DNV·GL

Certificate No:
TAE00002GK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
Texiline Power ALU 0,6/1 kV AXZ-HF EMC, Texiline Power ALU 1,8/3 kV AXZ-HF VFD EMC

Issued to
AMO Specialkabel AB
ALSTERMO, Sweden

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

Application :

Power cable with aluminum conductor.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Rated voltage (kV)	Temp. class (°C)
Texiline Power ALU 0,6/1 kV AXZ-HF EMC	0,6/1	90
Texiline Power ALU 1,8/3 kV AXZ-HF VFD EMC	1,8/3	90

Issued at **Høvik** on **2018-04-24**
This Certificate is valid until **2023-04-23**.
DNV GL local station: **Malmö**

Approval Engineer: **Ivar Bull**

for **DNV GL**

Andreas Kristoffersen
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-027056-1**
Certificate No: **TAE00002GK**

Product description

Types: Texiline Power ALU 0,6/1 kV AXZ-HF EMC,
Texiline Power ALU 1,8/3 kV AXZ-HF VFD EMC

Construction:

Conductors:	Stranded aluminum class 5 according to ISO 6722-2.
Core insulation:	XLPE
Inner covering	Flame retardant halogen-free compound
Braid:	Copper braid
EMC Screen:	Metal backed PE tape
Outer sheath:	SHF 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.

Cable shall be terminated with type DNV GL approved DBI-terminations designed for aluminium conductors, ref. DNV GL TA certificate TAE00002GJ.

Press to be performed with approved press tool and correct die size.

Heat shrink tubing with melt glue shall be installed over pressed termination in order to prevent ingress of moisrure.

Type Approval documentation

Tests carried out

	Release	General description	Limitation
DNVGL-CP-0399	2016-03	Class Programme Electric cables	Same requirements as for copper cables except for Aluminum coinductor
DNVGL-CP-0409	2018-01	Class Programme for terminal lugs for LV power cables with aluminium conductors	
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	Exception for aluminium conductor.
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	
IEC 60092-353	2016-09	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	
IEC 60228	2004-11	Conductors of insulated cables	For reference only.
ISO 6722-2	2013-12	Road vehicles – 60V and 600 V single core cables Part 2: Dimensions, test methods and requirements for aluminium conductor cables.	(IEC 60228 does not define class 5 aluminum conductors)
IEC 60332-1-2	2015-07	Tests on eletric cables under fire conditions. Test for vertical flame propagation for a	

	Release	General description	Limitation
		single insulated wire or cable.	
IEC 60332-3-22	2009-02	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	Bunch test Category A
IEC 60754-1	2011-11	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	2011-11	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	2013-07 2013-09	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance ≥60%

Marking of product

AMOKABEL AXZ-HF VFD EMC Aluminum size xxx mm^2 – 1,8/3 kV - IEC 60092-353 - IEC 60332-3-22 – DNV GL certificates TAE00002GK/TAE00002GK.

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