

**Hoonete ventilatsioon – Elamute ventilatsiooniseadmete ja -komponentide katsetamine – Osa 7:
Ühepereelamutele mõeldud sundventilatsiooni süsteemide sissepuhke/ väljatõmbe seadmete (sh. soojustagastuse) katsetamine**

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

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

<p>Käesolev Eesti standard EVS-EN 13141-7:2010 sisaldab Euroopa standardi EN 13141-7:2010 ingliskeelset teksti.</p>	<p>This Estonian standard EVS-EN 13141-7:2010 consists of the English text of the European standard EN 13141-7:2010.</p>
<p>Standard on kinnitatud Eesti Standardikeskuse 30.11.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p>	<p>This standard is ratified with the order of Estonian Centre for Standardisation dated 30.11.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p>
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English Version

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

Ventilation des bâtiments - Essais de performance des
composants/produits pour la ventilation des logements -
Partie 7: Essais de performance des centrales double flux
(y compris la récupération de chaleur) pour les systèmes
de ventilation mécaniques prévus pour des logements
individuels

Lüftung von Gebäuden - Leistungsprüfungen von
Bauteilen/Produkten für die Lüftung von Wohnungen - Teil
7: Leistungsprüfung von mechanischen Zuluft- und
Ablufteinheiten (einschließlich Wärmerückgewinnung) für
mechanische Lüftungsanlagen in Wohneinheiten
(Wohnung oder Einfamilienhaus)

This European Standard was approved by CEN on 25 September 2010.

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Foreword

This document (EN 13141-7:2010) 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 May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

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 13141-7:2004.

Compared to the 2004 version, changes have been made to the following (sub)clauses, tables and annexes:

- modification of the test temperatures to be similar to those of heat pump;
- possibility of measuring supply and exhaust ventilation and heat pump;
- suppression of reference to EN 308 for heat exchangers particular test conditions, this standard define its own conditions;
- introduction of tracer gas method for leakages;
- dependence of leakages under/over pressure configurations on fan position in airflow;
- obligation of reporting the two temperature ratios (on exhaust and supply air);
- possibility of doing an optional test by measuring on the outdoor side of the building while the measure is made on the inside side of the building in the mandatory test (exhaust and supply air flow rate);
- possibility of giving humidity ratios, like for PAC, this allowed to test enthalpy heat exchangers;
- review of value for balanced mass flows at 3 %, over 3% declaration of unbalanced unit and report of the disbalance value;
- setting of the declared maximum air volume flow at 50 Pa by default in lack of other declaration;
- addition of the declared minimum air volume flow at $P_{tud}/2$ and minimum setting;
- creation of a reference point at $P_{tud}/2$ and 70 % of declared maximum air volume flow;
- correction of the temperature ratios considering flow rate ratios.

This standard is a part of a series of standards on residential ventilation. It has a parallel standard referring to the performance characteristics of the components/products for residential ventilation.

