DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TALB0000018
Revision No:
4

This is to certify:

That the Inflatable liferafts

with type designation(s)
Viking liferaft 4DK+, 4 DK+ S30

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 :

Not for use onboard SOLAS ships. Carrying capacity is only 4 persons and does not fulfil item 4.1.2.1 (not less than 6 persons).

Issued at **Høvik** on **2020-04-14**

This Certificate is valid until **2023-10-23** .
DNV GL local unit: **Fredericia FiS**

Approval Engineer: **Tessa Biever**

for **DNV GL**

Digitally Signed By: Hoff, Øyvind
Location: DNV GL Høvik, Norway

Øyvind Hoff
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.

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Product description

4 DK+, inflatable liferaft available in the following type designations:

- 4DK+
- 4 DK+ S30

S30: Liferaft environmentally packed to allow for extended service intervals up to 30 months. The raft is subject to an annual onboard inspection.

Container material:	GRP
Buoyancy tube fabric:	NK205/2 or NK 300 or RNND6
Exterior canopy fabric:	Rivertex collection 200
Interior canopy fabric:	Rivertex collection 100
Insulated floor:	Alu foam Mic-cell

The design assessment is based on IMO Res. MSC.48(66) as amended including IMO Res. MSC.293(87).

This liferaft design with type designation including S30 comply with MSC.1/Circ. 1328 (extended service intervals).

Application/Limitation

Container No.	Emergency Pack	Max. Installation heights
016-0005	SOLAS A	10 Meter
016-0011	SOLAS A or B	10 Meter
016-0009	SOLAS A or B	18 Meter
016-3300	SOLAS B	18 Meter
016-5000	SOLAS A or B	25 Meter
016-3200	SOLAS B	3 Meter
016-9040	SOLAS A or B	18 Meter
Max. number of persons	4 persons	
Required towing force	3 knots – 1 kN	

- Not for use onboard SOLAS ships. Carrying capacity is only 4 persons and does not fulfil item 4.1.2.1 (minimum capacity 6 persons).
- 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.

With ref to 'Test carried out' the liferaft including type designation S30 is 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 liferaft is 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 liferaft shall be serviced at approved servicing stations in accordance with the recommendations in IMO Res. A.761(18) at intervals not exceeding 30 months.

Job Id: **262.1-009867-8**
Certificate No: **TALB0000018**
Revision No: **4**

Type Approval documentation

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

This certificate replaces TALB0000018 rev.3.

Basis for approval:

Drawings and reports	**Date**
Viking Conformity Assessment Report, type 4 DK+	2000-08-01
Parts list "Viking 4 DK+" No. 43000393.000 and referred drawings.	2009-12-15
Parts list "Viking 4 DK+" No. 43002363.000 and referred drawings.	2014-05-16
Design changes + supporting test reports	**Date**
Design Change No. DNV10267 (Fabric RBND6) and related test reports: - 1410, 1512, 1215a, 1228, 1413, 1261, 1397, 1398, 1399, 1400,1510, 1405, 1406, 1453, 1454, 1393, 1384, 1385, 1386, 1387, 1398, 1390, 191, 1392,1407, 1408, 1409.	2010-01-14
Design change No. DNV10289 (boarding ramp) and related test reports: - 1511,1512,1524,1528,1529,1530,1531,1532	2010-12-09
Design change No. DNV10318 (eyelink container) and related test reports: - 1916, 1917	2013-04-15
Design change No. DNV10333 (liferaft painter system) and related test report: - 1454	2013-12-10
Design change No. DNV10334 (entrance design) and related test reports: - 2033, 2034, 2016	2013-11-28
Design change No. DNV 10344 (fabric change for inflatable compartments) and related test reports: - 2131, 2132, 2133, 2134, 2154, 2155, 2136, 2137, 2156, 1993, 2037, 2038, 2167, 2128, 2139, 2135, 2129, 2130, 2126, 2158, 2127, 2157, 2160, 2138, 2017, 2007, 2008, 2010	2014-11-20
Design change No. DNV10386 (extended service interval) and related test reports in accordance with IMO MSC.1/Circ. 1328: - Test report 1905a – Delta test report DANAK-19/12937 (Vibration , damp heat test 6DK+ S30 in accordance with IMO MSC.1/Circ. 1328 §5.4.2 and §5.4.2) - RD-00043-D-004 (Drop test 6DK+S30 – IMO MSC.1/Circ. 1328 §5.4.6) - RD-00043-C-005 (Cold inflation 6DK+S30 – IMO MSC.1/Circ. 1328 §5.4.7) - RD-00043-P-008 (Pressure test 6DK+S30 – IMO MSC.1/Circ. 1328 §5.4.8) - RD-00043-FS-001 (Floor seam test 6DK+S30 – IMO MSC.1/Circ. 1328 §5.4.9) - RD-00043-DI-010 (Detailed inspection 6DK+S30 – IMO MSC.1/Circ. 1328 §5.4.10) - Long time field test 6DK+, DNV GL verification statement N1419HKK	2016-07-14 2013-03-22 2009-10-29 2009-10-28 2009-11-04 2009-11-02 2009-10-28 2016-06-08
Design change 10391 (Leafield GIST inflation system) and related test reports: - Inflation tests: 2498, 2499, 2505, 2511	2017-01-18
Design change 10403 (Albatross pyrotechnic emergency pack – max installation height 60m) and related test reports: - 2602, 2603, 2604, 2605 (drop tests) - 2616, 2617, 2618 (pyrotechnic tests)	2017-06-30
Design change 10411 (new vendor for Non return valves) - New revision GA parts list: 43002363.000.06	2017-09-27
Design change 10420 (Alternative buoyancy Fabric – NK300C) and related test reports: - 2595, 2596, 2667 (Mooring out tests) - 2733, 2734 (liferaft painter system test) - 2673, 2674 lLifting components strength tests) - 2688 (impact test) - 2682, 2683 (drop tests) - 2767, 2768, 2675, 2676, 2677, 2678, 2668, 2669 (Inflation tests (-30°C , ambient temp at 20°C, + 65°C)) - 2686, 2687, 2692 (Strength tests - davit launched liferaft) - 2685, 2693 (cold overload test David launched liferaft)	2018-05-18

- 2684 (lowering abrasion test david launched liferaft) - 2752 (material test report) - 2689, 2690, 2691 (seam strength tests)	
Design change 10422 (Signal lamp) and related test reports: - 2456, 2458, 2464, 2466 (drop tests)	2018-05-25
Design change 10434 (Alternative hardener Desmodur RFE) and related test reports: - 2834 (3x over pressure test) - 2828, 2829, 2830, 2831, 2833 (seam strength tests)	2018-10-08
Design change 10437 (Alternative hardener 'Beyond') and related test reports: - 2905, 2914, 2915 (3x over pressure test) - 2880, 2881, 2882, 2883, 2884, 2885 (seam strength tests)	2018-10-12
Design change 10438 (Alternative hardener 'TM-93') and related test reports: - 2868, 2869, 2870, 2871, 2872, 2873, 2876, 2877, 2878, 2988, 2989, 2990, 3017, 3019	2019-04-23
Design change 10451 (Painter system with alternative hardener 'TM-93' and 'Beyond') and related test reports: - 3085, 3086	2019-04-23
Design change 10457 (low profile container) and related test reports: - 3215 and 3216 (drop tests/ambient temperature tests) - 3217, 3218 (cold inflation test) - 3354 (hot inflation test) Drawing No. 16007510 Rev. 00 – Container specification	2019-09-17 2015-09-11

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), IMO Res. MSC 295(87) and MSC. 323(89), have been witnessed and evaluated and found to be in compliance.
- For extended service interval up to 30 months the required tests have been performed in accordance with IMO MSC.1/Circ 1328.

Marking of product

The marking shall be according to LSA Code, item 1.2.2.9, 4.2.6 and 4.2.7 as amended by IMO Res. MSC 48(66) and marked with "NON-SOLAS".

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.