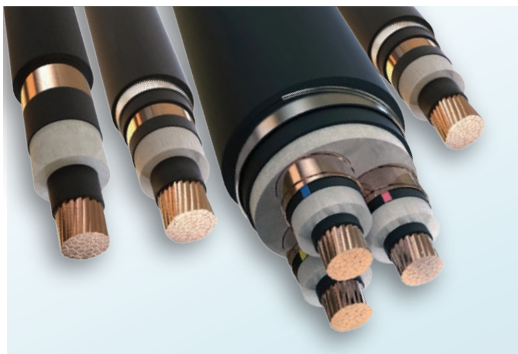


MEDIUM VOLTAGE POWER CABLES

PRODUCT CATALOGUE



Tai Sin[®]

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INTRODUCTION



Since our incorporation in 1980 as Tai Sin Electric Cables Manufacturer Pte Ltd, we have expanded and diversified over the past three decades to establish ourselves as the present Tai Sin Electric Limited. To cater for the robust growth in the regional market, Tai Sin now operates three cable manufacturing plants located in Singapore, Malaysia and Vietnam, all of which are fully equipped with the latest manufacturing facilities and technologies to meet increasing demands.

Tai Sin stocks the widest range of the Power, Control, Instrumentation and Safety Cables for use in all areas of electrical and instrumentation installation for commercial, residential, industrial and infrastructure projects. Our cables and wires are manufactured under strict quality control and designed to perform within fixed parameters of electrical, mechanical and environmental tolerances.

For over 30 years, we have grown steadily based on a sound business philosophy of providing quality products using leading edge technology, backed by unfailing excellence in customer service and faster turnaround time to maintain customer loyalty. These are the beliefs and values that give us the strength and confidence to grow, excel and succeed in the exciting years ahead.

This catalogue illustrates the construction of Tai Sin medium voltage cables which complies to various local and international standards.

Every possible effort has been made to ensure that the information contained in this publication is correct and prevailing at the time of printing. Tai Sin reserves the right to change the information and/or specifications at any time without notice in light of technical improvement and continued development.



MV CABLES DESIGN & CONSTRUCTION

6.6 ~ 33 kV XLPE insulated PVC or LSZH sheathed cable construction



Single core and three core cables consist of the following components:

Conductor

Conductors are made of either copper or aluminium. Conductor design is usually circular stranded and compacted. Our conductor design is in compliance with the requirements of IEC 60228 and BS EN60228.

Conductor Screen

Conductor screen is non-metallic, are made of extruded semi conducting polyethylene to minimize electrical stresses due to the stranded configuration of the conductor.

Insulation

XLPE insulation is as per IEC 60502-2. Triple extrusion process of inner semi-conductor, XLPE insulation and outer semi-conductor is applied. XLPE insulation is dry cured.

Insulation Screen

Insulation screen is non-metallic, are made of extruded semi conducting polyethylene to eliminate tangential and longitudinal stresses on the insulation surface.

Metallic Screen

The metallic screen is normally made of copper tape. Copper wires is available upon request.

Assembly

For three core cable - 3 insulated cores are laid together with interstices filled up by PP yarn fillers. A non woven binder tape will be wrapped onto the practically round assembled core.

Inner Sheath

Cable inner sheath is made of extruded layer of PVC or low smoke halogen free (LSZH) material.

Armouring

Armouring is either aluminium material for single core or steel material for three core cables. Armouring can be either in wire or tape form.

Outer sheath

Cable outer sheath is made of extruded layer of PVC or low smoke halogen free (LSZH) material. All outer sheath are of anti-termite properties.

Testing of Medium voltage cable

All cables will go through the standard routine tests in accordance to IEC 60502-2 before delivery.

Routine Tests

Measurements of the Electrical Resistance of conductors
Partial Discharge Test
High Voltage Test

Sample Test

Conductor Examination
Check of Dimensions
Hot Set Test for XLPE Insulations

MV STANDARDS

Cable structure

Samples of 6.6~33 kV XLPE insulated PVC or LSZH sheathed cable

6.6~33 kV XLPE INSULATED POWER CABLE

Standards

General Types: IEC60502-2 equivalent to DIN VDE0276, BS7835 and BS6622

Flame retardant types: IEC60332 equivalent to DIN VDE0472-804 and BS4066

LSZH types: IEC60754, IEC61034 equivalent to DIN VDE0472-813, DIN VDE0472-816, BS6425, and BS7622

Conductor operating temperature : 90 °C
Max. Short circuit temperature : 250 °C,
Max. Duration : 5s.

Voltage adopted:		Unit: kV	
Rated power frequency voltage between conductors (U)		Maximum voltage of equipment (Um)	
6.6		7.2	
11		12	
15		17.5	
22		24	
33		36	

The minimum installation bending radius:

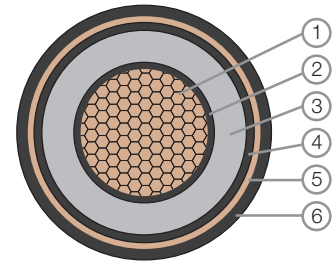
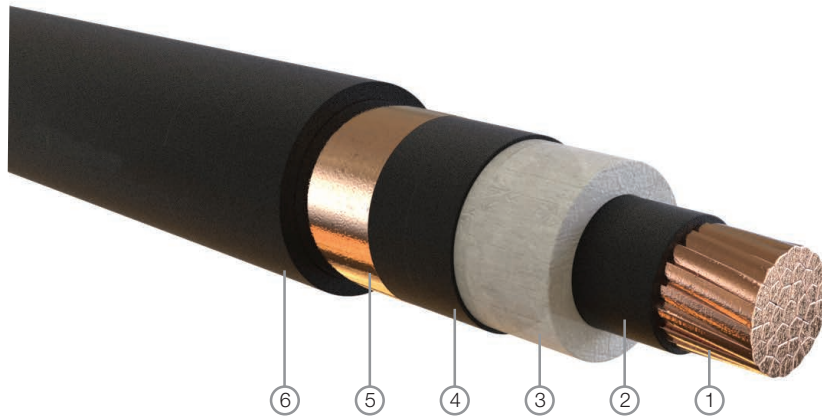
Single-core cable : 15D

Multi-core cable : 12D

Note: D=Cable outer diameter, mm

XCTP Cu/XLPE/CTS/PVC (Single Core)

XLPE Insulated, PVC Sheathed Cable 3.8/6.6KV (Max 7.2), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded semi conductive compound
Metallic Screen:	Copper Tape Screen
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	3.8/6.6KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

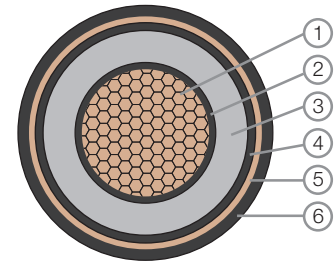
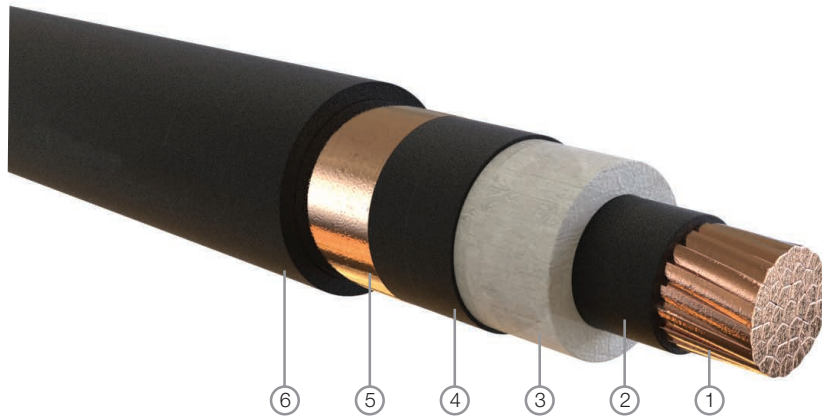
Cu/XLPE/CTS/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	2.5	1.8	19	570
35	6.9	303	2.5	1.8	20	690
50	8.1	408	2.5	1.8	21	860
70	9.7	591	2.5	1.8	23	1,050
95	11.4	821	2.5	1.8	24	1,350
120	12.9	1,035	2.5	1.8	26	1,640
150	14.3	1,277	2.5	1.8	27	1,850
185	16.0	1,601	2.5	1.8	29	2,200
240	18.4	2,105	2.6	1.9	32	2,800
300	20.6	2,640	2.8	2.0	35	3,400
400	23.3	3,383	3.0	2.1	38	4,400
500	26.3	4,272	3.2	2.2	41	5,400
630	30.0	5,618	3.2	2.3	47	6,900
800	34.2	7,286	3.2	2.4	51	8,600
1,000	38.2	9,046	3.2	2.6	57	10,600
1,200	43.0	10,860	3.2	2.8	61	12,600

