

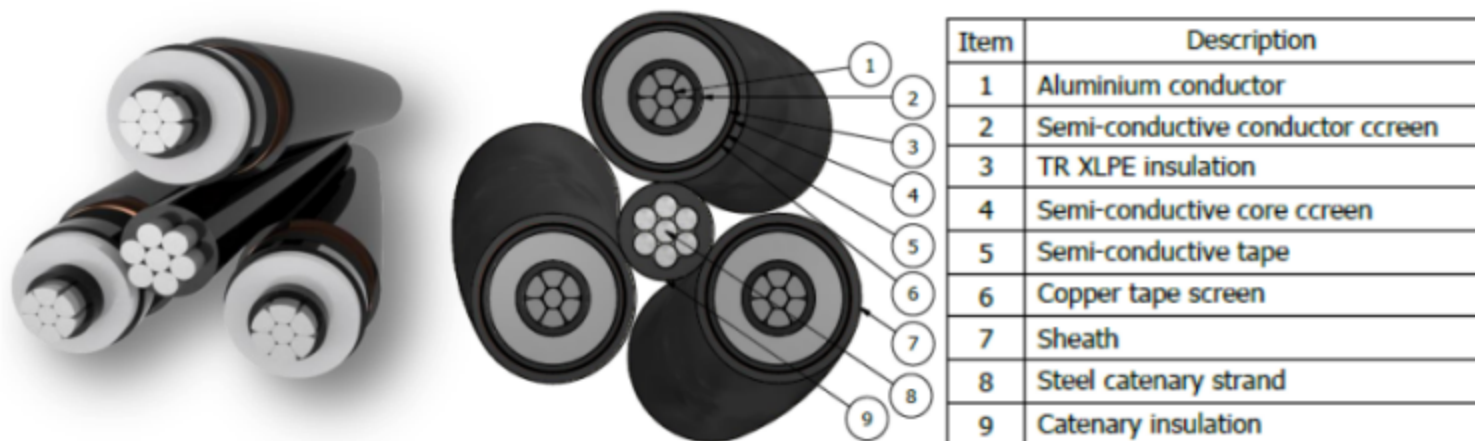
MV ABC Wire Application

Suitable for aerial installation and for public power distribution networks

MV ABC Wire Standard

SANS 1713— Electric cables -Medium voltage aerial bundled conductors for voltages from 3,8/6,6 kV to 19/33 kV

MV ABC Wire Construction



Conductor types: Stranded hard drawn Aluminium class 2. Triple layer TR Cross linked polyethylene insulated, 3 cores, XLPE, individually screened, armoured and un-armoured cables in accordance with SANS 1713.

Size Range -Type A (Armoured) 95- 185 mm²(3.8/6,6kV, 6.35/11kV, 12.7/22kV,19/33kV)

Size Range -Type B (Unarmoured) 35 - 185 mm²(3.8/6,6kV, 6.35/11kV, 12.7/22kV)50- 185 mm²(19/33kV)

- 1.Conductor: Aluminum, circular stranded and compacted.
- 2.Conductor Screening: Extruded thermosetting semi-conductor layer.
- 3.Insulation: XLPE thermosetting material.
- 4.Insulation Screening: Semi conducting screen: Extruded thermosetting semi-conducting layer, applied under a swellable semi-conducting tape for water tightness.
- 5.Metal screen: Plain soft copper wire and / or copper tape applied helically, or aluminum tape applied longitudinally bonded to the outer PE sheath.
- 6.Outer sheath: Extruded black PE sheath, or PVC upon specific customer requirements.
- 7.Steel Messenger: 50 or 70 mm² galvanized steel stranded wires, covered with black PE, or PVC upon specific customer requirements.

MV ABC Wire Parameter Table

6.6kV ABC Cable Specification

Phase Core								
Conductor size	mm ² nom	35	50	70	95	120	150	185
Conductor diameter	mm app.	7.15	8.25	9.95	11.8	13.1	14.8	15.95
Insulation diameter	mm app.	15.4	16.5	18.2	20.1	21.4	22.7	24.2
Core sheath diameter	mm app.	20.5	21.6	23.5	25.5	26.8	28.1	29.9
Catenary (Support Core)								
Conductor size	mm ² nom	50	50	50	50	70	70	70
Conductor diameter	mm app.	9	9	9	9	10.8	10.8	10.8
Insulation diameter	mm app.	11.5	11.5	11.5	11.5	13.3	13.3	13.3
Maximum tensile strength and pulling force of catenary	kN	26	26	26	26	37	37	37
Cable								
Cable diameter	mm app.	44	47	51	55	58	61	65
Cable mass	kg/m app.	2.05	2.24	2.6	3.01	3.51	3.85	4.33
Gross mass (500m)	kg app.	915	973	1,079	1,204	1,354	1,454	1,599

