BS ISO 15371:2024

BSI Standards Publication

Ships and marine technology — Fire-extinguishing systems for protection of galley cooking equipment

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National foreword

This British Standard is the UK implementation of ISO 15371:2024. It supersedes BS ISO 15371:2015, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SME/32, Ships and marine technology - Steering committee.

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

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Published by BSI Standards Limited 2024

ISBN 978 0 539 18048 0

ICS 13.220.10; 47.020.99

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2024.

Amendments/corrigenda issued since publication

Date	Text affected

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International Standard

ISO 15371

Fourth edition
2024-06

Ships and marine technology — Fire-extinguishing systems for protection of galley cooking equipment

Navires et technologie maritime — Systèmes d'extinction d'incendie des équipements de cuisine

Reference number
ISO 15371:2024(en)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Maritime safety*.

This fourth edition cancels and replaces the third edition (ISO 15371:2015), which has been technically revised.

The main changes are as follows:

— Clause 2 and Bibliography have been added;

— Clause 3, 4.4 and 5.4 have been modified.

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Introduction

This document provides the marine industry with a means for evaluating the effectiveness of fire-extinguishing systems for a variety of grease-laden cooking equipment that can be found in a galley. This document is also referenced in the International Maritime Organization (IMO) International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended[1]. This document aims to provide organizations who are party to SOLAS with a means of ensuring that deep-fat cooking equipment conforms to the fire suppression requirements prescribed in SOLAS.

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Ships and marine technology — Fire-extinguishing systems for protection of galley cooking equipment

1 Scope

This document applies to the design, testing, and operation of pre-engineered fire extinguishing systems that protect galley hoods, ducts, fryers and other grease-laden cooking equipment.

This document provides requirements for the construction and performance of components within pre-engineered fire-extinguishing system units. This document also provides minimum requirements for the testing and evaluation of components.

A product that contains features, characteristics, components, materials or systems that are new or different from those covered by the requirements in this document and that involve a risk of fire, electric shock, or injury to persons, can be evaluated using the appropriate additional component and end product testing.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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
auxiliary equipment
equipment used in conjunction with the extinguishing system

Note 1 to entry: Auxiliary equipment can be used to shut down power, fuel supply or ventilation to the hazard area being protected or to initiate alarm or signalling devices.

3.2
cooking equipment
cooking device that has, or is capable of having, a surface of liquid grease or one involving cooking with grease

Note 1 to entry: 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 equipment.

Note 2 to entry: The protected area is limited to the cooking area of the equipment only.

3.3
cooking grease
vegetable shortening incorporating an antifoaming agent

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3.4
cylinder valve assembly
container that incorporates a valve and that provides storage for the extinguishing agent and expellant gas until the valve is actuated

Note 1 to entry: For expellant-gas carriage operated units, this assembly includes the extinguishing agent storage container and cartridge mechanism.

3.5
deep fat fryer
commercially available cooking equipment in which cooking grease in depth are used

3.6
discharge nozzle
device that is used to distribute the extinguishing agent over or into a specific area

3.7
discharge rate
ratio of the quantity of the extinguishing agent discharged from a nozzle to the discharge time (time interval between the first appearance of the extinguishing agent at the nozzle and the time at which the discharge becomes predominantly gaseous or ceases to be measured to within ±1 s)

Note 1 to entry: This rate is expressed in kg/s.

3.8
duct
duct system
continuous enclosed passage for the transmission of air and cooking vapours

3.9
expellant gas
dry nitrogen or other dry gas to facilitate the discharge of extinguishing agent from the cylinder valve assembly

3.10
extinguishing system unit
identified components that can be assembled into a system for the discharge of an extinguishing agent through fixed piping and nozzles for the purpose of extinguishing fires

3.11
gas cartridge
container that provides storage for an expellant gas only

3.12
hood
device provided as part of an exhaust system to direct and capture grease vapours and exhaust gases from a cooking equipment

3.13
indicator
mechanical or electrical device that shows when an extinguishing system or one of its critical components is ready to operate or has already operated

3.14
inspection
visual examination of the system or portion thereof to verify that it appears to be in operating condition and is free of physical damage

3.15
low quality fatty beef steak
beef steak containing 20 % to 30 % fat or gristle, well marbled and uniform in size

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3.16
maintenance
work, including but not limited to repair, replacement and service, performed to ensure that the cooking equipment operates properly

3.17
manual means of actuation
means of system actuation in which a system is discharged by manual means

3.18
manufacturer's installation and maintenance manual
document containing the design, installation and maintenance instructions which is a complementary part of the extinguishing system

3.19
multiple-vat deep fat fryer
multiple electric fryers that are mechanically joined together

Note 1 to entry: Each vat incorporates a separately controlled heating source.

3.20
operating devices
mechanical, electrical or pneumatic devices involved in the operation of a system

3.21
owner's manual
pamphlet containing the manufacturer's recommendations for proper inspection and operation, which is prepared as a complementary part of the extinguishing system

3.22
plenum
volume of enclosed space between the grease filters and the portion of the *hood* (3.12) above the grease filters in a hood and *duct system* (3.8)

3.23
pre-engineered extinguishing system
system that is tested in accordance with the limitations prescribed by the manufacturer for the maximum and minimum pipe lengths, accessories, number of fittings, number and types of nozzles, nozzle placement, types of fire risk and the maximum dimensions, volumes and areas of the equipment, *hoods* (3.12) and *ducts* (3.8) to be protected

Note 1 to entry: The hazards protected by these systems are specifically limited as to type and size by testing on actual fires.

Note 2 to entry: The limitations on hazards that are permitted to be protected by these systems and piping and nozzle configurations are those contained in the *manufacturer's installation and maintenance manual* (3.18).

3.24
cylinder
container that provides storage for the expellant gas and extinguishing agent, or the extinguishing agent only when the expellant *gas cartridge* (3.11) is operated

3.25
product
fire-extinguishing system or any part thereof covered by the requirements of this document

3.26
shut-off device
device that operates simultaneously with the extinguishing system to shut off fuel and power to the equipment protected by the system and other equipment required to be shut off upon operation of the system

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