



SLOVENSKI STANDARD
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Oprema za komercialne kuhinje - Sestavni deli za prezračevanje v komercialnih kuhinjah - 8. del: Napeljava za čiščenje kuhinjskih hlapov - Zahteve in preskušanje

Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 8: Installations for treatment of cooking fumes - Requirements and testing

Großküchengeräte - Einrichtungen zur Be- und Entlüftung von gewerblichen Küchen - Teil 8: Anlagen zur Aerosol- und Aerosolnachbehandlung - Anforderungen und Prüfung

Équipement pour cuisines professionnelles - Éléments de ventilation pour cuisines professionnelles - Partie 8: Installations de traitement des fumées de cuisson - Exigences et essais

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Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 8: Installations for treatment of cooking fumes - Requirements and testing

Équipement pour cuisines professionnelles - Éléments de
ventilation pour cuisines professionnelles - Partie 8:
Installations de traitement des fumées de cuisson -
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von gewerblichen Küchen - Teil 8: Anlagen zur Aerosol-
und Aerosolnachbehandlung - Anforderungen und
Prüfung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 156.

If this draft becomes a European Standard, 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN 16282-8:2011) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

The activities of CEN/TC 156, WG 14, cover the calculation of the air volume and the design and testing of major components of ventilation equipment for commercial kitchens.

Specific installations for the treatment of cooking fumes are contained in individual appendices of this standard:

Annex A: UV installations for the treatment of cooking fumes

Annex B: Electrostatic installations for the treatment of cooking fumes

Annex C: Water spray equipment for the treatment of cooking fumes

Annex D: Treatment of microbiological cooking fumes

Annex E: Catalytic Photo-Oxidation installation for the treatment of cooking fumes

The appendices are structured as an alteration or supplement to the individual sections of the core standard. A.5.1 altered/supplemented, i.e. 5.1.

The structure of the standard series is as follows:

prEN 16282 Equipment for commercial kitchens – Components for ventilation in commercial kitchens

- **Part 1: General requirements including calculation method**
- **Part 2: Kitchen ventilation hoods; Design and safety requirements**
- **Part 3: Kitchen ventilation ceilings; Design and safety requirements**
- **Part 4: Outlets; Design and safety requirements**
- **Part 5: Air ducts**
- **Part 6: Aerosol separators**
- **Part 7: Installation and use of fixed fire suppression systems**
- **Part 9: Ventilation of buildings – capture and containment performance of extraction systems for commercial kitchen – test methods**

1 Scope

This standard applies to installations designed for the treatment of cooking fumes in kitchens and areas used for processing foodstuffs intended for commercial use from their nature and finish. These installations are used behind separators according EN Kitchen ventilation-6. It does not apply to household kitchens.

This standard stipulates the requirements covering the construction and operation, including the technical safety, ergonomic and hygienic features and their testing.

Unless otherwise specified, the requirements of this standard should be checked by way of inspection and/or measurement.

Additional or alternative national regulations converting installation, appliance requirements and inspection, maintenance and operation have to be complied with.

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.

prEN 16282-1, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 1: Design and safety requirements*

prEN 16282-2, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 2: Kitchen ventilation hoods, Design and safety requirements*

prEN 16282-3, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 3: Kitchen ventilation ceilings, Design and safety requirements*

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prEN 16282-4, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 4: Air inlets and outlets – Design and safety requirements*

prEN 16282-5, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 5: Air duct – Design and dimensioning*

prEN 16282-6, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 6: Aerosol separators; Design and safety requirements*

prEN 16282-7, *Equipment for commercial kitchens – Components for ventilation in commercial kitchens – Part 7: Installation and use of fixed fire suppression systems*

EN 954-1, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design*

EN 1088, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection*

EN 10088-1, *Stainless steels - Part 1: List of stainless steels*

EN 60204-1, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements*

EN 60335-1, *Household and similar electrical appliances - Safety - Part 1: General requirements*

EN 60529, *Degrees of protection provided by enclosures (IP code)*

EN 61140, *Protection against electric shock - Common aspects for installation and equipment*

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EN 60529, *Degrees of protection provided by enclosures (IP-Code)*

EN ISO 3274, *Geometric product specifications (GPS) – Surface texture: profile method – nominal characteristics of contact (stylus) instruments*

EN ISO 4287, *Geometric product specifications (GPS) – Surface texture: profile method – terms, definitions and surface texture parameters*

EN ISO 4288, *Geometric product specification (GPS) – Surface texture: profile method – rules and procedures for the assessment of surface texture*

EN ISO 13565-1, *Geometric product specifications (GPS) – Surface texture: profile method - surfaces having stratified functional properties - Part 1: Filtering and general measurement conditions*

EN ISO 13565-2, *Geometric product specifications (GPS) – Surface texture: profile method - surfaces having stratified functional properties - Part 2: Height characterisation using the linear material ratio curve*

Regulation 1935/2004/EC, *Materials and articles intended to come into contact with food and repealing Directives 80/590/EEC and 89/109/EEC*

DIN VDE 0100 (VDE 0100), *Requirements for the set-up of power installations with nominal voltages up to 1000 V.*

Standards in the series DIN VDE 0108 (VDE 0108), *High voltage current installations and safety current supply in building facilities for gatherings of people*

BGV A3 (formerly VBG 4), *Accident prevention regulations – electrical installations and equipment*

BGV A8 (formerly VBG 125), *Accident prevention regulation – safety and health protection markings in the workplace*

BimSchG, *Act governing the protection against the damaging environmental effect caused by air pollution, noise, vibrations and similar*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

- 3.1 kitchen**
rooms and parts of a building in which food is stored, meals are prepared, distracted out and distributed as well as where crockery and appliances are cleaned
- 3.2 collection area**
an open bottomed area situated in front of the extractor(s) serving to collect and buffer the rising vapour
- 3.3 outgoing air area**
space enclosed on top and laterally situated behind the extractor(s) which is connected with the outgoing air duct
- 3.4 cooking fume separator/extractor**
device for the efficient separation of airborne solid or liquid particles

NOTE It is based on the effect of forces (mechanical forces or electrical field forces) that deflect the particles out of the airflow.

