

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Launching Structures for Lifesaving**with type designation(s)
BD-FF85 with winch YSB45-100

Issued to

**Boatbuilding Yard, Qingdao Beihai Shipbuilding Heavy
Industry Co., Ltd.
Qingdao, Shandong, China**is found to comply with
IMO SOLAS 1974 as amended and the LSA Code**Application :****Product(s) approved by this certificate is/are accepted for DNVGL product certification and
installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2019-09-09**This Certificate is valid until **2024-09-08**.DNV GL local station: **Qingdao**for **DNV GL**Approval Engineer: **Björn Henke**

**Jörg Kallies
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

Free-fall System Type BD-FF85 incl. Winch Type YSB45-100

Application/Limitation

1. Working conditions:

Free-fall System:

- Design temperature: -10°C
- Max. 20000 load cycles
- Launching weight: 85kN

Winch:

- Max. working load (rope pull): 45,0kN
- Layer: max. 3
- Rope -ø: 24mm
- Drum -ø: 422mm
- Motor: hydr. motor

2. All materials are to be delivered with 3.1 certificates acc. to EN 10204 (or ISO 10474), documenting mechanical properties and chemical composition in compliance with DNVGL-ST-0377, Section 3.

3. Product certification:

To obtain a DNVGL Product Certificate, each free-fall system and winch shall be tested according to IMO-Resolution MSC. 81(70) as amended, Part 2, Regulation 6.1 in presence of our surveyor

Type Approval documentation

Is based on the following drawings/ documents verified by DNVGL:

Tests carried out

Prototype tested in accordance with IMO Resolution MSC.81(70) Part 1 (as amended)

Test report: BD-FF85-1SY dated 2019-05-07

Marking of product

Marking shall be implemented in accordance with the LSA Code, item 1.2.2.9

- Type designation, manufacturer name and serial number
- Safe Working Load

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.

END OF CERTIFICATE