

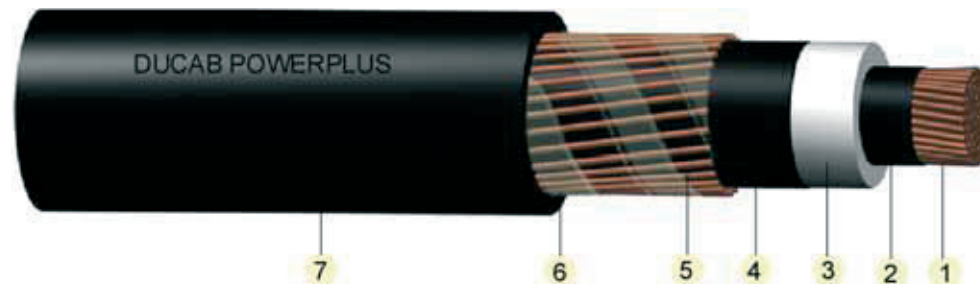
Table 16

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Conductor Diameter (Max)	mm	8.4	9.9	11.6	13	14.5	16.1	18.4	20.6	23.7	26.6	29.8	33.6	37.6
Weight of Conductor (Approx)	Kg/Km	420	605	839	1056	1297	1629	2141	2686	3421	4335	5585	7346	9160
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.9	1.9	2	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7
Approximate Overall Diameter	mm	26.3	27.9	29.7	31.2	32.8	34.5	36.9	39.3	42.6	45.7	49.1	53.1	57.4
Approximate Cable Weight	Kg/Km	1100	1380	1690	2030	2370	2750	3350	4060	4910	6170	7690	9040	10950
Standard Drum Length	m	500	500	500	500	500	500	500	500	500	500	500	400	300
Minimum Bending Radius of Cable (during installation)	mm	526	558	594	624	656	690	738	786	852	914	962	1062	1148
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0221	0.0176
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.051	0.041	0.040	0.030
Approximate Reactance at 50 Hertz	ohm/Km	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 Hertz	ohm/Km	0.51	0.37	0.28	0.23	0.20	0.17	0.15	0.13	0.12	0.11	0.10	0.10	0.09
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx. Charging Current per phase at U _o = 12kV and F = 50Hz	mA/m	0.68	0.79	0.87	0.94	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	614	676	757	828	899
2. Drawn into Ducts, Ground Temp. 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	360	396	463	507	561	623	694	757	819
3. Laid in Air in trefoil touching, Ambient Temp. 35° C	A	225	276	331	391	446	506	598	681	782	902	1040	1178	1306
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.01	13.60	17.20	21.50	26.50	34.30	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITING CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C. LONGER DRUM LENGTHS ARE AVAILABLE TO SPECIFIC CUSTOMER REQUIREMENTS.

12/20 (24)kV

Single Core
Copper Conductors
XLPE Insulated to
IEC 60502-2
Unarmoured



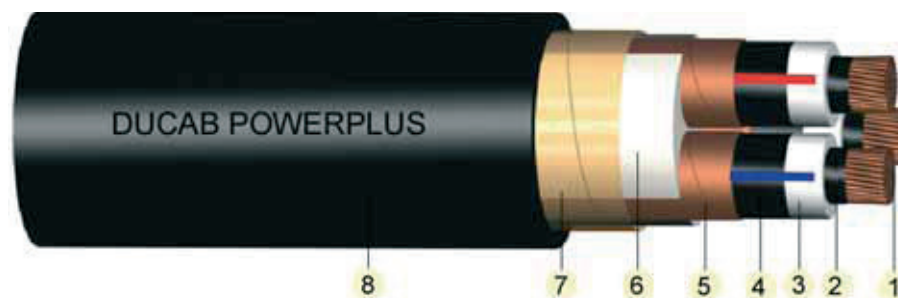
- 1.HCC⁺™ Copper Conductor
- 2.Semiconductive conductor screen
- 3.DFI™ XLPE Insulation
- 4.Semiconductive insulation screen
- 5.Copper wire screen
6. Tape binder
7. Outer sheath

Table 17

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Conductor Diameter (Max)	mm	8.4	9.9	11.6	13	14.5	16.1	18.4	20.6	23.7
Weight of Conductor (Approx)	Kg/Km	1281	1845	2558	3219	3954	4966	6526	8187	10428
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Outersheath Thickness (Nominal)	mm	2.7	2.8	2.9	3	3.1	3.2	3.4	3.5	3.8
Approximate Overall Diameter	mm	54.5	58.0	62.0	65.5	68.5	72.5	77.5	83.0	89.0
Approximate Cable Weight	Kg/Km	4100	5010	6080	7090	8210	9620	11830	14140	15700
Standard Drum Length	m	500	500	500	500	500	400	300	300	200
Minimum Bending Radius of Cable (during installation)	mm	818	869	929	977	1028	1083	1163	1239	1346
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063
Approximate Reactance at 50 Hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 Hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx. Charging Current per phase at U _o = 12kV and F = 50Hz	mA/m	0.68	0.79	0.87	0.94	1.0	1.1	1.2	1.3	1.5
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	198	241	279	316	354	396	453	500	557
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	175	212	245	283	316	358	406	453	510
3. Laid singly in Air, Ambient Temp. 35° C	A	215	263	316	364	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.01	13.60	17.20	21.50	26.50	34.30	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITING CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.
LONGER DRUM LENGTHS ARE AVAILABLE TO SPECIFIC CUSTOMER REQUIREMENTS.

