Application

Armoured power distribution cables with aluminium or copper conductors for external and direct burial applications in power networks.

Performance

Voltage rating U_0/U(Um): 3.8/6.6(7.2)kV
Chemical performance: Chemical, UV, and oil resistance
Mechanical performance (minimum bending radius):
Single core unarmoured cable: 20 x overall diameter
Single core AWA or aluminium tape armoured cable: 15 x overall diameter
Three core unarmoured cable: 15 x overall diameter
Three core SWA or STA armoured cable: 12 x overall diameter
Thermal performance:
Maximum operating temperature: 90℃
Maximum short-circuit temperature: 250℃ (Max. 5s)
Minimum service temperature: -10℃
Fire performance:
Flame retardant according to IEC/EN 60332-1-2 standard
Reduced emission of halogens chlorine <15%

Construction

Conductor: Stranded compacted copper or aluminium conductor, class 2.
Conductor Screen: Semi-conductive compound.
Insulation: XLPE (cross-linked polyethylene)
Alternative: EPR (Ethylene Propylene Rubber)
Insulation Screen: Semi-conductive compound.
Metallic Screen: Individual concentric copper wires and/or copper tape.
Filler: PET (polyethylene terephthalate) fibres
Binding Tape: Polyester tape or non-woven fabric
Optional Inner Sheath: PVC (Polyvinyl chloride)
Alternative: LSZH (Low Smoke Zero Halogen)
Optional Armour:
Single-core conductor: AWA (Aluminium Wire Armour) or aluminium tape
Three-core conductor: SWA (Steel Wire Armour) or galvanized steel tape (single or double layer, flat or corrugated)
Outer Sheath: PVC (Polyvinyl chloride)
Alternative: LDPE, MDPE (Low/Medium Density Polyethylene)
Alternative: LSZH (Low Smoke Zero Halogen)
Conductor Shape
Single Core: Circular, circular compacted
Three Core: Circular, circular compacted, sectorial

Specification

-BS 6622, IEC/EN 60228, IEC 60502-2

Eastful Cable Lab

We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.
CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rhineland and CCS.

National Green Factory

Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China.
We are committed to the development of high-end, intelligent and green manufacturing industry.

*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

Technical Parameters

Physical and Technical Performance Parameters											
No.of Cores	Nominal Cross Section Area	Nominal Dia. of Conductor	Nominal Thickness of Insulation	Max. Resistance of Conductor				Approx. Short Circuit Current			
				D.C. at 20℃		A.C. at 90℃		Conductor(1s)		Copper Wire Screen(1s)	
				Copper	Aluminum	Copper	Aluminum	Copper	Aluminum	Copper	Aluminum
-	mm^2	mm	mm	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	kA	kA
1	35	7.1	2.5	0.524	-	0.668	-	5.0	-	1.96	-
1	50	8.3	2.5	0.387	0.641	0.494	0.822	7.2	4.7	1.96	1.96
1	70	9.7	2.5	0.268	0.443	0.342	0.568	10.0	6.6	1.96	1.96
1	95	11.5	2.5	0.193	0.320	0.247	0.411	13.6	9.0	1.96	1.96
1	120	12.9	2.5	0.153	0.253	0.196	0.325	17.2	11.3	1.96	1.96
1	150	14.3	2.5	0.124	0.206	0.159	0.265	21.5	14.2	3.1	3.1
1	185	15.9	2.5	0.0991	0.164	0.128	0.211	26.5	17.5	3.1	3.1
1	240	18.3	2.6	0.0754	0.125	0.0984	0.162	34.3	22.7	3.1	3.1
1	300	20.6	2.8	0.0601	0.100	0.0796	0.130	42.9	28.3	3.1	3.1
1	400	23.5	3.0	0.0470	0.0778	0.0631	0.102	57.2	37.8	4.33	4.33
1	500	26.6	3.2	0.0366	0.0605	0.0508	0.0802	71.5	47.2	4.33	4.33
1	630	30.4	3.2	0.0283	0.0469	0.0434	0.0651	90.1	59.0	4.33	4.33
3	35	7.1	2.5	0.524	-	0.668	-	5.0	-	1.96	-
3	50	8.3	2.5	0.387	0.641	0.494	0.822	7.2	4.7	1.96	1.96
3	70	9.7	2.5	0.268	0.443	0.342	0.568	10.0	6.6	1.96	1.96
3	95	11.5	2.5	0.193	0.320	0.247	0.411	13.6	9.0	1.96	1.96
3	120	12.9	2.5	0.153	0.253	0.196	0.325	17.2	11.3	1.96	1.96
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3	240	18.3	2.6	0.0754	0.125	0.0984	0.162	34.3	22.7	3.1	3.1
3	300	20.6	2.8	0.0601	0.100	0.0796	0.130	42.9	28.3	3.1	3.1
3	400	23.5	3.0	0.0470	0.0778	0.0631	0.102	57.2	37.8	4.33	4.33

Technical Parameters

Electrical Performance Parameters (Aluminium Conductor) Single Core									
No. of Cores	Nominal Cross Section Area	Maximum Resistance of Conductor At 20°c	Operating Inductance		Operating Capacity	Current Carrying Capacity			
						in ground at 20℃		in air at 30℃	
			flat	trefoil		flat	trefoil	flat	trefoil
-	mm^2	Ω/km	mH/km	mH/km	μF/km	A	A	A	A
1	35	0.868	0.748	0.401	0.266	-	-	-	-
1	50	0.641	0.719	0.381	0.297	186	178	233	188
1	70	0.443	0.684	0.357	0.339	234	217	280	235
1	95	0.32	0.659	0.342	0.381	287	259	344	286
1	120	0.253	0.636	0.327	0.416	338	298	392	329
1	150	0.206	0.62	0.319	0.454	388	333	441	376
1	185	0.164	0.602	0.31	0.495	449	377	510	428
1	240	0.125	0.579	0.3	0.556	530	438	587	508
1	300	0.1	0.562	0.295	0.617	605	495	682	586
1	400	0.0788	0.543	0.29	0.681	678	562	781	676
1	500	0.0605	0.525	0.283	0.758	762	633	883	772
1	630	0.0469	0.507	0.276	0.853	858	712	1007	882

Electrical Performance Parameters (Aluminium Conductor) Multi Core						
No. of Cores	Nominal Cross Section Area	Maximum Resistance of Conductor At 20°c	Operating Inductance	Operating Capacity	Continuous Current Rating	
					in Ground at 20OC	in Air at 30OC
-	mm^2	Ω/km	μF/km	μF/km	A	A
3	50	0.641	0.33	0.31	162	160
3	70	0.443	0.31	0.37	199	199
3	95	0.320	0.30	0.41	238	242
3	120	0.253	0.29	0.44	271	280
3	150	0.206	0.28	0.49	304	318
3	185	0.164	0.27	0.53	345	365
3	240	0.125	0.27	0.57	401	431
3	300	0.100	0.26	0.58	516	649
3	400	0.0778	0.26	0.61	572	737
3	500	0.0605	0.25	0.65	638	835

Technical Parameters

Electrical Performance Parameters(Copper Conductor)		
Nominal Cross Section Area	Maximum Conductor D.C. Resistance at 20℃	Maximum Conductor A.C. Resistance at Operating Temp. and 50Hz
-	mm^2	Ω/km
1	35	0.868
1	50	0.641
1	70	0.443
1	95	0.32
1	120	0.253
1	150	0.206
1	185	0.164
1	240	0.125
1	300	0.1
1	400	0.0788
1	500	0.0605
1	630	0.0469

Capacitance	Charging Current	Dielectric Losses	Reactance at 50 Hz	Conductor S.C.C	Current Rating	
					Laid in ground	Laid in free air
mH/km	mH/km	μF/km	Ω/km	A	A	A
0.748	0.401	0.266	-	-	-	-
0.719	0.381	0.297	186	178	233	188
0.684	0.357	0.339	234	217	280	235
0.659	0.342	0.381	287	259	344	286
0.636	0.327	0.416	338	298	392	329
0.62	0.319	0.454	388	333	441	376
0.602	0.31	0.495	449	377	510	428
0.579	0.3	0.556	530	438	587	508
0.562	0.295	0.617	605	495	682	586
0.543	0.29	0.681	678	562	781	676
0.525	0.283	0.758	762	633	883	772
0.507	0.276	0.853	858	712	1007	882

Laying conditions at trefoil formation are as below:
-Soil thermal resistivity 100 °C.Cm/Watt
-Burial depth 0.8 m
-Ground temperature 20 °C | Air temperature 30 °C | Frequency 50 Hz