

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**

The European Standard EN 13141-7:2004 has the status of a
British Standard

ICS 91.140.30

National foreword

This British Standard is the official English language version of EN 13141-7:2004.

The UK participation in its preparation was entrusted to Technical Committee RHE/2, Ventilation for buildings, heating and hot water services, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

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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 ventilation des logements -
Partie 7: Essais de performance des bouches
d'alimentation et d'évacuation (y compris la récupération de
chaleur) pour les systèmes des centrales de ventilation
mécanique double flux utilisées en 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 Einfamilienhäusern

This European Standard was approved by CEN on 22 October 2003.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13141-7:2004) 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 August 2004, and conflicting national standards shall be withdrawn at the latest by August 2004.

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.

Annex A is informative.

This document includes a bibliography.

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

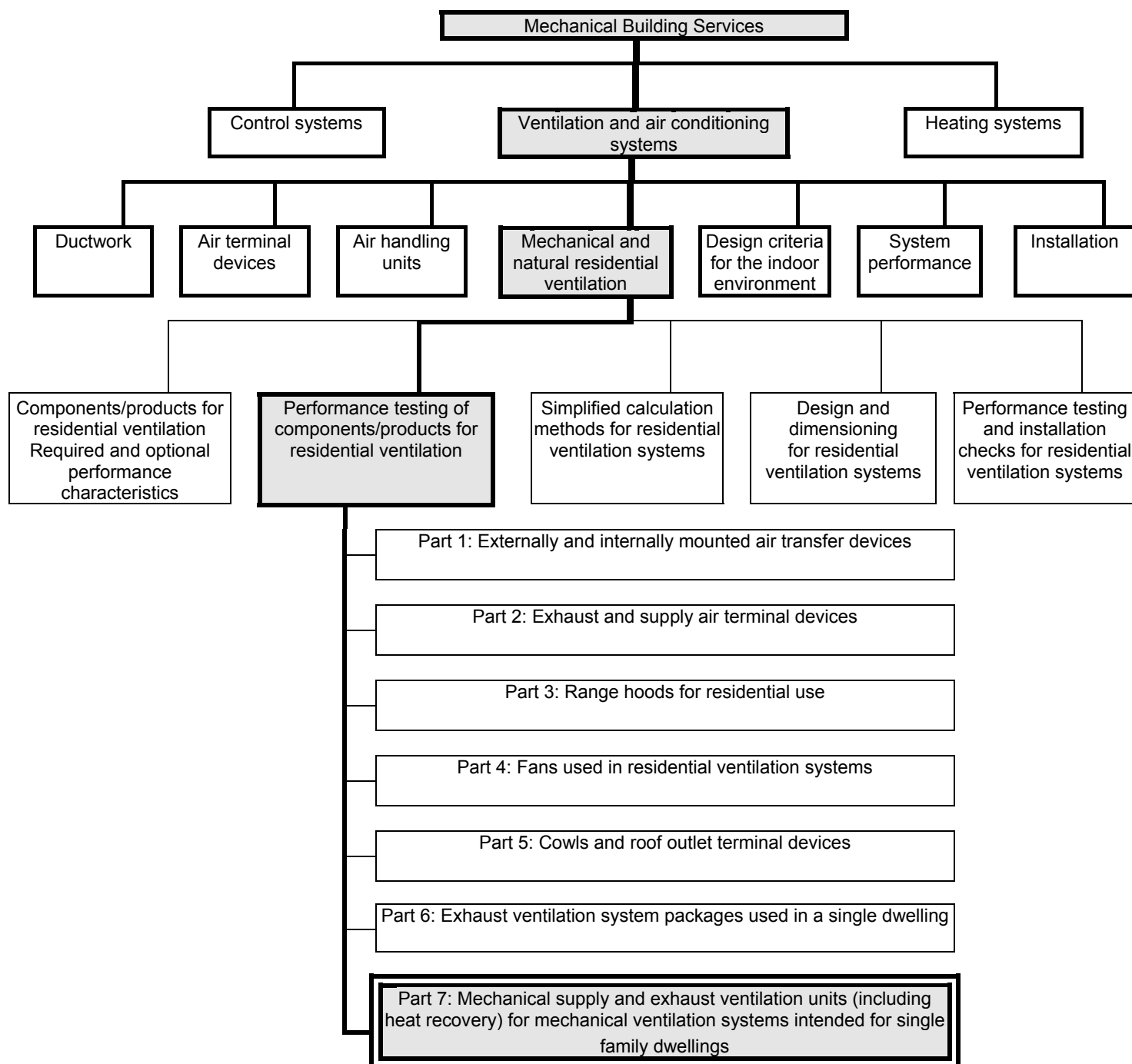


Figure 1 — Position of EN 13141-7 in the field of the mechanical building services

Introduction

This European Standard specifies methods for the performance testing of components used in residential ventilation systems to establish the main 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.

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.

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 power of a mechanical supply and exhaust ventilation unit used in a single dwelling.

In general such a unit contains:

- supply and exhaust air fans;
- air filters;
- air to air heat exchanger with/without air to air heat pump for exhaust air heat recovery;
- control system.

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

This standard does not deal with non-ducted units.

The method of testing for the performances of the heat pumps for heat recovery is generally given in EN 255-2 and in ENV 12102. Safety requirements are given in EN 60335-2-40 and EN 60335-2-80.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 255-2, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors – Heating mode – Part 2: Testing and requirements for marking for space heating units.*

EN 305, *Heat exchangers – Definitions of performance of heat exchangers and the general test procedure for establishing performance of all heat exchangers.*

EN 308, *Heat exchangers – Test procedures for establishing performance of air to air and flue gases heat recovery devices.*

EN 1886:1998, *Ventilation for buildings – Air handling units – Mechanical performance.*

EN 12792, *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 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.*

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 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 9614-1:1995).*

3 Terms, definitions and classification

For the purposes of this European Standard, the terms and definitions given in EN 12792 together with 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 surrounding air

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