



EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000370
Revision No:
5

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

that the **Fast rescue boats: (b) rigid**

with type designation(s)
Merlin-615 MKI Outboard

issued to

VIKING Life-Saving Equipment Norway AS
FÆRVIK, Norway

is found to comply with the requirements in the following Regulations/Standards:

Regulation (EU) 2023/1667,

item No. MED/1.20b. SOLAS 74 as amended, Regulation III/4, III/26, III/34, LSA Code, IMO MSC/Circ.1016, IMO MSC/Circ.1094, IMO MSC.1/Circ.1631, IMO MSC/Circ.1006

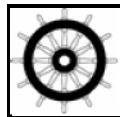
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-01-11**.

Issued at **Høvik** on **2024-02-21**

DNV local unit:
West Norway CMC

Approval Engineer:
Tessa Bieber



Notified Body
No.: **0575**



for **DNV AS**

Digitally Signed By: Kristensen, Steinar
Location: DNV Høvik, Norway, on behalf of

Mydlak-Röder, Christine
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 AS 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

“Merlin-615 MKI Outboard”,
 is a rigid fast rescue boat equipped with outboard engine and with single point lifting hook.

Material specification:

ASIA		
Material	Type	Manufacturer
Polyester resin:	FL-918, OR ETERSET 2929PT	Jiangsu Fullmark Chemical Co., Ltd., OR Eternal Materials Co.Ltd.
Gelcoat:	Enguard series: Enguard GE XXXXS/HZ, Enguard TM XXXXS/HZ	Ashland (Changzhou) Specialty Chemical Co., Ltd.
Gelcoat/topcoat	FL-NCxxxxG	Jiangsu Fullmark Chemicals Co., Ltd.
Glass fibre:	CSM: P-100g/m ² – P-900 g/m ² , chopped strand mat - powder bound	Jiangsu Changhai Composite Materials Holding Co., Ltd.
	CSM: EMC (powder type), EMCL (emulsion type)	Taishan Fiberglass Inc.
Buoyant material:	Rigid polyurethane foam,	Jiangyin Tongqi Allied Chemical Factory, OR Qingdao Lianmei Chemical Co., Ltd.
	Rigid polyurethane foam, LM-206A/LM- 206B	Qingdao Lianmei Chemical Co. Ltd.

EUROPE		
Material	Type	Manufacturer
Polyester resin:	Aropol F 207 or Aropol F 207 INF	INEOS Composites Finland Oy
Gelcoat:	Maxguard NP WHI S, Maxguard NP WHI H LS-30PA white, LS-31PA & LS-30PA variants	INEOS Composites Finland Oy Scott Bader Co., Ltd.
Gelcoat/topcoat:	FL-NCxxxxG	Jiangsu Fullmark Chemicals Co., Ltd.
Glass fibre:	CSM: Emulsion Bound E-100 – 900 g/m ²	Jiangsu Changhai Composite Materials Holding Co., Ltd.
	Multi-axial: Uni-axial; UNIE-L (250-1200 g/m ²) with or without CSM (100-600 g/m ²), Multi-axial: Uni-axial; UNIE-T (150-1000 g/m ²) with or without CSM (100-600 g/m ²)	Selcom S.r.l. a Socio Unico
	Multi-axial: Bi-axial; EBX (200-2000 g/m ²) with or without CSM (100-600 g/m ²), Multi-axial: Bi-axial; EBXS (300-2000 g/m ²) with or without CSM (100-600 g/m ²)	Selcom S.R.L. a Socio Unico
	Multi-axial: Tri-axial; ETLX (350-2200 g/m ²) with or without CSM (100-600 g/m ²), Multi-axial: Tri-axial; ETXT (200-2000 g/m ²) with or without CSM (100-600 g/m ²)	Selcom S.R.L. a Socio Unico
	Multi-axial: Quadri-axial; EQX (400-3500 g/m ²) with or without CSM (100-600 g/m ²)	Selcom S.R.L. a Socio Unico
	Spray Gun Rovings: ER13-2400-180, ER13-3000-180	Jushi Group Co., Ltd.
Buoyant material:	Elastopor H 1700/10, Elastopor H 1700/11 and Elastopor H 1702/4	BASF Polyurethanes Nordic AB

Length, overall: 6.25 m
 Breadth, overall: 2.45 m
 Depth: 0.98 m
 Height, overall: 2.50 m

