DNV·GL

Certificate No:
TAE0000263

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
CJY83/SC, CJY93/SC, CJYR83/SC, CJYR93/SC

Issued to
Hebei Huatong Wires & Cables Group Co., Ltd.
Tangshan, 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 **2017-08-10**
This Certificate is valid until **2022-08-09**.
DNV GL local station: **Tianjin**

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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-008108-5**
Certificate No: **TAE0000263**

Product description

Type: CJY83/SC, CJY93/SC, CJYR83/SC and CJYR93/SC 0,6/1 kV

Construction:

Conductors: Tinned stranded copper
Core insulation: XLPE
Inner sheath: SHF 1
Metal covering: Copper wire braid or galv. steel wire braid
Outer sheath: SHF1

CJY83/SC CJY93/SC

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJY83/SC CJY93/SC		
1 x 1,0	6,8	9,6
1 x 1,5	7,2	10,0
1 x 2,5	7,6	10,5
1 x 4	8,0	11,0
1 x 6	8,6	12,0
1 x 10	9,4	13,0
1 x 16	10,5	14,0
1 x 25	12,5	16,5
1 x 35	14,0	18,0
1 x 50	15,5	20,0
1 x 70	17,5	22,0
1 x 95	19,0	24,5
1 x 120	21,0	26,5
1 x 150	23,0	28,5
1 x 185	25,5	31,5
1 x 240	28,5	35,0
1 x 300	30,5	37,5
2 x 1,0	9,8	14,0
2 x 1,5	10,5	14,5
2 x 2,5	11,0	15,5
2 x 4	12,5	17,0
2 x 6	14,0	18,5
2 x 10	16,0	21,0
2 x 16	18,0	23,5
2 x 25	21,5	27,5
2 x 35	24,0	30,5
2 x 50	27,0	34,0
2 x 70	31,0	38,5
2 x 95	35,0	43,5
2 x 120	38,5	47,5
2 x 150	42,5	52,5
2 x 185	47,0	58,0
2 x 240	53,0	64,0
2 x 300	58,0	70,0

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJY83/SC CJY93/SC		
3 x 1,0	10,0	14,5
3 x 1,5	11,0	15,0
3 x 2,5	12,0	17,0
3 x 4	13,5	18,0
3 x 6	15,0	19,5
3 x 10	16,5	22,0
3 x 16	19,0	25,0
3 x 25	23,0	29,0
3 x 35	25,5	32,5
3 x 50	28,5	36,0
3 x 70	33,5	42,0
3 x 95	37,5	46,5
3 x 120	41,5	51,0
3 x 150	46,0	56,0
3 x 185	51,0	62,0
3 x 240	57,0	68,5
3 x 300	62,5	75,5
4 x 1,0	11,0	15,5
4 x 1,5	12,0	16,5
4 x 2,5	13,0	18,0
4 x 4	14,5	19,5
4 x 6	16,0	21,5
4 x 10	18,0	24,0
4 x 16	20,5	27,0
4 x 25	25,0	32,0
4 x 35	28,0	35,5
4 x 50	31,5	39,5
4 x 70	37,0	46,0
4 x 95	41,5	51,5
4 x 120	46,0	56,5
4 x 150	50,5	62,0
4 x 185	56,0	68,5
4 x 240	63,0	76,0
4 x 300	69,5	83,0

Number of	Overall	Overall

Number of	Overall	Overall

cores x conductor cross-section	Dia-meter min.	Dia-meter max.
mm^2	mm	mm
CJY83/SC CJY93/SC		
4 x 1,0	11,0	15,5
5 x 1,0	12,0	17,0
7 x 1,0	13,0	18,0
10 x 1,0	16,0	22,0
12 x 1,0	16,5	22,5
14 x 1,0	17,0	23,5
16 x 1,0	18,0	24,5
19 x 1,0	18,5	25,5
24 x 1,0	21,5	29,5
27 x 1,0	22,0	30,0
30 x 1,0	23,0	31,0
33 x 1,0	23,5	32,0
37 x 1,0	24,5	33,5
4 x 1,5	12,0	16,5
5 x 1,5	13,0	18,0
7 x 1,5	14,0	19,5
10 x 1,5	17,0	23,0
12 x 1,5	18,0	24,0
14 x 1,5	18,5	25,0
16 x 1,5	19,5	26,0

cores x conductor cross-section	Dia-meter min.	Dia-meter max.
mm^2	mm	mm
CJY83/SC CJY93/SC		
19 x 1,5	20,5	27,5
24 x 1,5	23,5	31,5
27 x 1,5	24,0	32,0
30 x 1,5	25,0	33,5
33 x 1,5	26,0	34,5
37 x 1,5	26,5	35,5
4 x 2,5	13,0	18,0
5 x 2,5	14,5	19,5
7 x 2,5	15,5	21,0
10 x 2,5	19,0	25,5
12 x 2,5	19,5	26,0
14 x 2,5	20,5	27,5
16 x 2,5	21,5	29,0
19 x 2,5	22,5	30,5
24 x 2,5	26,5	35,0
27 x 2,5	27,0	35,5
30 x 2,5	28,0	36,5
33 x 2,5	29,0	38,0
37 x 2,5	30,0	39,5

