BS ISO 15371:2015

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

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

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

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Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
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Foreword

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The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Lifesaving and fire protection*.

This third edition cancels and replaces the second edition (ISO 15371:2015). Subclauses 2.25, 2.26, 4.4.13, and 5.1.1.2 b) have been editorially revised to clarify requirements.

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Introduction

While this International Standard provides the marine industry with a means for evaluating the effectiveness of fire-extinguishing systems for a variety of grease-laden cooking appliances that may be found in a galley, it is also referenced by the International Maritime Organization (IMO) International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and provides organizations who are party to SOLAS with a means of ensuring conformance of deep-fat cooking equipment with the fire suppression requirements prescribed in SOLAS.

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INTERNATIONAL STANDARD ISO 15371:2015(E)

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

1 Scope

This International Standard applies to the design, testing, and operation of pre-engineered fire extinguishing systems to protect the galley hoods, ducts, fryers and other grease-laden appliances.

Pre-engineered fire-extinguishing system units are also required to comply with requirements for the construction and components performance as applicable to specific types, designs, sizes and arrangements. This International Standard 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 International Standard and that involve a risk of fire, electric shock, or injury to persons, shall be evaluated using the appropriate additional component and end product testing.

NOTE Only deep-fat cooking equipment, among the types of galley cooking equipment covered by this International Standard, are required by SOLAS chapter II-2 Regulation 10.6.4 to have fixed fire-extinguishing systems.

2 Terms and definitions

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

2.1
auxiliary equipment
equipment used in conjunction with the extinguishing system

EXAMPLE Auxiliary equipment can be used to shut down power, fuel or ventilation to the hazard area being protected or to initiate alarm or signalling devices.

2.2
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.

2.3
cooking grease
grease
vegetable shortening incorporating an antifoaming agent

2.4
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 cartridge-operated units, this assembly includes the extinguishing-agent storage container and cartridge mechanism.

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2.5
deep fat fryer
commercially available electric cooking appliance in which cooking greases in depth are used

2.6
discharge nozzle
device that is used to distribute the extinguishing agent over or into a specific area

2.7
discharge rate
ratio of the quantity of the extinguishing agent discharged from a nozzle to the discharge time measured to within ±1 s, expressed in kg/s

2.8
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

2.9
duct
duct system
continuous enclosed passageway for the transmission of air and cooking vapours

2.10
expellent gas
nitrogen air or other gas used to facilitate the discharge of the extinguishing agent

2.11
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

2.12
gas cartridge
container that provides storage for an expellant gas only

2.13
grease filter
component of a grease vapour removal system that deflects the air and vapours passing through it in such a manner as to result in the grease vapours concentrating, condensing, or both, for the purpose of grease collection

2.14
hood
device provided as part of an exhaust system to direct and capture grease vapours and exhaust gases from a cooking appliance

2.15
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

2.16
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

2.17
low quality fatty beef steak
beef steak containing 20 % to 30 % fat or gristle, well marbled and uniform in size

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2.18
maintenance
work, including, but not limited to, repair, replacement and service, performed to ensure that the equipment operates properly

2.19
manual means of actuation
means of system actuation in which a system is discharged by manual means

2.20
manufacturer's installation and maintenance manual
document containing the design, installation and maintenance instructions which is prepared and approved as a complimentary part of the extinguishing system

2.21
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.

2.22
operable pressure
pressure developed in a fully charged container conditioned at 21 °C for at least 24 h

2.23
operable pressure range
pressure range corresponding to the pressures in the storage container at the specified minimum and maximum temperatures for which the extinguishing system is intended to be operable

2.24
operating devices
mechanical, electrical or pneumatic devices involved in the operation of a system

2.25
operation
⟨automatic⟩ operation without human intervention

Note 1 to entry: Methods of automatic operation include, but are not limited to, heat, rate of temperature rise, smoke or pressure change.

2.26
operation
⟨manual⟩ operation of a system or its components through human action

2.27
owner's manual
pamphlet containing the manufacturer's recommendations for proper inspection and operation, which is prepared and approved as a complimentary part of the extinguishing system

2.28
plenum
volume of enclosed space between the grease filters and the portion of the hood above the grease filters in a hood and duct system

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2.29
pre-engineered 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 appliances, hoods and ducts 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.

2.30
pressure vessel
pressure cylinder
container that provides storage for the extinguishing agent and expellant gas

2.31
product
fire extinguishing system or any part thereof covered by the requirements of this International Standard

2.32
shut-off device
device that operates simultaneously with the extinguishing system to shut off fuel and power to the appliances protected by the system and other appliances required to be shut off upon operation of the system

2.33
signal
status indication communicated by electrical or other means

2.34
split-vat deep fat fryer
electric fryer that incorporates a divided partition which splits the fryer in sections

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

2.35
tilt skillets
cooking devices which are intended to braise, simmer, sauté, or fry foods

2.36
braising pans
cooking devices which are intended to braise, simmer, sauté, or fry foods

3 Components

3.1 General

Only system components referenced or permitted in the manufacturer's installation and maintenance manual or alternative components that have been approved for use with the specific extinguishing system shall be used.

3.2 Detectors

Detectors shall be approved devices that are capable of detecting fire.

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