Table 1

XCTP Cu/XLPE/CTS/PVC (Single Core)

XLPE Insulated, PVC Sheathed Cable 6.35/11KV (Max 12), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded semi conductive compound
Metallic Screen:	Copper Tape Screen
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	6.35/11KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

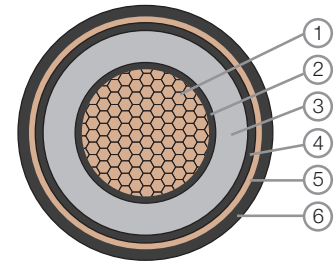
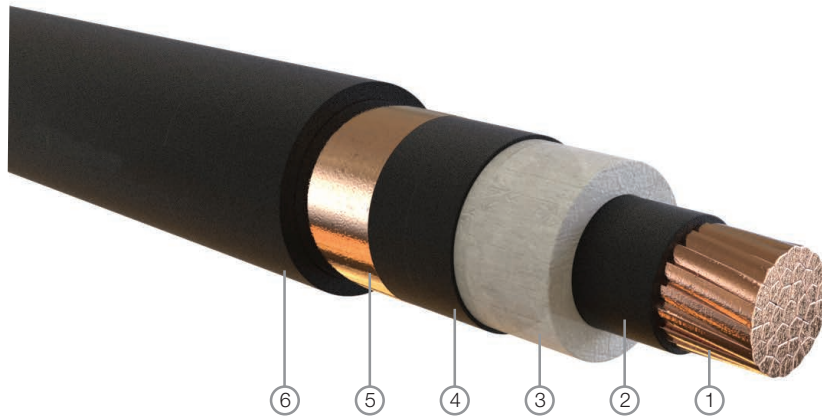
Cu/XLPE/CTS/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	3.4	1.8	22	590
35	6.9	303	3.4	1.8	23	710
50	8.1	408	3.4	1.8	24	880
70	9.7	591	3.4	1.8	26	1,090
95	11.4	821	3.4	1.8	27	1,370
120	12.9	1,035	3.4	1.8	29	1,650
150	14.3	1,277	3.4	1.8	30	1,900
185	16.0	1,601	3.4	1.9	32	2,300
240	18.4	2,105	3.4	2.0	35	2,900
300	20.6	2,640	3.4	2.0	39	3,500
400	23.3	3,383	3.4	2.1	42	4,500
500	26.3	4,272	3.4	2.2	45	5,500
630	30.0	5,618	3.4	2.3	49	7,000
800	34.2	7,286	3.4	2.5	53	8,700
1,000	38.2	9,046	3.4	2.6	57	10,700
1,200	43.0	10,860	3.4	2.8	63	12,700

Table 2

XCTP Cu/XLPE/CTS/PVC (Single Core)

XLPE Insulated, PVC Sheathed Cable 8.7/15KV (Max 17.5), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded semi conductive compound
Metallic Screen:	Copper Tape Screen
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	8.7/15KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

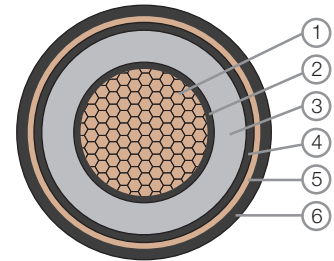
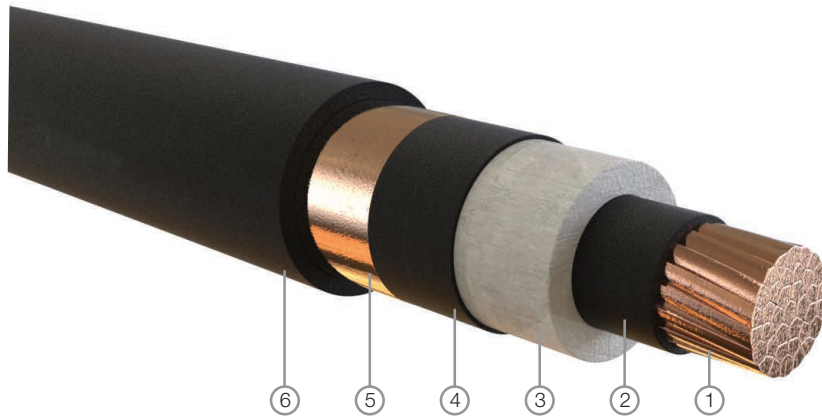
Cu/XLPE/CTS/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	4.5	1.8	25	680
35	6.9	303	4.5	1.8	26	800
50	8.1	408	4.5	1.8	27	950
70	9.7	591	4.5	1.8	29	1,200
95	11.4	821	4.5	1.8	31	1,490
120	12.9	1,035	4.5	1.9	32	1,750
150	14.3	1,277	4.5	1.9	34	2,100
185	16.0	1,601	4.5	2.0	36	2,450
240	18.4	2,105	4.5	2.0	38	3,050
300	20.6	2,640	4.5	2.1	42	3,650
400	23.3	3,383	4.5	2.2	45	4,600
500	26.3	4,272	4.5	2.3	48	5,600
630	30.0	5,618	4.5	2.4	52	7,200
800	34.2	7,286	4.5	2.5	56	8,900
1,000	38.2	9,046	4.5	2.7	61	10,900
1,200	43.0	10,860	4.5	2.9	66	13,000

Table 3

XCTP Cu/XLPE/CTS/PVC (Single Core)

XLPE Insulated, PVC Sheathed Cable 12.7/22KV (Max 24), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded semi conductive compound
Metallic Screen:	Copper Tape Screen
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	12.7/22KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

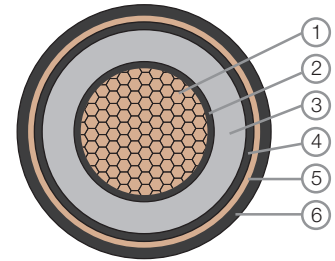
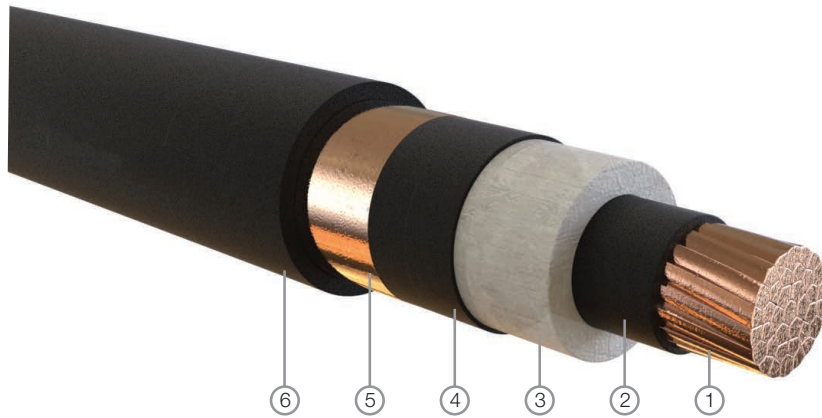
Cu/XLPE/CTS/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
35	6.9	303	5.5	1.8	28	950
50	8.1	408	5.5	1.8	29	1,100
70	9.7	591	5.5	1.8	31	1,300
95	11.4	821	5.5	1.9	33	1,600
120	12.9	1,035	5.5	1.9	34	1,900
150	14.3	1,277	5.5	2.0	36	2,300
185	16.0	1,601	5.5	2.0	38	2,700
240	18.4	2,105	5.5	2.1	40	3,300
300	20.6	2,640	5.5	2.2	44	3,900
400	23.3	3,383	5.5	2.3	47	4,900
500	26.3	4,272	5.5	2.4	50	5,900
630	30.0	5,618	5.5	2.5	54	7,400
800	34.2	7,286	5.5	2.6	59	9,100
1,000	38.2	9,046	5.5	2.7	63	11,200
1,200	43.0	10,860	5.5	2.9	68	13,100

