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Oprema za profesionalne kuhinje - Sestavni deli za prezračevanje profesionalnih kuhinj - 1. del: Splošne zahteve, vključno z metodo za izračun

Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 1: General requirements including calculation method

Einrichtungen in gewerblichen Küchen - Elemente zur Be- und Entlüftung - Teil 1: Allgemeine Anforderungen einschließlich Berechnungsmethoden

Équipement pour cuisines professionnelles - Éléments de ventilation pour cuisines professionnelles - Partie 1 : Exigences générales et méthode de calcul

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SIST EN 16282-1:2026

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16282-1

July 2026

ICS 97.040.99

Supersedes EN 16282-1:2017

English Version

**Equipment for commercial kitchens - Components for
ventilation in commercial kitchens - Part 1: General
requirements including calculation method**

Équipement pour cuisines professionnelles - Éléments
de ventilation pour cuisines professionnelles - Partie 1
: Exigences générales et méthode de calcul

Einrichtungen in gewerblichen Küchen - Elemente zur
Be- und Entlüftung - Teil 1: Allgemeine Anforderungen
einschließlich Berechnungsmethoden

This European Standard was approved by CEN on 13 April 2026.

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EN 16282-1:2026 (E)

European foreword

This document (EN 16282-1:2026) 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of an identical text or by endorsement, at the latest by January 2027, and conflicting national standards shall be withdrawn at the latest by January 2027.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 16282-1:2017.

EN 16282-1:2026 includes the following significant technical changes with respect to EN 16282-1:2017:

- General editorial improvement and clarifications throughout the document;
- Adding requirements for small kitchens under 25 kW in 6.1;
- 7.5 Revision of entire subclause;
- 8.2.2 modification of Table 2;
- 9.3.3 update of reference;
- Table A.1, deletion of restricted operating mode and revision/correction of values.

A list of all parts in the EN 16282 series, published under the general title Equipment for commercial kitchens — Components for ventilation in commercial kitchens can be found on the CEN website.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

Ventilation of commercial kitchens is a very specialized area of building ventilation. Cooking processes generate chemical pollutants (e.g. nitrosamines, formaldehyde, acrolein, carbon monoxide in gas appliances) and physical pollutants (odours, moisture, vapours, heat radiation). In addition, humid, greasy air can promote germs, cause mould and structural damage, and grease deposits can pose a fire hazard. Therefore, rapid, efficient removal of contaminated air and supply of fresh air is necessary. Efficient ventilation of commercial kitchens is therefore essential for the protection and safety of personnel and the building structure.

The EN 16282 series comprises several documents that specifically cover ventilation of commercial kitchens. The documents were developed to provide a common technical solution for the design, construction, operation and testing of ventilation systems in commercial kitchens and to systematically consider safety, hygiene, ergonomics, and fire protection.

The documents were developed by CEN/TC 156/WG 14 'Ventilation of commercial kitchens' and cover the calculation of the air volume flow rate and the design and testing of major components for ventilation equipment and systems for commercial kitchens.

The structure of the series is as follows:

EN 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: Air inlets and outlets; Design and safety requirements*
- *Part 5: Air duct; Design and dimensioning*
- *Part 6: Aerosol separators; Design and safety requirements*
- *Part 7: Installation and use of fixed fire extinguishing systems*
- *Part 8: Installations for treatment of cooking fumes; Requirements and testing*

EN 16282-1:2026 (E)

1 Scope

This document specifies general requirements, such as ergonomic aspects in relation to ventilation of the kitchen (temperature, air aspects, moisture, noise, etc.), including a method for calculating the airflow rates.

This document is applicable to ventilation systems in commercial kitchens, associated areas and other installations processing foodstuffs intended for commercial use. Kitchens and associated areas are special rooms in which meals are prepared, where tableware and equipment is washed, cleaned and food is stored.

This document does not apply to kitchen ventilation systems in domestic kitchens.

This document does not apply to solid fuel appliances e.g. charcoal grills.

Unless otherwise specified, the requirements of this document are intended to be checked by way of inspection and/or measurement.

NOTE Attention is drawn to the possible existence of additional or alternative national regulations on installation, appliance requirements and inspection, maintenance, operation.

2 Normative references

The following documents in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12792, *Ventilation for buildings - Symbols, terminology and graphical symbols*

EN 15780, *Ventilation for buildings - Ductwork - Cleanliness of ventilation systems*

EN 16282-5:2017, *Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 5: Air duct; Design and dimensioning*

EN 16798-1, *Energy performance of buildings — Ventilation for buildings — Part 1: Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics — Module M1-6*

EN 16798-3:2025, *Energy performance of buildings - Ventilation for buildings - Part 3: For non-residential buildings - Performance requirements for ventilation and room-conditioning systems (Modules M5-1, M5-4)*

EN ISO 7730, *Ergonomics of the thermal environment - Analytical determination and interpretation of thermal comfort using calculation of the PMV and PPD indices and local thermal comfort criteria (ISO 7730)*

3 Terms, definitions, symbols and abbreviated terms

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Terms and definitions

3.1.1

capture velocity

airflow velocity in the free area between the lower part of the hood and the cooking appliance required to extract the aerosols

3.1.2

sensible heat

$\dot{Q}_s$

heat which results in a change in temperature and is therefore measurable

3.1.3

simultaneity factor

φ

ratio of calculated extracted airflow rate of all used appliances simultaneously divided by calculated extracted airflow rate of all appliances

3.1.4

mixed airflow

air which contains two or more streams of air

3.1.5

extract airflow

air discharged from the room by means of negative pressure

3.1.6

aerosol

suspended fine solid or liquid particles in the extract and exhaust air, such as grease, oil, water and smoke

3.1.7

supporting jet

small amount of airflow forced in a specific direction in a connection with an extraction hood or extraction ceiling

3.2 Symbols and abbreviated terms

a	air diffusion factor	-
b	width	m
D	moisture emission	g/(h.kW)
d_{hydr}	hydraulic diameter	m
h_a	appliance height	m
h_d	height above the heat source to the hood/ventilated ceiling	m
k	empirically determined coefficient	$\text{m}^{4/3}\text{W}^{-1/3}\text{h}^{-1}$
L	length	m
q_m	mass flow	kg/h
P	power consumption	kW
ρ	density	kg/m ³