DNV·GL

Certificate No:
TAE000026U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
CJY80/SC, CJY90/SC, CJYR80/SC, CJYR90/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.

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Job Id: **262.1-008108-22**
Certificate No: **TAE000026U**

Product description

Type: CJY80/SC, CJY90/SC, CJYR80/SC and CJYR90/SC 0,6/1 kV

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

CJY80/SC CJY90/SC

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJY80/SC CJY90/SC		
1 x 1,0	5,2	8,0
1 x 1,5	5,6	8,2
1 x 2,5	6,0	8,8
1 x 4	6,4	9,4
1 x 6	7,0	10,0
1 x 10	7,8	11,0
1 x 16	9,0	12,5
1 x 25	11,0	15,0
1 x 35	12,0	16,0
1 x 50	13,5	18,0
1 x 70	15,5	20,0
1 x 95	17,0	22,0
1 x 120	19,0	24,0
1 x 150	21,0	26,5
1 x 185	23,0	29,0
1 x 240	26,0	32,0
1 x 300	28,0	35,5
2 x 1,0	8,2	12,0
2 x 1,5	8,8	12,5
2 x 2,5	9,6	13,5
2 x 4	11,0	15,5
2 x 6	12,0	17,0
2 x 10	14,0	19,0
2 x 16	16,0	21,5
2 x 25	19,5	25,0
2 x 35	21,5	28,0
2 x 50	24,5	31,5
2 x 70	28,5	36,0
2 x 95	32,5	41,0
2 x 120	35,5	44,5
2 x 150	39,5	49,0
2 x 185	44,0	54,0
2 x 240	49,5	60,0
2 x 300	54,5	66,0

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm^2	mm	mm
CJY80/SC CJY90/SC		
3 x 1,0	8,6	12,5
3 x 1,5	9,2	13,5
3 x 2,5	10,5	15,0
3 x 4	11,5	16,5
3 x 6	13,0	17,5
3 x 10	15,0	20,0
3 x 16	17,0	22,5
3 x 25	20,5	27,0
3 x 35	23,0	30,0
3 x 50	26,0	33,5
3 x 70	31,0	39,0
3 x 95	34,5	43,5
3 x 120	38,5	47,5
3 x 150	42,5	52,5
3 x 185	47,5	58,5
3 x 240	53,0	64,5
3 x 300	58,5	71,0
4 x 1,0	9,2	13,5
4 x 1,5	10,5	15,0
4 x 2,5	11,5	16,0
4 x 4	12,5	17,5
4 x 6	14,0	19,0
4 x 10	16,0	21,5
4 x 16	18,5	24,5
4 x 25	23,0	29,5
4 x 35	25,5	32,5
4 x 50	29,0	36,5
4 x 70	34,0	43,0
4 x 95	38,0	48,0
4 x 120	42,5	53,0
4 x 150	47,0	58,0
4 x 185	52,5	64,5
4 x 240	59,0	71,5
4 x 300	65,0	78,5

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

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

cross-section	min.	max.
mm²	mm	mm
CJY80/SC CJY90/SC		
4 x 1,0	9,2	13,5
5 x 1,0	10,5	15,0
7 x 1,0	11,0	16,0
10 x 1,0	14,0	20,0
12 x 1,0	14,5	20,5
14 x 1,0	15,0	21,0
16 x 1,0	16,0	22,5
19 x 1,0	16,5	23,5
24 x 1,0	19,5	27,0
27 x 1,0	20,0	27,5
30 x 1,0	20,5	28,5
33 x 1,0	21,0	29,5
37 x 1,0	22,0	30,5
4 x 1,5	10,5	15,0
5 x 1,5	11,5	16,0
7 x 1,5	12,0	17,0
10 x 1,5	15,0	21,0
12 x 1,5	15,5	22,0
14 x 1,5	16,5	23,0

cross-section	min.	max.
mm²	mm	mm
CJY80/SC CJY90/SC		
16 x 1,5	17,0	24,0
19 x 1,5	18,0	25,0
24 x 1,5	21,0	29,0
27 x 1,5	21,5	29,5
30 x 1,5	22,5	31,0
33 x 1,5	23,5	32,0
37 x 1,5	24,0	33,0
4 x 2,5	11,5	16,0
5 x 2,5	12,5	17,5
7 x 2,5	13,5	19,0
10 x 2,5	17,0	23,0
12 x 2,5	17,5	24,0
14 x 2,5	18,5	25,0
16 x 2,5	19,5	26,5
19 x 2,5	20,5	27,5
24 x 2,5	24,0	32,0
27 x 2,5	24,0	32,5
30 x 2,5	25,5	34,0
33 x 2,5	26,0	35,0
37 x 2,5	27,0	36,5