Table 4

XCTP Cu/XLPE/CTS/PVC (Single Core)

XLPE Insulated, PVC Sheathed Cable 19/33KV (Max 36), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded semi conductive compound
Metallic Screen:	Copper Tape Screen
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	19/33KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

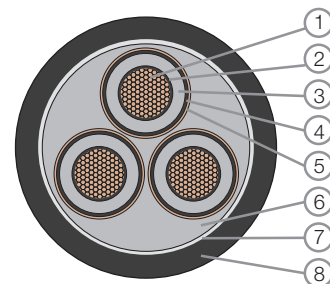
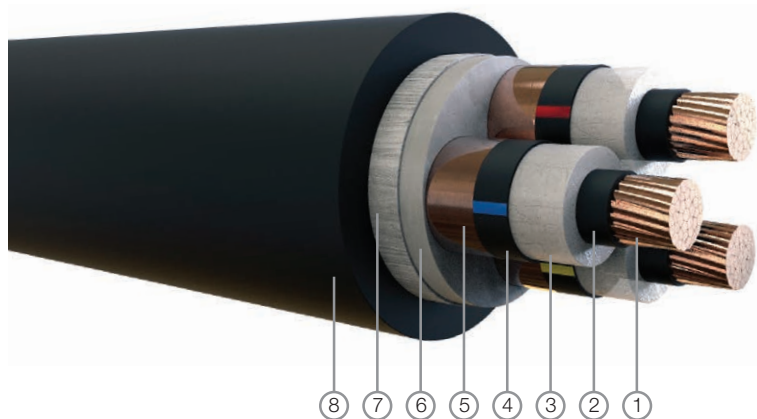
Cu/XLPE/CTS/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
50	8.1	408	8.0	1.9	35	1,350
70	9.7	591	8.0	2.0	36	1,650
95	11.4	821	8.0	2.1	38	2,000
120	12.9	1,035	8.0	2.1	40	2,350
150	14.3	1,277	8.0	2.1	41	2,650
185	16.0	1,601	8.0	2.2	43	3,100
240	18.4	2,105	8.0	2.3	46	3,700
300	20.6	2,640	8.0	2.3	49	4,400
400	23.3	3,383	8.0	2.5	53	5,400
500	26.3	4,272	8.0	2.5	56	6,550
630	30.0	5,618	8.0	2.7	60	8,000
800	34.2	7,286	8.0	2.8	64	9,700
1,000	38.2	9,046	8.0	2.9	68	11,800
1,200	43.0	10,860	8.0	3.0	73	14,500

Table 5

XCTP Cu/XLPE/CTS/PVC (Three Core)

XLPE Insulated, PVC Sheathed Cable 3.8/6.6KV (Max 7.2), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Yarn fillers
 7. Binder tape
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	3.8/6.6KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

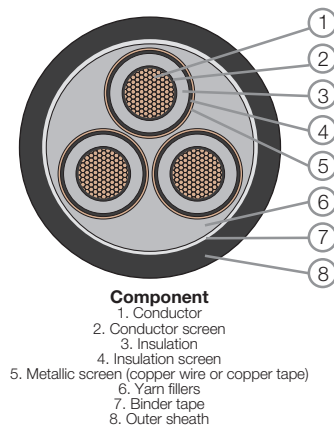
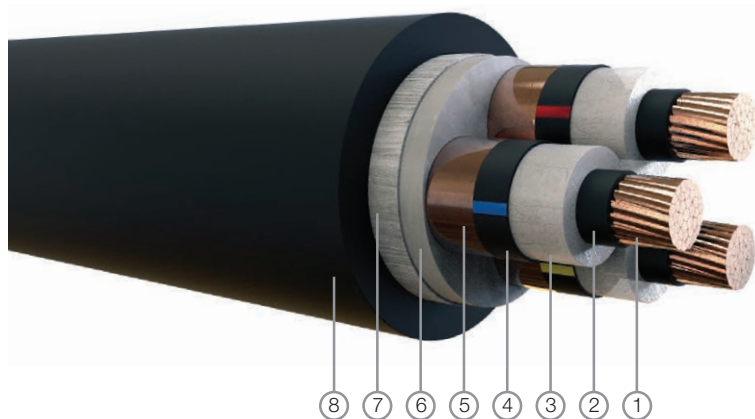
Cu/XLPE/CTS/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	2.5	2.1	39	1,800
35	6.9	927	2.5	2.1	41	2,200
50	8.1	1,248	2.5	2.2	44	2,800
70	9.7	1,808	2.5	2.3	48	3,500
95	11.4	2,512	2.5	2.5	52	4,400
120	12.9	3,167	2.5	2.6	55	5,300
150	14.3	3,907	2.5	2.7	59	6,300
185	16.0	4,899	2.5	2.8	62	7,300
240	18.4	6,441	2.6	3.0	68	9,300
300	20.6	8,078	2.8	3.2	78	11,200
400	23.3	10,351	3.0	3.4	85	14,700

Table 6

XCTP Cu/XLPE/CTS/PVC (Three Core)

XLPE Insulated, PVC Sheathed Cable 6.35/11KV (Max 12), IEC 60502-2



CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	6.35/11KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

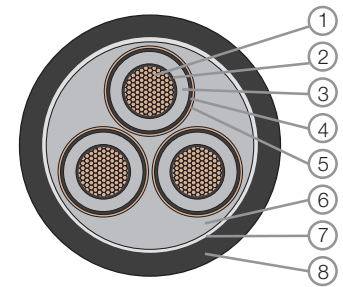
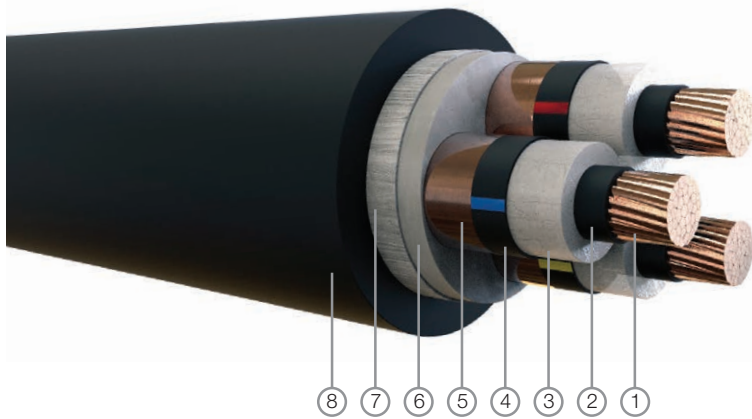
Cu/XLPE/CTS/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	3.4	2.2	43	1,900
35	6.9	927	3.4	2.3	46	2,300
50	8.1	1,248	3.4	2.4	48	3,000
70	9.7	1,808	3.4	2.5	52	3,800
95	11.4	2,512	3.4	2.6	56	4,500
120	12.9	3,167	3.4	2.7	59	5,600
150	14.3	3,907	3.4	2.8	63	6,500
185	16.0	4,899	3.4	2.9	67	7,800
240	18.4	6,441	3.4	3.1	72	9,700
300	20.6	8,078	3.4	3.3	81	12,000
400	23.3	10,351	3.4	3.5	87	15,000

Table 7

XCTP Cu/XLPE/CTS/PVC (Three Core)

