



EC TYPE EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

LLOYD'S REGISTER VERIFICATION LIMITED (LRV), designated as a "notified body" under the terms of the Merchant Shipping (Marine Equipment) Regulations 2016 (S.I. 2016 No.1025), did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the essential Fire protection equipment requirements of Marine Equipment Directive (MED) 2014/90/EU and Commission Implementing Regulation (EU) 2018/773 indicating design, construction and performance requirements and testing standards for marine equipment, subject to any conditions in the Design Appraisal Document attached hereto.

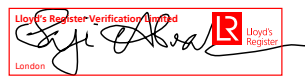
Manufacturer (Applicant)	Integrated Fire Protection Pvt Ltd.
Address	60A Pandit Madan Mohan Malabya Sarani Chakraberia Road (North) Kolkata- 700020 West Bengal India
Authorised Representative	Mrs. Djanaguyrame
Address	1 Avee De Colmar, 93110 Rosny-sous-Bois, France
Reference	Regulation (EU) 2018/773
Regulation Item (No & Item designation)	MED/3.59 - EXPANSION FOAM FOR FIXED FIRE EXTINGUISHING SYSTEMS FOR CHEMICAL TANKERS
Product Type	FOAM CONCENTRATE
Product Description	Fire Extinguishing Low-expansion Type A (Alcohol Resistant/Multi-purpose) AR-AFFF Synthetic (S) Foam Concentrates - Types: "IFP UNILIGHT AR-AFFF TYPE 3/3 ^{C6} (SELF-HEALING)" and "IFP UNILIGHT AR-AFFF TYPE 3/6 ^{C6} (SELF-HEALING)" for use on hydrocarbon and polar solvent fires
Specified Standard	IMO MSC.1/Circ.1312 IMO MSC.1/Circ.1312/Corr.1

The attached Design Appraisal Document (schedule) forms part of this certificate.

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

Date of issue 5 November 2018 Expiry date 4 November 2023

Certificate No. MED 1850197 Signed



Sheet No. 1 of 4 Name S. Abraham
For and on behalf of Lloyd's Register Verification
LRV EC Distinguishing No. 0038

Note:

This certificate is issued under the authority of the MCA.

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 the notified body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.

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Lloyd's
Register

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Document number MED 1850197
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 5 November 2018	Quote this reference on all future communications UKITSO/SFS/TA/JE/SA/WP32506582
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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1850197

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.

APPROVAL DOCUMENTATION

Advance Firetec and Research Lab Pvt. Ltd (AFTRL), B-3 Mangolpuri Industrial Area, Phase-II, Delhi 110034, India; Test Reports No. 667 and 668, both dated 4th April 2018 and Addendum letter dated 29 October 2018 clarifying product type tested.

CONDITIONS OF CERTIFICATION

- Types: "IFP UNILIGHT AR-AFFF TYPE 3/3^{C6} (SELF-HEALING)" and "IFP UNILIGHT AR-AFFF TYPE 3/6^{C6} (SELF-HEALING)" Synthetic (S) Low-expansion foam concentrates for use on hydrocarbon fires and polar solvent/alcohol based fires*, with the following essential characteristics (determined based on testing with seawater in accordance with IMO MSC.1/Circ.1312)

	"IFP UNILIGHT AR-AFFF TYPE 3/3 ^{C6} (SELF-HEALING)"	"IFP UNILIGHT AR-AFFF TYPE 3/6 ^{C6} (SELF-HEALING)"
Usage concentration	3% for both hydrocarbon and polar solvent fires	3% for hydrocarbon and 6% for polar solvent fires
Expansion ratio	6.04	7.2 (3%) & 8.8 (6%)
Drainage time (25%)	3 minutes 2 seconds	3mins 40 seconds (3%) & 6minutes 50 seconds (6%)
Volumic mass density (g/ml)	1.03	1.02
Kinematic viscosity (mm ² /s or cSt)	267.73	220.18
Film formation/ Spreading Co-efficient	5.2	5.5
Sedimentation (%)	0.02%	0.02%
pH value	7.97	7.9
Freezing temperature (°C)	-2	-2
Storage temperature range (°C)	1.7 to 49	1.7 to 49

* The above foam concentrates demonstrated satisfactory fire performance when tested separately with n-heptane (representing hydrocarbon fuels) and isopropyl alcohol and acetone (representing polar solvent fuels) in accordance with IMO MSC.1/Circ.1312

- To be used with separately approved fixed or mobile low expansion foam fire extinguishing systems
- It is to be confirmed that the IMO MSC.1/Circ.1312 test standard is acceptable for the project and applications envisaged



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4. This certificate only approves the fire performance characteristics of the foam concentrate in accordance with IMO MSC.1/Circ.1312. The use of certain foam concentrates may also be subject to additional requirements, including environmental regulations, depending on the projects where they are to be used. Therefore the suitability of the foam concentrate for each application must also be confirmed at the design stage by the Project Plan Approval authority
5. Periodical testing of foam concentrates should be carried out not more than 3 years after being supplied to the ship and after that, every year, by independent laboratories or authorised service suppliers acceptable to the Administration
6. The storage container should be compatible with the foam concentrates throughout the service life of the foam
7. Each product is to be supplied with its manual for application, use, transport, storage and maintenance
8. A Batch Certificate should be provided with each delivery, with a declaration of the main characteristics of Sedimentation, pH Value, Expansion Ratio, Drainage Time and Volumic Mass, by the manufacturer and will be the basis for the periodical testing
9. Chemical composition of foam is to be maintained in production in accordance with originally tested composition formula
10. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers agreed by Lloyd's Register, are fully compliant with the applicable statutory regulations and designed and manufactured to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties
11. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype
12. 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). The wheelmark cannot be affixed to the product until a conformity assessment module is in place
13. Each item, batch or lot of the equipment is to be issued with a "Declaration of Conformity" and have the "Mark of Conformity" affixed after a conformity assessment module is in place



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PLACE OF PRODUCTION

Integrated Fire Protection Pvt. Ltd
Rajbari Para
Jalpaiguri 735101
West Bengal
India



Saji Abraham
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
For and on behalf of Lloyd's Register Verification
LRV EC Distinguishing No. 0038