Bending radius	mm min.	636	669	720	776	841	880	926
Current rating								
In air	Amps	150	185	230	280	325	370	430
Resistance								
dc @ 20°C	W/km max	0.868	0.641	0.443	0.32	0.253	0.206	0.164
ac @ 90°C	W /km max	1.113	0.822	0.568	0.411	0.325	0.265	0.211
Reactance	W /km	0.136	0.124	0.121	0.114	0.111	0.106	0.103
Impedance	W /km	1.121	0.832	0.581	0.426	0.342	0.284	0.233
Short circuit ratings								
Symmetrical	kA (1 sec)	3	4	5.8	8	10.2	12.5	15.7
Earth fault	kA (1 sec)	1.5	1.6	1.7	1.9	2	2.1	2.3
11kv ABC Cable Specification								
Phase Core								
Conductor size	mm2 nom	35	50	70	95	120	150	185
Conductor diameter	mm app.	7.15	8.25	9.95	11.8	13.1	14.8	16.35
Insulation diameter	mm app.	17.3	18.4	20.1	21.9	23.2	24.5	26.1
Core sheath diameter	mm app.	22.5	23.6	25.3	27.4	28.7	30.2	31.7
Catenary (Support Core)								
Conductor size	mm2 nom	50	50	50	50	70	70	70
Conductor diameter	mm app.	9	9	9	9	10.8	10.8	10.8
Insulation diameter	mm app.	11.5	11.5	11.5	11.5	13.3	13.3	13.3
Maximum tensile strength and pulling force of catenary	kN	26	26	26	26	37	37	37
Cable								
Cable diameter	mm app.	49	51	55	59	62	65	69
Cable mass	kg/m app.	2.31	2.52	2.85	3.28	3.61	3.99	4.43
Gross mass (500m)	kg app.	993	1,055	1,155	1,285	1,382	1,496	1,628
Bending radius	mm min.	691	724	775	831	896	935	981
Current rating								
In air	Amps	150	185	230	280	325	370	430
Resistance								
dc @ 20°C	W/km max	0.868	0.641	0.443	0.32	0.253	0.206	0.164
ac @ 90°C	W /km max	1.113	0.822	0.568	0.411	0.325	0.265	0.211
Reactance	W /km	0.136	0.124	0.121	0.114	0.111	0.106	0.103
Impedance	W /km	1.121	0.832	0.581	0.426	0.342	0.284	0.233
Short circuit ratings								
Symmetrical	kA (1 sec)	3	4	5.8	8	10.2	12.5	15.7
Earth fault	kA (1 sec)	1.5	1.6	1.7	1.9	2	2.1	2.3
22kv ABC Cable Specification								
Phase Core								
Conductor size	mm2 nom	35	50	70	95	120	150	185
Conductor diameter	mm app.	7.15	8.25	9.95	11.8	13.1	14.8	16.35
Insulation diameter	mm app.	21.6	22.7	24.4	26.2	27.5	29.2	30.8
Core Sheath diameter	mm app.	27	28.1	30	31.9	33.4	35.1	36.8

Catenary (Support Core)								
Conductor size	mm ² nom	50	50	50	50	70	70	70
Conductor diameter	mm app.	9	9	9	9	10.8	10.8	10.8
Insulation diameter	mm app.	11.5	11.5	11.5	11.5	13.3	13.3	13.3
Maximum Tensile Strength and Pulling force of Catenary	kN	26	26	26	26	37	37	37
Cable								
Cable diameter	mm app.	58	61	65	69	72	76	80
Cable mass	kg/m app.	2.96	3.19	3.61	4.05	4.63	5.06	5.61
Gross mass (500m)	kg app.	1 188	1 257	1 383	1 514	1 690	1 819	1 984
Bending radius	mm min.	821	854	905	960	1025	1076	1123
Current rating								
In air	Amps	150	185	230	280	325	370	430
Resistance								
dc @ 20°C	W/km max	0.868	0.641	0.443	0.32	0.253	0.206	0.164
ac @ 90°C	W /km max	1.113	0.822	0.568	0.411	0.325	0.265	0.211
Reactance	W /km	0.136	0.124	0.121	0.114	0.111	0.106	0.103
Impedance	W /km	1.121	0.832	0.581	0.426	0.342	0.284	0.233
Short circuit ratings								
Symmetrical	kA (1sec)	3	4	5.8	8	10.2	12.5	15.7
Earth fault	kA (1sec)	1.5	1.6	1.7	1.9	2	2.1	2.3
33kV ABC Cable Specification								
Phase Core								
Conductor size	mm ² nom	50	70	95	120	150	185	
Conductor diameter	mm app.	8.25	9.95	11.8	13.1	14.8	16.35	
Insulation diameter	mm app.	27.8	29.5	31.4	32.7	34	35.5	
Core Sheath diameter	mm app.	33.7	35.4	37.4	38.7	40.2	41.8	
Catenary (Support Core)								
Conductor size	mm ² nom	50	50	50	70	70	70	
Conductor diameter	mm app.	9	9	9	10.8	10.8	10.8	
Insulation diameter	mm app.	11.5	11.5	11.5	13.3	13.3	13.3	
Maximum Tensile Strength and Pulling force of Catenary	kN	26	26	26	37	37	37	
Cable								
Cable diameter	mm app.	73	76	81	84	87	90	
Cable mass	kg/m app.	4.12	4.53	5.06	5.37	5.82	6.33	
Gross mass (500m)	kg app.	1,535	1,658	1,819	1,910	2,046	2,200	
Bending radius	mm min.	1007	1058	1114	1179	1218	1264	
Current rating								
In air	Amps	185	230	280	325	370	430	
Resistance								
dc @ 20°C	W/km max	0.641	0.443	0.32	0.253	0.206	0.164	
ac @ 90°C	W/km max	0.822	0.568	0.411	0.325	0.265	0.211	
Reactance	W /km	0.124	0.121	0.114	0.111	0.106	0.103	

Impedance	W /km	0.832	0.581	0.426	0.342	0.284	0.233
Short circuit ratings							
Symmetrical	kA (1 sec)	4	5.8	8	10.2	12.5	15.7
Earth fault	kA (1 sec)	1.6	1.7	1.9	2	2.1	2.3