EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00000N6

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment (MED) as amended by directive (EU) 2015/559. This Certificate is issued by DNV GL SE based on the notification of the German Federal Ministry of Transport, Building and Urban Development.

This is to certify:

That the Dry chemical powder extinguishing systems
with type designation(s)
Minimax fixed dry chemical powder fire extinguishing system
Issued to

Minimax GmbH & Co KG

BAD OLDESLOE, Germany

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/3.62 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation II-2/1 and IMO IGC Code 11
Further details of the equipment and conditions for certification are given overleaf.
This Certificate is valid until **2021-07-20**.

Issued at **Hamburg** on **2016-07-21**

DNV GL local station:
Hamburg
Approval Engineer:
Michael Kämpf

Notified Body
No.: **0098**

for **DNV GL SE**

Sven Dudszus
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 Council Directive 96/98/EC, as amended.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment.
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.

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Product description

The Minimax fixed dry chemical powder fire extinguishing system is designed for fighting fires in the on-deck cargo areas of ships carrying liquefied gases in bulk (gas carriers).
The system mainly consists of nitrogen cylinder(s) as propellant gas, piping, valves, pressure regulator, safety valves, gauges, pressure tank for the powder and discharge devices (monitors or hoses with nozzles).
The system has the following main specifications:
Dry chemical powder used in the system: Potassium sulphate of type BC Karate, Rühl, Germany
Powder monitor type: Minimax MX-2000, PN 16, DN 65

MINIMAX Dry Powder Unit of Type P-BC 250-5 Marine with Hose	
Propellant gas	One bottle of nitrogen 67 ltr / 150 bar
Powder tank	255 ltr
Filling volume, dry powder	Max. 250 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	33 m hose (25 mm internal diameter) with powder pistol acc. to dwg. S8-05-03
Min. discharge duration	45 s
Discharge rate achieved in testing	3.7 kg/s
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-81
MINIMAX Dry Powder Unit of Type P-BC 250-5 Marine	
Propellant gas	One bottle of nitrogen 67 ltr / 150 bar
Powder tank	255 ltr
Filling volume, dry powder	Max. 250 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	117.5 m DN 32, and nozzle with 20 mm orifice
Min. discharge duration	45 s
Discharge rate achieved in testing	4.0 kg/s
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-82
MINIMAX Dry Powder Unit of Type P-BC 250-5 Marine (for bunker station)	
Propellant gas	One bottle of nitrogen 67 ltr / 150 bar
Powder tank	255 ltr
Filling volume, dry powder	Max. 250 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	80 m DN 32, and nozzles with 2x16.5 mm orifice
Min. discharge duration	45 s
Discharge rate achieved in testing	5.7 kg/s
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-82

MINIMAX Dry Powder Unit of Type P-BC 600-8 Marine	
Propellant gas	Two bottles of nitrogen, each 67 ltr / 150 bar
Powder tank	600 ltr
Filling volume, dry powder	Max. 600 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	227 m DN 65, and DN 65 monitor with powder pipe and orifice (28 mm)
Min. discharge duration	45 s
Discharge rate achieved in testing	14.8 kg/s
Discharge range achieved in testing	> 10 m
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-83
MINIMAX Dry Powder Unit of Type P-BC 1000-10 Marine	
Propellant gas	Two bottles of nitrogen, each 67 ltr / 150 bar
Powder tank	1000 ltr
Filling volume, dry powder	Max. 1000 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	227 m DN 65, and DN 65 monitor with powder pipe and orifice (28/34 mm)

Min. discharge duration	45 s
Discharge rate achieved in testing	20.3 kg/s with 28 mm nozzle 21 kg/s with 34 mm nozzle
Discharge range achieved in testing	> 20 m
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-84
MINIMAX Dry Powder Unit of Type P-BC 1000-10 Marine (with pistol)	
Propellant gas	Two bottles of nitrogen, each 67 ltr / 150 bar
Powder tank	1000 ltr
Filling volume, dry powder	Max. 1000 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	227 m DN 65, and DN 65 monitor with powder pipe and orifice (34 mm), and 2 x 33 m hose (25 mm internal diameter) with powder pistol acc. to dwg. S8-05-03
Min. discharge duration	45 s
Discharge rate achieved in testing	Pistol: 4.3 kg/s Monitor: 10.2 kg/s
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-84
MINIMAX Dry Powder Unit of Type P-BC 1500-13 Marine	
Propellant gas	Three bottles of nitrogen, each 67 ltr / 150 bar
Powder tank	1600 ltr
Filling volume, dry powder	Max. 1500 kg
Max. operating pressure	14 bar
Max. length of pipings and fittings	227 m DN 65, and DN 65 monitor with powder pipe and orifice (51 mm)
Min. discharge duration	45 s
Discharge rate achieved in testing	25.7 kg/s
Discharge range achieved in testing	> 30 m
Minimum ambient storage temperature	- 35.8 °C
Minimax user manual	S8-80-85

Type Examination documentation

Tests carried out

The system is tested according to IMO MSC.1/Circ.1315.

Marking of product

The main parts of the system (dry powder units) are to be provided with the mark of conformity (wheel mark). This mark shall be followed by our identification number 0098 and by the year in which the mark is affixed, e.g. 0098/2016.