



EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRE000001V

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

Øglænd System AS
KLEPPE, Norway

for

Cable trays and ducts (Glass Reinforced Plastic (GRP))

with type designation(s)

EngiFibre GRP Cable Ladders FOE70, FOE100, FOE150, FOE200, FOE150GA

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Cable trays and ducts (Glass Reinforced Plastic (GRP))

Intended service

EngiFibre GRP Cable Ladders for use onboard ship and offshore platforms.

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2030-11-25**.

Issued at **Høvik** on **2025-11-26**

DNV local unit: **West Norway CMC**

for **DNV**

Approval Engineer: **Qiang William Guo**

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Frederik Tore Elter
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

EngiFibre® Glass Fibre Reinforced Cable ladder system, manufactured in Class 1 Polyester and Polyester with anti-static properties (C1A). Complying with IACS Rec 73, DNV-CP-0593.

Classification according to IEC 61537:

System type	Classification	Description	Note
FOE	6.1.2	Non-metallic system component	With FRP accessories
FOE	6.1.3	Composite system component	With SS accessories
FOE	6.2.2	Non-flame propagating system component	Non-flame propagating system component
FOE	6.3.1	Cable tray system or cable ladder system without electrical continuity characteristics	Cable tray system or cable ladder system without electrical continuity characteristics
FOE	6.4.2	Electrically non-conductive system component	Electrically non-conductive system component
FOE	6.5.3.3	Corrosion resistance for Internal fixing devices in SS option	Class III
FOE	6.6.1	Minimum temperature	- 20°C
FOE	6.6.2	Maximum temperature	+85°C
FOE	6.8	Free base area classification	Class X / Y. Size dependant. Contact manufacturer
FOE 70	6.9.4	System component offering impact resistance of 20 J	20J
FOE 100	6.9.4	System component offering impact resistance of 20 J	20J
FOE 150 GA	6.9.4	System component offering impact resistance of 20 J	20J
FOE 150	6.9.5	System component offering impact resistance of 50 J	50J
FOE 200	6.9.5	System component offering impact resistance of 50 J	50J

FOE70 Light duty Cable ladder system with rail height 70mm:

Type designation Width (mm) Height (mm) Length (mm)

Description	Width (mm)	Height (mm)	Length (mm)
Cable ladder FOE70 CL-150-3000 FRP	150	70	3000
Cable ladder FOE70 CL-200-3000 FRP	200	70	3000
Cable ladder FOE70 CL-300-3000 FRP	300	70	3000
Cable ladder FOE70 CL-400-3000 FRP	400	70	3000
Cable ladder FOE70 CL-450-3000 FRP	450	70	3000
Cable ladder FOE70 CL-500-3000 FRP	500	70	3000
Cable ladder FOE70 CL-600-3000 FRP	600	70	3000

FOE100 Medium duty Cable ladder system with rail height 100mm:

Type designation Width (mm) Height (mm) Length (mm)

Description	Width (mm)	Height (mm)	Length (mm)
Cable ladder FOE100 CL-150-3000 FRP	150	100	3000
Cable ladder FOE100 CL-300-3000 FRP	300	100	3000
Cable ladder FOE100 CL-450-3000 FRP	450	100	3000
Cable ladder FOE100 CL-600-3000 FRP	600	100	3000
Cable ladder FOE100 CL-750-3000 FRP	750	100	3000
Cable ladder FOE100 CL-900-3000 FRP	900	100	3000
Cable ladder FOE100 CL-150-6000 FRP	150	100	6000
Cable ladder FOE100 CL-300-6000 FRP	300	100	6000
Cable ladder FOE100 CL-450-6000 FRP	450	100	6000
Cable ladder FOE100 CL-600-6000 FRP	600	100	6000
Cable ladder FOE100 CL-750-6000 FRP	750	100	6000
Cable ladder FOE100 CL-900-6000 FRP	900	100	6000

FOE150GA Heavy duty Cable ladder system with rail height 150mm:

Type designation Width (mm) Height (mm) Length (mm)

Description	Width (mm)	Height (mm)	Length (mm)
Cable ladder FOE150GA CL-150-3000 FRP	150	150	3000
Cable ladder FOE150GA CL-300-3000 FRP	300	150	3000
Cable ladder FOE150GA CL-450-3000 FRP	450	150	3000
Cable ladder FOE150GA CL-600-3000 FRP	600	150	3000
Cable ladder FOE150GA CL-750-3000 FRP	750	150	3000
Cable ladder FOE150GA CL-900-3000 FRP	900	150	3000

FOE150 Very heavy-duty Cable ladder system with rail height 150mm:

Type designation Width (mm) Height (mm) Length (mm)

Description	Width (mm)	Height (mm)	Length (mm)
Cable ladder FOE150 CL-150-3000 FRP	150	150	3000
Cable ladder FOE150 CL-300-3000 FRP	300	150	3000
Cable ladder FOE150 CL-450-3000 FRP	450	150	3000
Cable ladder FOE150 CL-600-3000 FRP	600	150	3000
Cable ladder FOE150 CL-750-3000 FRP	750	150	3000
Cable ladder FOE150 CL-900-3000 FRP	900	150	3000
Cable ladder FOE150 CL-150-6000 FRP	150	150	6000
Cable ladder FOE150 CL-300-6000 FRP	300	150	6000
Cable ladder FOE150 CL-450-6000 FRP	450	150	6000
Cable ladder FOE150 CL-600-6000 FRP	600	150	6000
Cable ladder FOE150 CL-750-6000 FRP	750	150	6000
Cable ladder FOE150 CL-900-6000 FRP	900	150	6000

FOE200 Very heavy-duty Cable ladder system with rail height 200mm:

Type designation Width (mm) Height (mm) Length (mm)

Description	Width (mm)	Height (mm)	Length (mm)
Cable ladder FOE200 CL-150-3000 FRP	150	200	3000
Cable ladder FOE200 CL-300-3000 FRP	300	200	3000
Cable ladder FOE200 CL-450-3000 FRP	450	200	3000
Cable ladder FOE200 CL-600-3000 FRP	600	200	3000
Cable ladder FOE200 CL-750-3000 FRP	750	200	3000
Cable ladder FOE200 CL-900-3000 FRP	900	200	3000

Application/Limitation

Cable ladder with UV resistance suitable for open deck.

To be installed in accordance with the manufacturer's instructions.

The installation shall be mechanically protected and especially on weather decks in cargo hold areas and through cargo holds. Cable ladders and supports must not to be used as a walkway.

Fire resistant cables shall be installed on cable trays/ladders made of steel.

Cable tray made of Polyester with anti-static properties (C1A) with surface resistance tested according to IEC 60079-0 can be installed in gas dangerous areas.

Manufactured by:

Oglaend Industries SDN
Shah Alam
Malaysia.

Type Approval documentation

Marking of product

ØS Logo & Øglænd System, Item number, Description, width & length

Other Conditions

Type tests are in accordance with EU RO Mutual Recognition Technical Requirements CABLE TRAYS & DUCTS (GLASS REINFORCED PLASTIC /GRP) Version 0.3 i.e. IACS REC.73 (Dec 2023) and IEC61537 (Edition 2023): Safe working load test (SWL), Impact resistance test, flame retardant test, Smoke test, Volumetric and Surface resistivity test. UV test.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment to be performed annually.

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).