XLPE Insulated, PVC Sheathed Cable 8.7/15KV (Max 17.5), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Yarn fillers
 7. Binder tape
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	8.7/15KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

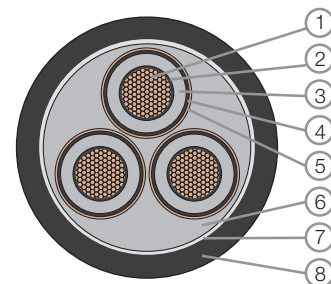
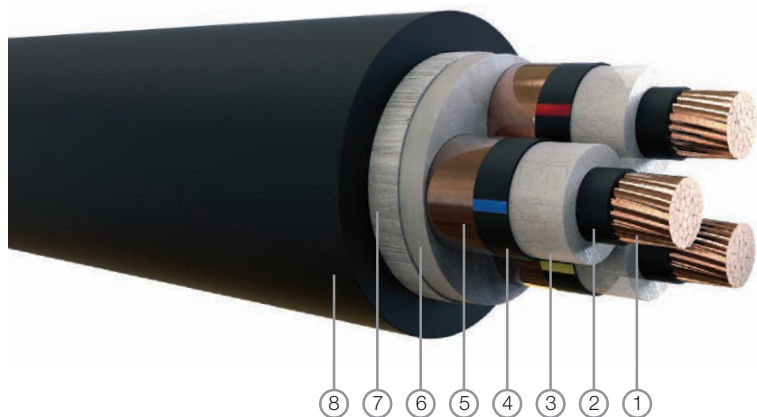
Cu/XLPE/CTS/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	4.5	2.4	48	2,500
35	6.9	927	4.5	2.5	50	2,900
50	8.1	1,248	4.5	2.6	53	3,500
70	9.7	1,808	4.5	2.7	57	4,200
95	11.4	2,512	4.5	2.8	60	5,200
120	12.9	3,167	4.5	2.9	64	6,100
150	14.3	3,907	4.5	3.0	67	7,200
185	16.0	4,899	4.5	3.1	71	8,300
240	18.4	6,441	4.5	3.3	77	10,100
300	20.6	8,078	4.5	3.4	85	12,500
400	23.3	10,351	4.5	3.7	91	15,500

Table 8

XCTP Cu/XLPE/CTS/PVC (Three Core)

XLPE Insulated, PVC Sheathed Cable 12.7/22KV (Max 24), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Yarn fillers
 7. Binder tape
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	12.7/22KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

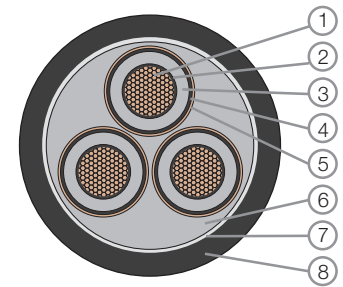
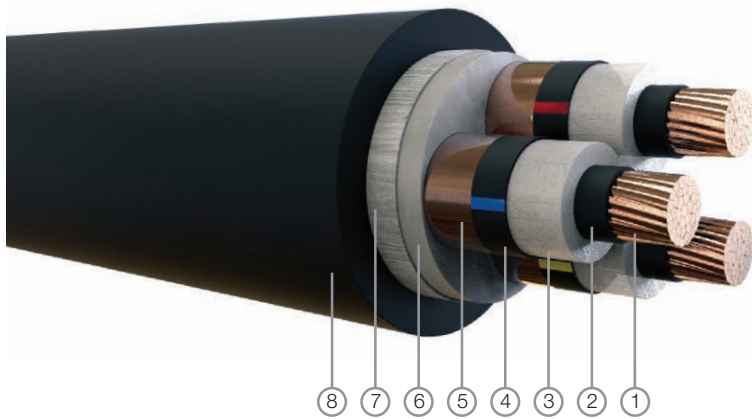
Cu/XLPE/CTS/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
35	6.9	927	5.5	2.6	55	3,300
50	8.1	1,248	5.5	2.7	57	3,900
70	9.7	1,808	5.5	2.8	61	4,600
95	11.4	2,512	5.5	2.9	65	5,500
120	12.9	3,167	5.5	3.0	68	6,400
150	14.3	3,907	5.5	3.1	72	7,600
185	16.0	4,899	5.5	3.3	76	9,000
240	18.4	6,441	5.5	3.4	81	11,000
300	20.6	8,078	5.5	3.6	90	13,500
400	23.3	10,351	5.5	3.8	96	16,000

Table 9

XCTP Cu/XLPE/CTS/PVC (Three Core)

XLPE Insulated, PVC Sheathed Cable 19/33KV (Max 36), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Yarn fillers
 7. Binder tape
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	19/33KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

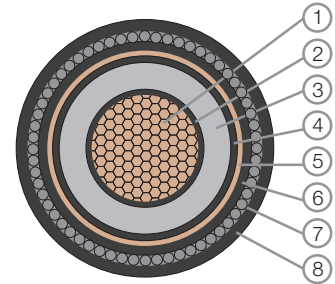
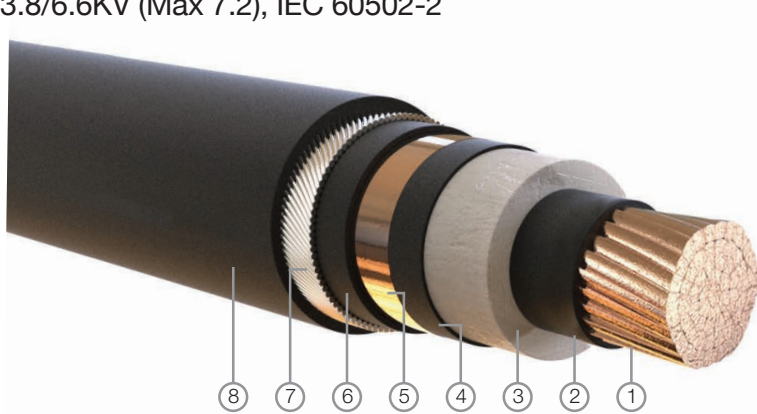
Cu/XLPE/CTS/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
50	8.1	1,248	8.0	3.1	69	5,100
70	9.7	1,808	8.0	3.2	73	6,000
95	11.4	2,512	8.0	3.3	77	7,000
120	12.9	3,167	8.0	3.4	80	8,000
150	14.3	3,907	8.0	3.5	83	9,100
185	16.0	4,899	8.0	3.6	87	10,500
240	18.4	6,441	8.0	3.8	93	12,500
300	20.6	8,078	8.0	4.0	101	15,500
400	23.3	10,351	8.0	4.2	108	18,300

Table 10

XCTAP Cu/XLPE/CTS/AWA/PVC (Single Core)

XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable
3.8/6.6KV (Max 7.2), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Inner sheath
 7. Armour
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Copper Tape Screen
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Aluminium Wire Armour (AWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	3.8/6.6KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

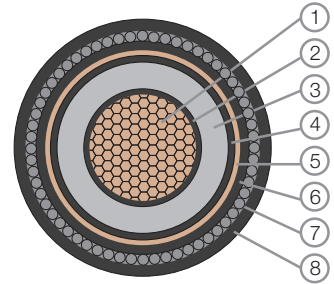
Cu/XLPE/CTS/AWA/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	2.5	1.2	1.6	1.8	25	800
35	6.9	303	2.5	1.2	1.6	1.8	26	900
50	8.1	408	2.5	1.2	1.6	1.8	27	1,100
70	9.7	591	2.5	1.2	1.6	1.8	29	1,300
95	11.4	821	2.5	1.2	1.6	1.9	30	1,600
120	12.9	1,035	2.5	1.2	1.6	1.9	32	1,900
150	14.3	1,277	2.5	1.2	1.6	2.0	34	2,300
185	16.0	1,601	2.5	1.2	2.0	2.0	36	2,700
240	18.4	2,105	2.6	1.2	2.0	2.1	39	3,300
300	20.6	2,640	2.8	1.2	2.0	2.2	43	4,100
400	23.3	3,383	3.0	1.2	2.0	2.3	47	5,000
500	26.3	4,272	3.2	1.3	2.5	2.5	52	6,200
630	30.0	5,618	3.2	1.4	2.5	2.6	56	7,700
800	34.2	7,286	3.2	1.4	2.5	2.7	60	9,500
1,000	38.2	9,046	3.2	1.5	2.5	2.9	65	11,600
1,200	43.0	10,860	3.2	1.6	2.5	3.0	70	13,800

