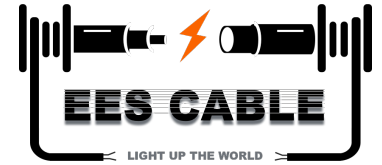
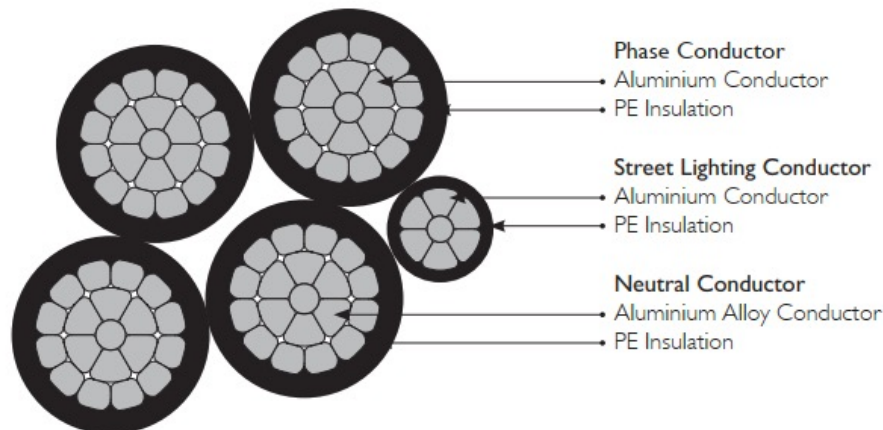


IEC 60502

Aerial Bundled Cables Low Voltage(ABC LV)



IEC 60502 & TNB Specification 0.6/1 (1.2) kV



DESCRIPTION

The aerial bundled cables designed for overhead distribution lines have an insulated neutral messenger made of AAAC, which the insulated aluminium phase conductors are helically wound over it. Cables are rated at 0.6/1(1.2) kV and conform to IEC 60502 & TNB Specification.

CONSTRUCTION

- 1 Conductor :
 - a) Phase - The phase conductors shall be of H68 Condition aluminium conductor and compacted circular stranded.
 - b) Neutral or messenger - The neutral or messenger conductor shall be of aluminium alloy conductor and compacted circular stranded.
 - c) Street Lighting - The street lighting conductors shall be of H68 Condition aluminium conductor and compacted circular stranded.
- 2 Insulation :

The phase, neutral and street lighting conductors shall be extruded with Polyethylene (PE) as insulation.
- 3 Assembly :

The cable consists of insulated phase and street lighting aluminium conductors, shall be held firmly onto the insulated neutral messenger aluminium alloy conductor in a right hand (Z) lay.

IEC 60502

Aerial Bundled Cables Low Voltage(ABC LV)



IEC 60502 & TNB Specification

0.6/1 (1.2) kV

Cables without street lighting

Phase conductor

	mm ²	16 *	16 *	25	35	50	70	95	120	150	185
Nominal cross-sectional area	mm ²	16 *	16 *	25	35	50	70	95	120	150	185
Number of cores		1	3	3	3	3	3	3	3	3	3
Minimum number of wires		6	6	6	6	6	12	15	15	30	30
Nominal insulation thickness	mm	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0
Diameter of insulated core	mm	6.8	6.8	8.5	9.5	11.2	13.0	15.1	16.6	18.4	20.6
Max. dc resistance at 20°C	ohm/km	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at still wind, ambient temperature = 30°C, conductor temperature = 75°C	A	61	61	84	104	129	167	209	246	283	332
Maximum voltage drop	mV/A/m	4.67	4.05	2.54	1.84	1.36	0.95	0.69	0.55	0.46	0.37

