Certificate No: LR22431618SS
Issue Date: 26/11/2022
Expiry Date: 25/11/2027

Certificate of Type Approval

This is to certify that the product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	**Survitec Group Ltd.**
Address	Kingsway, Dunmurry, Belfast, BT17 9AF, Northern Ireland, United Kingdom
Type	Liferafts
Description	6 persons, 8 persons, 10 persons, 12 persons, 16 persons, 20 persons, 25 persons capacity throw or roll-overboard canopied inflatable liferafts.
Trade Name	"RFD Surviva MKIV" (also known as Beaufort Seafarer, DSB LR07, EV Solas Silver, EV TO M10, Crewsaver, Elliot, Survitec Zodiac SZ2, DBC and Survitec).
Specified Standard	IMO Resolution MSC.81(70), Part 1 as amended

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Lijo Thomas

Lijo Thomas

Senior Surveyor to Lloyd's Register EMEA
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR22431618SS

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

This Design Appraisal Document forms part of the Certificate.

This Certificate is a Renewal of Certificate Number SAS S S170099-M1-03

APPROVAL DOCUMENTATION

DCS 9701 “PU coated structural fabric p/n. 10772009, RFD Spec. 1015 Type 1 (single sided)” issued on 19.09.11

DCS 9968 “Thanner DK99 Inflation system” issued on 20.06.12

DCS 9323 “Bostik 6530” issued on 30.03.10

DCS 0110 regarding the introduction of a new Daniamant RL6 lighting system as an alternative lighting system on Marine MK4 SOLAS liferafts

DCS070 2016, New triple approved 10.7l cylinder to stand as alternative to 13.4l cylinder on the Surviva MKIV 16P TO, dated 20/06/2016.

DCS 8920, RFD Surviva MkIV range of Marine Liferafts appropriate for USCG compliant products only.

Drawing No.	Rev. No.	Date	Drawing Title
D50863	20	20/04/21	Marine Liferaft 25-Persons
22540-01/02/03	2	02.07.07	General Arrangement (3 Drawings)
D50857	19	20.04.21	Marine Liferaft 6-Persons (Surviva MK4) (8 Drawings)
20638-01/02	2	29.06.07	General Arrangement (2 Drawings)
D50858	19	20.04.21	Marine Liferaft 8 Persons (Surviva MK4) (7 Drawings)
20837-01/02	2	09.07.07	General Arrangement
D50859	14	20.04.21	Marine Liferaft 10-Persons (Surviva MkIV 10TO) (7 Drawings)
21022-01/02/03	2	10.07.07	General Arrangement (3 Drawings)
D50860	14	20.04.21	Marine Liferaft 12-Persons (Surviva MkIV 12TO) (7 Drawings)
21236-01/02	2	04.07.07	General Arrangement (2 Drawings)
D50861	17	20.04.21	Marine Liferaft 16-Persons (Surviva MkIV 16TO) (8 Drawings)
21639-01/02	2	22-25.06.07	General Arrangement (2 Drawings)
D50862	17	20.04.21	Marine Liferaft 20-Persons (Surviva MkIV 20TO) (7 Drawings)
22053-01/02	2	18.07.07	General Arrangement (2 Drawings)
0217650G	-	14.01.20	Fibre glass containers model EV-VTRF03/03RH Pt No. 99991578
0217650G	-	14.01.20	Fibre glass containers model EV-VTRF03/05RH Pt No. 99991577
0217650G	-	14.01.20	Fibre glass containers model EV-VTRF03/11RH Pt No. 99991575
0217650G	-	14.01.20	Fibre glass containers model EV-VTRF03
D52886	A	02.08.2016	Containers N131 to N134 LPC

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D52888	A	17.08.2016	Container N136 & N136H LPC (2 Drawings)
D52905	A	19.01.2022	Container N137H XTREM
D52910	A	19.01.2022	Container N140 XTREM
D52911	A	19.01.2022	Container N140H XTREM
D52909	A	19.01.2022	Container N139H XTREM
D52906	A	19.01.2022	Container N138 XTREM
D52907	A	18.11.2021	Container N138H XTREM
D52908	A	19.01.2022	Container N139 XTREM
D52904	A	19.01.2022	Container N137 XTREM
D52887	A	18.08.2016	Container N135 LPC

