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VENTILATION IN BUILDINGS - CHILLED BEAMS - TESTING AND RATING OF ACTIVE CHILLED BEAMS

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English Version

Ventilation in buildings - Chilled beams - Testing and rating of active chilled beams

Ventilation des bâtiments - Poutres froides - Essai et évaluation des poutres froides actives

Lüftung von Gebäuden - Kühlbalken - Prüfung und Berechnung von aktiven Kühlbalken

This European Standard was approved by CEN on 28 February 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 15116:2008) 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of an identical text or by endorsement, at the latest by October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

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.

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1 Scope

This European Standard specifies methods for measuring the cooling capacity of chilled beams with forced air flow. The evaluation of aerodynamic air performance is not part of this standard. It will be dealt with in the future in a new standard entitled "Air terminal devices - Aerodynamic testing and rating for mixed flow applications for non isothermal testing - Cold jets".

The purpose of the standard is to give comparable and repeatable product data.

The test method applies to all types of convector cooling systems with forced air supply using any medium as energy transport medium. This standard only applies to situations where induced air only passes through the heat exchanger (primary air does not pass through the heat exchanger).

NOTE The result is valid only for the specified test set up. For other conditions, (i.e. different positions of heat loads, inactive ceiling elements around the test objects), the producer should give guidance based on full scale tests.

This standard refers to water as the main cooling medium, with the possibility of additional cooling from the primary air. Wherever water is written, any other cooling medium can also be used in the test.

2 Normative references

The following referenced documents are indispensable for the application 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 12792:2003, *Ventilation for buildings - Symbols, terminology and graphical symbols*

EN 14240:2004, *Ventilation for buildings — Chilled ceilings — Testing and rating*

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 5167-1:2003)*

EN ISO 7726, *Ergonomics of the thermal environment - Instruments for measuring physical quantities (ISO 7726:1998)*

ISO 5221*, Air distribution and air diffusion - Rules to methods of measuring air flow rate in an air handling duct*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792:2003 and the following apply.

3.1.1
active chilled beam
convector with integrated air supply where the induced air only passes through the cooling coil(s). The cooling medium in the coil is water

NOTE For the purpose of this standard primary air does not pass through the cooling coil.

3.1.2
test room
room in which the test object is mounted