Messenger conductor

Nominal cross-sectional area	mm ²	25	25	25	25	35	50	70	70	95	120
Minimum number of wires		6	6	6	6	6	6	12	12	15	15
Nominal insulation thickness	mm	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Diameter of insulated core	mm	8.5	8.5	8.5	8.5	9.5	11.2	13.1	13.1	15.1	16.6
Max. dc resistance at 20°C	ohm/km	1.312	1.312	1.312	1.312	0.943	0.693	0.469	0.469	0.349	0.273
Calculated breaking load	kN	6.4	6.4	6.4	6.4	8.9	12.1	18.0	18.0	24.2	30.8

Completed cable

Approx. overall diameter	mm	15.3	19.0	23.2	25.6	30.0	34.9	40.6	44.1	49.2	54.9
Approx. weight of cable	kg/km	160	290	400	500	680	920	1,270	1,510	1,870	2,340
Packing length	m/drum	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500

Cables with street lighting

Phase conductor

Nominal cross-sectional area	mm ²	25	35	50	70	95 *	120	150	185 *
Number of cores		3	3	3	3	3	3	3	3
Minimum number of wires		6	6	6	12	15	15	30	30
Nominal insulation thickness	mm	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0
Diameter of insulated core	mm	8.5	9.5	11.2	13.0	15.1	16.6	18.4	20.6
Max. dc resistance at 20°C	ohm/km	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at still wind, ambient temperature = 30°C, conductor temperature = 75°C	A	84	104	129	167	209	246	283	332
Maximum voltage drop	mV/A/m	2.54	1.84	1.36	0.95	0.69	0.55	0.46	0.37

Messenger conductor

Nominal cross-sectional area	mm ²	25	25	35	50	70	70	95	120
Minimum number of wires		6	6	6	6	12	12	15	15
Nominal insulation thickness	mm	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Diameter of insulated core	mm	8.5	8.5	9.5	11.2	13.1	13.1	15.1	16.6
Max. dc resistance at 20°C	ohm/km	1.312	1.312	0.943	0.693	0.469	0.469	0.349	0.273
Calculated breaking load	kN	6.4	6.4	8.9	12.1	18.0	18.0	24.2	30.8

Street lighting conductor

Nominal cross-sectional area	mm ²	16	16	16	16	16	16	16	16
Minimum number of wires		6	6	6	6	6	6	6	6
Nominal insulation thickness	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Diameter of insulated core	mm	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max. dc resistance at 20°C	ohm/km	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91

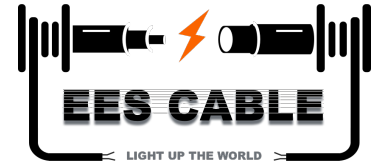
Completed cable

Approx. overall diameter	mm	23.2	25.6	30.0	34.9	40.6	44.1	49.2	54.9
Approx. weight of cable	kg/km	470	560	740	980	1,330	1,580	1,940	2,410
Packing length	m/drum	1,000	1,000	1,000	1,000	500	500	500	500

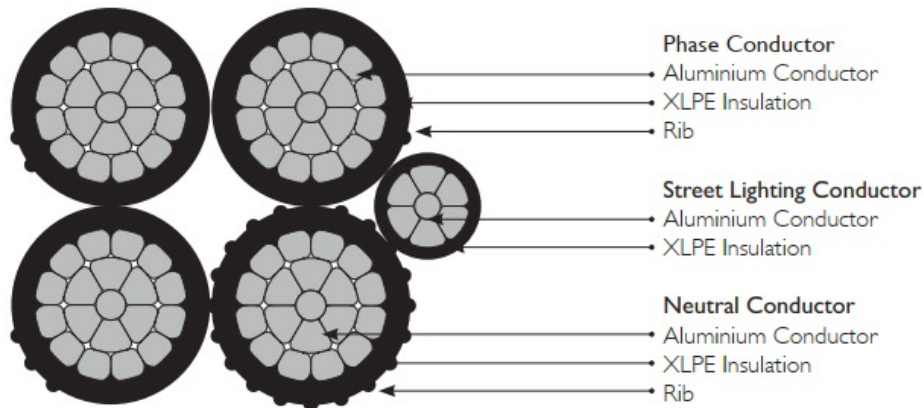
Remarks : *Standard size in the TNB Specification .

