Maritime & Coastguard Agency

Approved Body authorised by the MCA

Certificate No: LR22438742UKMB
Issue Date: 31/10/2022
Expiry Date: 30/10/2027

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, United Kingdom
Reference	MSN1874 Amendment 6
Regulation Item (No. & Item Designation)	**UK/1.12 Inflatable Liferafts**
Product Type	Inflatable Liferaft
Product Description	12 person, 16 person, 20 person, 25 person davit launched canopied Surviva MkIV inflatable liferaft hull, packaged for extended service intervals.
Trade Name	RFD Endura R' (also known as 'Survitec ESR', 'DSB LR07E', 'Survitec Zodiac ESP', 'Crewsaver ESR' & 'Elliot ESR')
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 This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.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

Design Change Sheet No 0023, regarding the introduction of New Humidity sensor (for compliance with IMO MSC.1/Circ.1328) on Liferafts Endura range.

Design Change Sheet No 9968 regarding the introduction of Thanner DK99 as an alternative Inflation System on Marine MK4 SOLAS liferafts.

Design Change Sheet No 0110 regarding the introduction of a new Daniamant RL6 lighting system as an alternative lighting system on Marine MK4 SOLAS liferafts.

Drawing Title	Rev	Date
GENERAL ARRANGEMENT/DESIGN DATA - RFD SURVIVA MkIV 12DL	14	20/04/2021
MANUFACTURING DRAWING - RFD SURVIVA MkIV 12DL - PU	14	20/04/2021
GENERAL ARRANGEMENT/DESIGN DATA - RFD SURVIVA MkIV 16DL	16	20/04/2021
MANUFACTURING DRAWING - RFD SURVIVA MkIV 16DL - PU	16	20/04/2021
GENERAL ARRANGEMENT/DESIGN DATA - RFD SURVIVA MkIV 20DL	14	20/04/2021
MANUFACTURING DRAWING - RFD SURVIVA MkIV 20DL - PU	14	20/04/2021
GENERAL ARRANGEMENT/DESIGN DATA - RFD SURVIVA MkIV 25DL	16	20/04/2021
MANUFACTURING DRAWING - RFD SURVIVA MkIV 25DL - PU	16	20/04/2021

TEST REPORTS

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 07.09.07.

Cold Inflation Test Endura (using Surviva MK4 hull), completed with Leafield (GIST), report no. 25/07, dated 11.09.07.

DSB LR97, 25 persons Righting Test, report No. 027/07 completed on 09.08.07.

Series of MSC/Circ. 980 test reports completed to demonstrate compliance with Resolution MSC.295 (87) and MSC.274 (85), dated 22.04.2010 to 03.03.2011, witnessed by a Lloyd's Register surveyor.

Series of MSC.1/Circ. 1328 test reports completed to demonstrate compliance with requirements stated under MSC.1/Circ. 1328, as witnessed by a Lloyd's Register surveyor and detailed in the Marine Report No: 2012-051.

Marine Report No 77/12, 46m Drop Test report as witnessed by a LR surveyor, dated 29.11.12.

Marine Report No 01/13 dated 29.11.2012 (Drop test report as witnessed by a LR surveyor).

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Marine Report No 02/13 dated 07.11.2012 (Cold Inflation test report as witnessed by a LR surveyor).

Marine Report No 03/13 dated 07.11.2012 (Cold Inflation test report as witnessed by a LR surveyor).

Liferaft towing test, test report No:1424176/LIV, dated 21 November 2014.

TEST REPORTS FOR POLAR SERVICE QUALIFICATION

Test of cold protection device, Polar Box used in conjunction with Hammar Release Unit, Test report BE 030-1/2017, dated 10/11/2017

Seating space test report BE 033/2017, dated 15/11/2017

Seating space test report BE 034/2017, dated 15/11/2017

Ice Accretion test on liferaft, Power Blanket and Hammar Polar Boxes, test report BE 042/2017, dated 10/11/2017

Vibration test of Power Blanket, test report BE 043/2017, dated 12/07/2017

Inflation test after exposure to -70^{0}C for 50 hours, Model Liferaft 25 TO PA ESR, test report BE 051/2017, dated 15/11/2017

Inflation test after exposure to -70^{0}C for 50 hours, Model 25 TO SR PA and 35 TO PA ESR, test report BE 052/2017, dated 05/11/2017

Inflation test after exposure to -70^{0}C for 50 hours, Model 100 TO SR V PA, test report BE 053/2017, dated 15/11/2017

Inflation test after exposure to -70^{0}C for 50 hours, Model 6 TO PA and Model 6 TO PA ESR, test report BE 054/2017, dated 07/11/2017

Seam Tensile Tests on conditioned samples at -70^0 C for 120 hours, Certificate No:LIV 1700975/01, dated 05 January 2018 endorsing Marine Test Report TR2018-003, dated 29/01/2018

Solid surface landing test, Model 100 TO SRV PA Survitec Zodiac, test report BE 056/2017, dated 06/12/2017