Table 11

XCTAP Cu/XLPE/CTS/AWA/PVC (Single Core)

XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable
6.35/11KV (Max 12), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Inner sheath
 7. Armour
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Copper Tape Screen
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Aluminium Wire Armour (AWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	6.35/11KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

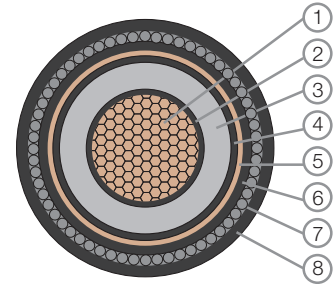
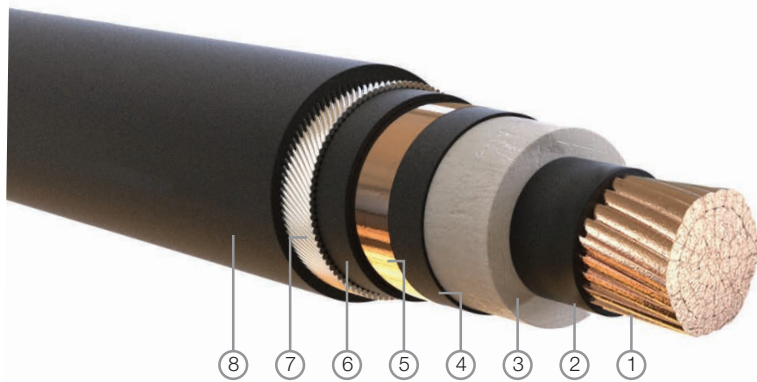
Cu/XLPE/CTS/AWA/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	3.4	1.2	1.6	1.8	27	980
35	6.9	303	3.4	1.2	1.6	1.8	28	1,110
50	8.1	408	3.4	1.2	1.6	1.8	29	1,250
70	9.7	591	3.4	1.2	1.6	1.9	31	1,550
95	11.4	821	3.4	1.2	1.6	1.9	33	1,850
120	12.9	1,035	3.4	1.2	1.6	2.0	34	2,150
150	14.3	1,277	3.4	1.2	2.0	2.1	37	2,550
185	16.0	1,601	3.4	1.2	2.0	2.1	39	2,990
240	18.4	2,105	3.4	1.2	2.0	2.2	41	3,650
300	20.6	2,640	3.4	1.2	2.0	2.2	45	4,450
400	23.3	3,383	3.4	1.2	2.0	2.4	48	5,350
500	26.3	4,272	3.4	1.3	2.5	2.5	52	6,650
630	30.0	5,618	3.4	1.4	2.5	2.6	57	8,300
800	34.2	7,286	3.4	1.4	2.5	2.7	61	10,200
1,000	38.2	9,046	3.4	1.5	2.5	2.9	66	12,300
1,200	43.0	10,860	3.4	1.6	2.5	3.0	71	14,650

Table 12

XCTAP Cu/XLPE/CTS/AWA/PVC (Single Core)

XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable
8.7/15KV (Max 17.5), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Inner sheath
 7. Armour
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Copper Tape Screen
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Aluminium Wire Armour (AWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	8.7/15KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

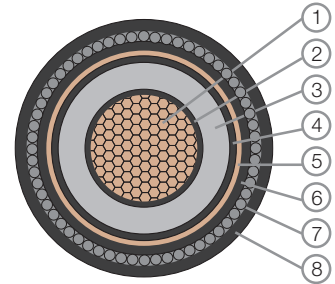
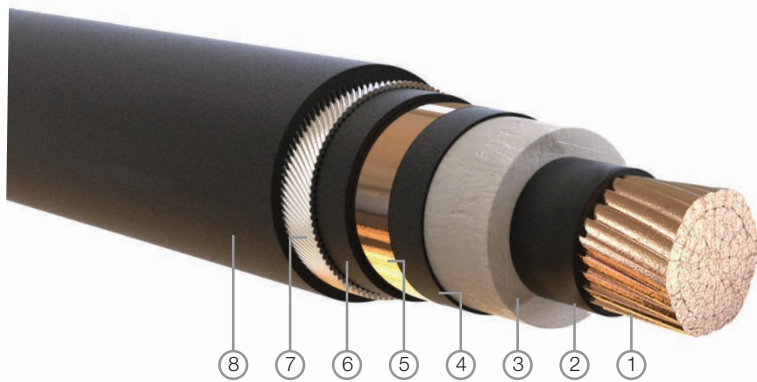
Cu/XLPE/CTS/AWA/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	218	4.5	1.2	1.6	1.8	30	1,100
35	6.9	303	4.5	1.2	1.6	1.9	31	1,250
50	8.1	408	4.5	1.2	1.6	1.9	33	1,400
70	9.7	591	4.5	1.2	1.6	1.9	34	1,670
95	11.4	821	4.5	1.2	2.0	2.0	37	2,100
120	12.9	1,035	4.5	1.2	2.0	2.1	39	2,400
150	14.3	1,277	4.5	1.2	2.0	2.1	40	2,750
185	16.0	1,601	4.5	1.2	2.0	2.2	42	3,200
240	18.4	2,105	4.5	1.2	2.0	2.3	45	3,850
300	20.6	2,640	4.5	1.2	2.0	2.3	48	4,650
400	23.3	3,383	4.5	1.3	2.5	2.5	53	5,800
500	26.3	4,272	4.5	1.3	2.5	2.6	56	6,900
630	30.0	5,618	4.5	1.4	2.5	2.7	60	8,600
800	34.2	7,286	4.5	1.5	2.5	2.8	65	10,500
1,000	38.2	9,046	4.5	1.6	2.5	3.0	69	12,600
1,200	43.0	10,860	4.5	1.7	2.5	3.2	75	15,000

Table 13

XCTAP Cu/XLPE/CTS/AWA/PVC (Single Core)

XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable
12.7/22KV (Max 24), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Inner sheath
 7. Armour
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Copper Tape Screen
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Aluminium Wire Armour (AWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	12.7/22KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

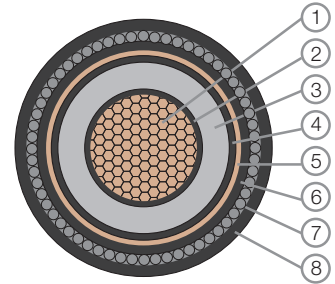
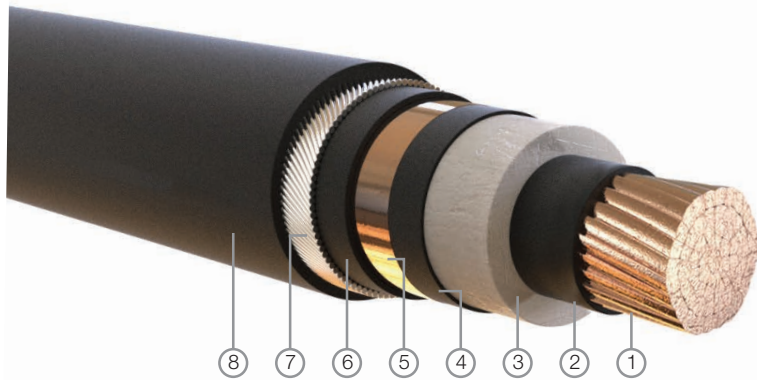
Cu/XLPE/CTS/AWA/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
35	6.9	303	5.5	1.2	1.6	1.9	35	1,450
50	8.1	408	5.5	1.2	1.6	2.0	36	1,600
70	9.7	591	5.5	1.2	2.0	2.0	38	2,000
95	11.4	821	5.5	1.2	2.0	2.1	40	2,350
120	12.9	1,035	5.5	1.2	2.0	2.1	42	2,650
150	14.3	1,277	5.5	1.2	2.0	2.2	43	3,050
185	16.0	1,601	5.5	1.2	2.0	2.2	45	3,450
240	18.4	2,105	5.5	1.2	2.0	2.3	48	4,100
300	20.6	2,640	5.5	1.3	2.5	2.4	51	5,035
400	23.3	3,383	5.5	1.3	2.5	2.5	54	6,000
500	26.3	4,272	5.5	1.4	2.5	2.6	58	7,100
630	30.0	5,618	5.5	1.4	2.5	2.8	62	8,800
800	34.2	7,286	5.5	1.5	2.5	2.9	66	10,700
1,000	38.2	9,046	5.5	1.6	2.5	3.0	71	12,800
1,200	43.0	10,860	5.5	1.7	2.5	3.2	77	15,600

