

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Fire-extinguishing system for protection of galley deep-fat cooking equipment**with type designation(s)
Nobel K-Series - K5, K15, K30

Issued to

Nobel Fire Systems Ltd.
Heywood, Lancashire, United Kingdom

is found to comply with

DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations
DNV GL rules for classification – Ships
DNV GL offshore standards**Application :****Approved for use as a fire extinguishing system for galley deep-fat cooking equipment.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-01-28**This Certificate is valid until **2024-01-27**.for **DNV GL**DNV GL local station: **Manchester**Approval Engineer: **Thorvald Furuseth**

Mårten Schei-Nilsson
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

"Nobel K-Series- K5, K15, K30",

is a low pressure wet chemical liquid fire fighting system, composed of a Nobel K chemical, cylinder, gas generator, burst disc, piping and a stainless steel nozzle.

The galley protection system shall 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.

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
Extinguishing agent		"Nobel K" made of potassium organic and inorganic salts, water and stabilising chemicals
Cylinders	K5	5 litre, Stainless steel 304
	K15	15 litre, Stainless steel 304
	K30	30 litre, Stainless steel 304
Gas Generator		Electrical, stainless steel
Burst Disc and Filter Unit		Stainless steel
Piping	K5	Ø 15 mm stainless steel 304L
	K15	Ø 15-22 mm stainless steel 304L
	K30	Ø 15-22 mm stainless steel 304L
Nozzles	N6, N8, N16 ¹⁾	Spray angle 55°, working height 0.8-1.4 m
	W6, W8, W15 ¹⁾	Spray angle 100°, working height 0.6-0.8 m
Note: 1) For nozzles N6, W6, N8, W8 plenum protection can be applied. For detail specification see manual.		

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

System specifications	
Nozzle height above vat	0.8-1.4 m (N-nozzles), 0.6-0.8 m (W-nozzles)
Position of nozzle ²⁾	One over the protected area
Max. area protected ³⁾	460 mm x 460 mm (0.21 m ²)
Maximum vat dimension ³⁾	550 mm x 382 mm x 340 mm
Operating pressure	3.5-14 bar
Note: 2) One aimed at centre of cooking device, using advised spray angle, pointing at centre of cooking device (see manual for details) 3) Per single nozzle	

System components are to be certified or inspected in accordance with DNV GL Rules.

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

- System arrangement plans including location of nozzle, release stations and cylinders.
- Capacity of pressure vessel system.
- Specification of pipes and associated components;
- Shut down of function defined by SOLAS 2000 II-2/10.6.4.2-5.
- Manual containing operating and maintenance instructions.

Job Id: **262.1-007108-5**
Certificate No: **TAF000013K**

Installation testing:

- Pressure testing of water pipe system to at least 1,5 times maximum working pressure;
- Other tests according to makers manual.

Periodical testing:

- Periodical control and inspection to be in accordance with maker's manual.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

Test report No. 288687 dated 10 June 2014 from BRE Global Ltd., Watford, UK.

Design, Installation & Maintenance Manual No. LPS1223-V3 Rev.6 dated 6 June 2013 from manufacturer.

Tests carried out

Tested according to ISO 15371:2009.

Marking of product

Main components in the system are to be marked with name of manufacturer and type designation.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.