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

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

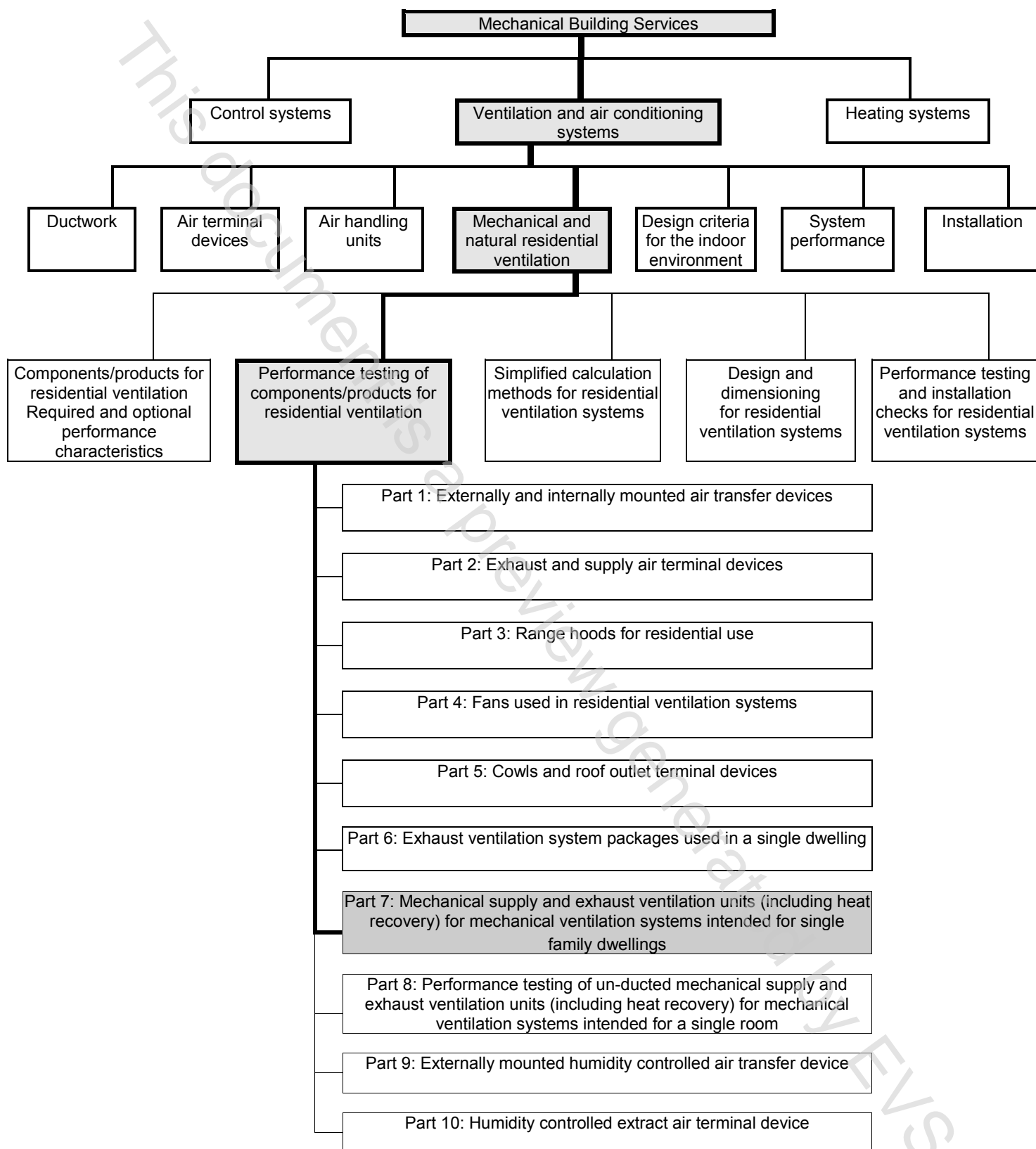


Figure 1 — Position of EN 13141-7 in the field of the mechanical building services

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.

This European Standard does not contain any information on ductwork and fittings, which are covered by other European Standards.

The standard can be used for the following applications:

- laboratory testing;
- attestation purposes.

1 Scope

This part of EN 13141 specifies the laboratory test methods and test requirements for the testing of aerodynamic, thermal and acoustic performance, and the electrical performance characteristic of a mechanical supply and exhaust ventilation units used in a single dwelling.

It covers unit that contain at least, within one or more casing:

- supply and exhaust air fans;
- air filters;
- air-to-air heat exchanger and/or Extract Air-to-Outdoor Air heat pump for extract air heat recovery;
- control system.

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

The different possible arrangements of heat recovery heat exchangers and/or heat pumps are described in Annex A.

This standard does not deal with non-ducted units or reciprocating heat exchangers.

This standard does not deal with units that supply several dwellings.

This standard does not cover ventilation systems that may also provide water space heating and hot water.

This standard does not cover units including combustion engine driven compression heat pumps and absorption heat pumps.

Electrical safety requirements are given in EN 60335-2-40 and EN 60335-2-80.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. 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 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 14511-2, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling — Part 2: Test conditions*

EN 14511-3, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling — Part 3: Test methods*

EN 14511-4, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling — Part 4: Requirements*

EN ISO 3741, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for reverberation rooms (ISO 3741:1999, including Cor 1:2001)*

EN ISO 3743-1, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, movable sources in reverberant fields — Part 1: Comparison method for hard-walled test rooms (ISO 3743-1:1994)*

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 3743-2:1994)*

EN ISO 3744, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 3745, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and semi-anechoic rooms (ISO 3745:2003)*

EN ISO 5135, *Acoustics — Determination of sound power levels of noise from air-terminal devices, air-terminal units, dampers and valves by measurement in a reverberation room (ISO 5135:1997)*

EN ISO 5136, *Acoustics — Determination of sound power radiated into a duct by fans and other air-moving devices — In-duct method (ISO 5136:2003)*

EN ISO 9614-1, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 9614-2, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning (ISO 9614-2:1996)*

3 Terms, definitions and classification

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