

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Automatic self-righting liferafts**

with type designation(s)

25 DKFS, 39 DKFS, 25 DKFS S30, 39 DKFS S30, 25 DKFS E, 39 DKFS 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/26.2, 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 **2018-09-17**for **DNV GL**This Certificate is valid until **2023-09-16**.DNV GL local station: **Fredericia**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

Automatic self-righting davit launched inflatable liferaft with the following type designations:

- 25 DKFS, 39 DKFS
- 25 DKFS S30, 39 DKFS S30
- 25 DKFS E, 39 DKFS E

The design assessment is based on IMO Res. MSC.48(66) as amended including 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.

Application/Limitation

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

S30: added to type designation e.g. 25DKFS 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. 25DKFS E. Environmental packed liferaft prepared for extended service intervals.

Notes to below from Capacity and installation heights: Container type designation is given as 16-xxxx, and emergency packs SOLAS A or B is given as "A" and "B".

Liferaft type	Towing strain 2 knots	Towing strain 3 knots	25 m	36 m	60 m	Capacity
25 DKFS, 25 DKFS S30 25 DKFS E	0.7 kN	1.4 kN		A 8200 B 8500 B 0113 B 0140	A 8200	20 persons 25 persons
39 DKFS 39 DKFS S30 39 DKFS E	1.05 kN	2.45 kN	B 8200	A 8400	-	35 persons 37 persons 39 persons

- 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, October 2017.

- Drawings and partslist as listed below:

Liferaft type	Parts list No.	Drawing no.
25 DKFS, 25 DFKS S30, 25 DFKS E	43002434.000	43002434.001/002/003
39 DFKS, 39 DFKS S30, 39 DKFS E	43002534.000	43002534.001/002/003

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) as per Conformity Assessment Report - DFKS have been witnessed and evaluated and found to be in compliance.
- Test reports in addition to the above mentioned prototype tests for the following subjects:

Subject	Test reports
Daniamant RL6 combi light	1881~1889
Plastic strapping around container	1887, 1888, 1901~1904
Shackle for lifting arrangement	- Strength report no. LX90433 dated 2009-11-02 from Shanghai Jinyi Materials test technology Co., Ltd, China - Salt spray test dated 2012-04-30 from Danish technological Institute (DTI), Denmark
Canopy material (Rivertex 4000 PES PU coated)	- 1899, 1912, 1803, 1993, 1870, 2015 - Material Technical Report 1809 A dated 2012-10-25 from SATRA Technology Centre, UK
Painterline for liferafts > 25 persons	2168
Boarding ramp change/Inflatable floor change / inner and outer life lines	1532, 2226, 2227
Installation height (max. 60 m for 25 DKS and 25 DKFS)	2413, 2414, 2415
Environmental packed	Extended Service Intervals - S30 tests
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 supported by the following test reports: Prototype test in accordance with IMO Res. MSC.81(70), Part 1: - 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
Buoyancy material (NK300C)	Prototype test in accordance with IMO Res. MSC.81(70), Part 1: - 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

Job Id: **262.1-028751-1**
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	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
Signal Lamp - in box with spare bulb and battery	2456, 2458, 2464, 2466

- Tests and reports in accordance with test requirements listed in MSC.1/Circ 1328 item 5.4.2 -5.4.10 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
- Tested to the requirements given in the Canadian Lifesaving Appliance Standard TP 14475E, Part II, Ch.5 §5.1.2.

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)) items 4.2.6.3 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.