



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-9987

This Certificate consists of 3 pages

This is to certify that the

High Voltage Cable

with type designation(s)

CEVDA&SA 3,6/6, CEVDA&SA 6/10, CEVDA&SA 7,8/15

Manufactured by

Anhui Hualing Cable Group Co., Ltd

Wuwei, China

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

IEC 60092-354 (2003-06)

IEC 60332-3-22 (2000-10)

IEC 60754-1 (1994-01)

IEC 60754-2 (1997-04)

IEC 61034-1 (2005-04)

IEC 61034-2 (2005-04)

Application

General power cable, flame retardant in bunch tested cat A/F, halogen free, low smoke.

Type	Voltage (kV)	Temp. class (°C)
CEVDA&SA	3,6/6	90
CEVDA&SA	6/10	90
CEVDA&SA	8,7/15	90

Place and date

Høvik, 2010-04-27

for DET NORSKE VERITAS AS

This Certificate is valid until

2014-06-30

Marit Laumann
Head of Section

Local Office
DNV Shanghai

Kjersti Bakke
Surveyor

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

Type; CEVDA&SA 3,6/6kV ; 6/10kV; 8,7/15kV
 Conductor: Tinned, stranded copper (Class 2 conductor)
 Insulation: EPR
 Outer sheath: ST2

CEV DA&SA 3,6/6kV		
Number of cores x conductor cross-section	Overall Diameter	
	mm ²	Min mm
1x10	17,2	19,4
1x16	18,2	20,4
1x25	19,4	21,6
1x35	20,5	22,8
1x50	21,7	24,0
1x70	23,3	25,5
1x95	24,9	27,0
1x120	26,3	28,5
1x150	27,9	30,1
1x185	29,7	32,0
1x240	32,3	34,6
1x300	34,9	37,2
3x10	33,3	35,7
3x16	35,4	37,8
3x25	38,0	40,5
3x35	40,3	43,0
3x50	43,6	46,3
3x70	47,2	50,1
3x95	50,9	53,8
3x120	54,1	57,2
3x150	58,0	61,2
3x185	61,6	65,0
3x240	67,0	70,4
3x300	73,0	76,6

CEV DA&SA 6/10kV		
Number of cores conductor cross-section	Overall Diameter	
	mm ²	Min mm
1x16	20,0	22,4
1x25	21,1	23,4
1x35	22,1	24,3
1x50	23,5	25,8
1x70	25,2	27,4
1x95	26,7	28,9
1x120	28,3	30,7
1x150	29,9	32,3
1x185	31,8	34,2
1x240	34,1	36,7
1x300	36,3	38,8
3x16	39,7	42,2
3x25	42,3	44,8
3x35	44,6	47,4
3x50	47,8	50,8
3x70	51,5	54,6
3x95	55,2	58,4
3x120	58,6	62,0
3x150	62,2	65,8
3x185	65,9	69,5
3x240	71,0	74,9
3x300	76,0	80,0

CEV/DA&SA 87/15kV		
Number of cores x conductor cross-section	Overall Diameter	
	mm ²	Min mm
1x25	23,3	25,5
1x35	24,3	26,5
1x50	25,6	27,9
1x70	27,3	29,4
1x95	29,2	31,4
1x120	30,5	32,8
1x150	32,2	34,6
1x185	33,9	36,3
1x240	36,4	38,8
1x300	38,7	41,3
3x25	47,4	50,2
3x35	49,8	52,7
3x50	53,0	56,1
3x70	56,6	60,0
3x95	60,3	63,7
3x120	63,5	67,0
3x150	67,2	70,7
3x185	71,0	75,0
3x240	76,0	80,0
3x300	81,2	85,4

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

Tests carried out

IEC 60092-350:2001; IEC 60092-354:2003; IEC 60092-359:1999; IEC60332-3-22:2000;
IEC 60754-1:1994; IEC 60754-2:1997; IEC 61034-1/2:2005-04

Marking of product

Anhui Hualing cable co. ltd. – CEV/DA&SA – size– voltage rating – IEC 60332-3-22

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials,

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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

Survey shall be performed at least every second year.

END OF CERTIFICATE