

# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE00001A1**  
Revision No:  
**2**

## This is to certify:

**That the Low Voltage Cable**

with type designation(s)

**FXFQ-HF(c) & FXFQ-HF(i)(c) & RXFQ-HF(c) & RXFQ-HF(i)(c) 250 V,  
FXAQ-HF(c) & FXAQ-HF(i)(c) & RXAQ-HF(c) & RXAQ-HF(i)(c) 250 V,  
FXQ or RXQ 250V**

Issued to

**amo specialkabel AB  
ALSTERMO, Sweden**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft  
DNV class programme DNV-CP-0399 – Type approval – Electric cables**

## Application :

**Control and instrumentation.**

**Products approved by this certificate are accepted for installation on all vessels classed by DNV.**

Type	Rated voltage (V)	Temp. class (°C)
<b>FXFQ-HF(c) &amp; FXFQ-HF(i)(c) &amp; RXFQ-HF(c) &amp; RXFQ-HF(i)(c) 250 V</b>	<b>250</b>	<b>90</b>
<b>FXAQ-HF(c) &amp; FXAQ-HF(i)(c) &amp; RXAQ-HF(c) &amp; RXAQ-HF(i)(c) 250 V</b>	<b>250</b>	<b>90</b>
<b>FXQ or RXQ 250V</b>	<b>250</b>	<b>90</b>

Issued at **Høvik** on **2021-11-03**

for **DNV**

This Certificate is valid until **2026-07-01**.

DNV local station: **Malmö**

Approval Engineer: **Ivar Bull**

**Trond Självåg  
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

Type:	FXFQ-HF(c) & FXFQ-HF(i)(c) & RXFQ-HF(c) & RXFQ-HF(i)(c) 250 V, FXAQ-HF(c) & FXAQ-HF(i)(c) & RXAQ-HF(c) & RXAQ-HF(i)(c) 250 V, FXQ or RXQ 250V
Conductors:	Plain or tinned, stranded copper class 2 (F) or class 5 (R)
Core insulation:	XLPE
Individual screen (if any)	AL foil w/tinned copper drain wire or copper wire braid
Metal Covering:	FXFQ type: Plain copper wire braid FXAQ type: Aluminium backed polyester tape with copper drain wire
Outer sheath:	SHF1

### FXFQ

No of cores:	Cross sectional area [mm <sup>2</sup> ]
1, 2, 4, 7, 8, 10, 14, 19, 24 pairs	0,5 0,75
1 Quad	0,75
2, 4, 8 pairs	1
4 Triple	1

### FXAQ

No of cores:	Cross sectional area [mm <sup>2</sup> ]
5, 6, 7, 8 Cores	0,75
1, 2, 4, 5, 7, 8, 14 Pairs	0,5 0,75
1, 2, 7 Triples	0,75
1 Quad	0,75
2, 4, 8 Pairs	1
4 Triple	1

## Application/Limitation

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

## Type Approval documentation

[Datasheets and test reports](#)

## Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2020-01	Electrical installations in ships - Part 350: General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-360	2021-01	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables	
IEC 60092-376	2017-05	Cables for control and instrumentation circuits 150/250 V (300 V)	
IEC 60332-3-22	2018-07	Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically mounted bunched wires or cables - Category A	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60754-1	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen

IEC 60754-2	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Part 1: Test apparatus Part 2: Test procedure and requirements	Low smoke Light transmittance >60%
BS EN 60811 1-4, Clause 8.2	1995-12	Insulating and sheathing materials of electric cables. Common test methods. General application. Tests at low temperature	YD = 7,41mm, 4-5 ggr x YD = 29,6 – 37mm 35mm mandrel Test temp.: -30°C
IEC 60092-350, 8.8 IEC60811-1-4	1995-12	Insulating and sheathing materials of electric cables. Common test methods. General application. Tests at low temperature	Weight of hammer: 300g Height = 100mm Test temp.: -30°C

### Marking of product

Amokabel - FXFQ-HF(c) or FXFQ-HF(i)(c) or RXFQ-HF(c) or RXFQ-HF(i)(c) or FXAQ-HF(c) or FXAQ-HF(i)(c) or RXAQ-HF(c) or RXAQ-HF(i)(c) or FXQ or RXQ – 150/250V – 90°C – Size – IEC 60332-3-22 – Lot no.

### Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are 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 Routine Tests (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 is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE