Irish Standard
I.S. 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

I.S. EN 13141-6:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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English Version

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

Ventilation des bâtiments - Essais de performance des composants/produits pour la ventilation des logements - Partie 6: Kits pour systèmes de ventilation par extraction pour le logement individuel

Lüftung von Gebäuden - Leistungsprüfung von Bauteilen/Produkten für die Lüftung von Wohnungen - Teil 6: Baueinheiten für Abluftanlagen für eine einzelne Wohnung

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

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Foreword

This document (EN 13141-6:2014) 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of an identical text or by endorsement, at the latest by June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

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 13141-6:2004.

In comparison to EN 13141-6:2004 the following changes have been made:

— in Clause 3, introduction of the definition of: maximum and minimum air volume flows (q_{vmax} and q_{vmin}), demand control ventilation (DCV), boosted air volume flow (q_{vboost}), short duct and long duct and reference configuration (for the energy efficiency calculation);

— in 5.2.2, differentiation of the duct connecting the roof/wall outlet to the fan unit depending if the fan unit outlet is situated on the top of the fan unit or if it is situated on a face of the fan unit;

— modification of Figure 6 describing the types of long ducts and long branched ducts (it now explains how to deal with long branched ducts on which there are more than 3 spigots);

— modification of Table 1 for the presentation of the aerodynamic characteristics;

— adding in Clause 6 of a procedure for the measurement of the external leakage;

— adding of Table 2 giving a classification of the external leakage;

— in Clause 7, specification of the test conditions for the measurement of the electrical power;

— in Clause 8, adding of a paragraph defining the test conditions and the calculation for the obtaining of the energy efficiency;

— creation of Table 3 for the presentation of the power consumption results;

— in Clause 9, specification of the acoustic test conditions;

— in Annex A, modification and explanation of Figure A.1 representing an example of compensating mounting for air flow measurement device.

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 test methods on ventilation system package and permits to avoid tests on each component separately.

The performance characteristics of the components/products for residential ventilation are given in EN 13142, [1].

