



SLOVENSKI STANDARD

SIST EN 14175-1:2003

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Fume cupboards - Part 1: Vocabulary

Fume cupboards - Part 1: Vocabulary

Abzüge - Teil 1: Begriffe

Sorbonnes - Partie 1: Vocabulaire

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English version

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
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SIST EN 14175-1:2003

Foreword

This document (EN 14175-1:2003) 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of an identical text or by endorsement, at the latest by November 2003, and conflicting national standards shall be withdrawn at the latest by November 2003.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 placing on the market of fume cupboards at DOP complying with a national standard in Europe, 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 work place 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)

Attention is drawn to the addition and modification of terms given in prEN 14175-3:2003.

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 objective of this part 1 of EN 14175 is to give definitions for terms relevant to fume cupboards for general use.

The terms and their definitions offer assistance in the construction of fume cupboards, in the drafting of user information as well as in the testing of fume cupboards. They are intended to contribute towards mutual understanding amongst manufacturers, laboratory designers, users and health and safety authorities.

Terms which occur the first time in the definition of another term of this European standard are printed in bold type.

1 Scope

This part 1 of EN 14175 provides terms and definitions for fume cupboards (see 3.1). Corresponding terms in eight European languages are given in the normative annex A.

For safety and performance requirements of fume cupboards EN 14175-2 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 devices used as animal accommodation.

2 Normative references

<https://standards.iteh.ai/catalog/standards/sist/d66745e4-7e7e-4734-88ee-5ea30ef028d4/sist-en-14175-1-2003>

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).

3 Types of fume cupboards

3.1 fume cupboards

protective device to be ventilated by an induced flow of air through an adjustable working opening

- with an enclosure designed to limit the spread of airborne contaminants to operators and other personnel outside the device,
- offering a degree of mechanical protection, and
- providing for the controlled release of airborne contaminants

NOTE A fume cupboard is a ventilated enclosure complying with the requirements specified in EN 14175-2.

3.2**bench type fume cupboard**

fume cupboard where the **work surface** is a minimum of 720 mm above the floor level

3.3**low level fume cupboard**

fume cupboard where the work surface is between floor level and 720 mm

3.4**walk-in fume cupboard**

fume cupboard where the work surface is at floor level or below

3.5**variable air volume (VAV) fume cupboard**

fume cupboard that provides a variable **extract volume flow rate** depending on the **sash opening**

3.6**recirculatory filtration fume cupboard**

protective device able, by trapping specified pollutants, to exhaust room air back to the room

4 Parts of fume cupboards**4.1****sash**

adjustable protective screen between the operator and the **workspace**

4.2**multiple sashes**

two or more screens arranged to operate in parallel within the **free area of opening** of the fume cupboard

4.3**combination sashes**

screen providing both vertical and horizontal adjustment within the free area of the fume cupboard opening

NOTE The most common form is a suspended vertically opening frame incorporating horizontal tracks within the frame to accommodate multiple horizontal transparent screens; these can be adjusted independently of the vertical position of the opening frame.

4.4**work surface**

upper surface of the platform or slab forming the base of the fume cupboard's **workspace**

4.5**baffle**

panel or panels located within the fume cupboard which aids in distributing the air moving into and through the fume cupboard

4.6**services**

drainage and supplies of illumination, electricity, water, vacuum, compressed air and other gases and liquids

5 Design of fume cupboards**5.1****overall width of fume cupboard**

distance measured horizontally between the two outer vertical side faces of the fume cupboard

5.2

overall depth of fume cupboard

distance measured horizontally from the foremost front vertical face of the fume cupboard to the furthest vertical feature of the fume cupboard.

NOTE Any service control or device affixed to the front of the fume cupboard and forming part of the fume cupboard is used as the measuring point for the foremost front vertical face of the fume cupboard.

5.3

overall height of fume cupboard

distance measured vertically from the underside of the lowest horizontal surface of the fume cupboard to the uppermost horizontal surface of the fume cupboard.