Table 14

XCTAP Cu/XLPE/CTS/AWA/PVC (Single Core)

XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable
19/33KV (Max 36), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Inner sheath
 7. Armour
 8. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Copper Tape Screen
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Aluminium Wire Armour (AWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	19/33KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

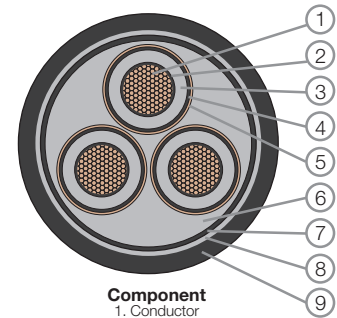
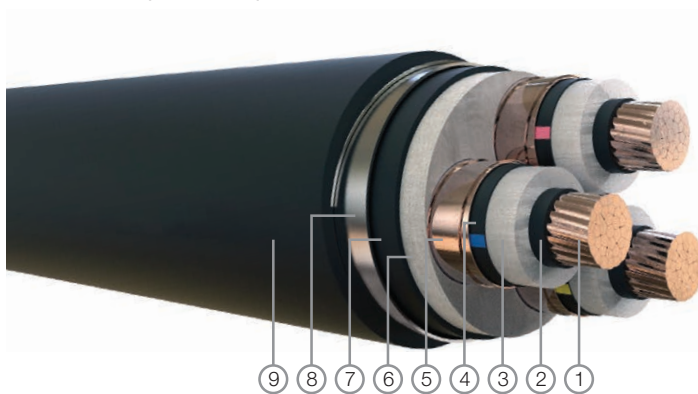
Cu/XLPE/CTS/AWA/PVC (Single Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
50	8.1	408	8.0	1.2	2.0	2.2	44	2,100
70	9.7	591	8.0	1.2	2.0	2.2	45	2,350
95	11.4	821	8.0	1.2	2.0	2.3	47	2,700
120	12.9	1,035	8.0	1.2	2.0	2.3	49	3,000
150	14.3	1,277	8.0	1.3	2.0	2.4	51	3,450
185	16.0	1,601	8.0	1.3	2.5	2.5	53	4,050
240	18.4	2,105	8.0	1.3	2.5	2.5	56	4,700
300	20.6	2,640	8.0	1.4	2.5	2.6	58	5,500
400	23.3	3,383	8.0	1.4	2.5	2.7	61	6,500
500	26.3	4,272	8.0	1.5	2.5	2.8	65	7,650
630	30.0	5,618	8.0	1.5	2.5	2.9	69	9,350
800	34.2	7,286	8.0	1.6	2.5	3.1	73	11,350
1,000	38.2	9,046	8.0	1.7	2.5	3.2	79	13,800
1,200	43.0	10,860	8.0	1.8	2.5	3.3	85	16,300

Table 15

XCTDP Cu/XLPE/CTS/DSTA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Double Steel Tape Armoured, PVC Sheathed Cable
3.8/6.6KV (Max 7.2), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Double Steel Tape Armour (DSTA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	3.8/6.6KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

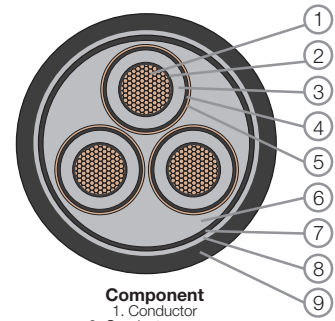
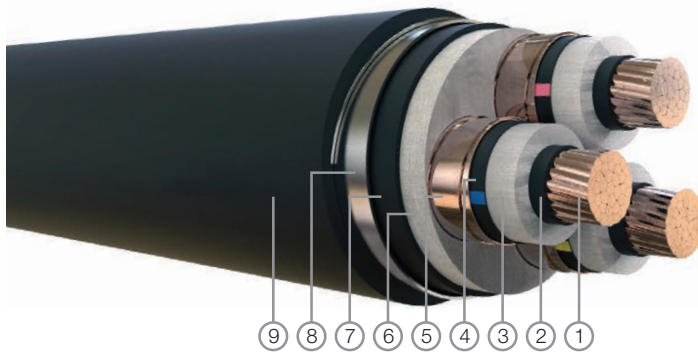
Cu/XLPE/CTS/DSTA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	2.5	1.2	0.5	2.2	44	2,900
35	6.9	927	2.5	1.2	0.5	2.3	46	3,300
50	8.1	1,248	2.5	1.3	0.5	2.4	49	3,900
70	9.7	1,808	2.5	1.4	0.5	2.5	53	4,800
95	11.4	2,512	2.5	1.4	0.5	2.6	57	5,800
120	12.9	3,167	2.5	1.5	0.5	2.7	61	6,800
150	14.3	3,907	2.5	1.5	0.5	2.8	64	7,900
185	16.0	4,899	2.5	1.6	0.5	2.9	68	9,200
240	18.4	6,441	2.6	1.7	0.5	3.1	74	11,400
300	20.6	8,078	2.8	1.8	0.5	3.3	84	14,300
400	23.3	10,351	3.0	2.0	0.8	3.6	93	18,500

Table 16

XCTDP Cu/XLPE/CTS/DSTA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Double Steel Tape Armoured, PVC Sheathed Cable
6.35/11KV (Max 12), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Double Steel Tape Armour (DSTA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	6.35/11KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

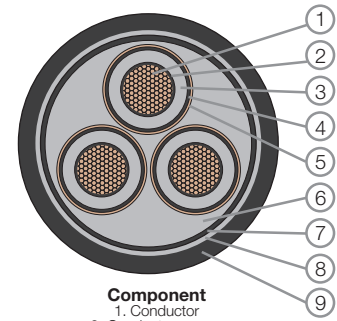
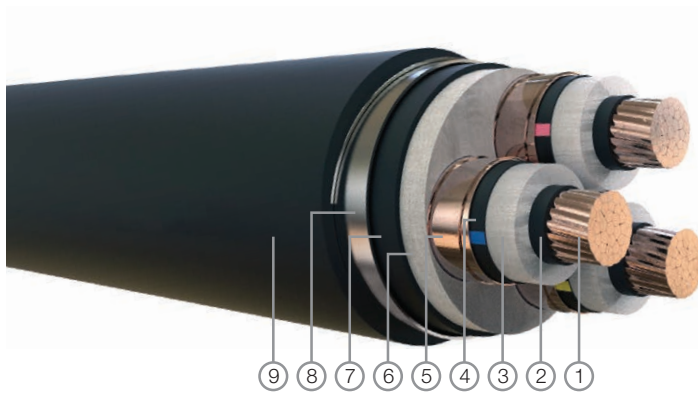
Cu/XLPE/CTS/DSTA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	3.4	1.3	0.5	2.3	48	3,300
35	6.9	927	3.4	1.3	0.5	2.4	50	3,700
50	8.1	1,248	3.4	1.4	0.5	2.5	53	4,300
70	9.7	1,808	3.4	1.4	0.5	2.6	57	5,200
95	11.4	2,512	3.4	1.5	0.5	2.7	61	6,300
120	12.9	3,167	3.4	1.6	0.5	2.9	65	7,300
150	14.3	3,907	3.4	1.6	0.5	3.0	68	8,400
185	16.0	4,899	3.4	1.7	0.5	3.1	72	9,800
240	18.4	6,441	3.4	1.8	0.5	3.3	78	12,000
300	20.6	8,078	3.4	1.9	0.5	3.4	86	14,800
400	23.3	10,351	3.4	2.0	0.8	3.7	94	19,000

