



Marine & Offshore
Division

Certificate number: 07517/E0 BV

File number: ACE 01/148/01

Product code: 25011

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Jiangsu Yuan Yang Cable Co.,Ltd.

Yangzhou - CHINA

for the type of product

CABLES (LOW VOLTAGE)

CE & CJ series.

0,6/1kV.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

IEC 60092-350 (2014), 353 (2014), 360 (2014), IEC 60228 (2004), IEC 60754-1/2 (2011), IEC 61034-1/2 (2013), IEC 60331-21 (1999), IEC 60332-1 (2004), IEC 60332-3-22 Cat.A (2009), IEC 60079-14 (2013).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Sep 2020

For BUREAU VERITAS,

At BV SHANGHAI, on 28 Sep 2015,

Jennifer Zhang



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Power, Lighting, control and communication cables.

1.1 - Specifications:

Rated voltage 0,6/1 kV
 Temperature Class: 90 °C
 Flame retardant: IEC 60332-1 (DA type), IEC 60332-3 Cat. A (SA, SC, NA & NC type)
 Fire resistant: IEC 60331-21 & IEC 60331-31 (during 120min) (NA & NC type)
 Low Smoke: IEC 61034-1/2 (SC & NC type)
 Halogen Free: IEC 60754-1/2 (SC & NC type)
 Construction Options: 80 - Tinned Copper wire braided
 82 - Tinned Copper wire braided, PVC - ST2 Outer Sheathed
 90 - Galvanized Steel wire braided
 92 - Galvanized Steel wire braided, PVC - ST2 Outer Sheathed
 85 - Tinned Copper wire braided, Halogen Free Thermoset Compound Inner Sheathed (Option) and Outer Sheathed
 95 - Galvanized Steel wire braided, Halogen Free Thermoset Compound Outer Sheathed
 86 - Tinned copper wire braided, Halogen Free Thermoplastic Compound Inner Sheathed (Option) and Outer Sheathed.
 96 - Galvanized steel wire braided, Halogen Free thermoplastic compound outer Sheathed.
 R - Flexible Cable
 P - Individually Screened

1.2 - Products Range:

1.2.1 - CE Series

EPR insulated

TYPE	Number of Cores	Cross-Sect.(mm ²)	Flame Retardant	Fire Resistant
CE82/92/DA, /SA, /NA CE85/86/95/96 /SC or /NC	1C	1 to 300	/DA, /NA, /NC, /SA, /SC	/NA, /NC
	2C	1 to 120		
	3C (2+E)	1 to 185		
	4C (3+E) to 37C	1 to 2.5		

1.2.2 - CJ Series

Cross-linked polyethylene (XLPE) insulated

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CJ 82/92 /DA, /SA, /NA CJ85/86/95/96 /SC or /NC	1C	1 to 300	/DA, /NA, /NC, /SA, /SC	/NA, /NC
	2C	1 to 120		
	3C (2+E)	1 to 185		
	4C (3+E) to 37C	1 to 2.5		

1.2.3 - CEF Series

EPR insulated, PCP inner sheathed shipboard cables.

TYPE	Number of Cores	Cross Sect (mm ²)	Flame Retardant	Fire Resistant
CEF /DA, /SA, /NA CEF 80/DA, /SA, /NA CEF 90/DA, /SA, /NA CEF 82/DA, /SA, /NA CEF 92/DA, /SA, /NA CEF R/DA, /SA, NA	1C	1 to 300	/DA, /NA, /SA	/NA
	2C	1 to 120		
	3C(2+E)	1 to 185		
	4C (3+E) to 37C	1 to 2.5		

1.2.4 - CEV Series

EPR insulated, PVC - ST2 inner sheathed shipboard cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CEV /DA, /SA, /NA CEV 80/DA, /SA, /NA CEV 90/DA, /SA, /NA CEV 82/DA, /SA, /NA CEV 92/DA, /SA, /NA CEV R/DA, /SA, /NA	1C	1 to 300	/DA, /NA, /SA	/NA
	2C	1 to 120		
	3C(2+E)	1 to 185		
	4C(3+E) to 37C	1 to 2.5		

