISO 16890-4:2016, *Air filters for general ventilation — Part 4: Conditioning method to determine the minimum fractional test efficiency (ISO 16890-4:2016)*