Table 17

XCTDP Cu/XLPE/CTS/DSTA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Double Steel Tape Armoured, PVC Sheathed Cable
8.7/15KV (Max 17.5), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Double Steel Tape Armour (DSTA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	8.7/1KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

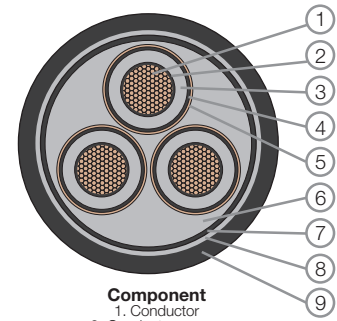
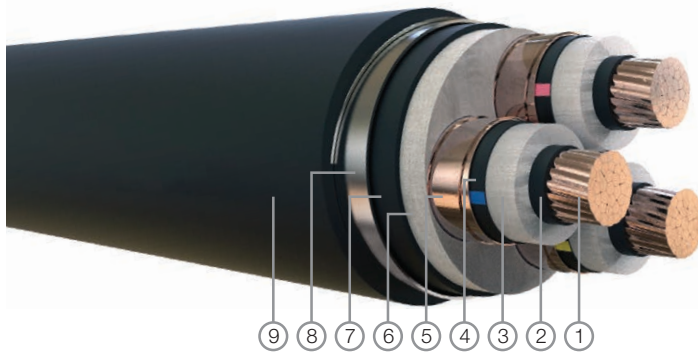
Cu/XLPE/CTS/DSTA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	4.5	1.4	0.5	2.5	53	3,900
35	6.9	927	4.5	1.4	0.5	2.6	56	4,400
50	8.1	1,248	4.5	1.5	0.5	2.7	59	5,000
70	9.7	1,808	4.5	1.5	0.5	2.8	62	5,900
95	11.4	2,512	4.5	1.6	0.5	2.9	67	7,000
120	12.9	3,167	4.5	1.7	0.5	3.0	70	8,100
150	14.3	3,807	4.5	1.7	0.5	3.1	73	9,100
185	16.0	4,899	4.5	1.8	0.5	3.3	78	10,500
240	18.4	6,441	4.5	1.9	0.5	3.4	83	12,700
300	20.6	8,078	4.5	2.0	0.8	3.6	93	16,900
400	23.3	10,351	4.5	2.1	0.8	3.9	100	20,000

Table 18

XCTDP Cu/XLPE/CTS/DSTA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Double Steel Tape Armoured, PVC Sheathed Cable
12.7/22KV (Max 24), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Double Steel Tape Armour (DSTA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	12.7/22KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

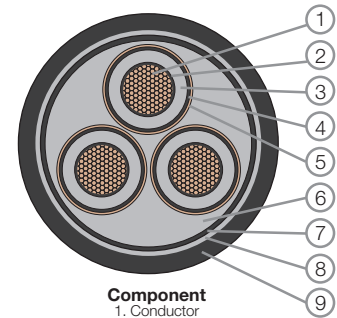
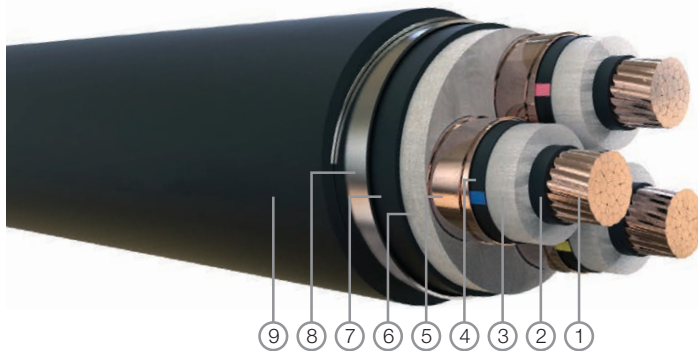
Cu/XLPE/CTS/DSTA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
35	6.9	921	5.5	1.5	0.5	2.7	61	4,700
50	8.1	1,248	5.5	1.6	0.5	2.8	64	5,300
70	9.7	1,808	5.5	1.6	0.5	2.9	67	6,300
95	11.4	2,512	5.5	1.7	0.5	3.1	71	7,400
120	12.9	3,167	5.5	1.7	0.5	3.2	75	8,400
150	14.3	3,907	5.5	1.8	0.5	3.3	78	9,500
185	16.0	4,899	5.5	1.9	0.5	3.4	82	11,000
240	18.4	6,441	5.5	2.0	0.8	3.6	89	14,300
300	20.6	8,078	5.5	2.0	0.8	3.8	98	17,300
400	23.3	10,351	5.5	2.2	0.8	4.0	105	20,500

Table 19

XCTDP Cu/XLPE/CTS/DSTA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Double Steel Tape Armoured, PVC Sheathed Cable
19/33KV (Max 36), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Double Steel Tape Armour (DSTA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	19/33KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

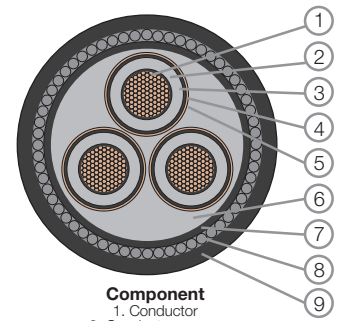
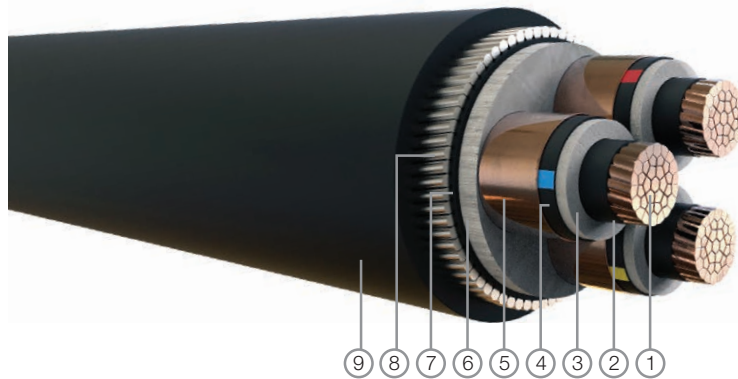
Cu/XLPE/CTS/DSTA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
50	8.1	1,248	8.0	1.8	0.5	3.2	76	6,900
70	9.7	1,808	8.0	1.8	0.5	3.3	79	7,900
95	11.4	2,512	8.0	1.9	0.5	3.5	83	9,000
120	12.9	3,167	8.0	2.0	0.8	3.6	88	11,000
150	14.3	3,907	8.0	2.0	0.8	3.7	92	12,000
185	16.0	4,899	8.0	2.1	0.8	3.9	96	14,000
240	18.4	6,441	8.0	2.2	0.8	4.0	101	16,000
300	20.6	8,078	8.0	2.3	0.8	4.2	110	19,000
400	23.3	10,351	8.0	2.4	0.8	4.4	117	22,000

Table 20

XCTSP Cu/XLPE/CTS/SWA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Steel Wire Armoured, PVC Sheathed Cable
3.8/6.6KV (Max 7.2), IEC 60502-2



Component

1. Conductor
2. Conductor screen
3. Insulation
4. Insulation screen
5. Metallic screen (copper wire or copper tape)
6. Filler & Binder Tape
7. Inner sheath
8. Armour
9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Steel Wire Armour (SWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	3.8/6.6KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

