SLOVENSKI STANDARD

SIST-TS CEN/TS 14175-5:2006

01-oktober-2006

Digestoriji ï 5. del: Priporoļ ila za vgradnjo in vzdrģevanje

Fume cupboards - Part 5: Recommendations for installation and maintenance

Abzüge - Teil 5: Empfehlungen für Installation und Wartung

Sorbonnes - Partie 5 : Recommandations relatives a l'installation et a la maintenance

Ta slovenski standard je istoveten z: CEN/TS 14175-5:2006

ICS:

71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

SIST-TS CEN/TS 14175-5:2006 **en,fr,de**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 14175-5

August 2006

ICS 71.040.10

English Version

Fume cupboards - Part 5: Recommendations for installation and maintenance

Sorbonnes - Partie 5 : Recommandations pour installation et entretien

Abzüge - Teil 5: Empfehlungen für Installation und Wartung

This Technical Specification (CEN/TS) was approved by CEN on 20 May 2006 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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, Romania, 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

Ref. No. CEN/TS 14175-5:2006: E

Contents

Page

Foreword

This Technical Specification (CEN/TS 14175-5:2006) has been prepared by Technical Committee CEN/TC 332 “Laboratory equipment”, the secretariat of which is held by DIN.

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.

The European Standard 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 6: Variable air volume fume cupboards

Due to its informative contents, Part 5 of EN 14175 is published as a Technical Specification (CEN/TS).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Technical Specification specifies a selection of recommendations for the installation and maintenance of fume cupboards in accordance with EN 14175-2 and EN 14175-6. The maintenance recommendations can be applicable to other fume cupboards as well.

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 13779, *Ventilation for non-residential buildings — Performance requirements for ventilation and room-conditioning systems*

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

EN 14175-3:2003, *Fume cupboards — Part 3: Type test methods*

EN 14175-4:2004, *Fume cupboards — Part 4: On-site test methods*

EN 14175-6:2006, *Fume cupboards — Part 6: Variable air volume fume cupboards*

3 Terms and definitions

For the purposes of this Technical Specification, the terms and definitions given in EN 14175-1:2003, EN 14175-3:2003 and EN 14175-6:2006 apply.

4 Installation of fume cupboards

4.1 General

This clause gives recommendations for the installation of fume cupboards, including siting and connection to and interfacing with building ventilation and services systems.

NOTE 1 See EN 14056:2003, Clauses 8, 9 and 11, particularly regarding services accessibility, services input and services outlets.

NOTE 2 Attention is drawn to national regulations, among others in respect of liability during installation of fume cupboards within laboratories.

4.2 Space needs and dimensions

4.2.1 Except where national regulations indicate otherwise, the following spaces should be allowed between fume cupboards and building elements or other equipment.

All dimensions given are for guidance. Alternatives may be appropriate, although their effectiveness should be objectively verified, preferably by means of test methods described in EN 14175-4 and, for VAV fume cupboards, in EN 14175-6.

4.2.2 The distance from the sash to any part of the laboratory frequently used by other personnel in moving from one part of the laboratory or the building to another should be at least 1 m (see Figure 1).

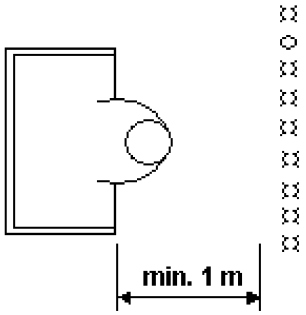

Figure 1 — Distance to the sash

4.2.3 The distance between the sash and a bench top opposite to it and used by the same operator should be at least 1,4 m (see Figure 2).

NOTE With more than one operator this distance may need to be greater.

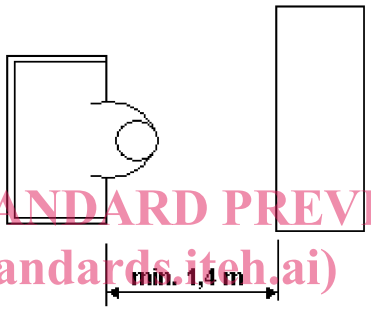

Figure 2 — Distance sash to benchtop

4.2.4 There should be no opposing wall (or other opposing obstruction likely to affect the air flow) within at least 1,4 m of the sash (see Figure 3).

This dimension should be increased to meet larger air flow requirements of certain types or numbers of fume cupboards and can typically approach 2 m.

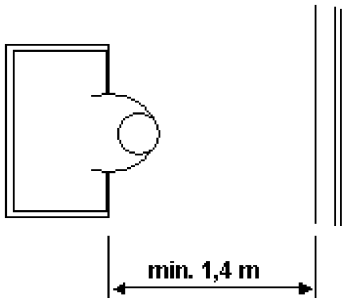

Figure 3 — Distance sash to wall

4.2.5 The interaction between rows of fume cupboards which face each other sash to sash should be carefully considered (see Figure 4).

