DNV·GL

Certificate No:
TAE000047B

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
ÖLFLEX® CHAIN 90 CP

Issued to
U.I. Lapp GmbH
Stuttgart, 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.
Rated voltage (kV) 0,6/1
Temp. class (°C) 70 (acc. IEC 60092-352)

Issued at **Hamburg** on **2020-12-08**
This Certificate is valid until **2025-12-07**.
DNV GL local station: **Augsburg**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Job Id: **262.1-026846-1**
Certificate No: **TAE000047B**

Product description

Type: ÖLFLEX® CHAIN 90 CP

Rated voltage:	U_0/U = 600/1000 V
Max. operating conductor temperature:	70 °C acc. to IEC 60092-352 or according to manufacturer`s instruction
Conductor:	Flexible stranded copper class 6
Insulation:	TPE (Thermoplastic Elastomer)
Screen:	Tinned copper wire
Outer sheath:	TMPU (thermoplastic Polyurethane)

Number of cores:	Cross-sectional areas:
1	1,5 to 300 mm²

Application/Limitation

Power cable

Depending on the installation methods the cross section of the cable conductor shall be selected according IEC 60092-352 ANNEX A or according the manufacturer`s instruction.

Ambient temperature range: -50°C to +80°C fixed installation

Type Approval documentation

Test report:	LAPP no. L37-20 dated 30.07.2020; no. P-214/20 dated 02.06.2020; no. P-213/20 dated 03.06.2020; no. 20_155 dated 04.06.2020; no. 20_154 dated 04.06.2020; no. P-200/16 dated 30.05.2016; no. P-474/15 dated 28.10.2015; no. P-475/15 dated 30.10.2015; no. P-575/15 dated 18.12.2015; no. P-576/15 dated 18.12.2015; no. 003.16 dated 12.02.2016; no. 317.15 dated 02.12.2015
Data sheet:	U.I. Lapp Document: WN1026547EN04 Version: 04 19.03.2018 U.I. Lapp Document: WN1026513EN04 Version: 04 21.03.2018 KS OELFLEX_CHAIN_90CP_EN + KS OELFLEX_CHAIN_90P_EN

Tests carried out

Standard	Release	General description	Limitation
UL Style		10649, 11624	
UL 758	2019-04	Appliance Wiring Material	
UL 1581	2020-06	Reference Standard for Electrical Wires, Cables, and Flexible Cords	
IEC 60228	2004-11	Conductors of insulated cables	
EN 50363-10-2	2005-11	Insulating, sheathing and covering materials for low voltage energy cables -- Part 10-2: Miscellaneous sheathing compounds - Thermoplastic polyurethane	
IEC 60332-1-2	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 –Procedure for 1 kW pre-mixed flame	

Standard	Release	General description	Limitation
IEC 60332-3-25	2018-07	Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D	
NEK TS 606	2016	Cables for offshore installations. Halogenfree and/or mud resistant. Technical specification.	MUD sheath TMPU: IRM902/IRM903 100°C 7d. Calcium Bromide 70°C 56d. EDC 95-11 base oil 70°C 56d.

Marking of product

LAPP KABEL STUTTGART * ÖLFLEX® CHAIN 90 CP * size * 0,6/1 kV

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