

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
CJPF/SC, CJPJ/SC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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.

Voltage class (kV) 0,6 / 1

Temp. class (°C) 90

This Certificate is valid until **2022-01-16**.

Issued at **Hamburg** on **2017-01-23**

DNV GL local station: **Nanjing**

for **DNV GL**

Approval Engineer: **Holger Jansen**

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

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJPJ/SC & CJPF/SC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: XLPE
Inner sheath: PJ - SHF2
PF - SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
3	1 to 185 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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 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	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	

Job Id:
Certificate No: **TAE00001KR**

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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJPF/NC, CJPJ/NC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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.****Voltage class (kV) 0,6 / 1****Temp. class (°C) 90**This Certificate is valid until **2022-01-16**.Issued at **Hamburg** on **2017-01-23**DNV GL local station: **Nanjing**for **DNV GL**Approval Engineer: **Holger Jansen**

Duy Nam Le
Head of Section

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Product description

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJPJ/NC & CJPJ/NC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: Mica tape + XLPE
Inner sheath: PJ - SHF2
PF - SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
3	1 to 185 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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.

The cable is fire resistant according to IEC 60331-1.

Type Approval documentation

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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 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	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	

Job Id:
Certificate No: **TAE00001KS**

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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	
IEC 60331-21	1999-04	Test for electric cables under fire conditions – Circuit integrity – Part 21: Products and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	
IEC 60331-1	2009-05	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830 for cables rated up to and including 0,6/1 kV	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22 IEC 60331-1

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJ85/SC, CJ95/SC, CJ86/SC, CJ96/SC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, Chinais 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.****Voltage class (kV) 0,6 / 1**
Temp. class (°C) 90This Certificate is valid until **2022-01-16**.Issued at **Hamburg** on **2017-01-23**DNV GL local station: **Nanjing**for **DNV GL**Approval Engineer: **Holger Jansen**

Duy Nam Le
Head of Section

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Product description

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJ85/SC & CJ95/SC 0,6/1 kV
CJ86/SC & CJ96/SC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: XLPE
Amour: 8 – Bare or tinned copper wire braid
9 – Galvanized steel wire braid
Outer sheath: 5 – SHF2
6 – SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
2+E	1 to 4 mm ²
3	1 to 185 mm ²
3+E	1 to 4 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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 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	

Job Id:
Certificate No: **TAE00001KM**

Standard	Release	General description	Limitation
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	
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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJ85/NC, CJ95/NC, CJ86/NC, CJ96/NC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, Chinais 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.****Voltage class (kV) 0,6 / 1**
Temp. class (°C) 90This Certificate is valid until **2022-01-16**.Issued at **Hamburg** on **2017-01-23**DNV GL local station: **Nanjing**for **DNV GL**Approval Engineer: **Holger Jansen**

Duy Nam Le
Head of Section

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Product description

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJ85/NC & CJ95/NC 0,6/1 kV
CJ86/NC & CJ96/NC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: Mica tape + XLPE
Amour: 8 - Bare or tinned copper wire braid
9 - Galvanized steel wire braid
Outer sheath: 5 - SHF2
6 - SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
2+E	1 to 4 mm ²
3	1 to 185 mm ²
3+E	1 to 4 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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.

The cable is fire resistant according to IEC 60331-1.

Type Approval documentation

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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.	

Job Id:
Certificate No: **TAE00001KN**

Standard	Release	General description	Limitation
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	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	
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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	
IEC 60331-21	1999-04	Test for electric cables under fire conditions – Circuit integrity – Part 21: Productures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	
IEC 60331-1	2009-05	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830 for cables rated up to and including 0,6/1 kV	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22 IEC 60331-1

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Low Voltage Cable**

with type designation(s)
CHJ85/SC, CHJP85/SC, CHJ86/SC, CHJP86/SC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU, JIANGSU, China

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 (V) 150/250

Temp. class (°C) 90

Issued at **Hamburg** on **2020-08-25**

This Certificate is valid until **2025-08-24**.

for **DNV GL**

DNV GL local station: **Nanjing NB & CMC**

Approval Engineer: **Carsten Hunsalz**

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Arne Schaarmann
Head of Section

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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.



Product description

XLPE insulated shipboard control and instrumentation cables

Rated voltage: 150/250 V
 Maximum operating conductor temperature: 90° C
 Conductor: Tinned stranded copper, class 2
 Insulation: XLPE
 Individual screen: P - Tinned copper
 Armour / braid: 8 - Copper wire braid
 Outer sheath: 5 - SHF2, 6 - SHF1

No. of pair units: Nominal cross section mm²
 1 - 24 0.75, 1, 1.5

Application/Limitation

Control and instrumentation.