12/20 (24)kV
Three Core
Copper Conductors
XLPE Insulated to
IEC 60502-2
Unarmoured



- 1.HCC⁺™ Copper Conductor
- 2.Semiconductive conductor screen
- 3.DFI™ XLPE Insulation
- 4.Semiconductive insulation screen
- 5.Copper tape screen
6. Fillers
7. Tape binder
8. Outer sheath

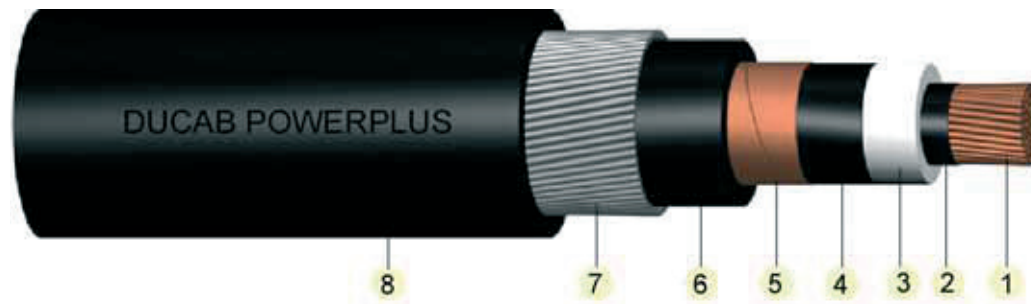
Table 18

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Conductor Diameter (Max)	mm	8.4	9.9	11.6	13	14.5	16.1	18.4	20.6	23.7	26.6	29.8	33.6	37.6
Weight of Conductor (Approx)	Kg/Km	420	605	839	1056	1297	1629	2141	2686	3421	4335	5585	7346	9160
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.5	1.5	1.6
Armour Wire Diameter (Nominal)	mm	1.6	2	2	2	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	2	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.6	2.7	2.8	2.9	3
Approximate Overall Diameter	mm	32.5	35.0	36.5	38.0	39.5	41.5	44.0	47.5	51.0	54.0	57.5	62.0	66.5
Approximate Cable Weight	Kg/Km	1500	1800	2200	2500	2850	3250	4000	4800	5750	7500	8450	10600	12690
Standard Drum Length	m	500	500	500	500	500	500	500	500	500	500	400	300	300
Minimum Bending Radius of Cable (during installation)	mm	483	519	548	570	593	618	657	710	761	809	863	926	992
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0221	0.0176
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063	0.050	0.040	0.039	0.029
Approximate Reactance at 50 Hertz	ohm/Km	0.15	0.14	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.09
Approximate Impedance at 50 Hertz	ohm/Km	0.52	0.37	0.28	0.23	0.2	0.17	0.15	0.14	0.12	0.12	0.11	0.10	0.10
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx. Charging Current per phase at U ₀ = 12kV and F = 50Hz	mA/m	0.68	0.79	0.87	0.94	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	401	454	507	570	623	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid singly	A	187	231	271	303	329	356	401	436	472	507	543	596	614
3. Laid in Air in trefoil touching, Ambient Temp. 35° C	A	239	294	350	405	451	515	598	672	764	865	966	1049	1132
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.01	13.60	17.20	21.50	26.50	34.30	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITING CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C. LONGER DRUM LENGTHS ARE AVAILABLE TO SPECIFIC CUSTOMER REQUIREMENTS.

12/20 (24)kV

Single Core
Copper Conductors
XLPE Insulated to IEC
60502-2
Aluminium Wire
Armoured



- 1.HCC⁺™ Copper Conductor
- 2.Semiconductive conductor screen
- 3.DFI™ XLPE Insulation
- 4.Semiconductive insulation screen
- 5.Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

