





Lloyd's  
Register

**Lloyd's Register Verification Limited**

71 Fenchurch Street, London, EC3M 4BS  
Telephone 020 7423 2416 Fax 020 7423 2053  
Email med@lr.org

Page 2 of 9
Document number MED 1750199/M1
Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1**

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and European Union legislation for the EC Type Examination of Marine Equipment for use on Merchant Ships Registered in the European Economic Area.

This Design Appraisal Document (schedule) forms part of the Certificate.

This Certificate is an amendment to the Certificate No. MED 1750199.

**EXAMINED DOCUMENTATION**

Liferaft Approval data issued by Lloyd's Register:

LR Certificate No.: SAS S070148/M2, SAS S070149/M2, SAS S070150/M2, SAS S070156/M2, SAS S070157/M2, SAS S070158/M2, SAS S070159/M2, SAS S100002/M2, SAS S100001/M2, SAS S100003/M2, SAS S100004/M2, SAS S100005/M1, SAS S100006/M1, SAS S100007/M1

EC Module B Certificate No.: MED 0750276/M2, MED 0750257/M2, MED 0750258/M2, MED 0750270/M2, MED 0750271/M2, MED 0750272/M2, MED 0750273/M2, MED 1050002/M2, MED 1050003/M2, MED 1050004/M2, MED 1050005/M2, MED 1050006/M1, MED 1050007/M1, MED 1050008/M1

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.



Lloyd's  
Register

## Lloyd's Register Verification Limited

71 Fenchurch Street, London, EC3M 4BS

Telephone 020 7423 2416 Fax 020 7423 2053

Email med@lr.org

Page 3 of 9
Document number MED 1750199/M1
Issue number 1

### DESIGN APPRAISAL DOCUMENT

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

#### ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1

<u>Drawing No.</u>	<u>Rev. No.</u>	<u>Date</u>	<u>Drawing Title</u>
D50863	2	07.08.07	Surviva Mk4 25-Persons Liferaft
22540-01/02/03	2	02.07.07	General Arrangement (3 drawings)
DCS 8920	-	08.09.08	RFD Surviva MkIV range Marine Liferrafts: USCG Compliant
D50857	2	07.08.07	Surviva MK4 6-Persons Liferaft
20638-01/02	2	17-23.06.07	General Arrangement (2 drawings)
15-03.45	F	08.07.05	Container size 4 type 4 and 5 with cradle lashing strap and hydrostatic release unit.
D50858	1	07.08.07	Surviva MK4 8 Persons
20837-01/02	2	09.07.07	General Arrangement
D50859	1	07.08.07	Surviva MK4 10-Persons Liferaft
21022-01/02/03	2	10.07.07	General Arrangement (3 drawings)
D50860	1	07.08.07	Surviva MK4 12-Persons Liferaft
21236-01/02	2	01.07.07	General Arrangement (3 drawings)
D50861	2	07.08.07	Surviva Mk4 16-Persons Liferaft
21639-01/02/03	2	25.06.07	General Arrangement (3 drawings)
D50862	1	07.08.07	Surviva Mk4 20-Persons Liferaft.
22053-01/02	2	18.07.07	General Arrangement (2 drawings)
99991577	-	31.08.10	Fibre glass container model EV-VTRF03
99991578	-	31.08.10	Fibre glass container model EV-VTRF03
99991575	-	31.08.10	Fibre glass container model EV-VTRF03
99991574	-	31.08.10	Fibre glass container model EV-VTRF03

#### TEST REPORTS

DSB Test Report for LR 97 8 person date completed 17 October 1997

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

DSB Test Report for LR 97 6 person date completed 17 October 1997

DSB LR 97, 6 Person Liferaft drop test, completed on 9 December 1998, witnessed by surveyor acceptable to Lloyds Register

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 9 December 1999, 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



Lloyd's  
Register

**Lloyd's Register Verification Limited**

71 Fenchurch Street, London, EC3M 4BS  
Telephone 020 7423 2416 Fax 020 7423 2053  
Email med@lr.org

Page 4 of 9
Document number MED 1750199/M1
Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1**

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

DSB LR97, 6 and 16 Persons Liferaft drop test, completed on 9 December 1998 and 10 December 1999 witnessed by surveyor acceptable to Lloyds Register

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

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)

**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

<u>Report No.</u>	<u>Date</u>	<u>Description</u>
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"**

<u>Report No.</u>	<u>Date</u>	<u>Description</u>
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)



Lloyd's Register

**Lloyd's Register Verification Limited**

71 Fenchurch Street, London, EC3M 4BS  
 Telephone 020 7423 2416 Fax 020 7423 2053  
 Email med@lr.org

Page 5 of 9
Document number MED 1750199/M1
Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1**

**TECHNICAL CRITERIA**

Liferaft Capacity	SoLaS E-Pack	RFD Containers				DSB Containers				EUROVINI L	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
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



Lloyd's Register

**Lloyd's Register Verification Limited**

71 Fenchurch Street, London, EC3M 4BS  
 Telephone 020 7423 2416 Fax 020 7423 2053  
 Email med@lr.org

Page 6 of 9
Document number MED 1750199/M1
Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1**

	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



Lloyd's  
Register

## Lloyd's Register Verification Limited

71 Fenchurch Street, London, EC3M 4BS

Telephone 020 7423 2416 Fax 020 7423 2053

Email med@lr.org

Page 7 of 9
Document number MED 1750199/M1
Issue number 1

### DESIGN APPRAISAL DOCUMENT

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

#### ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1

#### 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	1.3
Towing Force @ 3 Knots (kN)	1.23	1.5	1.55	1.79	2.06	1.5	2.59



Lloyd's  
Register

## Lloyd's Register Verification Limited

71 Fenchurch Street, London, EC3M 4BS

Telephone 020 7423 2416 Fax 020 7423 2053

Email [med@lr.org](mailto:med@lr.org)

Page 8 of 9
Document number MED 1750199/M1
Issue number 1

### DESIGN APPRAISAL DOCUMENT

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

#### ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1

#### 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 trade mark, 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
- 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 in accordance with the Marine Equipment Directive (Commission Implementing Regulation (EU) 2017/306), as amended, or by the Marine Administration of the country where the ship is registered (i.e. the flag state) or those acting on behalf of that Administration, as applicable
- The liferaft shall be marked as required by the LSA Code Regulation IV/4.2.7.1 with the maker's name or trade mark, 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
- 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
- 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
- Production items are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D) or Product Quality Assurance (Module E) or Product Verification (Module F) of the Marine Equipment Directive





Lloyd's  
Register

**Lloyd's Register Verification Limited**

71 Fenchurch Street, London, EC3M 4BS  
Telephone 020 7423 2416 Fax 020 7423 2053  
Email med@lr.org

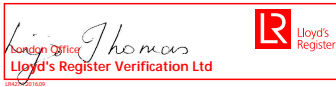
Page 9 of 9
Document number MED 1750199/M1
Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 20 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/LT/WP31788128
----------------------	--

**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750199/M1**

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 (Module E) or witnessed by the Notified Body as required by the Product Verification (Module F) of the Marine Equipment Directive. 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 equipment is to have the "Mark of Conformity" affixed and be issued with a "Declaration of Conformity"
13. 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



Lijo Thomas  
Senior Specialist  
Statutory Fire & Safety  
Southampton Technical Support Office, Marine & Offshore  
For and on behalf of Lloyd's Register Verification  
**LRV EC Distinguishing No. 0038**