

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Low Voltage Cable**with type designation(s)
Blue Line TA 180 C

Issued to

SAB Bröckskes GmbH & Co. KG
Viersen, Germanyis found to comply with
DNV GL rules for classification – Ships and offshore units**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Voltage class (V) 300/500**
Temp. class (°C) 180This Certificate is valid until **2021-11-10**.Issued at **Hamburg** on **2016-06-01**DNV GL local station: **Essen**Approval Engineer: **Carsten Hunsalz**for **DNV GL**-----
Duy Nam Le
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

Fluor-ethylen-propylen connection cable FEP Anschlussleitung

Rated voltage: 300/500 V
Temperatur class: -55 to 180° C with tinned copper conductor material
Conductor: Fine stranded tinned copper conductor class 5 or 6
Insulation: FEP
Inner sheath: FEP or Silicone
Screen/armour: tinned copper wire - or (galvanized) steel wire braiding
Outer sheath: FEP
Application: (At diesel engines, turbines, boilers and divices with increased temperatures and for measuring cables in cold storage chambers.)

Number of cores: Cross-sectional areas:
1 to 25 0,5mm² up to 2,5mm²
1 to 5 4mm² up to 10mm²

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

Test report : SAB Test report dated of 28.01.2005;
LABCO 0313-36-11-16 A/B 28.09.2011
CURRENTA 11/1157 2011-09-16
Specification: SAB Specification 3753, dated 23.08.2011 VersionC

Tests carried out

Standard	Release	General description	Limitation
DIN VDE 0207-6	2004-10	Insulating and sheathing compounds for cables and flexible cords	
IEC 60811	2012-12	Common test methods for insulating and sheathing materials of electric cables	
IEC 60288	2004-11	Conductors of insulated cables	
IEC 60332-1-2	2004-07	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	Procedure for 1 kW pre-mixed flame
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

Job Id: **262.1-022028-1**
Certificate No: **TAE0000148**

Marking of product

>0000m **DNV GL** • BRÖCKSKES • D-Viersen • BL TA 180 C n x A mm² - IEC 60332-3-22 -
300/500 V DNV GL **UL** AWM Style 21618 150°C 600 V **cUL** AWM I/II A/B 150°C 600 V FT1 FT2 CE
ww/yy

Legend:

> 0000m meter marking

n: number of cores/pairs

A: cross section

ww/yy: week/year of production

...: space for type approval marking of other classification societies (ABS, LR, RINA, RS)

UL: UL recognized Symbol

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.

Assessment to be performed at least every second year.

END OF CERTIFICATE