3.5 filter

special structural shape of storing separators which consist of an ordered and/or disordered structure of many isolated fibres/wires (e.g. knitted filters) or porous surfaces/bodies (e.g. active carbon)

3.6 cooking fumes

extracted cooking fumes

NOTE In this standard the fumes generated by the fat/oil/water mixture.

3.7 installation of devices for the treatment of cooking fumes

component with cooking fume treatment device without housing for installation behind the extractor within the hood/ceiling

3.8 external devices for the treatment of cooking fumes

housing with integrated cooking fume device for installation between hood/ceiling and outlet air duct or in the air duct

4 Designations iTeh STANDARD PREVIEW

Cooking fume devices and their designation are shown in table 1.

Table 1 — Designation for Cooking Fume Treatment Devices

Design	Name	EN number	Feature
Installation of UV installations for the treatment of cooking fumes	Device for the treatment of cooking fumes	EN xxx	-H1
External UV installations for the treatment of cooking fumes	Device for the treatment of cooking fumes	EN xxx	-H2
Corona plasma device for the treatment of cooking fumes	Device for the treatment of cooking fumes	EN xxx	-H3
Water spray device	Device for the treatment of cooking fumes	EN xxx	-H4
Microbiological cooking fume treatment installations	Device for the treatment of cooking fumes	EN xxx	-H5
Catalytic photo-oxidation installation	Device for the treatment of cooking fumes	EN xxx	-H6

EXAMPLE for an external UV device for the treatment of cooking fumes

Components for ventilation EN xxx-H2

5 Construction and Function

5.1 General remarks

Insofar as nothing to the contrary is stipulated the requirements are checked by inspection and/or measurement.

Extractor which is arrayed in front of or behind the component for ventilation must fulfil at least Sections 5, 6 and 7 of prEN 16282-6.

NOTE A standard governing extractors is in preparation.

5.2 Materials

Manufacturers have to use the materials shown in table 2:

Table 2 — Materials

Component/ part	Material	Surface
Fittings, mounts for the housing of the external component for ventilation	Chrome-nickel-steel steel plastic	galvanised

Stainless steel, material No. 1, 4301 as per EN 10088-1 or higher quality stainless steel is to be used.

Surfaces of stainless steel are permitted to display a surface roughness Ra of 1.1 µm at the most measured according to EN ISO 3274, EN ISO 4287, EN ISO 4288, EN ISO 13565-1 and EN ISO 13565-2. The surface is to be manufactured to produce a harmonised surface appearance.

6 Technical Safety Requirements

6.1 General remarks

Insofar as nothing to the contrary is stipulated the requirements are checked by inspection and/or measurement.

The shape and dimensions of the components along with the quality of the respective materials must ensure that components for ventilation and their accessories are used as intended and with the resulting mechanical, chemical and thermal demands so that they are operated in permanent safety in the prescribed installation position given regular maintenance and cleaning

6.2 Suspension of external ventilation installations

Suspension brackets and fixings of external components for ventilation are to be designed using means of mounts to load-bearing building parts as approved by building authorities. In this the individual fitting situation (composition of the wall / ceiling) must be taken into account. The manufacturer must supply set-up instructions that take account of the different building situations.

If the fixtures or threaded rods of a different material to the housing material are used (e.g. galvanised steel), the bushings or connections with the housing material are to be covered with covers made of the same material as the housing.

If mounting unavoidable brings material pairs involving metals that form a galvanic element together the contact surfaces are to be isolated with separating layers.

6.3 Electrical equipment

The type of protection of the electrical components must be at least IP 54, preferably IP65 as per EN 60529.

Electrical installations and equipment must comply with the generally recognised electrical principles. These are deemed as observed if the following standards

- DIN VDE 0100 (VDE 0100) "Protection against high voltage installations with nominal voltage of up to 1000 V",
- DIN VDE 0108 (VDE 0108) "High voltage installations with safety voltage supply in public buildings",
- EN 60335-1, Household and similar electrical appliances: Part 1: General requirements",
- EN 60204-1, "Safety of machinery – electrical equipment of machines –Part 1: General requirements",
- EN 61140, Protection against electric shock - Common aspects for installation and equipment
- BGV A3 "Electrical installations and equipment"

are fulfilled.

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7 Ergonomic Requirements and Testing

The ergonomic aspects of 8.2 and 9 are to be observed

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8 Hygienic Requirements

8.1 General Remarks

Insofar as nothing to the contrary is stipulated the requirements are checked by inspection and/or measurement.

8.2 General hygienic requirements

All materials coming into contact with foodstuffs shall be free of contaminants in accordance with the national regulation and regulation 1935/2004/EC.

The cooking fume treatment installation must be easy to reach for the purposes of maintenance and cleaning work.

9 Instructions

9.1 Installation instructions

Installation instructions in the appreciate national language are to be enclosed for assembly with each device.

They shall be kept brief and contain all the necessary information for installation and maintenance in an easy-to-understand way. The installation instructions shall at least contain the following information: