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Fire extinguishing systems in commercial kitchens -  
System design, documentation, and test requirements

## EESTI STANDARDI EESSÕNA

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.08.2021.	Date of Availability of the European standard is 18.08.2021.
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EUROPEAN STANDARD

**EN 17446**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## Fire extinguishing systems in commercial kitchens - System design, documentation, and test requirements

Systèmes d'extinction d'incendie dans les cuisines  
professionnelles - Exigences de calcul et d'essai

Brandbekämpfungsanlagen für Großküchen - Planung  
und Prüfanforderungen

This European Standard was approved by CEN on 4 July 2021.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 17446:2021) has been prepared by Technical Committee CEN/TC 191 “Fixed firefighting systems”, 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of an identical text or by endorsement, at the latest by February 2022, and conflicting national standards shall be withdrawn at the latest by February 2022.

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.

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## Introduction

This document has been developed with the purpose of establishing a common base for fire protection of commercial kitchens (for example, the ones used in restaurants, hotels and hospitals), attending to the appliances usually found in them and independently from the typology of the fire extinguishing system used. This approach focused in hazard protection rather than in the definition of the system, allows achieving a same fire hazard protection level independently from the type of system used.

This document does not consider the requirements for the components that constitute the different types of fire extinguishing systems to which it applies. This circumstance does not reduce the importance to the need that components are designed to ensure functionality and reliability of the system, both for those having existing standards and for those that at this moment do not count with them.

Summarizing, this document offers a full set of requirements to carry out the design, installation and maintenance of fire protection systems for kitchens, together with test protocols applicable to any system, which shall be completed when required, with specific requirements in relationship with the components constituting a system for each typology.

It is important to understand that the protection of the cooking areas only without including the hood, plenum or the air extract ducts may become incomplete because of the possibility of fire causing the ignition of the grease present in them, and to which an extinguishing agent discharge not including these points, will not be capable to extinguish it. The existence of fire in the air extract ducts can cause its propagation to other parts of the building.

## 1 Scope

This document establishes the minimum requirements applicable to the design, installation, functioning, test and maintenance of fixed automatic fire extinguishing systems for kitchen protection that covers the cooking appliances, the hood, the plenum and the air extract ducts. This document also provides requirements for the construction and components performance as applicable to specific types, designs, sizes and arrangements of pre-engineered kitchen fire-extinguishing systems.

This document does not cover household kitchens or industrial food production equipment.

The detailed test procedures for the plenum and air extract ducts are contained in CEN/TS 17749.

Closed plenum type ventilated ceilings designed similar to standard hoods are included in this document. Open plenum type ventilated ceilings are excluded and require an engineered solution for the plenum protection. Protection for appliances below open or closed plenum ventilated ceilings are included.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3-7:2004+A1:2007, *Portable fire extinguishers — Part 7: Characteristics, performance requirements and test methods*

EN 3-8, *Portable fire extinguishers — Part 8: Additional requirements to EN 3-7 for the construction, resistance to pressure and mechanical tests for extinguishers with a maximum allowable pressure equal to or lower than 30 bar*

EN 1860-2, *Appliances, solid fuels and firelighters for barbecuing — Part 2: Barbecue charcoal and barbecue charcoal briquettes — Requirements and test methods*

## 3 Terms and definitions

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

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

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

### 3.1 extinguishing agent

substance whose action causes the extinguishment of a fire

### 3.2 cooking appliance

cooking device that has, or is capable of having, a surface of liquid grease or one in which cooking with grease is involved

EXAMPLE Deep fat fryer, griddle, range, chain-broiler, electric char-broiler, charcoal broiler, mesquite broiler, gas radiant char broiler, wok, tilt skillet/braising pan and similar appliances.

Note 1 to entry: The protected area is limited to the cooking area of the appliance only.