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.

Flame retardant Cat. A. Low smoke.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2020-01	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-376	2017-05	Cables for control and instrumentation circuits 150/250 V (300 V)	
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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
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

Job Id: **262.1-014141-4**
Certificate No: **TAE000041W**

Standard	Release	General description	Limitation
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

Example:

Jiangsu Yuanyang Cable Co.,Ltd - CHJ85/SC – 150/250V – size - IEC 60332-3-22 - Lot 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

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Low Voltage Cable**

with type designation(s)
CHJ85/NC, CHJP85/NC, CHJ86/NC, CHJP86/NC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU, JIANGSU, China

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 (V) 150/250

Temp. class (°C) 90

Issued at **Hamburg** on **2020-08-25**

This Certificate is valid until **2025-08-24**.

for **DNV GL**

DNV GL local station: **Nanjing NB & CMC**

Approval Engineer: **Carsten Hunsalz**

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Arne Schaarmann
Head of Section

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Product description

XLPE insulated shipboard control and instrumentation cables

Rated voltage: 150/250 V
 Maximum operating conductor temperature: 90° C
 Conductor: Tinned stranded copper, class 2
 Insulation: Mica tape + XLPE
 Individual screen: P - Tinned copper
 Armour / braid: 8 - Copper wire braid
 Outer sheath: 5 - SHF2, 6 - SHF1

No. of pair units: Nominal cross section mm²
 1 - 24 0.75, 1, 1.5

Application/Limitation

Control and instrumentation.

This type of cable is fire resistant in accordance with IEC Publication 60331.

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.

Fire resistant. Flame retardant Cat. A. Low smoke.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2020-01	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-376	2017-05	Cables for control and instrumentation circuits 150/250 V (300 V)	
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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60331-1	2018-03	Fire resistance / Circuit integrity – Test method for fire with shock at temperature of at least 830°C for cables rated up to and including 0,6/1 kV	For cables with an overall diameter exceeding 20 mm
IEC 60331-21	1999-04	Tests for electric cables under fire conditions Circuit integrity Part 21: Procedures and requirements. Cables of rated voltage up to and including 0,6/1,0 kV	For cables with an overall diameter not exceeding 20 mm

Job Id: **262.1-014141-4**
Certificate No: **TAE000041V**

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

Marking of product

Example:

Jiangsu Yuanyang Cable Co.,Ltd - CHJ85/NC – 150/250V – size - IEC 60332-3-22 - IEC 60331-1/21 - Lot 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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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.****Voltage class (kV) 0,6 / 1****Temp. class (°C) 90**This Certificate is valid until **2022-01-16**.Issued at **Hamburg** on **2017-01-23**DNV GL local station: **Nanjing**for **DNV GL**Approval Engineer: **Holger Jansen**

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

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJPJ85/SC & CJPJ95/SC 0,6/1 kV
CJPF86/SC & CJPF96/SC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: XLPE
Inner sheath: PJ - SHF2
PF - SHF1
Amour: 8 - Bare or tinned copper wire braid
9 - Galvanized steel wire braid
Outer sheath: 5 - SHF2
6 - SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
2+E	1 to 4 mm ²
3	1 to 185 mm ²
3+E	1 to 4 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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.	

Job Id:
Certificate No: **TAE00001KJ**

Standard	Release	General description	Limitation
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	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	
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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJPJ85/NC, CJPJ95/NC, CJPF86/NC, CJPF96/NC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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.****Voltage class (kV) 0,6 / 1****Temp. class (°C) 90**This Certificate is valid until **2022-01-16**.Issued at **Hamburg** on **2017-01-23**DNV GL local station: **Nanjing**for **DNV GL**Approval Engineer: **Holger Jansen**

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

Halogen free XLPE insulated and SHF 1 or SHF 2 sheathed shipboard power cables

Type: CJPJ85/NC & CJPJ95/NC 0,6/1 kV
CJPF86/NC & CJPF96/NC 0,6/1 kV

Conductors: Tinned or bare stranded copper conductor
Insulation: Mica tape + XLPE
Inner sheath: PJ - SHF2
PF - SHF1
Amour: 8 - Bare or tinned copper wire braid
9 - Galvanized steel wire braid
Outer sheath: 5 - SHF2
6 - SHF1

Number of cores:	Cross-sectional areas:
1	1 to 300 mm ²
2	1 to 120 mm ²
2+E	1 to 4 mm ²
3	1 to 185 mm ²
3+E	1 to 4 mm ²
4	1 to 150 mm ²
5 to 37	1 to 2,5 mm ²

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.

The cable is fire resistant according to IEC 60331-1.

