Irish Standard
I.S. 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

I.S. EN 13141-4:2021

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 13141-4:2021 is the adopted Irish version of the European Document 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

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13141-4

April 2021

ICS 91.140.30

Supersedes EN 13141-4:2011

English Version

Ventilation for buildings - Performance testing of components/products for residential ventilation - Part 4: Aerodynamic, electrical power and acoustic performance of unidirectional ventilation units

Ventilation des bâtiments - Essais de performance des composants/produits pour la ventilation des logements - Partie 4 : Performance aéraulique, de puissance électrique et acoustique des unités de ventilation simple flux

Lüftung von Gebäuden - Leistungsprüfungen von Bauteilen/Produkten für die Lüftung von Wohnungen - Teil 4: Aerodynamische, elektrische und akustische Leistung von unidirektionalen Lüftungsgeräten

This European Standard was approved by CEN on 25 January 2021.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 13141-4:2021) 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of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.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 13141-4:2011.

In addition to a number of editorial revisions, the following main changes have been made with respect to EN 13141-4:2011:

— the scope has been changed, and concerns now all unidirectional ventilation units (ducted or non-ducted units, supply or exhaust units), excluding cowls with fans (see EN 13141-5);

— the terms and definitions have been updated in accordance with the parameters used in the document;

— performance testing of aerodynamic characteristics clause includes new testing of external leakages;

— description of the connection box has been moved in a normative annex;

— determination of the maximum and reference air flow has been added;

— assessment of part load energy efficiency has been moved in an informative annex;

— tests of air flow sensitivity and indoor/outdoor airtightness have been added;

— in the energy part, the characterization of SPI has been added;

— the whole acoustic clause has been reorganized and references to acoustic standard updated;

— testing of noise radiated by the casing for ducted units has been added;

— testing of radiated sound power in the indoor or outdoor space and the airborne sound insulation of non-ducted units have been added;

— the safety clause has been deleted;

— a new clause dealing with all test results has been created.

A list of all parts in the EN 13141 series, published under the general title *Ventilation for buildings — Performance testing of components/products for residential ventilation* can be found on the CEN website.

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

This document specifies methods for the performance testing of components used in residential ventilation systems to establish the performance characteristics as identified in EN 13142:2021 [1].

This document 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 document can be used for the following applications:

— laboratory testing;

— attestation purposes.

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

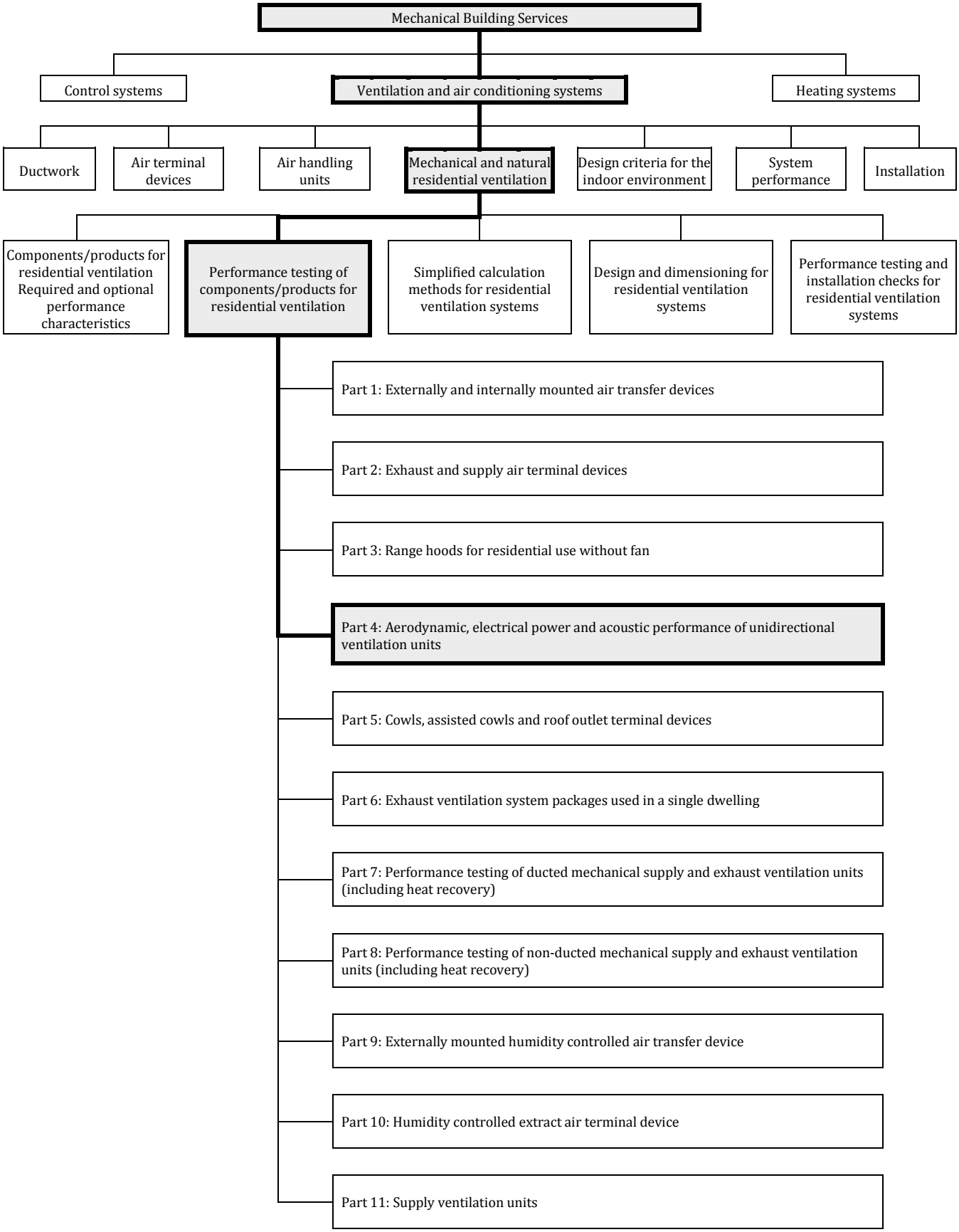

Figure 1 — Position of EN 13141-4 in the field of the mechanical building services

1 Scope

This document specifies aerodynamic, acoustic and electrical power performance test methods for unidirectional ventilation units used in residential ventilation systems.

This document is applicable to ventilation units:

— installed on a wall or in a window without any duct, A category;

— installed in the upstream of a duct, B category;

— installed in the downstream of a duct, C category;

— installed in a duct, or with duct connection upstream and downstream, D category;

— with one or several inlets/outlets;

— installed in a system with a heat pump for domestic hot water or water for cooling or heating;

— which can be used for supply or exhaust.

This document does not apply to:

— fan assisted cowls which are tested according to EN 13141-5;

— mechanical supply and exhaust units which are tested according to EN 13141-7:2021 or prEN 13141-8:2021.

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, *Ventilation for buildings — Symbols, terminology and graphical symbols*

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 5801:2017, *Industrial fans — Performance testing using standardized airways (ISO 5801:2017)*

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)*

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

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

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)*