

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Inflatable liferafts**

with type designation(s)

6 DK+, 6 DKN, 8 DK+, 10 DK+, 10 DKN, 12 DK+, 16 DK+, 20 DK+, 25 DK+, 35 DK+, 6 DK+S30, 6 DKN S30, 8 DK+S30, 10 DK+S30, 10 DKN S30, 12 DK+S30, 16 DK+S30, 20 DK+S30, 25 DK+S30, 35 DK+S30, 6 DK+E, 8 DK+E, 10 DK+E, 12 DK+E, 16 DK+E, 20 DK+E, 25 DK+E, 35 DK+E

Issued to

**Viking Life-Saving Equipment A/S
Esbjerg V, Denmark**

is found to comply with

SOLAS 74 as amended, Regulation III/4, III/21, III/31, III/34. IMO Res. MSC 48(66) - Lifesaving Appliance Code. Tested to IMO Res. MSC 81(70)**Application :****This certificate is recognized by Transport Canada.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-06-30**for **DNV GL**This Certificate is valid until **2024-05-29**.DNV GL local station: **Fredericia FiS**Approval Engineer: **Tessa Biever****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

Throw overboard inflatable liferaft with the following type designations:

- 6 DK+, 6 DKN, 8 DK+, 10 DK+, 10 DKN, 12 DK+, 16 DK+, 20 DK+, 25 DK+, 35 DK+
- 6 DK+S30, 6 DKN S30, 8 DK+S30, 10 DK+S30, 10 DKN S30, 12 DK+S30, 16 DK+S30, 20 DK+S30, 25 DK+S30, 35 DK+S30
- 6 DK+E, 8 DK+E, 10 DK+E, 12 DK+E, 16 DK+E, 20 DK+E, 25 DK+E, 35 DK+E

Application/Limitation

The liferafts are available with features added on to the existing type approved base raft.

S30: added to type designation e.g. 12DKF+ S30. Liferaft tested according to MSC.1/Circ. 1328 and packed in a sealed packing bag to allow for extended service intervals up to 30 months. The raft is subject to an annual onboard inspection.

N added to type denomination e.g. 6 DKN. The raft is equipped with an improved "stairway" like boarding arrangement.

GN: added to type designation e.g. 12 DKF+ GN. SOLAS A emergency pack with desalinator partly replacing the water rations according to LSA Code § 4.1.5.1.19.

E: added to type designation e.g. 6 DK+ E. Environmental packed liferaft prepared for extended service intervals

| Capacity, towing strains and installation heights: Container no. given as 016 – xxxx Emergency packs SOLAS A or B given as A or B in the form below | | | | | | | | | | |
|---|--------------------------|--------------------------|--|-----------|------------------|-----------|-----------|-----------|-----------|------------|
| | Towing strain 2 knots | Towing strain 3 knots | 18 metres | 25 metres | 36 metres | 37 metres | 50 metres | 60 metres | 73 metres | Capacity |
| 6 DK+ 6DK+S30 6 DK+ E | 0.45 kN | 0.9 kN | A 0011 A 0039 A 9041 B 0009 B 0040 B 9040 B 9041 | | B 5000 | | | A 5000 | | 6 persons |
| 6 DKN 6 DKN S30 | 0.45 kN | 0.9 kN | B 0022 | | | | | | | 6 persons |
| 8 DK+ 8 DK+ S30 8 DK+E | 0.45 kN | 0.9 kN | A 0039 A 9042 B 0040 B 9042 | B 5000 | A 5000 | | | | | 8 persons |
| 10 DK+ 10 DK+ S30 10 DK+E | 0.5 kN | 1.1 kN | A 9042 B 9042 B 0040 | | A 6100 B 6100 | | | | | 10 persons |
| 10 DKN 10 DKN S30 | 0.5 kN | 1.1 kN | B 0026 | | | | | | | 10 persons |
| 12 DK+ 12 DK+S30 12 DK+E | 0.5 kN | 1.1 kN | A 9042 B 9042 | | A 5000 | | | A 6100 | B 0021 | 12 persons |
| 16 DK+ 16 DK+S30 16 DK+E | 0.5 kN | 1.2 kN | A 9044 B 9042 | | B 5100 | | | A 5100 | | 16 persons |
| 20 DK+ 20 DK+ S30 20 DK+E | 0.5 kN | 1.2 kN | | | B 6000 | | | A 6000 | | 20 persons |
| 25 DK+ 25 DK+S30 25 DK+E | 0.5 kN | 1.2 kN | | | B 5200 B 6000 | | | A 5200 | | 25 persons |
| 35 DK+ 35 DK+S30 35 DK+E | 1.05 kN | 1.8 kN | | | | A 5700 | B 5400 | A 5700 | | 35 persons |