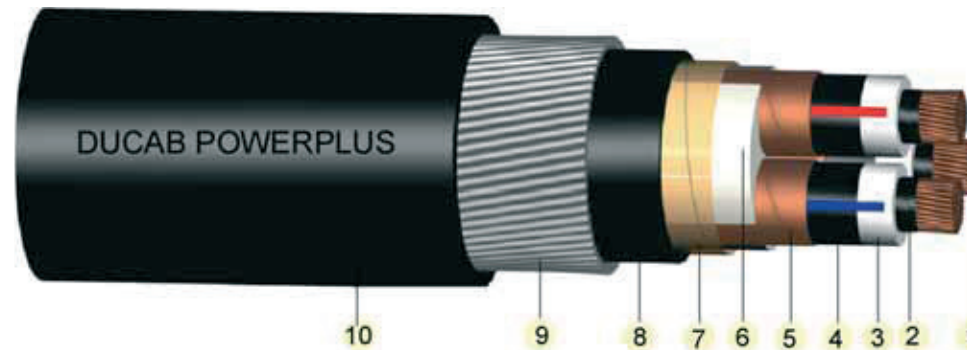
Table 19

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Conductor Diameter (Max)	mm	8.4	9.9	11.6	13	14.5	16.1	18.4	20.6	23.7
Weight of Conductor (Approx)	Kg/Km	1281	1845	2558	3219	3954	4966	6526	8187	10428
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.6	1.6	1.7	1.7	1.8	1.9	2	2.1	2.2
Armour Wire Diameter (Nominal)	mm	2.5	2.5	2.5	3.15	3.15	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	3	3.1	3.2	3.4	3.5	3.6	3.8	3.9	4.2
Approximate Overall Diameter	mm	63.5	67.0	71.0	75.5	79.0	83.0	88.5	94.0	101.5
Approximate Cable Weight	Kg/Km	6550	7550	8750	10700	11900	13500	15800	18300	21700
Standard Drum Length	m	500	400	300	300	300	250	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	757	799	848	906	948	995	1061	1123	1213
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 Hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 Hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx. Charging Current per phase at U _o = 12kV and F = 50Hz	mA/m	0.68	0.79	0.87	0.94	1.0	1.1	1.2	1.3	1.5
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	187	227	263	298	334	374	427	472	525
2. Drawn into ducts, Ground Temp. = 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	165	200	231	267	298	338	383	427	481
3. Laid singly in Air, Ambient Temp. 35° C	A	207	253	304	350	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.01	13.60	17.20	21.50	26.50	34.30	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITING CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.
LONGER DRUM LENGTHS ARE AVAILABLE TO SPECIFIC CUSTOMER REQUIREMENTS.

12/20 (24)kV

**Three Core
Copper Conductors
XLPE Insulated
to IEC 60502-2
Steel Wire Armoured**

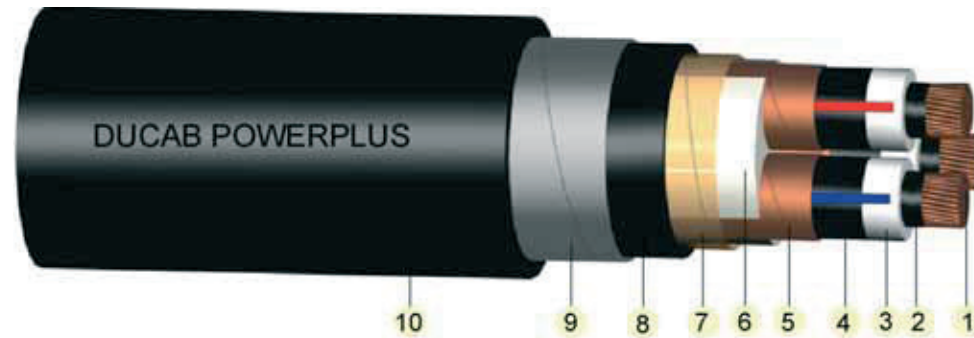


- 1.HCC[™] Copper Conductor
- 2.Semiconductive conductor screen
- 3.DFI[™] XLPE Insulation
- 4.Semiconductive insulation screen
- 5.Copper tape screen
6. Fillers
7. Tape binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Table 20

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Conductor Diameter (Max)	mm	8.4	9.9	11.6	13	14.5	16.1	18.4	20.6	23.7
Weight of Conductor (Approx)	Kg/Km	1281	1845	2558	3219	3954	4966	6526	8187	10428
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.6	1.6	1.7	1.7	1.8	1.9	2	2.1	2.2
Steel Tape Thickness (Nominal)	mm	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.8
Outersheath Thickness (Nominal)	mm	2.9	3	3.1	3.2	3.4	3.5	3.6	3.8	4
Approximate Overall Diameter	mm	61.5	65.0	69.0	72.5	78.5	80.0	85.5	90.5	98.0
Approximate Cable Weight	Kg/Km	5120	6090	7180	8250	9510	11020	14150	16590	20690
Standard Drum Length	m	500	500	500	400	400	300	250	200	200
Minimum Bending Radius of Cable (during installation)	mm	734	778	826	866	910	955	1021	1085	1174
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 Hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 Hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx. Charging Current per phase at U _o = 12kV and F = 50Hz	mA/m	0.68	0.79	0.87	0.94	1.0	1.1	1.2	1.3	1.5
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid singly	A	187	227	263	298	334	374	427	472	525
2. Drawn into Ducts, Ground Temp. = 30°C & g =1.2°C m/W, depth of laying = 0.8m, laid singly	A	165	200	231	267	298	338	383	427	481
3. Laid singly in Air, Ambient Temp. 35° C	A	207	253	304	350	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.01	13.60	17.20	21.50	26.50	34.30	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITING CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C. LONGER DRUM LENGTHS ARE AVAILABLE TO SPECIFIC CUSTOMER REQUIREMENTS.



12/20 (24)kV

Three Core
Copper Conductors
XLPE Insulated to
IEC 60502-2
Steel Tape Armoured

- 1.HCC⁺™ Copper Conductor
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9. Galvanised steel tape armour
10. Outer sheath