Weight of boat, fully equipped: 1150 kg
 Weight of boat, fully manned (82.5 kg/person): 2388 kg

Hook manufacturer and type:

Viking Life-Saving Equipment Norway AS, K4-D / K4-D FM ⁽¹⁾
 Viking Life-Saving Equipment Norway AS, DIB32 ⁽²⁾
 H.Henriksen AS, HMK 3.5 ⁽³⁾

Hook SWL: 4000 kg ⁽¹⁾
 3263 kg ⁽²⁾
 3500 kg ⁽³⁾

Hull material: FRP

Propulsion system: Outboard engine
 Engine manufacturer and type: Yamaha Motor Co., Ltd., 60 ⁽¹⁾
 Mercury Marine, Mercury/Mariner 60 ⁽²⁾
 Mercury Marine, Mercury/Mariner 90 ⁽³⁾
 Frydenbo Marine AS, Evinrude E-TEC 75 ⁽⁴⁾
 Viking Life-Saving Equipment Norway AS, T75FEL-T ⁽⁵⁾
 Viking Life-Saving Equipment Norway AS, T90FEL-T ⁽⁶⁾

Bollard pull: 3.4 kN ⁽¹⁾
 3.4 kN ⁽²⁾
 4.7 kN ⁽³⁾
 3.2 kN ⁽⁴⁾
 4.12 kN ⁽⁵⁾
 4.07 kN ⁽⁶⁾

Application/Limitation

Approved engine power: 44.1 kW ⁽¹⁾
 44.1 kW ⁽²⁾
 66.2 kW ⁽³⁾
 56.0 kW ⁽⁴⁾
 55.2 kW ⁽⁵⁾
 66.2 kW ⁽⁶⁾

Max. number of persons: 15
 Max. load of persons (82.5 kg/person): 1237.5 kg

Approved colour: Orange / Red / Yellow

The fast rescue boat equipment and marking/instructions to be inspected after installation on board the ship. Equipment shall comply with LSA Code and IMO Res. MSC.81(70).

The fast rescue boat is fitted with a release hook without on-load release capabilities, in accordance with LSA Code 4.4.7.6.9. Hence, if it is to be combined with launching appliances with permanent high-speed tensioning device (LSA Code 6.1.7.3), compatibility must be assured.

The normal equipment of the fast rescue boat to include a hands-free and watertight VHF radio communication set, in addition to the ones required on the bridge.

The design assessment is based on IMO Res. MSC.48(66) as amended by IMO Res. MSC.207(81), IMO Res. MSC.218(82), IMO Res. MSC.272(85) and IMO Res. MSC.320(89).

Retro-reflective material shall satisfy IMO Res. MSC.481(102) for equipment installed on or after 10 October 2026.

Production and installation testing shall be carried out according to IMO Res. MSC.81(70), part 2, as amended.

Type Examination documentation

Drawing No.	Date
G-501154 Rev. 8 - Merlin-615 MKI Outboard, K4-D FM, Fast rescue boat	2021-02-24
G-504345 Rev. 0 - Merlin-615 MKI Outboard, DIB-32, Fast rescue boat	2021-05-27
G-505738 Rev.0 - Merlin-615 MKI Outboard, HMK 3.5, Fast rescue boat	2023-11-09
A-500647 Rev. 2 - Painter release hook, 4.6T	2022-11-09
A-502150 Rev. 4 - K4-D FM	2018-11-02
A-503097 Rev. 2 - Merlin-615 OUTBOARD, K4-D FM W/REMOTE CONTROL	2022-08-13
A-503219 Rev. 4 - Merlin-615 Outboard, Hook Arrangement	2022-08-13
A-505117 Rev. 1 - Merlin-615 MKI Outboard, Propulsion system	2021-07-19
A-505143 Rev. 3 - Merlin-615 MKI Outboard, Fuel tank 140 litres (Aluminium 4mm)	2020-08-10
A-505144 Rev. 2 - Merlin-615 MKI Outboard, Fuel system	2022-07-24
A-505147 Rev. 1 - Merlin-615 MKI Outboard, Engine system	2022-05-30