TEST REPORTS

- Series of tests completed for DSB LR 97 Liferafts carried out between 5 February 1997 and 6 June 1997
- DSB LR97, 25 persons Righting Test, report No. 027/07 completed on 9 August 2007
- Series of MSC/Circ. 980 test reports completed to demonstrate compliance with Resolution MSC.295 (87) and MSC.274 (85), dated 22 April 2010 to 3 March 2011, witnessed by a Lloyd's Register surveyor
- Weight test of RFD Surviva MKIV liferafts packed in MK 16/size 2 type containers, report No 26/2009, dated 25 March 2009
- 18m Drop test of RFD Surviva MK 4 liferafts packed in MK 16/size 2 type containers, report No 23/2009, dated 12 March 2009
- DSB LR 97, 16 Persons Liferaft drop test and weight test completed on February 1997, witnessed by surveyor acceptable to Lloyds Register
- RFD Test Report No. 10/10, dated 7 April 2010. 18m Drop test of RFD Surviva Mk4 liferafts packed in eurovinil type containers
- RFD Test Report No. 16/10, dated 26 August 2010. Weight test of RFD Surviva Mk4 liferafts, 6, 8, 10 and 12 person liferafts packed in E.V. containers
- Marine report No 2016 – 012 dated 27.04.2016 (Cold Inflation test report as witnessed by a LR surveyor)
- Marine Report No 01/13 dated 29.11.12 (Drop test from 46 meters report as witnessed by a LR surveyor)
- Marine Report No: TR2016 – 013 dated 06.06.2016 (18 m Drop Test Surviva MK4 Liferaft Hull in Low Profile and Xtrem Containers as witnessed by LR Surveyor)
- Marine Report No: TR2016 – 023 dated 01.08.2016 (Weight Test – MK4 Hull in alternative Low Profile Containers as witnessed by LR Surveyor)
- Liferaft towing test, test report No:1424176/LIV, dated 21 November 2014

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Liferafts Fitted with TPED Compliant Cylinders

Hot Inflation Test of RFD Endura MK4 25 Person davit launched and 6 person throw over liferaft completed with Leafield (GIST), report no. 24/07, dated 7 September 2007

Cold Inflation Test Endura (using Surviva MK4 hull), completed with Leafield (GIST), report no. 25/07, dated 11 September 2007

Qualifying Test for Leafield GIST Inflation System

Liferafts fitted with US DOT Compliant Cylinders
DCS 8920

Report No.	Date	Description
07/08	01.08.08	Hot Inflation (Leafield GIST)
02/08	14.04.08	Cold Inflation (Leafield GIST)
14/08	14.07.08	36m Drop Test (Leafield GIST)
39/08	04.08.08	46m Drop Test (Leafield GIST)
06/08	23.04.08	Ambient Inflation / Painter Pull Force (Leafield GIST)

"Qualifying Tests for Thanner Compact Inflation System" & "Liferafts fitted with TPED Compliant Cylinders"

Report No.	Date	Description
16/08	09.06.08	36m Drop test (c/w Thanner Mk6 Inlet Valve & Thanner DK99 Short Operating Head)
18/08	04.06.08	Cold Inflation (c/w Thanner Mk6 Inlet Valve & Thanner DK99 Short Operating Head)
19/08	05.06.08	Hot Inflation (c/w Thanner Mk6 Inlet Valve & Thanner DK99 Short Operating Head)

TECHNICAL CRITERIA

Liferaft Capacity	SoLaS E-Pack	RFD Containers				DSB Containers				EUROVINIL	Weight (Kg)	Drop Height (m)	Laden Weight (Kg)
		Mk10 Size	Mk14 Size	Mk18 Size	Mk16 Size	Mk20 Size	F Series	N Series	Other	Other			
6TO	A	4									76	46	571
	B	3									57	46	552
	A		12								76	46	571
	B		12								57	46	552
	A			3							76	18	571
	B			1							57	18	552
	A						6/8F				87	36	582
	B							4N			63	36	558
	B								Size 4 Type 4		75	8	570

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	A									99991577	66	18	561
	B									99991578	53	18	548
8TO	A	4									80	46	740
	B	3									57	46	717
	A			3							86	18	746
	B			3							62	18	722
	A						6/8F				91	36	751
	B							4N			63	36	723
	B								Size 4 Type 5		84	8	744
	A									99991576	75	18	735
	B									99991578	53	18	548
10TO	A	6									100	46	925
	B	4									80	46	905
	B		14								74	46	899
	A		14								99	46	924
	A				2						101	18	926
	B				2						85	18	910
	A						10/12F				111	36	936
	B						6/8F				91	36	916
	A									99991574	94	18	919
	B									99991575	76	18	901
12TO	A	6									109	46	1099
	B	4									85	46	1075
	A		14								108	46	1098
	B		14								79	46	1069
	A				2						110	18	1100
	B				2						90	18	1080
	A						10/12F				120	36	1110
	B						6/8F				96	36	1086
	A									99991574	103	18	1093
	B									99991575	81	18	1071
16TO	A	7									137	46	1457
	B	6									103	46	1423
	A		14								144	46	1464
	B		14								101	46	1421
	A		17								139	46	1459
	A						16F				149	36	1469
	B						10/12F				114	36	1434
	B								Size 16 Type 5		78	8	1398
20TO	A	9									158	46	1808
	B	7									109	46	1759
	A		17								160	46	1810