Applications / limitations continued:

The design assessment is based on International Life-Saving Appliances (LSA) Code, IMO Res. MSC 48(66) as amended by IMO Res. MSC.218(82) and IMO Res. MSC.293(87) and Canadian Lifesaving Appliance Standard TP 14475E, Ch. IV §4.1 and §4.2. and Life saving equipment regulations C.R.C 1436 Schedule VIII.

Liferaft designs with type designation including S30 comply also with MSC.1/Circ. 1328 (extended service intervals).

The liferaft shall be packed with a SOLAS A PACK or SOLAS B PACK.

Gas cylinders shall be of an approved type.

Components in the gas inflation system should be approved according to ISO 15738:2002.

The liferaft is intended to be installed with external weak link and a hydrostatic release unit. Float free arrangement to be checked upon installation on board.

Production testing shall be carried out according to IMO Res. MSC.81(70) part 2.

The liferafts may be approved for extended service intervals up to 30 months in accordance with SOLAS Ch. III, Regulation 20.8.3 on the condition that.

1. Such extended service intervals has been approved by the ships flag administration.
2. The liferafts are checked onboard in accordance with SOLAS Ch. III Regulation 20.8.3.2 at intervals in accordance with SOLAS Ch. III Regulation 20.8.1.1, according to procedures issued by the manufacturer.
3. The liferafts shall be serviced at approved servicing stations in accordance with the recommendations in IMO Res. A.761(18) at intervals not exceeding 30 months.

Type approval documentation

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

This certificate replaces LB-486.

Basis for approval:

| Liferaft type | Parts list no.: | Drawing no. |
|----------------------------|-----------------|----------------------|
| 6 DK+, 6 DK+S30, 6DK+E | 43002489.000 | 43002489.001/002 |
| 6 DKN, 6 DKN S30 | 43000336.000 | 43000336.001/002 |
| 8 DK+, 8DK+S30, 8 DK+E | 43002490.000 | 43002490.001/002 |
| 10 DK+, 10 DK+S30, 10 DK+E | 43002491.000 | 43002491.001/002 |
| 10 DKN, 10 DKN S30 | 43000335.000 | 43000335.001/002 |
| 12 DK+, 12 DK+S30, 12 DK+E | 43002492.000 | 43002492.001/002/003 |
| 16 DK+, 16 DK+S30, 16 DK+E | 43002494.000 | 43002494.001/002/003 |
| 20 DK+, 20 DK+S30, 20 DK+E | 43002496.000 | 43002496.001/002/003 |
| 25 DK+, 25DK+S30, 25 DK+E | 43002498.000 | 43002498.001/002/003 |
| 35 DK+, 35 DK+S30, 35 DK+E | 43002501.000 | 43002501.001/002/003 |

Design changes:

| | | |
|-------|------------|---------------------------------|
| 10346 | 2015-02-09 | Introduction of triple approved |
|-------|------------|---------------------------------|

