Certificate No: LR22509282SS
Issue Date: 25/05/2022
Expiry Date: 24/05/2027

Certificate of Type Approval

The product detailed below has been found by a member of the Lloyd's Register group to comply with the Specified Standard (s) referenced below and may be accepted for use on ships and offshore installations classed with Lloyd's Register, and on ships and offshore installations when authorised by relevant contracting governments.

Manufacturer	**Fibrelight Developments Ltd/CQC Ltd**
Address	CQC House, 2-3 Brannam Court, Barnstaple, EX31 3TD, United Kingdom
Type	MEANS OF EMBARKATION
Description	Polyester Emergency Ladder/ Controlled Means of Descent – Type: "Fibrelight"
Trade Name	"Fibrelight"
Specified Standard	IMO Resolution MSC.81 (70) Part 1, as amended IMO Resolution A.520(13) LSA Code Regulation I/1.2 MGN 519 (M) ISO 5489:2008 (as applicable) SAE J1960

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

DESIGN APPRAISAL DOCUMENT

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR22509282SS

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 Certificate is a Renewal and an Amendment of Certificate Number SAS S170055/M2

APPROVAL DOCUMENTATION

Technical File Document No ajph6, Issue 1 & dated 16.04.2012.

Fibrelight Emergency Ladder, Operating Instructions & Maintenance Record Document No ajph8, Issue No 3 & dated 05.01.15.

Drawing No:	Rev. No:	Title:	Date:
GA 27-02-14 Dwg 001	0	Emergency Ladder A Standard Ladder	27.02.14
GA 27-02-14 Dwg 002	0	Emergency Ladder B with Ballast	27.02.14
GA 27-02-14 Dwg 003	0	Emergency Ladder S with Stand Offs	27.02.14
GA 27-02-14 Dwg 004	0	Emergency Ladder BS with ballast and Stand Offs	27.02.14

Statement for deployment of equipment Doc. No SOU 1400760/01, dated 21st July 2014 as witnessed by Lloyd's Register Surveyor.

TEST REPORTS

Test report on weathering of sample in accordance with SAE J1960, conducted at SATRA technology centre, Report No FWT01774444/0933/A, dated 9th September 2009.

Test report on strength requirements of BS ISO 799-2004, conducted at RKS laboratories, Report No 2608, issue 2, dated 12th May 2010.

Test certificate for Fibrelight Emergency ladder, conducted at RKS laboratories, Certificate No C2706, Issue No 1, dated 7th March 2012.

Practical Performance test report of Fibrelight Emergency ladder, conducted at Fleetwood Testing Laboratory, Report No BLS/FTL/2442, dated 23rd March 2012.

Addendum to Test Report No BLS/FTL/2442, dated 16th April 2012.

Fibrelight strops tensile test, conducted at Lloyd's British Testing Laboratory, Report No 230625, dated 23rd August 2013.

Fibrelight Emergency Ladder stainless steel ballast rungs tensile test, conducted at Lloyd's British Testing Laboratory, Report No 235376, dated 30th January 2014.

Practical & Performance test of Fibrelight 30 mt emergency ladder with stand offs and ballast, conducted at Fleetwood Testing Laboratory, Report No DK/FTL/2617, dated 28th February 2014.

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Tensile Test Report conducted at Lloyd's British, Report No 247049, dated 26th November 2014.

Temperature Cycling Test, Oil Resistance Test and Weathering Test conducted at 4Ward Testing, Report No R1721, dated 2014.11.19.

Lloyds British Testing Tensile strength test of GRP, Carbon Fibre rung ladder, Report No: SOTON01, dated 14/07/2017.

Ladder unrolling test, 65 meters of length, Test Report No PRJ1109998304, dated 05.04.2019.

Load testing of high shear carbon rod ladder rungs, Test Report No: PRJ-018221, dated 12th October 2018.

Tensile Strength of Thread Material after exposure to cold temperature , test conducted at 4Ward Testing, Report No R2183, dated 17 October 2018.