CONDITIONS OF CERTIFICATION

Polar Service Conditions

1. Cold inflation test temperature: -70^0 C.
2. Hydrostatic release unit: HAMMAR H20 Polar Box.
3. Minimum expected time of rescue: 5 days.
4. Liferaft capacity to accommodate personal in suitable polar clothing and additional polar survival equipment:

Normal Application Capacity	12	16	20	25
Polar Application Capacity	9	13	16	20

5. Operational assessment should be carried out to assess the contents of the Personal and Group Survival Kits, for the intended route. The parent vessel should be provided with personal and group survival kits for 110% of persons on board and stowed at a easily accessible location as required for the expected time of rescue as determined by the operational assessment. While determining the contents of both personal and group survival equipments, the sample list of items in paragraph 9.1 and 9.2 of MSC Circ.385(94) PART I-B shall be supplied as the minimum content of the kit.
6. Embarkation arrangement such as embarkation ladders used in conjunction with polar liferafts shall provide safe abandonment of ship, taking into consideration the possible adverse environmental conditions during an emergency. The embarkation ladder used in conjunction with liferafts shall be kept free of ice.

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7. Blanket heating is to be connected to the emergency switch board.

8. Adequate emergency rations shall be provided, for the maximum expected time of rescue as determined by the operational assessment.

9. Liferaft shall be equipped with EPIRB and radio communication devices with battery capacity and life for maximum expected time of rescue as required by paragraph 10.2.2.2 of Polar Code.

10. Position indicating lights and internal reading lights should have a battery capacity and life for maximum expected time of rescue.

11. Liferaft used in Polar service shall be serviced at intervals of 12 months.

Normal Service Conditions

12. Liferaft specifications when used with Leafields GIST Inflation System:-

Liferaft Type	SoLaS E-Pack	RFD Containers				Stowed Weight (KG)	Drop Height (M)	Laden Weight (KG)
		Mk10 Size	Mk14 Size	Mk20 Size	Type 35 Size			
12DL	A	6DL				118	46	1108
	B	4DL				94	46	1084
	A		14DL			117	46	1107
	B		14DL			96	46	1086
16DL	A	7DL				143	46	1463
	B	6DL				111	46	1431
	A		14DL			156	46	1476
	B		14DL			110	46	1430
	A		17DL			145	46	1465
20DL	A	9DL				164	46	1814
	B	6DL				124	46	1774
	A			7DL		164	20	1814
	A		17DL			167	46	1817
	B		17DL			127	46	1777
25DL	A	9DL				183	46	2245.5
	B	7DL				133	46	2195.5
	A		17DL			182	46	2244.5
	B		17DL			135	46	2197.5
	A			7DL		183	20	2245.5
	B			7DL		153	20	2215.5

**This SOLAS A Pack Configuration should provide additional 5% of fresh water for each person the liferaft is permitted to accommodate (i.e. total minimum 1.875 litres in excess).*

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	Liferaft Type			
	12DL	16DL	20DL	25DL
Towing force @ 2 Knots (KN)	0.8	0.87	0.78	0.92
Towing force @ 3 Knots (KN)	1.79	2.06	1.5	3.04

Configuration: The Liferafts consist of a complete standard SOLAS approved davit launched liferaft hermetically sealed within a moisture controlled envelope. The status of the atmosphere within the envelope can be verified at any time. The liferafts include means to evaluate the humidity level behind the protective barrier and to detect any leakage of inflation gas during the annual onboard inspection in accordance with MSC.1/Circ. 1328

13. **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

14. The liferaft's container shall be marked as required by the LSA Code Regulation IV/4.2.6.3 with the maker'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.

15. 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.

16. 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.

17. This type of liferaft is designed to be serviced at extended intervals not exceeding 30 months which shall continue for the service life of the product as long as the hermetic seal has not been compromised. The application of the 30 months service interval shall be pursuant to conditions of MCA letter MS 67/11/6 dated 23 May 2016, and being subject to the acceptance of the vessel's Marine Administration.

18. The service of the liferaft is to be undertaken at a Lloyd's Register approved or Flag Administration approved Service station duly authorised and appointed by the manufacturer subject to the following conditions:

    – The hermetic seal verification shall be performed on board at intervals not exceeding 12 months from the last service or onboard inspection, in accordance with MSC.1/Circ. 1328 and the manufacturer's instructions by personnel trained and certificated by the liferaft manufacturer.

    – The supplied Log Card should be completed with the person's Certificate of Competence number and the container label then being indelibly updated to display the date of the next annual inspection.

19. The liferaft shall be fitted with a label containing the text "The liferaft is permitted for extended service interval of 30 months if serviced at an approved service station" and "The Liferaft must be inspected on board at intervals not exceeding 12 months by a person certified for such purpose by Survitec Group".

20. 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. 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.

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21. Retro-reflective materials, position-indicating lights and the equipment carried on board the liferaft as required by LSA Code Regulations IV/4.1.5 and 4.2.9 are to be approved type.

22. **Installation on board:** The on-board arrangements and installation of the liferaft, including launching of liferaft on ice are not part of this design appraisal or certificate. All such arrangements are to be to the satisfaction of the Surveyors attending on board.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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.

Lijo Thomas

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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