

Ventilation for buildings - Ductwork - Measurement of ductwork surface area

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14239:2004 sisaldab Euroopa standardi EN 14239:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 18.05.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 14239:2004 consists of the English text of the European standard EN 14239:2004. This document is endorsed on 18.05.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This European Standard specifies the requirements for the measurement of the surface area of a duct for use in the determination of air leakage flow rate per unit surface area (leakage factor). The standard is applicable to circular and rectangular ducts and components used in air conditioning and ventilation systems in buildings.	Scope: This European Standard specifies the requirements for the measurement of the surface area of a duct for use in the determination of air leakage flow rate per unit surface area (leakage factor). The standard is applicable to circular and rectangular ducts and components used in air conditioning and ventilation systems in buildings.
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ICS 91.140.30

Võtmesõnad: circular form, mechanical, nominal widths, pipelines, service installations in buildings, specification (approval), specifications, testing, thermal environment systems, utility equipment, ventilation, ventilation ducts, ventilation ductwork, ventilation plants

ICS 91.140.30

English version

Ventilation for buildings - Ductwork - Measurement of ductwork surface area

Ventilation des bâtiments - Réseau de conduits - Mesurage
de l'aire superficielle des conduits

Lüftung von Gebäuden - Luftleitungen - Messung von
Luftleitungsflächen

This European Standard was approved by CEN on 3 November 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
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 14239:2004) 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 July 2004, and conflicting national standards shall be withdrawn at the latest by July 2004.

The standard is one of a series of standards for ductwork used for ventilation and air conditioning of buildings for human occupancy.

The position of this standard in the field of 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.

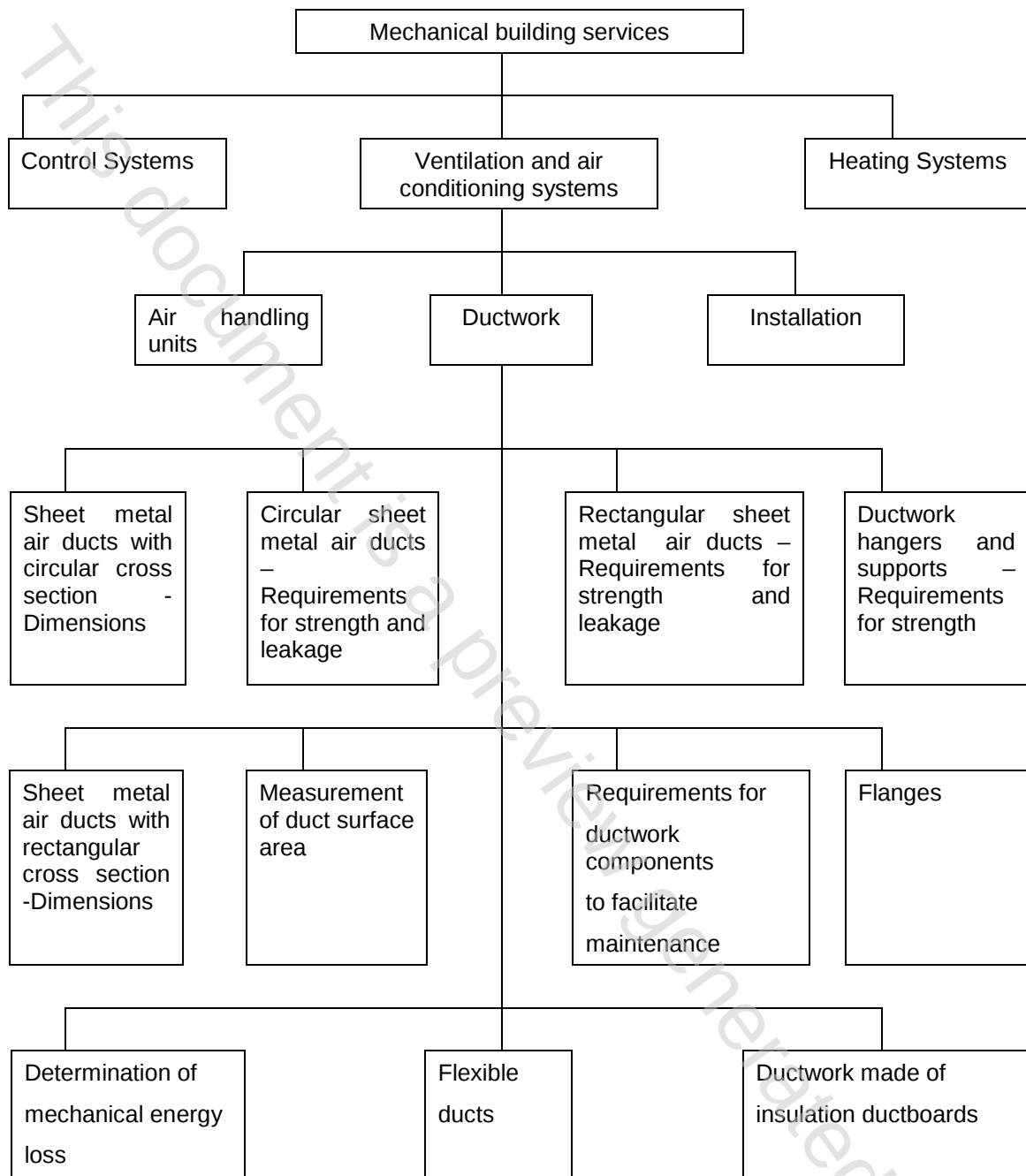


Figure 1 – Position of EN 14239 in the field of mechanical building services

Introduction

This European Standard provides a method of measurement to establish the surface area for use in further calculations for ductwork in ventilation and air conditioning systems.

1 Scope

This European Standard specifies the requirements for the measurement of the surface area of a duct for use in the determination of air leakage flow rate per unit surface area (leakage factor).

The standard is applicable to circular and rectangular ducts and components used in air conditioning and ventilation systems in buildings.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references the subsequent amendments to the 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 12792, *Ventilation for buildings – Symbols and terminology and graphical symbols*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 12792 apply.

4 Measurement of circular ductwork

Measurement of circular ductwork shall be carried out in accordance with the following, where references in the text are as indicated in Figure 2 which shows a typical installation, and an example of calculation for this installation is shown in Table 1 using data given in annex A.

The length of each straight duct with the same diameter shall be measured between two points on perpendiculars to the axis of the duct. The lengths of separate components situated between the perpendiculars such as dampers (A) and transformation pieces (B) are thereby included. The accuracy of measurement shall be ± 10 mm. Openings, e.g. branch and inspection panels, shall not be deducted from the surface area. The surface area of end plates shall also be included. However, internal duct walls or guide vanes shall not be taken into account. Transformation pieces shall be calculated based on the largest dimension. In the case where the branch tap is located on a transformation piece, the main duct axis corresponds to the duct of the largest size.

The additional length of a bend (C) shall be calculated to the intersection of the straight centerlines, and the length of a branch shall be calculated from the axis of the principal duct (D).