CJYR83/SC , CJYR93/SC

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJYR83/SC CJYR93/SC		
1 x 1,0	6,8	9,6
1 x 1,5	7,2	10,0
1 x 2,5	7,6	10,5
1 x 4	8,0	11,0
1 x 6	8,6	12,0
1 x 10	9,6	13,0
1 x 16	10,5	14,5
1 x 25	13,0	17,0
1 x 35	14,5	19,0
1 x 50	16,5	21,0
1 x 70	18,0	23,5
1 x 95	20,0	25,5
1 x 120	22,0	27,5
1 x 150	24,0	30,0
1 x 185	26,5	33,0
1 x 240	29,5	36,5
1 x 300	32,0	39,5

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJYR83/SC CJYR93/SC		
2 x 1,0	9,8	14,0
2 x 1,5	10,5	14,5
2 x 2,5	11,0	15,5
2 x 4	12,5	17,0
2 x 6	14,0	18,5
2 x 10	16,5	22,0
2 x 16	18,5	24,0
2 x 25	22,5	28,0
2 x 35	25,5	32,0
2 x 50	29,5	36,5
2 x 70	33,0	41,0
2 x 95	37,5	46,0
2 x 120	41,0	50,0
2 x 150	45,5	55,5
2 x 185	50,0	60,5
2 x 240	56,0	67,5
2 x 300	61,5	74,0

Number of cores x conductor cross-section	Overall Dia-meter	Overall Dia-meter

Number of cores x conductor cross-section	Overall Dia-meter	Overall Dia-meter

	min.	max.
mm^2	mm	mm
CJYR83/SC CJYR93/SC		
3 x 1,0	10,0	14,5
3 x 1,5	11,0	15,0
3 x 2,5	12,0	17,0
3 x 4	13,5	18,0
3 x 6	15,0	20,0
3 x 10	17,5	23,0
3 x 16	20,0	25,5
3 x 25	23,5	30,0
3 x 35	26,5	34,0
3 x 50	31,0	38,5
3 x 70	35,0	44,5
3 x 95	39,5	49,0
3 x 120	43,5	53,5
3 x 150	48,0	59,0
3 x 185	53,0	65,0
3 x 240	59,5	72,5
3 x 300	65,5	79,5
4 x 1,0	11,0	15,5
4 x 1,5	12,0	16,5
4 x 2,5	13,0	18,0
4 x 4	14,5	19,5
4 x 6	16,0	21,5
4 x 10	18,5	24,5
4 x 16	21,5	28,0
4 x 25	25,5	32,5
4 x 35	29,5	37,0
4 x 50	34,0	42,5
4 x 70	39,0	49,0
4 x 95	43,5	54,0
4 x 120	48,0	59,0
4 x 150	53,5	65,5
4 x 185	59,0	72,0
4 x 240	66,0	80,5
4 x 300	72,5	88,0

	min.	max.
mm^2	mm	mm
CJYR83/SC CJYR93/SC		
4 x 1,0	11,0	15,5
5 x 1,0	12,0	17,0
7 x 1,0	13,0	18,0
10 x 1,0	16,0	22,0
12 x 1,0	16,5	22,5
14 x 1,0	17,0	23,5
16 x 1,0	18,0	24,5
19 x 1,0	18,5	25,5
24 x 1,0	21,5	29,5
27 x 1,0	22,0	30,0
30 x 1,0	23,0	31,0
33 x 1,0	23,5	32,0
37 x 1,0	24,5	33,5
4 x 1,5	12,0	16,5
5 x 1,5	13,0	18,0
7 x 1,5	14,0	19,5
10 x 1,5	17,0	23,0
12 x 1,5	18,0	24,0
14 x 1,5	18,5	25,0
16 x 1,5	19,5	26,0
19 x 1,5	20,5	27,5
24 x 1,5	23,5	31,5
27 x 1,5	24,0	32,0
30 x 1,5	25,0	33,5
33 x 1,5	26,0	34,5
37 x 1,5	26,5	35,5
4 x 2,5	13,0	18,0
5 x 2,5	14,5	19,5
7 x 2,5	15,5	21,0
10 x 2,5	19,0	25,5
12 x 2,5	19,5	26,0
14 x 2,5	20,5	27,5
16 x 2,5	21,5	29,0
19 x 2,5	22,5	30,5
24 x 2,5	26,5	35,0
27 x 2,5	27,0	35,5
30 x 2,5	28,0	36,5
33 x 2,5	29,0	38,0
37 x 2,5	30,0	39,5

Application/Limitation

General power and lighting. Control.

Type Approval documentation

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	

Standard	Release	General description	Limitation
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 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

Marking of product

Hebei Huatong Wires & Cables Group Co.,Ltd. – CJY83/SC or CJY93/SC or CJYR83/SC or CJYR93/SC - size - 0,6/1 kV – 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