CJYR80/SC CJYR90/SC

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm²	mm	mm
CJYR80/SC CJYR90/SC		
1 x 1,0	5,2	8,0
1 x 1,5	5,6	8,2
1 x 2,5	6,0	8,8
1 x 4	6,4	9,4
1 x 6	7,0	10,0
1 x 10	8,0	11,5
1 x 16	9,2	13,0
1 x 25	11,0	15,0
1 x 35	12,5	17,0
1 x 50	14,5	19,0
1 x 70	16,0	21,5
1 x 95	18,0	23,5
1 x 120	19,5	25,5
1 x 150	22,0	28,0
1 x 185	24,0	30,5
1 x 240	27,0	34,0
1 x 300	29,5	36,5

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm²	mm	mm
CJYR80/SC CJYR90/SC		
2 x 1,0	8,2	12,0
2 x 1,5	8,8	12,5
2 x 2,5	9,6	13,5
2 x 4	11,0	15,5
2 x 6	12,5	17,0
2 x 10	14,5	19,5
2 x 16	16,5	22,0
2 x 25	19,5	26,0
2 x 35	22,5	29,5
2 x 50	26,5	33,5
2 x 70	30,0	38,5
2 x 95	34,0	43,0
2 x 120	37,5	47,0
2 x 150	42,0	52,0
2 x 185	46,0	57,0
2 x 240	52,0	63,5
2 x 300	57,0	70,0

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm²	mm	mm

Number of cores x conductor cross-section	Overall Dia-meter min.	Overall Dia-meter max.
mm²	mm	mm

CJYR80/SC CJYR90/SC		
3 x 1,0	8,6	12,5
3 x 1,5	9,2	13,5
3 x 2,5	10,5	15,0
3 x 4	11,5	16,5
3 x 6	13,0	17,5
3 x 10	15,5	20,5
3 x 16	17,5	23,5
3 x 25	21,0	27,5
3 x 35	24,5	31,5
3 x 50	28,5	36,0
3 x 70	32,5	41,5
3 x 95	36,5	46,0
3 x 120	40,0	50,0
3 x 150	45,0	55,5
3 x 185	49,5	61,0
3 x 240	56,0	68,5
3 x 300	61,5	75,0
4 x 1,0	9,2	13,5
4 x 1,5	10,5	15,0
4 x 2,5	11,5	16,0
4 x 4	12,5	17,5
4 x 6	14,0	19,5
4 x 10	16,5	22,5
4 x 16	19,0	25,5
4 x 25	23,5	30,0
4 x 35	27,0	34,5
4 x 50	31,5	39,5
4 x 70	36,0	46,0
4 x 95	40,5	51,0
4 x 120	44,5	55,5
4 x 150	50,0	61,5
4 x 185	55,0	68,0
4 x 240	62,0	76,0
4 x 300	68,0	83,0
4 x 1,0	9,2	13,5
5 x 1,0	10,5	15,0
7 x 1,0	11,0	16,0

CJYR80/SC CJYR90/SC		
10 x 1,0	14,0	20,0
12 x 1,0	14,5	20,5
14 x 1,0	15,0	21,0
16 x 1,0	16,0	22,5
19 x 1,0	16,5	23,5
24 x 1,0	19,5	27,0
27 x 1,0	20,0	27,5
30 x 1,0	20,5	28,5
33 x 1,0	21,0	29,5
37 x 1,0	22,0	30,5
4 x 1,5	10,5	15,0
5 x 1,5	11,5	16,0
7 x 1,5	12,0	17,0
10 x 1,5	15,0	21,0
12 x 1,5	15,5	22,0
14 x 1,5	16,5	23,0
16 x 1,5	17,0	24,0
19 x 1,5	18,0	25,0
24 x 1,5	21,0	29,0
27 x 1,5	21,5	29,5
30 x 1,5	22,5	31,0
33 x 1,5	23,5	32,0
37 x 1,5	24,0	33,0
4 x 2,5	11,5	16,0
5 x 2,5	12,5	17,5
7 x 2,5	13,5	19,0
10 x 2,5	17,0	23,0
12 x 2,5	17,5	24,0
14 x 2,5	18,5	25,0
16 x 2,5	19,5	26,5
19 x 2,5	20,5	27,5
24 x 2,5	24,0	32,0
27 x 2,5	24,0	32,5
30 x 2,5	25,5	34,0
33 x 2,5	26,0	35,0
37 x 2,5	27,0	36,5

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	
IEC 60092-353	2016-09	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	

Standard	Release	General description	Limitation
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. – CJY80/SC or CJY90/SC or CJYR80/SC or CJYR90/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