Certificate no.:
TAE00004XY

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Flexible cable

with type designation(s)
BizLink SeaLine® CNX C-flex R 300V 2X1.5 / 3X1.5 / 4X1.5

issued to
BizLink Special Cables (Changzhou) Co., Ltd.
Changzhou, **China**

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

Application:

Flexible spiral cable for moving applications 300V
Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-09-03**

This Certificate is valid until **2029-09-02**.

for **DNV**

DNV local unit: **Nanjing NB & CMC**

Approval Engineer: **Carsten Hunsalz**

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 300,000 USD.

Product description

BizLink SeaLine® CNX C-flex R 300V 2X1.5 mm^2 / 3X1.5 mm^2 / 4X1.5 mm^2
Flexible spiral cable for moving applications 300V

Different lengths available according to technical datasheet: BizLink Spiral Cable Series with 382401, 382402, 382440 updated in May 2024

Construction:

Conductors:	Extra fine stranded copper Class 6
Core insulation:	Two layers PP + TPES
Fillers:	PP
Inner covering:	Plastic tape
Shielding:	Tinned fine copper braid, coverage 90%
Sheath:	TPES

Dynamic properties:

Maximum speed tested	0,4 [m/s]
Number of cycles at Temperature +20°C. Maximum elongation is 5 times of the static length of spiral cable	6000 cycles
Maximum acceleration	0,22 [m/s^2]
Acceptance criteria dynamic tests: Increased resistance of conductor	Maximum 3% increase referred to start of test.
Suitable for torsion (Yes/No)	No

Application/Limitation

Flexible spiral cable for moving applications 300V

Dynamic tests performed at +20°C. The cables are not to be used on open deck or cold or hot places.

Manufacturers installation instructions to be followed.
Cable must be installed in that way, to avoid cable damage due to movement or external impact.
All conductor ends shall be provided with suitable pressured sockets or ferrules, or cable lugs.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
DNV-CP-0417	2021-08	DNV Class Programme. Flexible electric cables	Dynamic tests performed at +20°C Not to be used on open deck or cold or hot places.
UL 1581	2023-11	Reference Standard for Electrical Wires, Cables, and Flexible Cords	
UL 758	2019-04	Appliance Wiring Material	
IEC 60228	2023-12	Conductors of insulated cables	
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	
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 60684-2	2011-08	Clause 45.2 Methods of determination of low levels of fluorine	Fluorine content < 0,1%

Marking of product

Example

"Sequential length in meters" * BizLink SeaLine SCC * CNX C-flex R 300V 2X1.5 mm^2 * "internal lot number"

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