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# 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*



PROOF

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# Contents

## Foreword

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This document was prepared by Technical Committee ISO/TC 8, *Ship 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.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

## 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. ItThis document is also referenced byin the International Maritime Organization (IMO) International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and provides.[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.

# ~~Ship~~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.

~~NOTE SOLAS chapter II-2 regulation 10.6.4 specifies performance requirements on fire-extinguishing systems for galley cooking equipment.~~

## 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~~ ISO Online browsing platform: available at ~~https://www.iso.org/obp~~https://www.iso.org/obp



— ~~IEC~~ IEC Electropedia: available at ~~https://www.electropedia.org/~~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

~~EXAMPLES:~~ 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 ~~1~~ 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

**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~~,) expressed in kg/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.~~15~~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.~~16~~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.~~17~~15**
**low quality fatty beef steak**
beef steak containing 20 % to 30 % fat or gristle, well marbled and uniform in size

**3.~~18~~16**
**maintenance**
work, including but not limited to repair, replacement and service, performed to ensure that the cooking equipment operates properly

**3.~~19~~17**
**manual means of actuation**
means of system actuation in which a system is discharged by manual means

**3.~~20~~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.~~21~~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.~~22~~20**
**operating devices**
mechanical, electrical or pneumatic devices involved in the operation of a system

**3.~~23~~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.~~24~~22**
**plenum**
volume of enclosed space between the grease filters and the portion of the *hood* ~~(3.12)~~(3.12) above the grease filters in a hood and *duct system* ~~(3.8)~~(3.8)

**3.~~25~~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)~~(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).