NOTE Any device forming part of the fume cupboard's structure extending above and/or below the main body of the fume cupboard (such as the sash glazing and/or its track mechanism), is used as the measuring point for the lowest and uppermost horizontal surface of the fume cupboard.

5.4

plane of sash

plane in which the sash moves

5.5

sash opening

distance in the direction of sash movement between the boundaries of the opening

NOTE If airfoils are provided, they are taken as boundaries.

5.6

area of opening

area limited by the two vertical and horizontal sides of the clear opening into the fume cupboard's **workspace** located in the plane of sash

NOTE The depth or height of any recessed track for operation of the sash is not included in the area of the opening.

5.7

operational sash opening

variable opening up to a position to which the sash could be opened during use of the fume cupboard and where a stop device limits further opening unless deliberately overridden

5.8

minimum sash opening

minimum opening to which the sash could be closed

5.9

maximum sash opening

maximum opening to which the sash could be opened when stop devices, limiting height in operational sash opening, are overridden

5.10

area of the sash opening

free area of the openings in the plane of the sash

5.11

clearance between multiple sashes

free distance between overlapping sliding sashes

5.12

workplace

room, laboratory or building where the fume cupboard is installed and where people work

5.13**workspace**

interior of the fume cupboard bounded by the internal planes of work surface, sash(es), rear, side and top walls (or baffles)

5.14**height of work surface**

distance measured from the floor level to the upper surface of the fume cupboard work surface

5.15**bypass**

constructional arrangement other than leakages that allows room air to flow into a fume cupboard by a route other than through the sash opening

6 Air flow of fume cupboards**6.1****extract system**

all ductwork and associated equipment installed between the point of connection to the fume cupboard and the point of discharge

6.2**extract volume flow rate**

volume of air extracted per unit time from the fume cupboard

6.3**extract air**

air extracted from the fume cupboard(s)

6.4**room extract air**

air extracted from the room by means other than fume cupboard(s)

6.5**make-up air**

air supplied to the room that replaces the air extracted from the room

6.6**direct make-up air**

air taken from outside of the room and fed directly to the fume cupboard

6.7**auxiliary air input**

air added into the fume cupboard from an auxiliary air system that is taken from the room and intended to improve performance rather than to partly replace the room make-up air

7 Testing of fume cupboards**7.1****containment**

capability of a fume cupboard to retain airborne contaminants within the work space

7.2**robustness**

capability of a fume cupboard to maintain containment during external front disturbances

7.3

air exchange efficiency

capability of a fume cupboard to remove airborne contaminants efficiently from the work space

7.4

pressure drop

static pressure of a fume cupboard at the point of connection to the extract system measured with respect to the static pressure of the room

7.5

face velocity

velocity of air passing through the area of the sash opening

7.6

spatial average velocity

arithmetic mean of local mean velocities

7.7

inner measurement plane

plane of the sash at the type test sash opening bounded

- at the top by the lowest point of the upper edge of the type test sash opening in the plane of the sash
- and at the bottom by the uppermost point of the lower edge of the opening
- and at the sides by the side edges of the opening

7.8

outer measurement plane

plane which is 50 mm out from and parallel to the plane of sash at the type test sash opening

NOTE It is bounded at the top by a horizontal line 100 mm above the upper edge of the type test sash opening, at the bottom by another horizontal line 100 mm below the lower edge of the opening and at the sides by the side edges of the opening.

7.9

instantaneous value

time-varying value occurring at a given time

7.10

maximum instantaneous value

maximum value of instantaneous value

7.11

time constant

time required to obtain a response of 63 % to a step change

NOTE See EN 13182.

7.12

type

specimen of a design manufactured with the characteristics intended for series production

7.13

type testing

conformity testing on the basis of one or more specimens of product representative of the production

NOTE See EN 45020.

