

TYPE APPROVAL CERTIFICATE

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

with type designation(s)

12 DKF+, 16 DKF+, 20 DKF+, 20 DKF+GN, 25 DKF+, 35 DKF+, 12 DKF+S30, 16 DKF+S30, 20 DKF+GN S30, 20 DKF+S30, 25 DKF+S30, 35 DKF+S30, 12 DKF+ E, 16 DKF+E, 20 DKF+E, 25 DKF+E, 35 DKF+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 **2024-06-29**.DNV GL local station: **Fredericia FiS**Approval Engineer: **Tessa Bieber****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

Davit launched inflatable liferaft with the following type designations:

- 12 DKF+, 16 DKF+, 20 DKF+, 20 DKF+GN, 25 DKF+, 35 DKF+
- 12 DKF+S30, 16 DKF+S30, 20 DKF+S30, 20 DKF+S30, 25 DKF+S30, 35 DKF+S30
- 12 DKF+ E, 16 DKF+E, 20 DKF+E, 20 DKF+E, 25 DKF+E, 35 DKF+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.

E: added to type designation e.g. 12 DKF+ E. Environmental packed liferaft prepared for extended service intervals.

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.

| | Towing strain 2 knots | Towing strain 3 knots | 25 metres | 36 metres | 45 metres | 60 metres | Capacity |
|--|----------------------------------|----------------------------------|------------------|--|------------------|------------------|-----------------|
| 12 DKF+ 12 DKF+S30 12 DKF+E | 0.5 kN | 1.1 kN | | A 0114 B 0114 A 690X B 690X | | | 12 persons |
| 16 DKF+ 16 DKF+S30 16 DKF+E | 0.5 kN | 1.2 kN | | B 8000 | | A 5100 | 16 persons |
| 20 DKF+ 20 DKF+S30 20 DKF+E | 0.5 kN | 1.2 kN | | B 8000 | | A 8000 | 20 persons |
| 20 DKF+GN 20 DKF+ GN S30 | 0.5 kN | 1.2 kN | A 5500K* | | A8100* | | 20 persons |
| 25 DKF+ 25 DKF+S30 25 DKF+E | 0.5 kN | 1.2 kN | | B 8100 | | A 8100 | 25 persons |
| 35 DKF+ 35 DKF+S30 35 DKF+E | 1.05 kN | 1.8 kN | | B 8200 | | A 8400 | 35 persons |
| *Equipment based on SOLAS A | | | | | | | |

Applications / limitations continued:

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.

These liferafts designs are complying with the LSA Code as amended, including 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.

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.

The certificate replaces LB-486.

Basis for approval:

| Liferaft type | Parts list no.: | Drawing no. |
|-------------------------------|------------------------|----------------------|
| 12 DKF+, 12 DKF+S30, 12 DKF+E | 43002493.000 | 43002493.001/002/003 |
| 16 DKF+, 16 DKF+S30, 16 DKF+E | 43002495.000 | 43002495.001/002/003 |
| 20 DKF+, 20 DKF+S30, 20 DKF+E | 43002497.000 | 43002497.001/002/003 |
| 20 DKF+GN, 20 DKF+GN S30 | 43001921.000 | 43001921.001/002/003 |
| 25 DKF+, 25 DKF+S30, 25 DKF+E | 43002499.000 | 43002499.001/002/003 |
| 35 DKF+, 35 DKF+S30, 35 DKF+E | 43002502.000 | 43002502.001/002/003 |

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 1682-1685.

Design changes:

Job Id: **262.1-018166-5**
 Certificate No: **TALB0000036**

| | | | |
|-------|------------|---|--|
| 10346 | 2015-02-09 | Introduction of triple approved pressure cylinders. TPED/DOT/T | |
| 10352 | 2015-06-02 | 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 |
| 10385 | 2016-05-17 | Max. installation height for 25DKS/25 DKFS | 2413, 2414 |
| 10411 | 2017-09-27 | New material numbers for non-return valves displayed on GA drawings | |
| 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 |
| 10430 | 2018-09-27 | Change of container type for 12DKF (016-690X) | 2787, 2788 Drawing 16012707 |
| 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) |
| 10438 | 2019-04-23 | Alternative hardener 'TM-93' | 2868, 2869, 2870, 2871, 2872, 2873, 2876, 2877, 2878, 2988, 2989, 2990, 3017, 3019 |
| 10443 | 2019-04-23 | Improved painter system for liferafts with capacity of 26 and more | 3088, 3087, 2952, 2953 |
| 10451 | 2019-04-23 | Paintersystem with alternative hardener 'TM-93' and 'Beyond' | 3085, 3086 |

Marking of product



Job Id: **262.1-018166-5**
Certificate No: **TALB0000036**

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 Approval

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.