TYPE APPROVAL CERTIFICATE

Certificate no.:
TAE00002B2
Revision No:
8

This is to certify:

that the Low Voltage Cable

with type designation(s)
AFUMEX FIRS NAU e-senS XTCUA,
AFUMEX FIRS NAU e-senS XOTCUA,
AFUMEX FIRS NAU e-senS XHTCUA,
AFUMEX FIRS NAU e-senS XAOTCUA

issued to
PRYSMIAN CABLES SPAIN, S.A.
Vilanova i la Geltrú, **Spain**

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Control and instrumentation. Fire resistant.
Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Type	Rated voltage (V)	Temp. class (°C)
AFUMEX FIRS NAU e-senS XTCUA	150/250	90
AFUMEX FIRS NAU e-senS XOTCUA	150/250	90
AFUMEX FIRS NAU e-senS XHTCUA	150/250	90
AFUMEX FIRS NAU e-senS XAOTCUA	150/250	90

Issued at **Høvik** on **2026-11-11**

This Certificate is valid until **2029-12-21**.
DNV local unit: **Area NB/CMC Iberia**

Approval Engineer: **Ivar Bull**

for **DNV**

This document has been digitally signed and will therefore not have handwritten signature

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 USD 300 000.

Product description

Types: AFUMEX FIRS NAU e-senS XTCUA
AFUMEX FIRS NAU e-senS XOTCUA
AFUMEX FIRS NAU e-senS XHTCUA
AFUMEX FIRS NAU e-senS XAOTCUA

Construction:

Conductors: Plain or tinned, stranded copper. Class 2 or class 5
Core insulation: Mica-tape + XLPE (X and FIRS)
Screen (if any): Individual or collective screen. AL/PE tape with tinned copper drain wire
Overall screen may be made of copper tape
O=overall screen
H=individual screen
Inner covering: Tape or Halogen free compound (A)
Metal covering: Plain or tinned copper wire braid (TCU)
Outer sheath: SHF1 (A)

No of Elements:	Cross sectional area [mm^2]
2 to 32 single cores	0,75 1 1,5 2,5
2, 4 pairs	0,50
2 to 24 pairs	0,75
1,2,3,4,5,7,10 pairs	1.5
1 triples	0,75 2,5

Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331-1/2.

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

Data sheets: HOM 9-A dated 09/12.
RFQ CTC rev 0.
Datasheets AFUMEX FIRS NAU e-senS Rev 0. 5 June 2026

Test reports

Tests carried out

Standard	Release	General description	Limitation
DNV CP-0399	2021-08	Electric cables.	
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 60331-1/2	2018-03	Tests for electric cables under fire conditions - Circuit integrity - Part 1/2: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding / not exceeding 20 mm	120 min
IEC 60331-21	1999-04	Tests for electric cables under fire conditions – Circuit integrity – Part 21: Procedures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	120 min + 15 min cooling down time

Standard	Release	General description	Limitation
IEC 60332-1-2(2004) AMD1(2015)	2015-07	Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable.	Flame retardant small scale. Distance between the lower edge of the top support and the onset of charring > 50 mm and charring not to extend downwards > 540 mm from the lower edge of the top support.
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 2: Determination of acidity (by pH measurement) and conductivity	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%

Marking of product

PRYSMIAN SAP – AFUMEX FIRS NAU e-senS XTCUA or XOTCUA or XHTCUA or XAOTCUA - size – 150/250 V – IEC 60331-1/2 - IEC 60332-3/A - Lot No.

SAP = Santa Perpetua Plant.

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) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall 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