Annex A (normative)

Multilingual list of terms

Clause	English	French	German
3.1	Fume cupboard	Sorbonne	Abzug
3.2	Bench type fume cupboard	Sorbonne sur paillasse	Tischabzug
3.3	Low level fume cupboard	Sorbonne basse	Tiefabzug
3.4	Walk-in fume cupboard	Sorbonne accessible de plain pied	begehbarer Abzug
3.5	Variable air volume (VAV) fume cupboard	Sorbonne à débit d'air variable	volumenstromgeregelter Abzug
3.6	Recirculatory filtration fume cupboard	Sorbonne à recirculation	Absaugbox mit Luftrückführung
4.1	Sash	Façade mobile	Frontschieber
4.2	Multiple sashes	Façade mobiles multiples	mehrteiliger Frontschieber
4.3	Combination sashes	Façade mobiles combinées	horizontal und vertikal verschiebbarer Frontschieber
4.4	Work surface	Plan de travail	Arbeitsfläche
4.5	Baffle	Défecteur	Prallplatte
4.6	Services	Alimentation	Medienversorgung
5.1	Overall width of fume cupboard	Largeur hors-tout de la sorbonne	Breite des Abzuges über alles
5.2	Overall depth of fume cupboard	Profondeur hors-tout de la sorbonne	Tiefe des Abzuges über alles
5.3	Overall height of fume cupboard	Hauteur hors-tout de la sorbonne	Höhe des Abzuges über alles
5.4	Plane of sash	Plan de façade mobile	Frontschieberebene
5.5	Sash opening	Ouverture de façade mobile	Frontschieberöffnung
5.6	Area of opening	Zone d'ouverture	Öffnungsfläche
5.7	Operational sash opening	Ouverture de travail de la façade mobile	variable Arbeitsöffnung
5.8	Minimum sash opening	Ouverture minimale de la façade mobile	kleinste Frontschieberöffnung
5.9	Maximum sash opening	Ouverture maximale de la façade mobile	größte Frontschieberöffnung
5.10	Area of the sash opening	Zone d'ouverture de la façade mobile	Fläche der Frontschieberöffnung
5.11	Clearance between multiple sashes	Jeu entre les façade multiples	Abstand zwischen mehrteiligen Frontschiebern
5.12	Workplace	Lieu de travail	Arbeitsplatz
5.13	Workspace	Espace de travail	Abzugsinnenraum
5.14	Height of work surface	Hauteur du plan de travail	Höhe der Arbeitsfläche
5.15	Bypass	Bypass	Bypass
6.1	Extract system	Système d'évacuation	Abluftanlage
6.2	Extract volume flow rate	Débit d'air extrait	Abluftvolumenstrom
6.3	Extract air	Air extrait	Abluft
6.4	Room extract air	Air de la pièce extrait	Raumabluft
6.5	Make-up air	Air de compensation	Raumzuluft
6.6	Direct make-up air	Air auxiliaire externe	direkte Abzugszuluft
6.7	Auxiliary air input	Entrée d'air auxiliaire	Zuluftanschluss
7.1	Containment	Confinement	Rückhaltevermögen
7.2	Robustness	Robustesse	Robustheit
7.3	Air exchange efficiency	Efficacité de renouvellement d'air	Luftaustauschvermögen
7.4	Pressure drop	Perte de charge	Druckverlust (statisch)
7.5	Face velocity	Vitesse d'air frontale	Einströmgeschwindigkeit
7.6	Spatial average velocity	Vitesse d'air moyenne	mittlere Einströmgeschwindigkeit
7.7	Inner measurement plane	Plan de mesure intérieur	innere Messebene
7.8	Outer measurement plane	Plan de mesure extérieur	äußere Messebene
7.9	Instantaneous value	Valeur instantanée	Schwankungswert
7.10	Maximum instantaneous value	Valeur instantanée maximale	größter Schwankungswert
7.11	Time constant	Constante de temps	Zeitkonstante
7.12	Type	Type	Baumuster
7.13	Type testing	Essais de type	Baumusterprüfung

Clause	English	Italian	Spanish
3.1	Fume cupboard	Cappa chimica	Vitrina de gases
3.2	Bench type fume cupboard	Cappa chimica da banco	Vitrina de gases con superficie alta de trabajo
3.3	Low level fume cupboard	Cappa per distillazione	Vitrina de gases con superficie baja de trabajo
3.4	Walk-in fume cupboard	Cappa 'walk in'	Vitrina de gases de acceso directo
3.5	Variable air volume (VAV) fume cupboard	Cappa con VAV (Variatore automatica di portata)	Vitrina de gases de volumen de aire variable (VAV)
3.6	Recirculatory filtration fume cupboard	Cappa chimica a filtrazione	Vitrina de gases de recirculación sin conducto
4.1	Sash	Saliscendi frontale	Guillotina
4.2	Multiple sashes	Saliscendi multiplo	Guillotinas multiples
4.3	Combination sashes	Combinazione di saliscendi	Guillotinas combinadas
4.4	Work surface	Superficie di lavoro	Superficie de trabajo
4.5	Baffle	Deflettore	Deflector
4.6	Services	Servizi	Servicios
5.1	Overall width of fume cupboard	Larghezza esterna della cappa	Anchura total de la vitrina de gases
5.2	Overall depth of fume cupboard	Profondità esterna della cappa	Profundidad total de la vitrina de gases
5.3	Overall height of fume cupboard	Altezza esterna della cappa	Altura total de la vitrina de gases
5.4	Plane of sash	Piano del saliscendi	Plano de la guillotina
5.5	Sash opening	Apertura del saliscendi	Apertura de guillotina
5.6	Area of opening	Area dell'apertura frontale	Área de la apertura
5.7	Operational sash opening	Apertura operativa del saliscendi	Apertura operacional de guillotina
5.8	Minimum sash opening	Apertura minima del saliscendi	Apertura mínima de guillotina
5.9	Maximum sash opening	Apertura massima del saliscendi	Apertura máxima de guillotina
5.10	Area of the sash opening	Area di apertura del saliscendi	Área de la apertura de guillotina
5.11	Clearance between multiple sashes	Distanza tra saliscendi multipli	Distancia entre guillotinas múltiples
5.12	Workplace	Posto di lavoro	Lugar de trabajo
5.13	Workspace	Spazio di lavoro	Zona de trabajo
5.14	Height of work surface	Altezza del piano di lavoro	Altura de la superficie de trabajo
5.15	Bypass	Bypass	Bypass
6.1	Extract system	Sistema di estrazione	Sistema de extracción
6.2	Extract volume flow rate	Flusso del volume d'aria aspirata	Caudal volumétrico de extracción
6.3	Extract air	Aria estratta	Aire de extracción
6.4	Room extract air	Aria aspirata alla stanza	Aire de extracción de la sala
6.5	Make-up air	Ricambio d'aria	Aire de compensación
6.6	Direct make-up air	Ricambio d'aria diretta	Aire de compensación directa
6.7	Auxiliary air input	Entrata d'aria supplementare	Entrada auxiliar de aire
7.1	Containment	Contenimento	Contención
7.2	Robustness	Robustezza	Robustez
7.3	Air exchange efficiency	Efficienza del ricambio d'aria	Eficiencia del intercambio de aire
7.4	Pressure drop	Caduta di pressione	Pérdida de presión
7.5	Face velocity	Velocità di superficie	Velocidad frontal
7.6	Spatial average velocity	Velocità media	Velocidad media
7.7	Inner measurement plane	Piano di misurazione interno	Plano de medida interno
7.8	Outer measurement plane	Piano di misurazione esterno	Plano de medida esterno
7.9	Instantaneous value	Valore istantaneo	Valor instantáneo
7.10	Maximum instantaneous value	Valore istantaneo massimo	Valor instantáneo máximo
7.11	Time constant	Costante temporanea	Constante de tiempo
7.12	Type	Tipo	Tipo
7.13	Type test	Prova del tipo	Ensayo de tipo