

Hoonete ventilatsioon – Elamute ventilatsiooniseadmete ja -komponentide katsetamine – Osa 8: Ühele ruumile mõeldud ilma kanalita sundventilatsiooni süsteemide sissepuhke/väljatõmbe seadmete (sh. soojustagastuse) katsetamine

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13141-8:2014 sisaldab Euroopa standardi EN 13141-8:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 13141-8:2014 consists of the English text of the European standard EN 13141-8:2014.
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ICS 91.140.30

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English Version

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

Ventilation des bâtiments - Essais de performance des
composants/produits pour la ventilation des logements -
Partie 8 : Essais de performance des unités de soufflage et
d'extraction (y compris la récupération de chaleur) pour les
systèmes de ventilation mécaniques non raccordés prévus
pour une pièce

Lüftung von Gebäuden - Leistungsprüfung von
Bauteilen/Produkten für die Lüftung von Wohnungen - Teil
8: Leistungsprüfung von mechanischen Zuluft- und
Ablufteinheiten ohne Luftführung (einschließlich
Wärmerückgewinnung) für ventilatorgestützte
Lüftungsanlagen von einzelnen Räumen

This European Standard was approved by CEN on 6 February 2014.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13141-8:2014) 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of an identical text or by endorsement, at the latest by September 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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 13141-8:2006.

In comparison to EN 13141-8:2006 the following changes have been made:

- alternating ventilation units including a storage type heat exchangers have been included;
- measurement of the deviation of air flow rate due to façade pressures in normal use has been introduced;
- temperature conditions have been modified to be the same as in EN 13141-7 that is to say 7 °C / 20 °C.

EN 13141 consists of the following parts, under the general title *Ventilation for buildings — Performance testing of components/products for residential ventilation*:

- *Part 1: Externally and internally mounted air transfer devices;*
- *Part 2: Exhaust and supply air terminal devices;*
- *Part 3: Range hoods for residential use;*
- *Part 4: Fans used in residential ventilation systems;*
- *Part 5: Cowls and roof outlet terminal devices;*
- *Part 6: Exhaust ventilation system packages used in a single dwelling;*
- *Part 7: Performance testing of a mechanical supply and exhaust ventilation units (including heat recovery) for mechanical ventilation systems intended for single family dwellings;*
- *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;*
- *Part 9: Externally mounted humidity controlled air transfer device;*
- *Part 10: Humidity controlled extract air terminal device.*
- *Part 11: Positive pressure ventilation systems.*

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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

This European Standard specifies methods for the performance testing of components used in residential ventilation systems to establish the performance characteristics as identified in EN 13142 [1].

This European Standard incorporates many references to other European and International Standards, especially on characteristics other than the aerodynamic characteristics, for instance on acoustic characteristics.

In most cases some additional tests or some additional conditions are given for the specific use in residential ventilation systems.

This European Standard can be used for the following applications:

- laboratory testing;
- attestation purposes.

The position of this European Standard in the field of standards for the mechanical building services is shown in Figure 1.

