



CERTIFICATE OF FIRE APPROVAL

This is to certify that


The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	Kidde - Fenwal Inc.
Address	400 Main Street Ashland MA 01721 United States of America (USA)
Type	FIXED EXTINGUISHING SYSTEM FOR PROTECTION OF DEEP FAT COOKING EQUIPMENT
Description	Fixed Fire Extinguishing System - Type: Kidde Fire Systems "WHDR-125" and "WHDR-260" Wet Chemical System for the Protection of Galley Deep-Fat Cooking Equipment
Specified Standard	ISO 15371 : 2015 SOLAS, Chapter II-2, Regulation 10.6.4.1

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue 30 June 2016 Expiry date 14 June 2017

Certificate No. SAS F160176/M1 Signed 

Sheet No 1 of 4 Name S. Abraham
Surveyor to Lloyd's Register EMEA
A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

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DESIGN APPRAISAL DOCUMENT

Date	30 June 2016	Quote this reference on all future communications	MTES/SFS/TA/FF/SA/WP24458626
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160176/M1

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Danish Institute of Fire and Security Technology, Jernholmen 12, DK-2650 Hvidovre, Denmark, Fire Test Report No: PEO10011A dated 15 October 2015 and Validation Letter PEO10011A dated 29 March 2016.

CONDITIONS OF CERTIFICATION

1. The system has been designed for compliance with SOLAS 2009, Chapter II-2, Regulation 10.6.4.1. and ISO 15371:2015
2. For use on deep fat fryers with a single vat of maximum cooking area 495mm wide x 641mm long = 0.32m². The capacity and arrangement of the spray nozzles is to be verified against the specifications of the deep fat cooking installation and shall be located as denoted in GENERAL NOTES
3. All nozzles must be fitted with a means of preventing the ingress of grease vapours
4. Arrangement drawings and calculations are to be submitted for acceptance in each case where it is proposed to install this system. All principal components of the system are to be identified, with their location in relation to the deep fat cooking installations being indicated
5. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype

PLACE OF PRODUCTION

Kidde-Fenwal, Inc.
400 Main St.
Ashland, MA 01721
United States of America



Saji Abraham
Senior Specialist
Statutory Fire and Safety
Marine Technology and Engineering Services
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).



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GENERAL NOTES

1. The nozzles are to be made of brass or stainless steel and are to be fitted with protective foil seal caps.
2. Maximum surface area of deep fat fryer tested: 495mm wide x 641mm long = 0.317m². [Total appliance area (including drip board): area 495mm wide x 641mm long = 0.317m².
3. Maximum fry tank capacity: 31 litres.
4. Nozzle part no: "87-120012-001", marking "F" with Flow rate 110 ml/s. Minimum and Maximum height of the nozzle above the fryer is 762mm and 1270mm respectively. A single nozzle is to be provided for each vat, located at the centre over the cooking area. The nozzles are to be installed in accordance with Manufacturer's system manual.
5. The system is actuated by a Nitrogen gas cartridge, p/n 87-120043-001, with a working temperature between -17.8 °C and 48.8°C. The agent storage container is pressurised at 21°C = 12.1 bar (175 psig).
6. WHDR-125 system is charged with 5.033 litres of wet chemical agent; WHDR-260 system is charged with 10.068 litres of wet chemical agent. For both systems, the wet chemical agent used is "APC Wet Agent" manufactured by Kidde-Fenwal, USA.
7. Piping shall be made of stainless steel having a minimum grade of 304L, pipe size of 1/2" NPT, with a minimum and maximum pipe length of 4 m and 7.87 m for WHDR-125 system and minimum and maximum pipe length of 4.7 m and 18.4 m for WHDR-260 system.
8. The system pipework including: flexible hoses, pipes, valves and fittings are to be approved by Lloyd's Register, in accordance with Lloyd's Register Rules, Part 5, Chapter 12.
9. Valves and fittings in pressure piping exceeding 7 bar are to be designed and tested to codes of practice recognised by Lloyd's Register, indicating that they can withstand the pressure expected in service, giving regard to their installed location.
10. The storage system containers and associated pressure components are to be designed and tested to codes of practice recognised by Lloyd's Register, indicating that they can withstand the pressure expected in service, giving regard to their installed location.
11. The deep-fat cooking equipment must be fitted with a primary and back-up thermostat with an alarm to alert the operator in the event of failure of either thermostat.
12. Activation of the system must:
 - Shut off power to the Deep-Fat Cooking Equipment being protected by such system.
 - Initiate an audible alarm within the space containing the Deep-Fat Cooking Equipment being protected.
 - Initiate an audible and visual alarm at the continuously manned control station when fitted as part of the automatic sprinkler, fire detection and fire alarm system.
13. The system may be activated either manually or be automatic; heat detectors using glass bulb or fusible link type activation devices manufactured to a suitable standard may be accepted. Any other types of heat detection devices must be separately approved by Lloyd's Register.



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GENERAL NOTES - CONTINUED

12. The controls for manual operation of the fire extinguishing system must be clearly labelled for ready use by the crew.
13. Construction details and constituent components of the system are to be as given in an Installation, Operation and Maintenance Manual, which shall be provided with each extinguishing system unit or made available upon request, in accordance with ISO 15371:2015.
14. On completion of the installation final acceptance of the system is dependent on satisfactory survey and testing in accordance with the manufacturer's design manual.