Type Approval documentation

No. 01-012 YYMCF dated 24.04.2001
No. 05-057 dated of 06/2005 Jiang Su Yuangang Marine Cable
No. CT05-966-2 and CT050966-3
No. CT10-3123-1 and CT10-3123-3
No. CT98-785 CNC
No. CT03-1227-1 and CT04-56

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2011-08	Single and multicore non-radial field power cables with extruded solid insulation for rated Voltages of 1 kV and 3 kV	
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.	

Job Id:
Certificate No: **TAE00001KK**

Standard	Release	General description	Limitation
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	
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	
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	
IEC 61034-2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements	
IEC 60331-21	1999-04	Test for electric cables under fire conditions – Circuit integrity – Part 21: Productures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	
IEC 60331-1	2009-05	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830 for cables rated up to and including 0,6/1 kV	

Marking of product

Jiangsu Yuanyang Cable Co.,Ltd – type – size – 0,6/1 kV – IEC 60332-3-22 IEC 60331-1

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJ85/SC-VFD, CJ86/SC-VFD

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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) 90**Issued at **Hamburg** on **2017-12-12**This Certificate is valid until **2022-12-11**.DNV GL local station: **Nanjing**Approval Engineer: **Carsten Hunsalz**for **DNV GL**

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

Type: CJ85/SC-VFD, CJ86/SC-VFD 0,6/1 kV
 Conductor: Tinned stranded copper conductor class 2
 Core insulation: XLPE
 Screen: 8 - Tinned copper wire braided
 Outer sheath: 5 - SHF2
 6 - SHF1

Number of cores: Cross-sectional areas:
 3 25 mm² to 240 mm²
 3+E 25 mm² to 240 mm² + 16 mm² to 120 mm²
 3+3E 25 mm² to 240 mm² + 3x6 mm² to 3x50 mm²

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.

General power and lighting.
 Flame retardant in bunch Cat. A. Halogen free. Low smoke.
 For Variable Frequency Drives.

Type Approval documentation

Test report : CT12-1022-1; CT12-1022-2
 Specification: Jiangsu Yuanyang Cable No.: GL201201, dated July 7, 2012

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2016-09	Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV	
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 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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.

Job Id: **262.1-025798-1**
Certificate No: **TAE00002DE**

Standard	Release	General description	Limitation
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 – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH 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	HF max 0,1%
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

Example:

Jiangsu Yuanyang Cable Co.,Ltd – CJ85/SC-VFD - size - 0,6/1 kV - IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJ85/SC-VFD, CJ86/SC-VFD

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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) 1,8/3****Temp. class (°C) 90**Issued at **Hamburg** on **2017-12-12**This Certificate is valid until **2022-12-11**.DNV GL local station: **Nanjing**Approval Engineer: **Carsten Hunsalz**for **DNV GL**

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

Type: CJ85/SC-VFD, CJ86/SC-VFD 1,8/3 kV
 Conductor: Tinned stranded copper conductor class 2
 Core insulation: XLPE
 Screen: 8 - Tinned copper wire braided
 Outer sheath: 5 - SHF2
 6 - SHF1

Number of cores: Cross-sectional areas:
 3 25 mm² to 240 mm²
 3+E 25 mm² to 240 mm² + 16 mm² to 120 mm²
 3+3E 25 mm² to 240 mm² + 3x6 mm² to 3x50 mm²

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.

General power and lighting.
 Flame retardant in bunch Cat. A. Halogen free. Low smoke.
 For Variable Frequency Drives.

Type Approval documentation

Test report : CT12-1022-1; CT12-1022-2
 Specification: Jiangsu Yuanyang Cable No.: GL201201, dated July 7, 2012

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2016-09	Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV	
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 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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.

Job Id: **262.1-025798-1**
Certificate No: **TAE00002DD**

Standard	Release	General description	Limitation
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 – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH 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	HF max 0,1%
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

Example:

Jiangsu Yuanyang Cable Co.,Ltd – CJ85/SC-VFD - size - 1,8/3 kV - IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJV82/DA/SA, CJV92/DA/SA

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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) 90**Issued at **Hamburg** on **2017-12-12**This Certificate is valid until **2022-12-11**.DNV GL local station: **Nanjing**Approval Engineer: **Carsten Hunsalz**for **DNV GL**

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

Type:	CJV82/DA/SA, CJV92/DA/SA 0,6/1 kV
Conductor:	Stranded tinned copper conductor
Insulation:	XLPE
Inner sheath:	PVC ST2
Armour /screen:	Copper wire braiding for CJV82 Steel wire braiding for CJV92
Outer sheath:	PVC ST2
Number of cores:	Cross-sectional area:
1	1 to 300 mm ²
2	1 to 120 mm ²
3 (2+E)	1 to 185 mm ²
4 to 37	1 to 2,5 mm ²

Application/Limitation

General power and lighting.

