EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000088R

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Nozzles for deep fat cooking equipment fire extinguishing systems (automatic or manual type)

with type designation(s)
ANSUL R-102 Fire Suppression System

Issued to
Tyco Fire Products, LP
Marinette, WI, USA

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2022/1157,**
item No. MED/3.43. SOLAS 74 as amended, Regulation II-2/1, II-2/10 & X/3, 2000 HSC Code 7, MSC.1/Circ.1433 and ISO 15371:2015

Manufacturers authorised representative
Tyco Building Services Products B.V.
Enschede, Overijssel, Netherlands

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-03-04**.

Issued at **Hamburg** on **2023-03-05**

DNV local unit:
Houston Offshore Services

Approval Engineer:
Helge Bjørnarå

Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Roeder
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

"Ansul R-102"
is a wet chemical fire suppression system for protection of deep fat cooking equipment. The system consists of liquid agent storage tank, pressure cartridges, one nozzle, stainless steel piping and a release system.

The galley protection system should be designed according to SOLAS II-2/10.6.4.1-5. This certificate addresses only item 10.6.4.1. Compliance with the shut-down function has to be verified in each case.

Only the nozzles are type approved by this certificate. Other systems components are subject to case-by-case approval.

Application/Limitation

Approved for use as a fire extinguishing system for galley deep-fat cooking equipment.

The system is composed of the following main components:

Part	Description, material
Gas cartridge LT-30-R	Expellant gas: nitrogen
Regulated release assembly	Mechanical type
Extinguishing agent	ANSULEX Low pH Liquid Fire Suppressant (wet chemical solution), Capacity 11.4 L (3 gal)
Fusible link for automatic actuation	Type: SL, Temperature rating 182 °C
Nozzle	Type: 3N
Piping system	Stainless-steel min. SUS 304, 10 mm (3/8")
Remote manual pull station	Molded red composite

The spray head is to be installed according to the following specifications:

System specifications	
Max. length of piping	12.2 m (max. 9 elbows and 1 tee)
Max. area protected	0.46 x 0.71 m (w x l)
Nozzle height	0.63 - 0.79 m
Nozzle location	Just inside front edge, aimed at centre
Discharge rate	Minimum 0.11 kg/s
Minimum nozzle discharge pressure	6.5 bar

System components, such as pipes and pipe connections as well as welding of pipes are to be certified or inspected in accordance with DNV Rules or equivalent standards acceptable to the Flag State.

The following items are to be submitted for approval for each project:

a. System arrangement plans including location of nozzles, section valves, release stations and supply component(s).
b. Capacity of pressure vessel system.
c. Specification of pipes, supply component(s), and associated components.
d. Shut down of function defined by SOLAS II-2/10.6.4.2-5.
e. ANSUL Part No. 418087-12, R-102 Restaurant Fire Suppression Manual, Rev. 11 from manufacturer.

Installation testing:

- Pressure testing of pipe system to at least 1.5 times maximum working pressure.
- Function testing of the system.
- Testing according to maker's manual.

Periodical testing:

- The periodical testing shall comply with instructions from flag administration, statutory interpretations, and maker's maintenance manual.

Each system is to be supplied with a manual for installation, operation, and maintenance according to ISO 15371:2015, Chapter 6.

Type Examination documentation

Test report No. PEO10007 dated 8 December 2014 from DBI, Hvidovre, Denmark.

ANSUL Part No. 418087-12, R-102 Restaurant Fire Suppression Manual, Rev. 11 from manufacturer.

Nozzle drawing No. 439830 dated 5 June 2013 from the manufacturer.

Tests carried out

Tested according to ISO 15371:2009 and satisfying ISO 15371:2015.

Marking of product

The discharge nozzle is to be marked with nozzle type, whereas the system agent tanks to be marked with the name and address of manufacturer, type designation, and Mark of Conformity.