CONDITIONS OF CERTIFICATION

1. Ladder Dimensions and configurations:

Length	Width	Columns	Rung Material
1 to 15 meters	600 mm	2	12.5mm dia. Carbon Fibre or 12.5mm dia GRP
15 to 30 meters	600 mm	2	12.5mm dia. Carbon Fibre
1 to 10 meters	800 mm	3	12.5mm dia. Carbon Fibre or 12.5mm dia GRP
Up to 65 meters	600 mm	2	12.5mm dia. Carbon Fibre or 12.5mm dia GRP

- SWL of individual GRP rungs over any 2 section/column: 150 KG
- SWL of individual high shear carbon rungs over any 2 section/column: 200 KG
- SWL of ladder: 600 KG

Note:

a. For each installation of the ladder, the "Company" (Ship Owner/Vessel Operator) should conduct and documented a risk assessment. Taking into account the anticipated condition and ship specific for survival craft characteristics and a safety case should be submitted to the Flag Administration (of the vessel on which the means of embarkation is installed) for their final acceptance.

2. The emergency ladder satisfy the objectives required by SOLAS REG.III/11.7 (in matter of strength, suitability for marine environment) as other means of embarkation enabling descent to the water in a controlled manner for the Liferafts required by SOLAS Reg.III/31.1.4 or Reg. III/21.1.1.2. However, it is to be confirmed that the use of this means of embarkation is acceptable to the Flag Administration (of the vessel on which the novel life-saving appliance is installed) on an installation-by-installation basis.

   a. In case the ladder is used for the embarkation of other survival craft rather than the ones required by SOLAS Reg.III/31.1.4 or Reg. III/21.1.1.2., the ship's owner/operator should conduct a risk assessment and a safety case should be submitted to the Flag Administration (of the vessel on which the novel life-saving appliance is installed) for their final acceptance on an installation-by-installation basis.

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b. The length of the ladder used to board the remotely located Liferaft should be calculated by applying an adverse list of 20 degrees, to the loading condition taken from the approved ship's loading manual which gives the lightest draft at the embarkation station.

3. Before delivery, each ladder is to be subject to a visual examination and unrolling test as per ISO 5489:2008 paragraph 5. The particulars of the test are to be clearly and durably marked on the equipment.

4. The emergency ladder has to be clearly marked with the name and address of manufacturer, the manufacturer's model designation, the year of assembly of the ladder, the maximum length of the ladder and the maximum safe loading (by number of persons and by total weight).

5. On board drills should be conducted to ensure that the crew are familiar with this equipment and Ship's abandonment procedures.

6. The loose gear to be used in conjunction with this equipment is not part of this Design Appraisal or Certificate but is expected to be tested in accordance with requirements of IMO Resolution MSC.81 (70) and chapter 12 of the LR Code for lifting appliance as appropriate, to the attending Surveyor satisfaction.

7. The equipment should be clearly marked with the maximum number of persons it can accommodate, based on a weight of 82.5 kg per person.

8. For compliance with SOLAS Regulation III/35 & III/36 fully detailed operations and maintenance Manuals shall be supplied with each equipment.

9. **Installation on board:** The installation of the equipment is not part of this Design Appraisal or Certificate. All such arrangements are to be to the satisfaction of the vessel's Administration and/or RO acting on their behalf on an installation-by-installation.

10. 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.

11. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/ and to ensure that production ladders are produced to the same standard as the original prototype ladder tested for approval.

12. Production tests are to be conducted in accordance with ISO 5489 Annexe A; and be recorded by the manufacturer in accordance with the approved quality control system.

13. A visual examination as described in Table 1, and the tests in Table A.1 of ISO 5489:2008 should be conducted by recognized organization, at least annually on a ladder taken from the production line to ensure that it complies with the requirements of Clauses 4 and 5 ISO 5489:2008.

14. Should a change of Place of Production from that stated below be required 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 Certificate will require to be updated for Approval to be maintained.

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DESIGN APPRAISAL DOCUMENT

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PLACE OF PRODUCTION

Fibrelight Developments Ltd/CQC Ltd
CQC House, 2-3 Brannam Court
Barnstaple
EX31 3TD
United Kingdom

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)