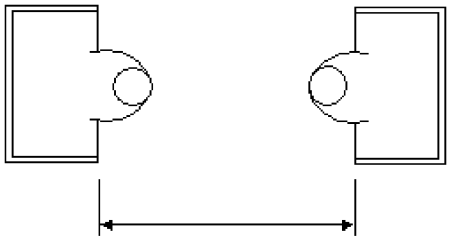

Figure 4 — Distance sash to sash

4.2.6 The impact of room air inlets on the performance of fume cupboards should carefully be considered. Room air flow should not exceed 0,2 m/s at a zone 400 mm from the sash at the positions given in EN 14175-4:2004, 5.8.3. A ceiling height of 3 m is recommended and a height of 2,7 m should be the minimum.

4.2.7 Large isolated obstructions, e. g. an architectural column, at the side of the fume cupboard and projecting beyond the plane of the sash can influence the performance of the fume cupboard (see example in Figure 5).

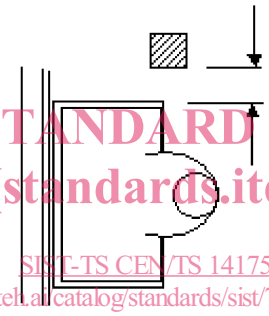

Figure 5 — Distance fume cupboard to column

4.2.8 No doorway frequently used by personnel should be within 1 m of the sash or within 0,3 m of the side of a fume cupboard (see Figure 6 and Figure 7). This recommendation does not apply for doorways exclusively used as emergency exit.

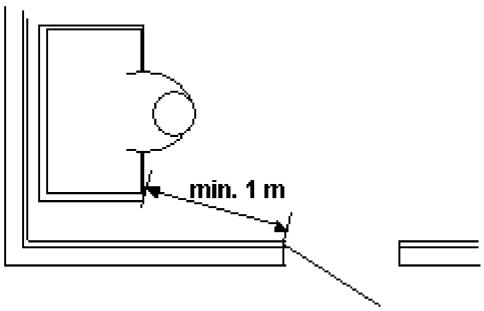

Figure 6 — Distance sash to doorway

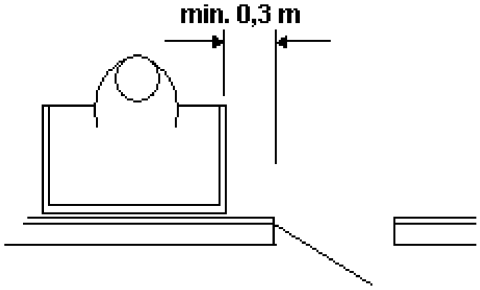

Figure 7 — Distance fume cupboard to doorway

4.3 Fume cupboards and escape routes

The possibility of a fire or explosion in a fume cupboard should always be considered when positioning a fume cupboard in a laboratory. Special attention should be given to the positioning, if national regulations permit a single escape route for laboratory rooms.

4.4 Fume extract and laboratory make-up air systems

The air requirements of the fume cupboards within a laboratory should be given to the designers of the fume extract and air make-up system of the laboratory room or building to enable the optimal function of the fume cupboards.

Requirements for room and building ventilation are given in EN 13779.

4.5 Fume cupboards temporarily out of use

Contamination of laboratory rooms from fume cupboards that are not in use, but which may have previously been contaminated should be avoided. This can be prevented e. g. by having a negative pressure in the ducts relative to the room with the fume cupboards. This negative pressure can be maintained by having a low extract volume flow through the fume cupboards.

Other options are either the complete sealing of the fume cupboards or intensive cleaning and sealing of the fume cupboard's duct system.

5 Maintenance of fume cupboards

5.1 General

This clause gives recommendations for the preventive and corrective maintenance of fume cupboards.

NOTE 1 In the use of laboratory equipment, risk assessment and appropriate precautions are the responsibility of the organization running the laboratory and the laboratory user.

NOTE 2 Attention is drawn to EN 13306, Maintenance terminology, which fixes vocabulary and avoids confusion.

Maintenance is the combination of all technical, administrative and managerial actions, during the life cycle of a fume cupboard intended to retain it in, or restore it to, a state in which it can perform the required function.

Preventive maintenance is carried out at predetermined intervals or according to prescribed criteria and is intended to reduce the probability of failure or the degradation of the functioning of a fume cupboard.

Corrective maintenance is carried out after fault recognition and intended to put a fume cupboard into a state in which it can perform the required function.