



BSI Standards Publication

**Fire extinguishing systems in commercial
kitchens — System design, documentation,
and test requirements — Fire test
procedures for plenum and ducts**

National foreword

This Published Document is the UK implementation of CEN/TS 17749:2022.

The UK participation in its preparation was entrusted to Technical Committee FSH/18/6, Gaseous Extinguishing Media and Systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

This publication is not to be regarded as a British Standard.

© The British Standards Institution 2022
Published by BSI Standards Limited 2022

ISBN 978 0 539 16854 9

ICS 13.220.20

Compliance with a Published Document cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 July 2022.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

ICS 13.220.20

English Version

**Fire extinguishing systems in commercial kitchens -
System design, documentation, and test requirements -
Fire test procedures for plenum and ducts**

Systèmes d'extinction d'incendie dans les cuisines professionnelles - Conception du système, documentation et exigences d'essai - Modes opératoires d'essais au feu pour le plénum et les conduits

Feuerlöschanlagen in Großküchen - Anforderungen an die Planung, Dokumentation und Prüfung von Anlagen - Brandprüfverfahren für Plenum und Kanäle

This Technical Specification (CEN/TS) was approved by CEN on 31 January 2022 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, 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, Turkey and United Kingdom.



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

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

Contents

Page

European foreword	iii
Introduction	iv
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Air extract duct test - actuation sequence	5
4.1 Adjustment of the exhaust conditions during the test	5
4.2 Test 5	
5 Plenum test actuation sequence	6
5.1 Adjustment of the exhaust conditions during the test	6
5.2 Discharge coverage verification	6
5.3 Test 6	

European foreword

This document (CEN/TS 17749:2022) has been prepared by Technical Committee CEN/TC 191 “Fixed Fire Fighting Systems”, the secretariat of which is held by BSI.

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 is intended to be used in conjunction with EN 17446.

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 announce this Technical Specification: 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, Turkey and the United Kingdom.

Introduction

The purpose of this document is to provide the user with a procedure for conducting the fire testing in the plenum and air extract ducts as specified in EN 17446:2021, Clause 7.4.

This document is intended to allow test authorities and specifiers to gain experience in the application of plenum and air extract ducts tests as specified in EN 17446 and allow a common understanding of the test methods and results obtained from the test.

1 Scope

This document establishes the detailed test procedures for conducting the test on the plenum and air extract ducts.

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 17446:2021, *Fire extinguishing systems in commercial kitchens — System design, documentation, and test requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17446 apply.

ISO and IEC maintain terminological 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/>

4 Air extract duct test - actuation sequence

4.1 Adjustment of the exhaust conditions during the test

Before the start of the actual test, exhaust conditions shall be adjusted according to the type of test to perform:

- a) at the full scale test with natural air exhaustion, the damper is brought to its maximum opening position, so that the outlet of the air extract duct is fully open and is to be kept like this for the whole duration of the testing. Air flow by a blower is permitted and shall be turned off after ignition;
- b) at the full scale test without air exhaustion, proceed as in the previous point but close the air extract duct outlet immediately before system actuation. Air flow by a blower is permitted and shall be turned off after ignition;
- c) at the full scale test with forced air exhaustion by a blower, its position shall be determined so that the air velocity is between 150 m/min to 300 m/min inside the air extract duct. The air extract duct outlet shall be open and the blower shall be working during the whole duration of the test.

4.2 Test

In each test proceed in the same way after the adjustment of the exhaust conditions indicated in the previous Clause and the application of fuel:

The procedure described below is applicable for all three exhaust and damper conditions defined in 5.1. The requirement described there shall be implemented in the process as applicable.

- a) In the case forced air exhaustion is used, start the exhaustion;
- b) Start the deep fat fryer's heat source and wait until fire propagates to filters and plenum;
- c) Ignite the fuel with external sources such as, for example, gas burners, propane or butane burners, hand-held torches;