

Fume cupboards - Part 2: Safety and performance requirements

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14175-2:2003 sisaldab Euroopa standardi EN 14175-2:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 06.06.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14175-2:2003 consists of the English text of the European standard EN 14175-2:2003.</p> <p>This document is endorsed on 06.06.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This part 2 of EN 14175 specifies safety and performance requirements and objectives for general purpose fume cupboards. In addition, dimensions and marking of general purpose fume cupboards are specified as well as requirements on the product manual to be supplied with fume cupboards</p>	<p>Scope: This part 2 of EN 14175 specifies safety and performance requirements and objectives for general purpose fume cupboards. In addition, dimensions and marking of general purpose fume cupboards are specified as well as requirements on the product manual to be supplied with fume cupboards</p>
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English version

Fume cupboards - Part 2: Safety and performance requirements

Sorbonnes - Partie 2: Exigences de sécurité et de performances

Abzüge - Teil 2: Anforderungen an Sicherheit und Leistungsvermögen

This European Standard was approved by CEN on 3 March 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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, 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 14175-2:2003) has been prepared by Technical Committee CEN/TC 332, "Laboratory Equipment", the secretariat of which is held by DIN.

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 November 2003, and conflicting national standards shall be withdrawn at the latest by November 2003.

This part of EN 14175 is applicable from the date of publication (DOP). For fume cupboards complying with a national standard in Europe until DOP, this part of EN 14175 or the national standard may be applied until DOP + 6 months.

This part of EN 14175 is not applicable to fume cupboards which have been installed in the workplace before DOP + 6 months if not otherwise declared by the manufacturer.

EN 14175 consists of the following parts, under the general title *Fume cupboards*

- Part 1: Vocabulary
- Part 2: Safety and performance requirements
- Part 3: Type test methods
- Part 4: On-site test methods
- Part 5: Recommendations for installation and maintenance (in preparation)
- Part 6: Variable air volume fume cupboards (in preparation)

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The performance of a fume cupboard can be expressed conveniently in qualitative terms as the ability to contain and remove a pollutant or pollutants released from a source within the workspace of the fume cupboard, as well as the ability to minimise possible perturbing influences, such as air draughts, operator movement, personnel traffic. This is effected by an inward airflow through its opening, reducing risk to the operator and other personnel which is the primary function of this type of protective device. Other important performance criteria are the protection against splashes, dangerous atmospheres and the effects of implosions.

The safety requirements given in this part 2 of the European Standard provide a guideline for the construction of fume cupboards and serve as basis for testing of fume cupboards.

Two different procedures to investigate the safety and performance are available:

- a) type testing in accordance with the requirements given in this part 2 and the test methods given in part 3 of this European Standard;
- b) testing on-site in accordance with the requirements given in this part 2 and the test methods given in part 4 of this European Standard. This on-site testing investigates an individual fume cupboard in its particular environment and does not constitute a type test. The results cannot be transferred to further production of the design or model of the fume cupboard concerned.

1 Scope

This part 2 of EN 14175 specifies safety and performance requirements and objectives for general purpose fume cupboards. In addition, dimensions and marking of general purpose fume cupboards are specified as well as requirements on the product manual to be supplied with fume cupboards.

Recommendations on the evaluation of conformity of general purpose fume cupboards with the requirements of this part 2 of EN 14175 are given in the informative annex A.

For terms and definitions of fume cupboards EN 14175-1 applies. For type testing of fume cupboards prEN 14175-3 applies. For microbiological safety cabinets EN 12469 applies.

This part of EN 14175 does not address recirculatory filtration fume cupboards or fume cupboards for carrying out work on radioactive materials. For special purpose fume cupboards other requirements may apply.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or 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 292-1, *Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology.*

EN 292-2, *Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications.*

EN 12600:2002, *Glass in building - Pendulum test - Impact test method and classification for flat glass*

EN 13150:2001, *Workbenches for laboratories – Dimensions, safety requirements and test methods.*

EN 13792, *Colour coding of taps and valves for use in laboratories.*

EN 14175-1:2003, *Fume cupboards - Part 1: Vocabulary.*

prEN 14175-3:2003, *Fume cupboards - Part 3: Type test methods.*

EN 60529, *Degrees of protection provided by enclosures (IP-Code) (IEC 60529:1989).*

EN ISO 12543-1, *Glass in building - Laminated glass and laminated safety glass - Part 1: Definitions and description of component parts (ISO 12543-1:1998).*

3 Terms and definitions

For the purposes of this part 2 of EN 14175, the terms and definitions given in EN 14175-1:2003 apply.

4 Dimensions

4.1 Overall width of fume cupboard

The overall width of fume cupboards shall be a multiple of 100 mm with preferable dimensions of 1200 mm and 1500 mm.

4.2 Overall depth of fume cupboard

The overall depth of fume cupboards shall be between 600 mm and 1200 mm.

4.3 Height of work surface

The height of the work surface of fume cupboards shall not exceed (900^{+50}_0) mm with preferable heights of 0 mm, 500 mm, 720 mm and 900 mm with a tolerance of ± 50 mm.

4.4 Dimensions for customized fume cupboards

Other dimensions than those given in 4.1 to 4.3 may be agreed between customer and manufacturer. Tolerances shall be specified by the manufacturer.

5 Basic safety and performance objectives

Fume cupboards shall be designed such that

- hazardous concentrations or quantities of airborne contaminants are prevented from escaping from the fume cupboard into the room;
- fumes are removed efficiently to reduce the susceptibility to an explosive or hazardous atmosphere inside the workspace;
- the user is protected by a front sash against splashes of substances and flying particles.