A-509014 Rev. 3 - Merlin-615 Outboard, Hook Arrangement, DIB32 single	2022-08-15
D-500163 Rev. 1 - Control table for laminate thickness in console Merlin 615	2022-10-31
D-500228 Rev. 1 - Merlin-615 Outboard, Control table for laminate thickness hull	2022-10-31
D-500229 Rev. 1 - Merlin-615 Outboard, Control table for laminate thickness liner	2022-10-31
R-501506 Rev. 5 - Merlin-615 MKI Outboard, Seating plan 15 persons	2020-07-29
R-501509 Rev. 1 - Merlin-615 Outboard, Buoyancy calculation	2021-04-27
R-504252 Rev. 0 - DIB32 SINGLE POINT GA	2020-07-07
R-506228 Rev.0 - Hook Arrangement, Henriksen HMK3.5T, Merlin-615 Outboard	2020-11-18
S-502285 Rev. 1 - Lower lifting bracket, Merlin-615	2021-01-12
S-507504 Rev. 3 - Support beam for lifting bracket, Merlin-615	2022-04-02
S-507639 Rev. 1 - Upper lifting bracket, Merlin-615	2021-01-12
S-509054 Rev. 5 - Merlin-615, Self-righting frame (Replaced 60-022)	2022-04-12
S-509091 Rev. 2 - Merlin-615 Outboard, Lamination drawing liner	2022-11-03
S-509094 Rev. 2 - Merlin-615 Outboard, Lamination drawing hull	2023-02-27
Calculations	Date
CAL-0366 Rev. 7 - Merlin-615, Lifting arrangement equipment strength analysis	2022-05-06
Test reports	Date
REP-0977 Rev. 0 - Fire test and moulding journal GES-18 and Mako-655 NO	2002-06-18
REP-1123 Rev. 0 - Merlin-615 Outboard, Mercury 90hp, K4-D FM, Prototype test report	May /July 2016
REP-1159 Rev. 0 - Merlin-615 Outboard, Prototype Test Report signed by BGV	2001-02-12
REP-1212 Rev. 0 - Merlin-615 Outboard, Prototype Test Report signed by BGV	2010-05-04
REP-1218 Rev. 0 - Merlin-615 Hull Fire-retardant and Flame-resistant test report no. 2016-05-M002 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2016-06-21
REP-1219 Rev. 0 - Merlin-615 Laminate strength test report no. 2016-06-0435 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2016-06-24
REP-1222 Rev. 0 - Merlin-615 Outboard, prototype test report signed by LR	2002-01-17
REP-1409 Rev. 0 - Merlin-615 MK I waterjet with hook type 'H.Henriksen AS, HMK 3.5', witnessed by DNVGL	2017-12-25
REP-1459 Rev. 0 - Merlin-615 Outboard, prototype test report with T75/T95FEL-T, witnessed by DNV	2018-04-17
REP-1509 Rev. 0 - Fire-retardant & Flame-resistant test of CSM laminate w/Scott Bader gel coat, test report no. 2018-07-M012 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2018-07-30
REP-1510 Rev. 0 - Fire-retardant & Flame-resistant test of Spray-up laminate w/Scott Bader gel coat, test report no. 2018-07-M011 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2018-07-30
REP-2080 Rev. 0 - Merlin-615 Outboard initial fitted with DIB32-Prototype test report	2022-02-22
Other	Date
MAN-0431 Rev. 9 - Merlin-615 Outboard, K4-D FM, Operation and maintenance manual	2020-12-04
MAN-2000 Rev. 0 - Merlin-615 Outboard, DIB-32, Operation and maintenance manual	2021-05-26
Document Index No. 23387 Rev. A - Alternative Polyester Resin ETERSET 2929PT	2021-03-01
Document Index No. 12556 Rev. 0 - Components data sheets and approval certificates	2017-06-09

Tests carried out

Tests are documented in accordance with recommendation on testing of Life-Saving Appliances, IMO Res. MSC.81(70) part 1, as amended by IMO Res. MSC.226(82), IMO Res. MSC.274(85), IMO Res. MSC.321(89) and IMO Res. MSC.323(89), and IMO MSC/Circ.1006.

Marking of product

The product is to be indelibly marked with name and address of manufacturer, boat model and serial number, month and year of manufacture, number of persons approved for and operational restrictions, if any, according to LSA code item 4.4.1.2 and the MED Mark of Conformity (see page 1).

List of fast rescue boat equipment to be posted in the boat.