1.2.5 - CJV Series

XLPE insulated, PVC - ST2 inner sheathed shipboard cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CJV /DA, /SA, /NA	1C	1 to 300	/DA, /SA, /NA	/NA
CJV 80/DA, /SA, /NA	2C	1 to 120		
CJV 90/DA, /SA, /NA	3C(2+E)	1 to 185		
CJV 82/DA, /SA, /NA	4C(3+E)	1 to 2.5		
CJV 92/DA, /SA, /NA	37C	1 to 2.5		

1.2.6 - CEPF Series

EPR insulated, SHF1 (Halogen Free Thermoplastic compound) inner sheathed shipboard cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CEPF /SC, /NC	1C	1 to 300	/SC, /NC	/NC
CEPFR /SC, /NC	2C	1 to 120		
CEPF 80/SC, /NC	3C(2+E)	1 to 185		
CEPF 90/SC, /NC	4C(3+E)	1 to 150		
CEPF 86/SC, /NC	5C to 37C	1 to 2.5		
CEPF 96/SC, /NC	37C	1 to 2.5		

1.2.7 - CEPJ Series

EPR insulated, SHF2 (Halogen Free Thermoset compound) inner sheathed shipboard cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CEPJ /SC, /NC	1C	1 to 300	/SC, /NC	/NC
CEPJ 80/SC, /NC	2C	1 to 120		
CEPJ 90/SC, /NC	3C(2+E)	1 to 185		
CEPJ 85/SC, /NC	4C(3+E)	1 to 150		
CEPJ 95/SC, /NC	5C to 37C	1 to 2.5		
CEPJR/SC, /NC	37C	1 to 2.5		

1.2.8 - CJPJ Series

Cross-linked polyethylene (XLPE) insulated, SHF2(Halogen Free Thermoset compound) inner sheathed shipboard power cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CJPJ /SC, /NC	1C	1 to 300	/SC, /NC	/NC
CJPJ 80/SC, /NC	2C	1 to 120		
CJPJ 90/SC, /NC	3C(2+E)	1 to 185		
CJPJ 85/SC, /NC	4C(3+E)	1 to 150		
CJPJ 95/SC, /NC	5C to 37C	1 to 2.5		
CJPJR/SC, /NC	37C	1 to 2.5		

1.2.9 - CJPF Series

Cross-linked polyethylene (XLPE) insulated, SHF1 (Halogen Free Thermoplastic compound) inner sheathed shipboard cables.

TYPE	Number of Cores	Cross-Sect (mm ²)	Flame Retardant	Fire Resistant
CJPF /SC, /NC	1C	1 to 300	/SC, /NC	/NC
CJPF 80/SC, /NC	2C	1 to 120		
CJPF 86/SC, /NC	3C(2+E)	1 to 185		
CJPF 90/SC, /NC	4C(3+E)	1 to 2.5		
CJPF 96/SC, /NC	37C	1 to 2.5		
CJPF 96/SC, /NC	37C	1 to 2.5		

2. DOCUMENTS AND DRAWINGS:

Specification from the Manufacturer filed in ACE 01/148/01.

See also the documents on file ACE 01/154/02, ACE 1/148/3 and ACE 01/762/02.

3. TEST REPORTS:**CHINA NATIONAL CENTRE for QUALITY SUPERVISION and TEST of ELECTRIC WIRE and CABLE:**

Test reports N°s: CT97-154-4, FECA99-041a-5, FECA99-041a-6, CT97-154-3, CT97-154-2, CT97-732, CT97-114, CT96-117, CT97-114, CT96-117, CT2000-0390A-2, CT98-785, CT98-788, CT05-0273-1, CT05-0273-2.