Job Id: **262.1-018166-6**
 Certificate No: **TALB0000039**

| | | | |
|-------|------------|--|---|
| 10352 | 2015-06-02 | pressure cylinders. TPED/DOT/T 6-35 DK+ and 12-35 DKF+ protection for operating head | 2170 ~ 2173 |
| 10363 | 2015-10-27 | Updates for Viking Thermal Control Box. | 2246, 1658, 1660, 1661, 1663, 1692, 1693 |
| 10364 | 2015-11-04 | Environmental packed | Extended service interval - S30 tests |
| 10411 | 2017-09-27 | New material numbers for non-return valves displayed on GA drawings | |
| 10412 | 2017-11-20 | 35DK+ A-pack – stowage height 60 m | 2658 2659 |
| 10420 | 2018-05-18 | Fabric NK300C from ContiTech | 2595, 2596, 2667, 2733, 2734, 2673, 2674, 2688, 2682, 2683, 2767, 2768, 2675, 2676, 2677, 2678, 2668, 2669, 2686, 2687, 2692, 2685, 2693, 2684, 2752, 2689, 2690, 2691 Additional buoyancy material (NK300C) supported by the following test reports: Prototype test in accordance with IMO Res. MSC.81(70), Part 1: <ul style="list-style-type: none"> - weft distortion dated 2017-12-18, - Test report no. 2747:Coating Adhesion dated 2018-04-13 - Test report no. 2749: Oil resistance dated 2018-04-13 - Test report no. 2750: Blocking resistance 2018-04-13 - Laboratory test report no 1530100000 rev. 13 dated 2018-03-05 for NK300C by Contitech Laboratory Northeim, Germany witnessed by DNVGL surveyor - DNV GL verification statement N141GV0D dated 2018-03-15 |
| 10422 | 2018-05-25 | Signal Lamp - in box with spare bulb and battery | 2456, 2458, 2464, 2466 |
| 10434 | 2018-10-08 | Alternative hardener Desmodur RFE | 2834 (3 x over pressure test) 2828, 2829, 2830, 2831, 2833 (seam strength tests) |
| 10437 | 2018-12-10 | Alternative hardener 'Beyond' | 2905, 2914, 2915 (3x over pressure test), 2880, 2881, 2882, 2883, 2884, 2885 (seam strength tests) |
| 10443 | 2019-04-23 | Improved painter system for liferafts with capacity of 26 and more | 3088, 3087, 2952, 2953 |
| 10438 | 2019-04-23 | Alternative hardener 'TM-93' | 2868, 2869, 2870, 2871, 2872, 2873, 2876, 2877, 2878, 2988, 2989, 2990, 3017, 3019 |
| 10451 | 2019-04-23 | Paintersystem with alternative hardener 'TM-93' and 'Beyond' | 3085, 3086 |

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Tests carried out

- Prototype tests and test reports in accordance with the Recommendation on Testing of Life-Saving Appliances, IMO Res.MSC.81(70) part 1, including IMO Res.MSC.226(82), MSC.295(87) and MSC.323(89), have been witnessed and evaluated and found to be in compliance.
- Tested to the requirements given in the Canadian Lifesaving Appliance Standard TP 14475E, Part II, Ch.5 §5.1.2.
- Tests and reports in accordance with new test requirements listed in MSC.1/Circ.1328 item 5.4.2 - 5.4.10 for 25 DKFS+S30 have been witnessed by DNV surveyor and evaluated and found to be in compliance (testreport item 5.4.4 dd. 2009-09-01, item 5.4.6 dd. 2009-10-29, item 5.4.7 dd. 2009-10-28, item 5.4.8- 5.4.10 dd. 2009-11-02/2009-11-04).
- Tested according to the MarED recommendation for liferaft occupancy weight increase from 75 kg to 82.5 kg: 1027-1029, 1228, 1395, 1451, 1497, 1509, 1534, 1544, 1554, 1581-1587, 1589, 1591-1593, 1595-1603, 1605-1617, 1620, 1622, 1627-1642, 1655-1657 and 1683-1685.

Marking of product

The product is to be indelibly marked with name of manufacturer, type designation and date of manufacture. The marking shall comply with the LSA Code IMO Res. MSC 48(66) item 4.2.6 and 4.2.7

All instructions and markings accompanying the liferafts, or printed directly on the liferafts, shall be in both English and French, as per "Procedures For Approval of Life-Saving Appliances and Fire Safety Systems, Equipment and Products" (TP14612E) Ch.2.2.1.3.

Transport Canada

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

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.