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BSI Standards Publication

Ventilation for buildings - Correction of air flow rate according to ambient conditions

bsi.

National foreword

This Published Document is the UK implementation of CEN/TS 17153:2018.

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A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Ventilation for buildings - Correction of air flow rate according to ambient conditions

Ventilation des bâtiments - Correction du débit d'air en fonction des conditions ambiantes

Lüftung von Gebäuden - Korrektur des Luftstroms entsprechend der Umgebungsbedingungen

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European foreword

This document (CEN/TS 17153:2018) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

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Introduction

The formula to correct the air flow rate depending on ambient conditions that is stated in some standards published by CEN/TC 156 is not correct. This document gives a correct formula and the way it has been obtained. CEN/TC 156 working groups are invited to use the content of this document in their standards. Those working groups can use the correct formula only or more depending on the level of explanation needed for the understanding of their standards.

1 Scope

This document gives guidelines to correct the measured air flow rate when measuring conditions are different from standard conditions.

It applies to a power-law formula giving the air flow rate as a function of a pressure difference with an air flow rate coefficient, *C*, varying with temperature and pressure.

This document applies to:

— passive elements of air distribution systems with a cross-section area that does not depend on pressure;

— volume flow rate (and not mass flow rate).

This document is applicable to (but not limited to):

— EN 1507, *Ventilation for buildings — Sheet metal air ducts with rectangular section — Requirements for strength and leakage*;

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

— EN 12237, *Ventilation for buildings — Ductwork — Strength and leakage of circular sheet metal ducts*;

— EN 13141-1, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 1: Externally and internally mounted air transfer devices*;

— EN 13141-2, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 2: Exhaust and supply air terminal devices*;

— EN 13141-9, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 9: externally mounted humidity controlled air transfer device*;

— EN 13141-10, *Ventilation for buildings — Performance testing of components/products for residential ventilation — Part 10: humidity controlled extract air terminal device*;

— EN 15727, *Ventilation for buildings — Ducts and ductwork components, leakage classification and testing*.

This document does not apply to:

— fans;

— air terminal devices with automatically controlled openings (variable openings).

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

3 Terms and definitions

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