Test reports dated 29/Mar./2010 N°s: CT10-0615-1, CT10-0615-2, CT10-0615-3, CT10-0615-4, CT10-0615-5, CT10-0615-6, CT10-0615-7.

Jiangsu Yuanyang Cable Co., Ltd.:

Test reports N°s: 00-018, 00-022, 98-023, 98-025, 98-026, 98027, 98-028, 98-029, 98-030, 00-023, 00-024, 99-006, 99-007, 99-008, 99-009, 00-019, 99-015, 99-018, 00-007, CT06-026, CT06-027, CT06-030, CT06-031, CT06-032, CT06-033.

The above tests were witnessed by a Society's Surveyor.

See also the documents on file ACE 01/154/02, ACE 1/148/3 and ACE 01/762/02.

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships. and IEC 60092 series.

4.2 - Approval valid for units having to comply with IMO Resolution A649 (The "MODU Code")

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **above cables** are to be supplied by **Jiangsu Yuan Yang Cable Co., Ltd** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

6. MARKING OF PRODUCT:

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information through the length of cable:

6.1 - Voltage grade,

6.2 - Cable symbol & Temperature, Class,

6.3 - Applicable standard to flame retardant / fire resistance if any,

6.4 - No. of conductor & conductor size,

6.5 - Manufacturer's name or trade mark,

6.6 - Year of manufacture.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the cables at any time and that **Jiangsu Yuan Yang Cable Co., Ltd.** will accept full responsibility for informing shipbuilders, ship-owners or their sub-contractors of the proper methods of use and general maintenance of the cables and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 07517/D1 BV issued on 19.Jan.2011. by the Society.

*** END OF CERTIFICATE ***



Marine & Offshore
Division

Certificate number: 14128/C0 BV

File number: ACE 01/148/04

Product code: 2505I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Jiangsu Yuan Yang Cable Co.,Ltd.

Yangzhou - CHINA

for the type of product

INSTRUMENTATION AND COMMUNICATION CABLES

150/250 V

type : CH ... series & CK ... series

/DA, /SA, /NA, /SC and /NC Types

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 60092-350 (2014), 360 (2014), 376 (2003), IEC 60228 (2004),

IEC 60331-1,2 (2009), IEC 60331-21 (1999), IEC 60332-1 (2004), IEC 60332-3-22 Cat.A (2009)

IEC 60754-1,2 (2011), IEC 61034-1,2 (2005)+Amd1 (2013)

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 28 Sep 2020

For BUREAU VERITAS,

At BV SHANGHAI, on 28 Sep 2015,

Jennifer Zhang



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Product model or type designation:

Flame retardant, Fire resistant (/NA & /NC types), Halogen Free (/SC & /NC types)

Product description:

Marine and Offshore Instrumentation, Communication and Control cables.

1.1 Specification

Rated Voltage	150/250 V according to IEC 60092-376
Temperature Class	90°C
Flame Retardant	IEC 60332-1 and IEC 60332-3-22(Cat A) (except /DA type)
Fire Resistant	IEC 60331-21 or IEC 60331-1(/NA & /NC types)
Halogen Free	IEC 60754-1/2(/SC & /NC)
Low Smoke	IEC 61034-1/2

1.2 Construction

Conductor	Stranded tinned annealed copper Class2 (according to IEC 60228)
Fire Protection	Mica tape (for /NC & /NA type)
Insulation	Cross-Linked PolyEthylene - XLPE - (J) Ethylene Propylene Rubber - EPR - (E)
Screen	Screeded Pair - (P)
Inner Sheath	Thermoplastic compound - PVC - (V) Thermoset compound - SE1 - (F) Halogen Free Thermoplastic compound - SHF1 - (PF) Halogen Free Thermoset compound - SHF2 - (PJ)
Armour	Copper wires braid - (8) or Steel wires braid (9)
Outer Sheath	Thermoplastic compound - PVC - (2) Halogen Free Thermoplastic compound - SHF1 - (6) Halogen Free Thermoset compound - SHF2 - (5)