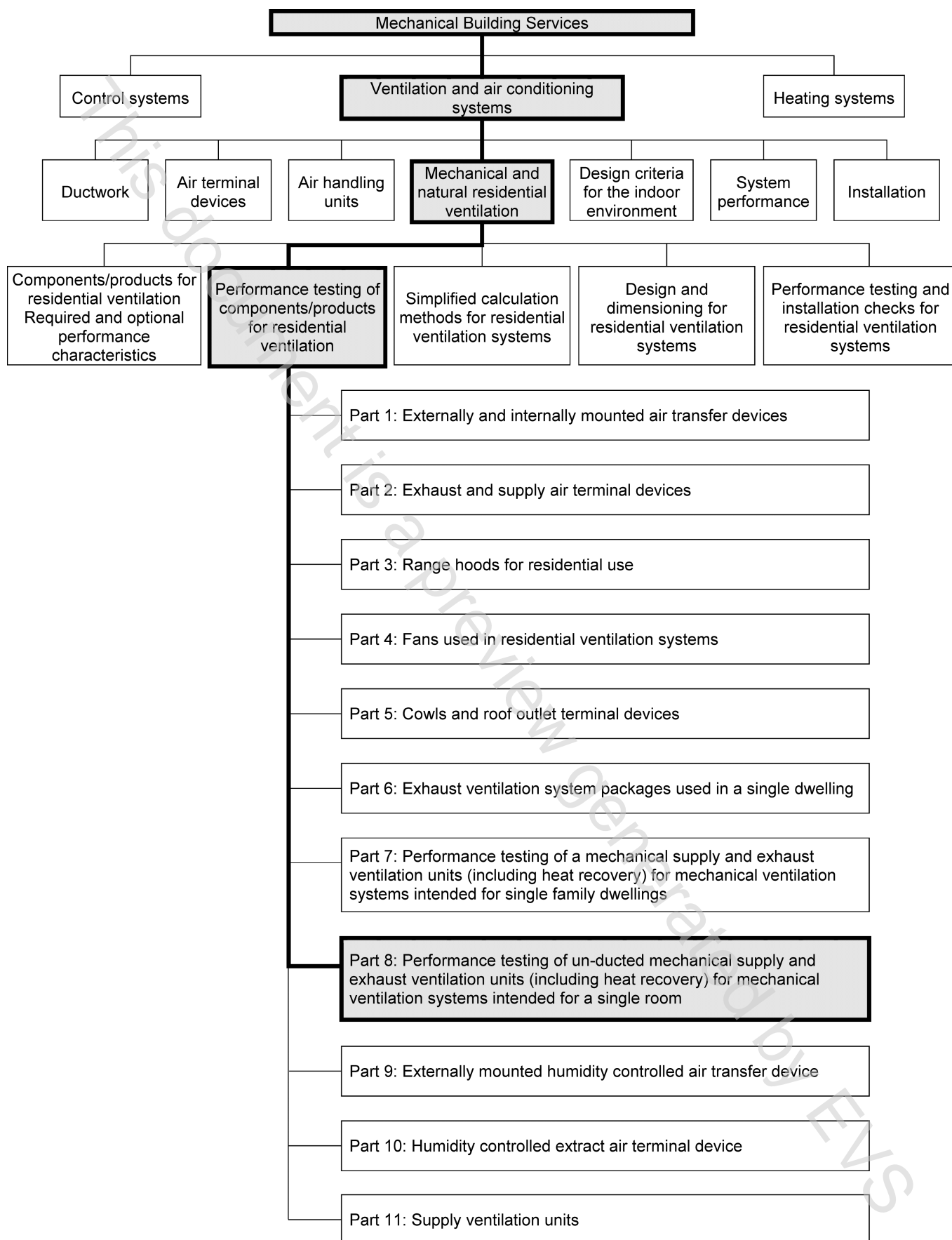


Figure 1 — Position of EN 13141-8 in the field of the mechanical building services

1 Scope

This European Standard specifies the laboratory test methods and test requirements for the testing of aerodynamic, thermal and acoustic performance, and the electrical power of an un-ducted mechanical supply and exhaust ventilation unit used in a single room.

The purpose of this European Standard is not to consider the quality of ventilation but to test the performance of the equipment.

In general, a ventilation unit contains:

- supply and exhaust air fans;
- air filters;
- air to air heat exchanger or air storage mass for exhaust air heat and humidity recovery;
- control system;
- inlet and outlet grilles.

Such equipment can be provided in more than one assembly, the separate assemblies of which are designed to be used together.

Such equipment can contain alternating heat exchangers which provide separate supply and exhaust air flows.

In certain cases, i.e. alternating ventilation unit, the manufacturer may recommend that the equipment can be installed in such a way that it serves more than one room. For the purpose of this European Standard, these products are assessed in a single room.

This European Standard does not deal with ducted units or units with heat pumps.

Safety requirements are given in EN 60335-2-80:2003 [2].

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 306, *Heat exchangers - Methods of measuring the parameters necessary for establishing the performance*

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

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

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

EN ISO 717-1, *Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation (ISO 717-1)*

EN ISO 3741, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms (ISO 3741)*

EN ISO 3743-1, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for small movable sources in reverberant fields - Part 1: Comparison method for a hard-walled test room (ISO 3743-1)*

EN ISO 3743-2, *Acoustics - Determination of sound power levels of noise sources using sound pressure - Engineering methods for small, movable sources in reverberant fields - Part 2: Methods for special reverberation test rooms (ISO 3743-2)*

EN ISO 3744, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane (ISO 3744)*

EN ISO 3745, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for anechoic rooms and hemi-anechoic rooms (ISO 3745)*

EN ISO 9614-1, *Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 1: Measurement at discrete points (ISO 9614-1)*

EN ISO 9614-2, *Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 2: Measurement by scanning (ISO 9614-2)*

EN ISO 10140-1:2010, *Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for specific products (ISO 10140-1:2010)*

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

3 Terms, definitions and classification

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

3.1 Terms and definitions

3.1.1

external leakage

leakage to or from the air flowing inside the casing of the unit to or from the air external to the equipment under test

3.1.2

internal leakage

leakage inside the unit between the exhaust and the supply air flows

3.1.3

filter bypass leakage

air bypass around filter cells

3.1.4

indoor/outdoor airtightness

maximum of air flow at – 20 Pa and + 20 Pa corresponding to the setting when the fans are off

3.1.5

outdoor mixing

mixing of the two airflows external to the equipment under test between discharge and intake ports at outdoor terminal points caused by short circuiting

3.1.6

indoor mixing

mixing of the two airflows under test between discharge and intake ports at indoor terminal points caused by short circuiting