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

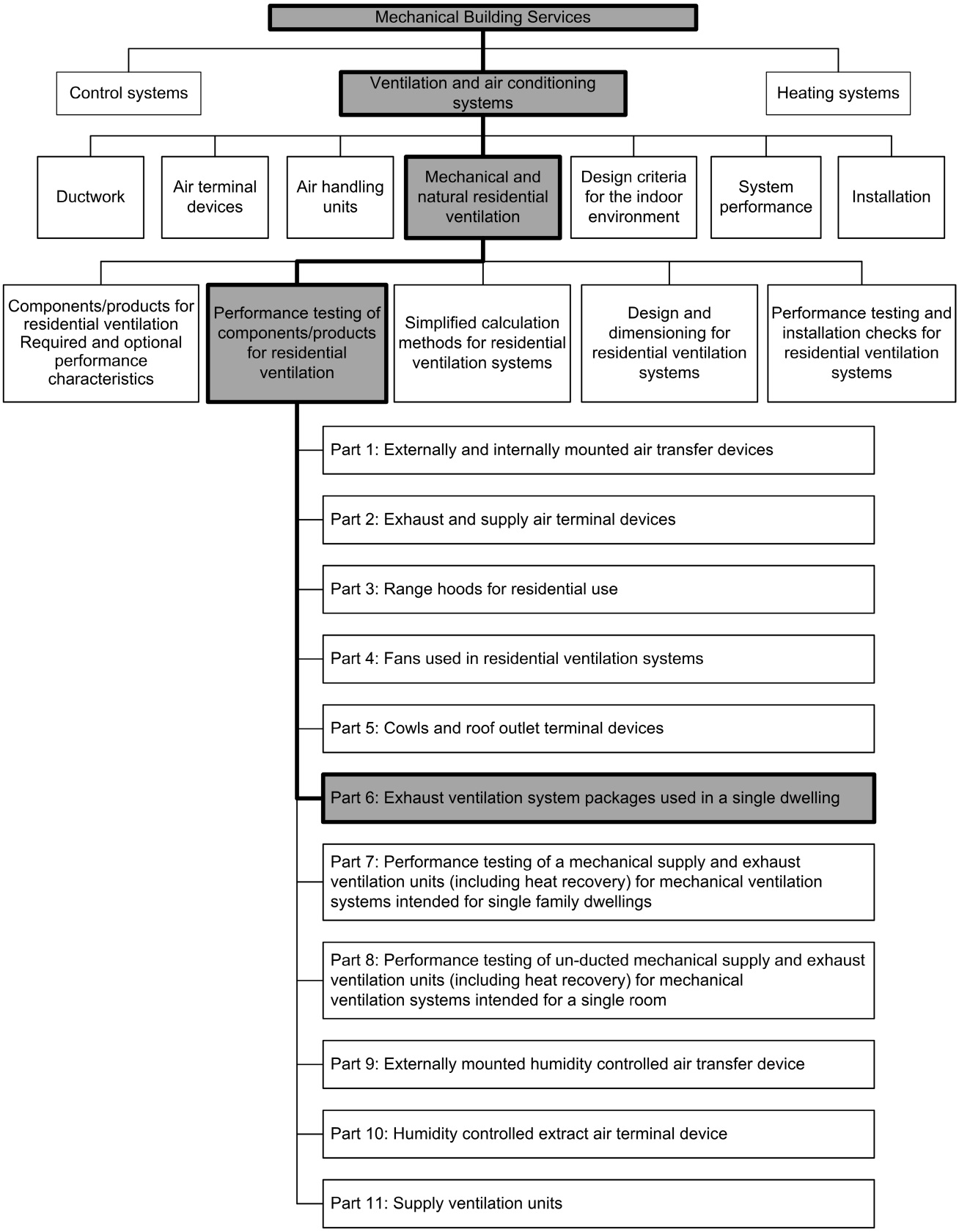


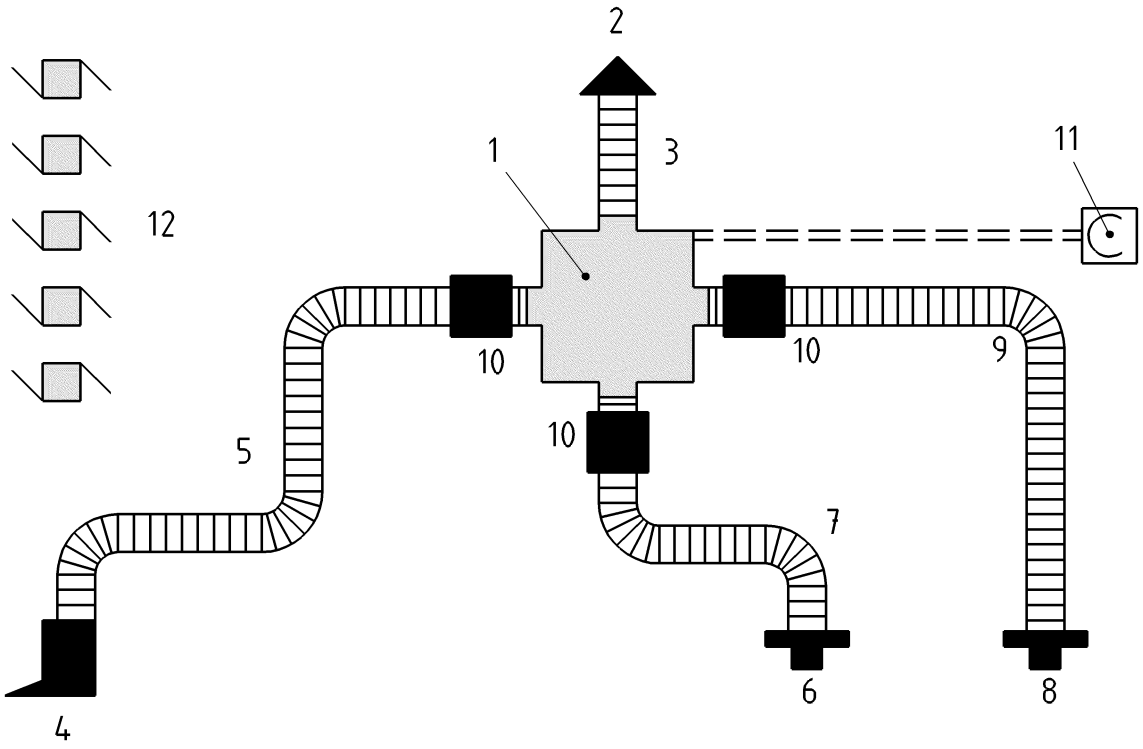
Figure 1— Position of EN 13141-6 in the field of the mechanical building services

1 Scope

This European Standard specifies laboratory methods for measuring the aerodynamic and acoustic performance characteristics and energy consumption of assembled exhaust ventilation system packages for a single dwelling. If a component of the package is not physically linked to the others (e.g. air inlets), then it is assumed to have been tested according to the test method related to this component. An example of a typical exhaust package is given in Figure 2.

The object of this European Standard is to provide tested characteristics for a ventilation system package in worst case conditions. It is assumed that better values are achieved on site when the ventilation system package is installed in accordance with the manufacturer's instruction and within the limits of the test conditions given in this standard.

Safety requirements are given in EN 60335-2-80.



Key

1	fan unit	7	duct for extract air from 6
2	roof/wall outlet	8	exhaust air terminal device (toilets)
3	duct for roof/wall outlet	9	duct for extract air from 8
4	static extraction range hood or exhaust air terminal device (kitchen)	10	sound attenuators
		11	controls
5	duct for range hood	12	set of air inlets
6	exhaust air terminal device (bathroom)		

Figure 2 — Example of system package: exhaust ventilation system package

NOTE In Figure 2, ducts, outlets, fan, exhaust air terminal devices, sound attenuators, etc. are presented assembled but they are normally sold disassembled in a single package.

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 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 13141-7:2010, *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*

EN 60704-2-13, *Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-13: Particular requirements for range hoods*

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 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements (ISO 5167-1)*

EN ISO 5167-2, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 2: Orifice plates (ISO 5167-2)*

EN ISO 5167-3, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 3: Nozzles and Venturi nozzles (ISO 5167-3)*

EN ISO 5167-4, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 4: Venturi tubes (ISO 5167-4)*

EN ISO 5801, *Industrial fans - Performance testing using standardized airways (ISO 5801)*

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)*