

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Lifeboats**

with type designation(s)
VG10.50 HLB

Issued to

Vanguard (Nantong) F.R.P. Co., Ltd.
Nantong Jiangsu, China

is found to comply with

**SOLAS 74 as amended, Regulation III/4, III/21, III/31, III/34 & X/3, LSA Code, IMO
MSC/Circ. 1006 & 1423, and 2000 HSC Code 8**

Application :

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**

Issued at **Høvik** on **2017-11-29**

This Certificate is valid until **2022-11-28**.

for **DNV GL**

DNV GL local station: **Nantong**

Approval Engineer: **Tessa Biever**

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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.



Job Id: **262.1-023902-1**
Certificate No: **TALB000001Y**

Product description

Totally enclosed fire-protected hyperbaric lifeboat with self-contained air support system.

Length:	10.50 m
Breadth:	3.30 m
Depth:	1.25 m
Weight of boat, fully equipped:	19800 kg
Weight of boat, fully manned (100 kg/per person):	22000 kg
Hook manufacturer and type:	Vanguard, CSAFE 14, on-load
Hook SWL	14000 kg
Hull material:	FRP
Propulsion system:	Inboard engine
Engine manufacturer and type:	STEYR MOTORS GMBH STEYR MO144M38, 106 kW
Bollard pull:	5.1 kN
Hyperbaric chamber:	
Manufacturer:	PecoFacet Australia PTY Limited
Dimensions:	Internal Diameter 1750mm x Length 5600mm
Weight:	5420 kgs

Application/Limitation

Approved engine power	106 kW
Maximum number of persons:	18 divers and 4 crew
Maximum load of persons (100 kg/per person):	2200 kg

- For hyperbaric evacuation this lifeboat shall also hold (or be part of) a Certificate stating conformity to the relevant IMO publications regarding Hyperbaric Escape Units (IMO Res. A.692(17)) or equivalent Class publications (DNV-RP-E403) as acceptable to the Administration.
- The lifeboat shall only be operated onboard ships with a Contingency Plan for hyperbaric evacuation developed by the shipowner and approved by the ship's Flag Administration or designated Recognized Organization.
- Lifeboat equipment and marking/instructions to be inspected after installation onboard the ship. Equipment shall comply with LSA Code and IMO Res.MSC.81(70).
- The design assessment is based on International Life-Saving Appliances (LSA) Code, 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).
- Production and installation testing shall be carried out according to IMO Res. MSC. 81(70), part 2 as amended.
- The lifeboat to be delivered with a DNV GL boat certificate.

Type Examination documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2017.

Basis for approval:

Drawings	Date
General arrangement (port side), VG10.5HLB-00-01, Rev.1	2016-10-25

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General arrangement (starboard side), VG10.5HLB-00-02, Rev.1	2016-10-25
General arrangement, VG10.5HLB-00-03, Rev.1	2016-10-25
Seating plan, VG10.5HLB-00-04, Rev.1	2016-10-25
Buoyancy arrangement, VG10.5HLB-03, Rev.1	2016-10-25
Spray system, VG10.5HLB-04-0, Rev.1	2016-10-25
Door, window, hatch, hook, skate arrangement plan, VG10.5HLB-05-0, Rev.1	2016-10-25
Structure figure- Lines plan, VG10.5HLB-01, Rev.3	2016-12-25
Structure figure- Lines plan, VG10.5HLB-02, Rev.2	2016-12-07
Structure figure- Lines plan, VG10.5HLB-04, Rev.2	2016-12-07
Propeller arrangement, VG10.5HLB-35, Rev.3	2016-10-25
Power system, VG10.5HLB-35, Rev.5	2017-01-17
Electrical diagram, VG10.5HLB-00DYL, Rev.5	2017-11-17
Emergency air supply system, VG10.5HLB-07-0, Rev.1	2016-10-25
Steering system, VG10.5HLB-09-0, Rev.1	2016-10-25
Release mechanism, VG10.5HLB-06-0, Rev.4	2016-10-25
Hook device, VG10.5HLB-HD, Rev.0	2016-09-01
Painter release device, VG10.5HLB-10-0, Rev.0	2016-09-01
Reflective tape, VG10.5HLB-34, Rev.1	2016-10-25
Calculations	Date
Strength calculation sheet for hook, VG10.5HLB-36, Rev.1	2016-10-25
Single point lifting arrangement, VG10.5HLB-SPLA, Rev.1	2016-10-25
Calculation strength (hull), VG10.5HLB-00JS5, Rev.0	2016-09-01
Calculation buoyancy, VG10.5HLB-00JS4, Rev.1	2016-10-25
Calculation for air supply, VG10.5HLB-00JS9, Rev.0	2016-09-01
Calculation towing eye, VG10.5HLB-TE, Rev.1	2016-10-25
Calculation sheet for weight center gravity, VG10.5HLB-00JS1, Rev.1	2016-10-25
Capsize stability calculation sheet for totally enclosed condition, VG10.5HLB-00JS2, Rev.1	2016-10-25
Capsize stability calculation sheet for totally flooded condition, VG10.5HLB-00JS3, Rev.1	2016-10-25
Reports	Date
Prototype test witnessed by DNV GL	2017-05-02 2017-04-13 2017-04-14 2017-04-17
Impact test, test report no. S213-XPZ-2017	2017-04-17
Fuel system test report iaw ISO10088	2017-04-07
Air hoses and hose assemblies test	2016-11-21
Laminate strength test, test report no. 2016-12-0975 dated 2017-04-11 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2017-04-11
Fire retardant test iaw IMO MSC/Circ. 1006, test report no. 2016-12-M005 from Shanghai R&D Center for Polymer Materials, Shanghai, China	2017-04-11
Other	Date
Operation and maintenance manual, VG10.5HLB-00SM1, Rev.2	2016-12-07
Equipment list, VG10.5HLB-00SJ, Rev.1	2016-10-25
FRP lifeboats hull and canopy building technology, VG10.5HLB-00GY1, Rev.1	2016-10-25

Tests carried out

Tests are documented in accordance with recommendation on testing of Lifesaving 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), IMO Res. MSC.323(89) and IMO MSC./Circ.1006.

Marking of product



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The product is to be indelibly marked with name and address of manufacturer, boat model and serial number, month and year of manufacturer, number of persons approved for and operational restrictions, if any, according to LSA code item 4.4.1.2.

List of lifeboat equipment to be posted in the boat.

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 Class Programme DNVGL-CP-0338, Section 4