IEC 60502 LV/ABC 0.6/I (1.2) kV

Aerial Bundled Cables Low Voltage(ABC LV)



IEC 60502 & DES/LV/ABC 0.6/I (1.2) kV



DESCRIPTION

The aerial bundled cables designed for overhead distribution lines have all conductors made of aluminium 1350 and are insulated with XLPE. Phase and neutral cores are laid up in a bundle with a left hand lay. Cables are rated at 0.6/1(1.2) kV and conform to IEC 60502 & DES/LV/ABC.

The main advantage of aerial bundled cables include :

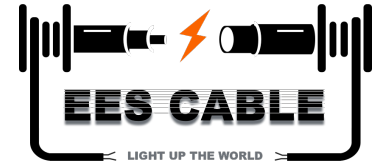
1. Ease of erection and stringing
2. Practically no tree - trimming required
3. Less maintenance

CONSTRUCTION

- 1 **Conductor (For either phase, neutral or street lighting) :**
The conductors shall be of H68 condition aluminium conductor and compacted circular stranded.
- 2 **Insulation :**
The conductors shall be extruded with Cross-linked Polyethylene (XLPE) material as insulation. Each phase core is marked with one rib, two ribs or three ribs to denote the phases .The neutral core carries equally spaced ribs right round the circumference.The street lighting core is marked with the letter " S/L " .
- 3 **Assembly :**
The cores shall be laid up with a left hand (S) lay.

IEC 60502 LV/ABC 0.6/I (1.2) kV

Aerial Bundled Cables Low Voltage(ABC LV)



IEC 60502 & DES/LV/ABC

0.6/I (1.2) kV

Cables without street lighting

Phase conductor

Nominal cross-sectional area	mm ²	25	35
Number of cores		3	3
Minimum number of wires		6	6
Nominal insulation thickness	mm	1.4	1.4
Diameter of insulated core	mm	8.9	9.9
Max. dc resistance at 20°C	ohm/km	1.20	0.868
Minimum breaking load	kN	3.5	4.9
Current rating at still wind, ambient temperature = 30°C, conductor temperature = 75°C	A	84	104

Neutral Conductor

Nominal cross-sectional area	mm ²	25	35
Minimum number of wires		6	6
Nominal insulation thickness	mm	1.4	1.4
Diameter of insulated core	mm	8.9	9.9
Max. dc resistance at 20°C	ohm/km	1.2	0.868
Minimum breaking load	kN	3.5	4.9

Completed cable

Approx. overall diameter	mm	21.5	23.9
Approx. weight of cable	kg/km	420	550
Packing length	m/drum	1,000	1,000

Cables with street lighting

Phase conductor

Nominal cross-sectional area	mm ²	120	185
Number of cores		3	3
Minimum number of wires		15	30
Nominal insulation thickness	mm	1.7	2.2
Diameter of insulated core	mm	17.0	21.0
Max. dc resistance at 20°C	ohm/km	0.253	0.164
Minimum breaking load	kN	16.8	25.9
Current rating at still wind, ambient temperature = 30°C, conductor temperature = 75°C	A	246	332

Neutral conductor

Nominal cross-sectional area	mm ²	120	185
Minimum number of wires		15	30
Nominal insulation thickness	mm	1.7	2.2
Diameter of insulated core	mm	17.0	21.0
Max. dc resistance at 20°C	ohm/km	0.253	0.164
Minimum breaking load	kN	16.8	25.9

Street lighting conductor

Nominal cross-sectional area	mm ²	25	25
Minimum number of wires		6	6
Nominal insulation thickness	mm	1.4	1.4
Diameter of insulated core	mm	8.9	8.9
Max. dc resistance at 20°C	ohm/km	1.2	1.2

Completed cable

Approx. overall diameter	mm	43.8	50.7
Approx. weight of cable	kg/km	1,800	2,700
Packing length	m/drum	500	500