

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Category cables**

with type designation(s)
S/FTP Cat.7 VOKA MLAN 1000 Patch

Issued to

Vogtländisches Kabelwerk GmbH
Plauen, Sachsen, Germany

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

Application :

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

Issued at **Hamburg** on **2020-05-14**

This Certificate is valid until **2025-05-13**.

DNV GL local station: **Magdeburg**

for **DNV GL**

Approval Engineer: **Carsten Hunsalz**

.....
Arne Schaarmann
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.



Product description

Types: VOKA MLAN 1000 Patch S/FTP Cat 7. 4x2xAWG 26/7

Conductor	Stranded bare copper wire
Insulation	Foam skin SFS-PE
Cabling	Twisted pairs with Al/Polyester foil
Metallic covering	Tinned copper wire braid
Sheath	SHF1

Type	Number of cores x conductor cross-section	Overall diameter
VOKA MLAN 1000 Patch S/FTP Cat 7.	4x2xAWG 26/7	6.5±0.2 mm

f in MHz	Attenuation (dB/10m) nom.	NEXT (dB) nom.	ACR (dB/10m) nom.	ELFEXT (dB/100m) nom.	RL (dB) nom.
1	0,28	95	95,0	95	23
4	0,55	95	94,5	93	27
10	0,85	95	94,1	90	30
16	1,05	95	94,0	81	30
20	1,20	92	90,8	77	30
31,25	1,50	90	88,5	75	30
62,5	2,10	88	85,9	70	30
100	2,70	86	83,3	58	28
200	3,85	84	80,2	50	26
300	4,70	82	77,3	47	24
400	5,10	80	74,9	45	23
500	5,70	78	72,3	42	22
600	6,75	75	68,3	40	21
800	7,90	73	65,1	37	19
900	8,60	72	63,4	36	18
1000	9,15	70	60,2	34	17

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.

Due to the low cross section of these cables, extra precautions shall be made during installation. In order to achieve a transmission link compliant with Category 7, cables shall be installed with suitable termination equipment according to manufacturer's recommendations.

Work area cables Cat. 7
Flame retardant in bunch; cat A. Low smoke

Temperature window
Operation: - 20°C to +75°C
Installation: 0°C to +50°C

Type Approval documentation

Data sheet: TDB 09-19/26, dated 24.09.19

Test reports: VOKA Type Test Report No. 30/2018, dated 23.07.2018
VOKA KAT.7A Ring Labormessung, dated 28.10.2019
VOKA Type Test Report No. 3/2010, dated 26.01.2010

Tests carried out

Standard	Release	General description	Limitation
DNVGL-CP-0403	2015-12	DNV GL Type approval program for Data communication cables – category cables	Ref. IEC 61156-5 standard Category 7
IEC 61156-6	2010-01	Multicore and symmetrical pair/quad cables for digital communications – Part 6: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Work area wiring – Sectional specification	Reference to requirement for category cable: 7 (600MHz)
ISO/IEC 11801	2010-04	Information technology – Generic cabling for customer premises, inc Amd 1 and 2.	Reference to requirement for category cable: 7 (600MHz)
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	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

Job Id: **262.1-032056-1**
Certificate No: **TAE00003V1**

Standard	Release	General description	Limitation
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	2013-06	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%

Marking of product

VOKA-MLAN 1000 Patch S/FTP FRNC 4PR AWG 26/7 Cat.7 ISO/IEC 11801 DNV GL TAE00003V1
IEC 60332-3-22 IEC 60754-1/2 CE xxxxxm – Batch 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