The following applies to SA type cables only:

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 : CT 97-114 and 99-009; No. 2002-020 and 02-022 dated of 29.10.02

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2016-09	Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV	
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 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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.

*SA type only

Job Id: **262.1-025798-1**
Certificate No: **TAE00002DT**

Marking of product

Example:

Jiangsu Yuanyang Cable Co.,Ltd – CJV82/SA - size - 0,6/1 kV - IEC 60332-3-22*

*SA type only

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
CJV82/NA, CJV92/NA

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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) 90**Issued at **Hamburg** on **2017-12-12**This Certificate is valid until **2022-12-11**.DNV GL local station: **Nanjing**Approval Engineer: **Carsten Hunsalz**for **DNV GL**

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

Type: CJV82/NA, CJV92/NA 0,6/1 kV
 Conductor: Stranded tinned copper conductor
 Insulation: MICA tape + XLPE
 Inner sheath: PVC ST2
 Armour /screen: Copper wire braiding for CJV82
 Steel wire braiding for CJV92
 Outer sheath: PVC ST2

Number of cores: Cross-sectional area:

1	1 to 300 mm ²
2	1 to 120 mm ²
3 (2+E)	1 to 185 mm ²
4 to 37	1 to 2,5 mm ²

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.

General power and lighting.
 Fire resistant. Flame retardant in bunch Cat. A.

Type Approval documentation

Test report : CT 97-114 and 99-009
 No. 2002-020 and 02-022 dated of 29.10.02

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2016-09	Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV	
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 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 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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.

Job Id: **262.1-025798-1**
Certificate No: **TAE00002DS**

Standard	Release	General description	Limitation
IEC 60331-1	2009-05	Fire resistance / Circuit integrity – Test for method for fire <i>with shock</i> at temperature of at least 830°C for cables rated up to and including 0,6/1 kV	Minimum 90 min. test + 15 min. cooling down.
IEC 60331-21	1999-04	Tests for electric cables under fire conditions – Circuit integrity – Part 21: Procedures and requirements – Cables of rated voltage up to and including 0,6/1,0 kV	Minimum 90 min. test + 15 min. cooling down.

Marking of product

Example:

Jiangsu Yuanyang Cable Co.,Ltd – CJV82/NA - size - 0,6/1 kV - IEC 60331 - IEC 60332-3-22

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

TYPE APPROVAL CERTIFICATE

This is to certify:**That the High Voltage Cable**with type designation(s)
CJPJ85/SC; CJPF86/SC; CJPJ95/SC; CJPF96/SC

Issued to

Jiangsu Yuanyang Cable Co.,Ltd
YANGZHOU JIANGSU, China

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) 3,6/6 6/10 8,7/15**
Temp. class (°C) 90Issued at **Hamburg** on **2017-12-12**This Certificate is valid until **2022-12-11**.DNV GL local station: **Nanjing**Approval Engineer: **Carsten Hunsalz**for **DNV GL**

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

Type:	CJPJ85/SC; CJPF86/SC; CJPJ95/SC; CJPF96/SC 3,6/6 kV; 6/10 kV; 8,7/15 kV
Conductor:	Stranded copper conductor (class 2)
Insulation:	Semi-conducting compound HF-XLPE
Screen:	Semi-conducting compound
Inner sheath:	Copper tape
Armour / braid:	PJ - Cross-linked polyolefin PF - Thermoplastic polyolefin
Outer sheath:	8 - Tinned copper wire braid 9 - Galvanized steel wire braid
	5 - Cross-linked polyolefin (SHF2) 6 - Thermoplastic polyolefin (SHF1)
Number of cores:	Cross-sectional area:
1	10 - 300 mm ² ; 16 - 300 mm ² ; 25 - 300 mm ²
3	10 - 150 mm ² ; 16 - 150 mm ² ; 25 - 150 mm ²

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.

High voltage power.
 Flame retardant in bunch Cat. A. Halogen free. Low smoke.

Type Approval documentation

Test report: No. CT 07-1279
 Specification: Shipboard Cable Information, March 26, 2007

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-354	2014-08	Electrical installations in ships - Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)	
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 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	

Job Id: **262.1-025798-1**
Certificate No: **TAE00002DC**

Standard	Release	General description	Limitation
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	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH 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

Example:

Jiangsu Yuanyang Cable Co.,Ltd - CJPJ85/SC - size - 3,6/6 kV - IEC 60332-3-22

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