AS/NZS 3599.1

Aerial Bundled Cables Medium Voltage (ABC MV)

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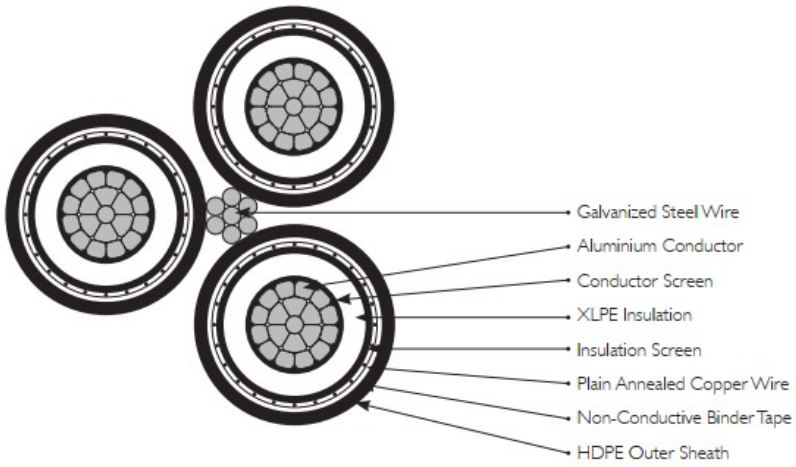

DESCRIPTION

Circular compacted stranded aluminium conductor, XLPE insulated, copper wire screened and HDPE outer sheathed cable. The three XLPE insulated and copper wire screened single core cables are bundled around the galvanized steel wires in a right hand lay.

CONSTRUCTION

1 Conductor Phase conductors are circular compacted stranded H68 aluminium to BS2627.

2 Conductor screen Extruded layer of semi-conductive compound.

3 Insulation XLPE (cross-linked polyethylene) rated at 90°C.

4 Insulation screen

- a Non-metallic part
  Extruded layer of semi-conductive compound.
- b Metallic part
  Copper wire screen (SCW).

5 Separator Non conductive swellable binder tape Note :A semi-conductive swellable tape may be applied in between the non-metallic and metallic part.

6 Outer sheath High density polyethylene (HDPE) colour black. The outer sheath shall be printed with figures 1 ONE, 2 TWO, 3 THREE which corresponding to the three different phases.

7 Support wire The support wire shall comprise a stranded galvanized steel wires.

8 Assembly The three XLPE insulated and copper wire screened single core cables are bundled around the galvanized steel wires in a right hand (Z) lay.

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Aerial Bundled Cables Medium Voltage (ABC MV)

AS/NZS 3599.1 (Light Duty Screen) — 6.35/11 (12) kV

Phase conductor								
Nominal cross-sectional area	mm²	35	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	18	18	30
Nominal diameter of conductor	mm	7.0	7.0	8.1	9.7	14.5	12.9	14.3	16.1
Minimum thickness of conductor screen	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nominal thickness of XLPE insulation	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Minimum thickness of insulation screen	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
No. and diameter of metallic screening approx. of copper wire	no./mm	24/0.85	24/0.85	24/0.85	24/0.85	24/0.85	24/0.85	24/0.85	24/0.85
Nominal thickness of outer sheath	mm	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9
Nominal diameter over sheathing	mm	24.2	24.2	25.1	26.7	28.4	29.9	31.3	33.2
Max. dc resistance at 20°C	ohm/km	0.868	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at Ambient temperature = 30°C Ambient temperature = 40°C Solar radiation = 1000w/m² Wind speed = 1m/s	 A A	 185 155	 185 155	 210 185	 260 230	 315 280	 365 325	 415 370	 475 425
Earth fault current carrying capacity of metallic screen at -1 second (1 core)	kA	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Messenger - Galvanized steel wire									
Stranding	No./mm	7/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0
Direction of the outermost layer		Right-hand (Z)							
Overall diameter	mm	6.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Completed cable									
Approx. overall diameter	mm	54.4	58.4	60.1	63.4	66.8	69.8	72.6	76.4
Approx. weight of cable	kg/km	1890	2190	2320	2610	2960	3260	3590	4060
Packing length	m/drum	500	500	500	500	500	500	250	250

AS/NZS 3599.1 (Heavy Duty Screen) — 6.35/11 (12) kV

Phase conductor								
Nominal cross-sectional area	mm²	35	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	18	18	30
Nominal diameter of conductor	mm	7.0	7.0	8.1	9.7	11.5	12.9	14.3	16.1
Minimum thickness of conductor screen	mm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Nominal thickness of XLPE insulation	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Minimum thickness of insulation screen	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
No. and diameter of metallic screening approx. of copper wire	no./mm	40/0.85	40/0.85	23/1.35	32/1.35	38/1.35	38/1.35	38/1.35	38/1.35
Nominal thickness of outer sheath	mm	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9
Nominal diameter over sheathing	mm	24.2	24.2	26.1	27.7	29.4	30.9	32.3	34.2
Max. dc resistance at 20°C	ohm/km	0.868	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at Ambient temperature = 30°C Ambient temperature = 40°C Solar radiation = 1000w/m² Wind speed = 1m/s	 A A	 185 155	 185 155	 210 185	 260 230	 315 280	 365 325	 415 370	 475 425
Earth fault current carrying capacity of metallic screen at -1 second (1 Core)	kA	3.3 *	3.3 *	4.8 *	6.8 *	8.0	8.0	8.0	8.0
Messenger - Galvanized steel wire									
Stranding	No./mm	7/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0	19/2.0
Direction of the outermost layer		Right-hand (Z)							
Overall diameter	mm	6.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Completed cable									
Approx. overall diameter	mm	54.4	58.4	62.1	65.4	68.8	71.8	74.6	78.4
Approx. weight of cable	kg/km	2150	2440	2880	3540	4130	4440	4770	5240
Packing length	m/drum	500	500	500	500	500	500	250	250

* The screen earth fault current rating is limited by the short circuit current rating of conductor.