HOONETE VENTILATSIOON. VENTILATSIOONI KESKSEADMED. KESKSEADMETE KOMPONENTIDE JA SEKTSIOONIDE VALIK JA TOIMIMINE

Ventilation for buildings - Air handling units - Rating and performance for units, components and sections

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13053:2019 sisaldab Euroopa standardi EN 13053:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 13053:2019 consists of the English text of the European standard EN 13053:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.12.2019.	Date of Availability of the European standard is 11.12.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 91.140.30

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13053

December 2019

ICS 91.140.30

Supersedes EN 13053:2006+A1:2011

English Version

Ventilation for buildings - Air handling units - Rating and performance for units, components and sections

Ventilation des bâtiments - Centrales de traitement d'air - Classification et performance des unités, composants et sections

Lüftung von Gebäuden - Zentrale raumlufttechnische Geräte - Leistungskenndaten für Geräte, Komponenten und Baueinheiten

This European Standard was approved by CEN on 28 September 2018.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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

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

Ref. No. EN 13053:2019 E

Contents

Page

European foreword

This document (EN 13053:2019) 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 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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 13053:2006+A1:2011.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

This document has been revised and includes new requirements according to Ecodesign requirements for ventilation units given in EU Commission Regulation No 1253/2014.

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 European Standard is a part of a suite of standards for air handling units used for ventilation and air conditioning of buildings for human occupancy. It considers the ratings and the performance of air handling units as a whole, the requirements and performance of specific components and sections of air handling units including hygiene requirements. The position of this standard in the field of mechanical building services is shown in Figure 1.

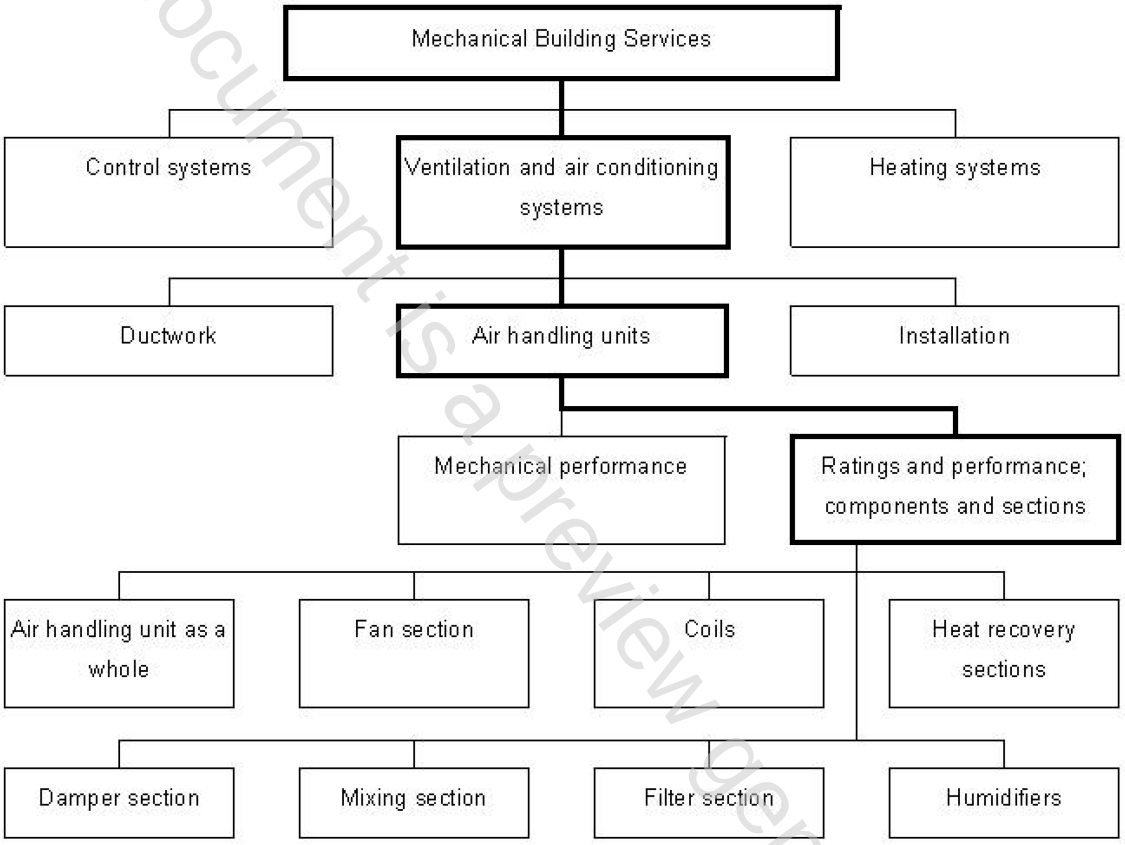

Figure 1 — Position of this standard in the field of mechanical building services

1 Scope

This document specifies requirements and testing for rating and performance of Non Residential Ventilation Units, NRVU's, specifically Air Handling Units (AHU's). It specifies requirements, classifications and testing of components and sections of air handling units.

This document applies to tests in a laboratory and *in situ*. This document is applicable both for mass produced air handling units and tailor-made Air Handling Units.

This document applies to AHU and individual sections of AHU with the designed air flow > 250 $m^3 \cdot h^{-1}$. This document applies to UVU's with additional air treatment components in addition to filtration.

This standard does not include:

— residential unidirectional and bidirectional ventilation units;

— nonresidential unidirectional ventilation units which consist of only a casing, a fan with or without filter.

NOTE 1 Residential ventilation units are covered by EN 13142.

NOTE 2 Nonresidential unidirectional ventilation units which consists only casing, fan with or without filter are covered by EN 17291.

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

EN 1216, *Heat exchangers — Forced circulation air-cooling and air-heating coils — Test procedures for establishing the performance*

EN 1751, *Ventilation for buildings — Air terminal devices — Aerodynamic testing of damper and valves*

EN 1886, *Ventilation for buildings — Air handling units — Mechanical performance*

EN 12599:2012, *Ventilation for buildings — Test procedures and measurement methods to hand over air conditioning and ventilation systems*

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

EN 16211, *Ventilation for buildings. Measurement of air flows on site. Methods*

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 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 3746, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746)*

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

EN ISO 7235, *Acoustics — Laboratory measurement procedures for ducted silencers and airterminal units — Insertion loss, flow noise and total pressure loss (ISO 7235)*

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 9614-3, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 3: Precision method for measurement by scanning (ISO 9614-3)*

EN ISO 16890-1, *Air filters for general ventilation — Part 1: Technical specifications, requirements and classification system based upon particulate matter efficiency (ePM) (ISO 16890-1)*

EN ISO 16890-2, *Air filters for general ventilation — Part 2: Measurement of fractional efficiency and air flow resistance (ISO 16890-2)*

EN ISO 16890-3, *Air filters for general ventilation — Part 3: Determination of the gravimetric efficiency and the air flow resistance versus the mass of test dust captured (ISO 16890-3)*

EN ISO 16890-4, *Air filters for general ventilation — Part 4: Conditioning method to determine the minimum fractional test efficiency (ISO 16890-4)*

ISO 3966, *Measurement of fluid flow in closed conduits — Velocity area method using Pitot static tubes*

ISO 13347-1, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions - Part 1: General overview*

ISO 13347-2, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions - Part 2: Reverberant room method*

ISO 13347-3, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions - Part 3: Enveloping surface methods*

ISO 13347-4, *Industrial fans — Determination of fan sound power levels under standardized laboratory conditions - Part 4: Sound intensity method*

ISO 16956, *Thermal performance in the built environment — Determination of air flow rate in building applications by field measuring methods*