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	B		14								106	46	1756
	A						25F				160	36	1810
	B						10/12F				118	36	1768
25TO	A	9									178	46	2241
	B	7									128	46	2191
	A		17								180	46	2243
	B		17								130	46	2193
	A						25F				180	36	2243
	B						16/20F				141	36	2204

TECHNICAL CRITERIA (Low profile and extreme low-profile containers)

Liferaft Capacity	SoLaS E-Pack	Container Type	Weight (Kg)	Drop Height (m)	Laden Weight (Kg)
6TO	A	LPC N134	74	18	569
	B	LPC N133	54	18	549
	A	Xtrem N137H	72	18	567
	B	Xtrem N137	53	18	548
8TO	A	LPC N135	82	18	742
	B	LPC N134	57	18	717
	A	Xtrem N138H	75	18	735
	B	Xtrem	55	18	715
10TO	A	LPC N135	101	18	926
	B	LPC N135	85	18	910
	A	Xtrem N139H	95	18	920
	B	Xtrem N139	80	18	905
12TO	A	LPC N135	110	18	1100
	B	LPC N134	86	18	1076
	A	Xtrem N139H	104	18	1096
	B	Xtrem N139	85	18	1075
16TO	A	LPC N136H	137	18	1457
	B	LPC N136	101	18	1421
	A	Xtrem N140H	131	18	1451
	B	Xtrem N140	99	18	1419
20TO	A	LPC N136H	155	18	1805
	B	LPC N136 H	108	18	1758

Towing Forces

	6TO	8TO	10TO	12TO	16TO	20TO	25TO
Towing Force @ 2 Knots (kN)	0.72	0.65	0.88	0.8	0.87	0.78	0.92
Towing Force @ 3 Knots (kN)	1.23	1.5	1.55	1.79	2.06	1.5	3.04

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CONDITIONS OF CERTIFICATION

1. Lloyd's Register's acceptance for the MkIV range of liferafts to be fitted with US DOT approved cylinders is subjected to relevant USCG Approval Certification remaining valid.
2. **Operating head inflation system:**
   i. Manufacturer: Leafield Marine Limited
   Type: GIST (to be used only with PD 11401& ARCTIC-04 hose)
   ii. Manufacturer: Thanner & Co A/S
   Type: DK 99 series
3. The liferaft's container shall be marked as required by the LSA Code Regulation IV/4.2.6.3 with the marker's name or trademark, serial number, approving authority, number of persons it is approved to carry, SOLAS, the type of emergency pack enclosed, date when last serviced, length of painter, maximum stowage height and launching instructions. In addition, containers of liferafts carried on ro-ro passenger ships fitted with a radar transponder shall be clearly marked.
4. Provision shall be made for marking each liferaft as required by the LSA Code Regulation IV/4.2.7.2 with the name and port of registry of the ship to which the liferaft is supplied, in such a form that the ship identification can be changed at any time without opening the container.
5. The liferaft shall be marked as required by the LSA Code Regulation IV/4.2.7.1 with the maker's name or trademark, serial number, date of manufacture, approving authority, name and place of last servicing station, and the number of persons it is approved to carry.
6. **Installation on board:** The on-board arrangements and installation of the liferaft are not part of this design appraisal or certificate. All such arrangements are to be to the satisfaction of the Surveyors attending on board.
7. The liferaft and its equipment shall be kept in good working order at all times and checked at regular intervals according to the manufacturer's instructions and SOLAS requirements.
8. Detailed instructions for use, maintenance, and installation of the liferaft complying with SOLAS Regulations III/35 and 36 and instructions for use and maintenance of the liferaft equipment shall be provided to each purchaser and be available on board.
9. If the specified standards are amended during the validity of this certificate, this product type is to be re-approved prior to it being supplied to vessels to which the amended standards apply.
10. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/5.

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11. Production tests are to be conducted in accordance with the applicable requirements of IMO Resolution MSC.81 (70), Part 2 and each item, batch, or lot be delivered with an LR Certificate of SOLAS Production Testing issued by the attending LR Surveyors following their witness of the tests. This does not preclude any further testing to additional requirements of the Marine Administration of the country where the ship is registered (i.e., the flag state) or those acting on behalf of that Administration.
12. Should a change of Place of Production from that stated on the application form be required, i.e., where the stages of manufacture/assembly/testing of this product takes place, the new Place of Production is to be advised to us prior to the change taking place. This updated notification about the Place of Production is required for this Approval to be maintained.
13. All equipment installed on board the liferaft is to be of an approved type as required by SOLAS and the LSA Code as applicable.

Lijo Thomas

Lijo Thomas
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s)

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