1.3 Product Range

1.3.1 Shipboard symmetrical Communication cables:

Type	Number of Cores / Pairs / Triples	Cross-Sect. (mm ²)
CHE 82/P82/92/P92 CHJ 82/P82/92/P92 CHEF 80/P80/82/P82/90/P90/92/P92 CHEV 80/P80/82/P82/90/P90/92/P92 CHJV 80/P80/82/P82/90/P90/92/P92 /DA, /SA, /NA	1P to 48 P	0.5 to 2.5
CHEPJ 80/P80/85/P85/90/P90/95/P95 CHE/85/P85/86/P86/95/P95/96/P96 CHJ/85/P85/86/P86/95/P95/96/P96 CHEPF 80/P80/86/P86/90/P90/96/P96 CHJPJ 80/P80/85/P85/90/P90/95/P95 CHJPF 80/P80/86/P86/90/P90/96/P96 /SC, /NC	1P to 48 P	0.5 to 2.5
CHEPF 86/96 CHEPF P86/P96 CHEPJ 85/95 CHEPJ P85/P95 CHJPJ 85/P85/90/P90/95/P95 /SC, /NC	1T to 48T	1.5

1.3.2 Control cables:

Type	Number of Core	Cross-Sect. (mm ²)
CKEPJ 85/95 CKEPF 86/96 /SC, /NC	2C to 37C (2+E)	0.75 to 2.5
CKJPJ 85/95 /SC	2,3(2+E), 4C to 37C	0,75 to 2,5

2. DOCUMENTS AND DRAWINGS:

Jiangsu Yuan Yang Cable Co., Ltd (previously Yangzhou Yuanyang Cable Factory):

Shipboard Cable Information, unreferenced, dated July 2004.

Included document filed in ACE 01/154/03 and ACE 01/148/02

3. TEST REPORTS:

Included in the referenced in 2. above:

Jiangsu Yuan Yang Cable Co., Ltd (previously Yangzhou Yuanyang Cable Factory):

Test Report, ref. 2004-011, dated 2004.04.21, stamped by GL Surveyor.

Test Report, ref. 2004-012, dated 2004.04.21, stamped by GL Surveyor.

Included test reports filed in ACE 01/154/03 and ACE 01/148/02

Test report N°CT10-0623-4 dated 30.03.2010, stamped by Bureau Veritas.

Test report N°CT10-0623-6 dated 30.03.2010, stamped by Bureau Veritas.

For modification C0 version:**CNAS:**

- Test report No.: CT14-3509-1, dated 2014.09.23
- Test report No.: CT14-3509-2, dated 2014.09.23
- Test report No.: CT14-3509-1, dated 2014.09.23
- Test report No.: CT14-3509-1, dated 2014.09.23
- Test report No.: CT15-2784, dated 2015.07.07

4. APPLICATION / LIMITATION:

According to BUREAU VERITAS Rules for the Classification of Steel Ships, and Manufacturer's specifications.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **Jiangsu Yuan Yang Cable Co., Ltd.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

6. MARKING OF PRODUCT:

The cable shall be marked on the surface outer sheath, in a durable legible and visible manner, with the following information through the length of cable:

- 6.1 - Voltage grade
- 6.2 - Cable symbol and temperature class
- 6.3 - Applicable standards to flame retardant and fire resistance
- 6.4 - No. of conductor & conductor size
- 6.5 - Manufacturer's name or trademark
- 6.6 - Year of manufacture.

7. OTHERS:

7.1 - This approval is given with the understanding that **Jiangsu Yuan Yang Cable Co., Ltd. - Yangzhou - CHINA**, will accept full responsibility for informing shipbuilders, shipowners and/or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 14128/B1 BV issued on 29 Aug 2012 by the Society.

*** END OF CERTIFICATE ***