



UK TYPE-EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

Lloyd's Register Marine Limited (LRM Ltd) did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, subject to any conditions in the schedule attached hereto.

Manufacturer	Survitec Group Ltd.
Address	Kingsway, Dunmurry, Belfast, BT17 9AF, Northern Ireland, United Kingdom
Reference	MSN1874 Amendment 6
Regulation Item (No. & Item Designation)	UK/1.12 Inflatable Liferafts
Product Type	Inflatable Liferaft
Product Description	6-person, 8-person, 10-person, 12-person, 16-person, 20-person, 25-person throw-over/roll-over canopied inflatable liferaft.
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), as amended

The attached Design Appraisal Document (schedule) forms part of this certificate. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

This certificate is issued under the authority of the MCA. This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

The "UK Mark of Conformity" may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an Approved Body.

Lloyd's Register Marine Limited (Reg. no. 13281335) is a limited company registered in England and Wales. Registered office: 71 Fenchurch Street, London, EC3M 4BS, UK.
A member of Lloyd's Register group.

Lijo Thomas

Senior Surveyor
For and on behalf of Lloyd's Register Marine Ltd. (8512)

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The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and the Merchant Shipping (Marine Equipment) Regulations 2016, as amended for the UK Type Examination of marine equipment for use on UK ships

This Design Appraisal Document forms part of the Certificate.

APPROVAL/EXAMINED 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.

<u>Drawing No.</u>	<u>Rev. No.</u>	<u>Date</u>	<u>Drawing Title</u>
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
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

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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 Liferrafts 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

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 Leaffield (GIST), report no. 24/07, dated 7 September 2007

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

Qualifying Test for Leaffield GIST Inflation System

Liferafts fitted with US DOT Compliant Cylinders
DCS 8920

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

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

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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
	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

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	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
	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

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	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

CONDITIONS OF CERTIFICATION

- 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.
- Operating head inflation system:**
 - Manufacturer: Leafield Marine Limited
Type: GIST (to be used only with PD 11401& ARCTIC-04 hose)
 - Manufacturer: Thanner & Co A/S
Type: DK 99 series
- 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.
- 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.
- 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.
- 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.
- 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.
- Detailed instructions for use, maintenance, and installation of the liferaft complying with SOLAS Regulations III/35 and 36 and also instructions for use and maintenance of the liferaft equipment shall be provided to each purchaser and be available on board.
- 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.

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Certificate No: LR22431976UKMB
Issue Date: 26/11/2022
Expiry Date: 25/11/2027
Reference: UKITSO/TA/LSA/LT/FL/WP47985955/PRJ11100387707

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10. Production items of the subject equipment are to be manufactured in accordance with either an approved Production Quality Assurance System (Module D), a Product-Quality Assurance System (Module E) or a Product Verification Process (Module F), as applicable. The UK Conformity Mark cannot be affixed to the product until a conformity assessment module is in place.
11. Production tests are to be conducted in accordance with the applicable requirements of IMO Resolution MSC.81 (70), Part 2 and be recorded by the manufacturer in accordance with either the approved Production Quality Assurance System (Module D) or Product Quality Assurance System (Module E) or a Product Verification Process (Module F), as applicable. 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. Each item, batch or lot of the subject equipment is to be issued with a "UK Declaration of Conformity" and have the "UK Conformity Mark" affixed after a conformity assessment module is in place.
13. Should a change of Place of Production from that provided at the application stage i.e. where the stages of manufacture/assembly/testing of this product take 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.
14. The manufacturer must keep a copy of the UK type-examination certificate, its annexes, and additions together with the technical documentation at the disposal of the national authorities for a period of at least 10 years after the UK Conformity Mark has been affixed on the last product manufactured and, in no case for a period shorter than the expected life of the marine equipment concerned.
15. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products are fully compliant with the relevant statutory regulations as applicable and are designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
16. All equipment installed on board the liferaft is to be of an approved type as required by SOLAS and the LSA Code as applicable.
17. Equipment items listed on the current version of Merchant Shipping Notice MSN 1874 (M+F) which are supplied with the liferaft are to be of an approved type when delivered to UK flagged vessels.

Lijo Thomas
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
For and on behalf of Lloyd's Register Marine Ltd.
(LRM Ltd) - UK Approved Body 8512

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