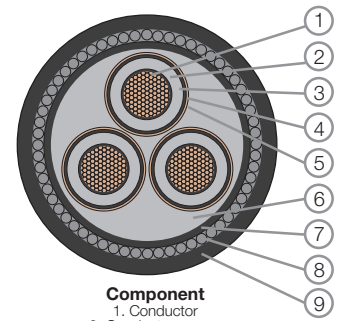
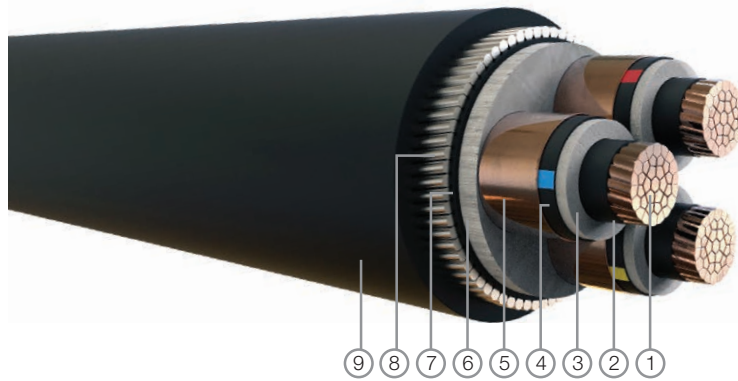
Cu/XLPE/CTS/SWA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	2.5	1.2	2.0	2.3	46	3,700
35	6.9	927	2.5	1.2	2.0	2.3	48	4,200
50	8.1	1,248	2.5	1.3	2.5	2.5	52	5,300
70	9.7	1,808	2.5	1.4	2.5	2.6	56	6,300
95	11.4	2,512	2.5	1.4	2.5	2.7	60	7,500
120	12.9	3,167	2.5	1.5	2.5	2.8	64	8,600
150	14.3	3,907	2.5	1.5	2.5	2.9	67	9,800
185	16.0	4,899	2.5	1.6	2.5	3.0	71	11,400
240	18.4	6,441	2.6	1.7	2.5	3.2	77	13,800
300	20.6	8,078	2.8	1.8	3.15	3.5	88	18,000
400	23.3	10,351	3.0	2.0	3.15	3.8	96	21,500

Table 21

XCTSP Cu/XLPE/CTS/SWA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Steel Wire Armoured, PVC Sheathed Cable
6.35/11KV (Max 12), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Steel Wire Armour (SWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	6.35/11KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

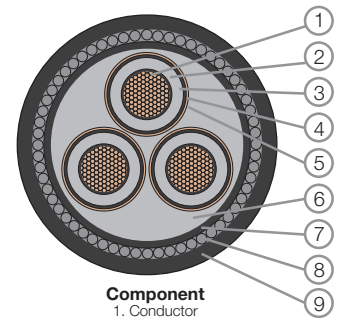
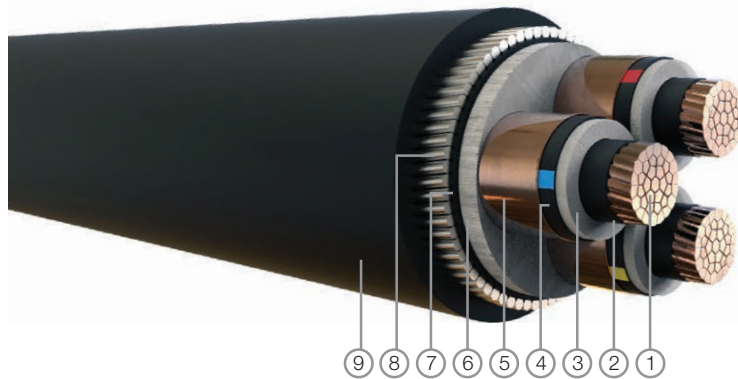
Cu/XLPE/CTS/SWA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	3.4	1.3	2.5	2.4	51	4,400
35	6.9	927	3.4	1.3	2.5	2.5	53	4,900
50	8.1	1,248	3.4	1.4	2.5	2.6	56	5,900
70	9.7	1,808	3.4	1.4	2.5	2.7	60	6,900
95	11.4	2,512	3.4	1.5	2.5	2.9	64	8,100
120	12.9	3,167	3.4	1.6	2.5	3.0	68	9,300
150	14.3	3,907	3.4	1.6	2.5	3.1	71	10,500
185	16.0	4,899	3.4	1.7	2.5	3.2	75	12,100
240	18.4	6,441	3.4	1.8	3.15	3.4	82	15,300
300	20.6	8,078	3.4	1.9	3.15	3.5	91	18,700
400	23.3	10,351	3.4	2.0	3.15	3.8	97	22,100

Table 22

XCTSP Cu/XLPE/CTS/SWA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Steel Wire Armoured, PVC Sheathed Cable
8.7/15KV (Max 17.5), IEC 60502-2



- Component**
1. Conductor
 2. Conductor screen
 3. Insulation
 4. Insulation screen
 5. Metallic screen (copper wire or copper tape)
 6. Filler & Binder Tape
 7. Inner sheath
 8. Armour
 9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Steel Wire Armour (SWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	8.7/15KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

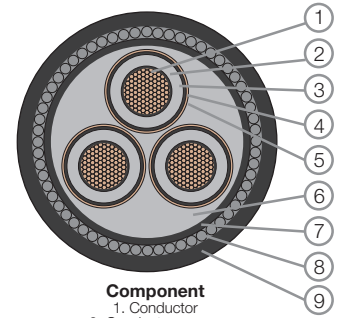
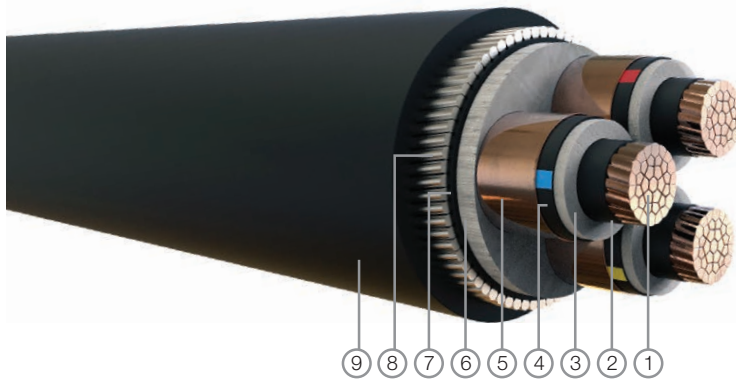
Cu/XLPE/CTS/SWA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
25	5.9	667	4.5	1.4	2.5	2.6	57	5,400
35	6.9	927	4.5	1.4	2.5	2.7	59	6,000
50	8.1	1,248	4.5	1.5	2.5	2.8	62	6,700
70	9.7	1,808	4.5	1.5	2.5	2.9	66	7,700
95	11.4	2,512	4.5	1.6	2.5	3.0	70	9,100
120	12.9	3,167	4.5	1.7	2.5	3.1	73	10,300
150	14.3	3,907	4.5	1.7	2.5	3.2	77	11,500
185	16.0	4,899	4.5	1.8	3.15	3.4	82	14,000
240	18.4	6,441	4.5	1.9	3.15	3.6	88	16,500
300	20.6	8,078	4.5	2.0	3.15	3.7	97	20,000
400	23.3	10,351	4.5	2.1	3.15	4.0	103	23,500

Table 23

XCTSP Cu/XLPE/CTS/SWA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Steel Wire Armoured, PVC Sheathed Cable
12.7/22KV (Max 24), IEC 60502-2



Component

1. Conductor
2. Conductor screen
3. Insulation
4. Insulation screen
5. Metallic screen (copper wire or copper tape)
6. Filler & Binder Tape
7. Inner sheath
8. Armour
9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Steel Wire Armour (SWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	12.7/22KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

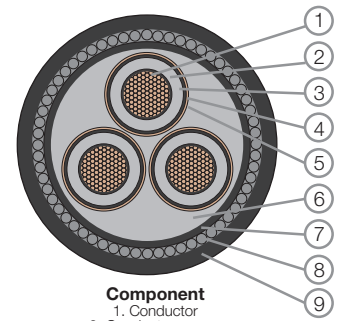
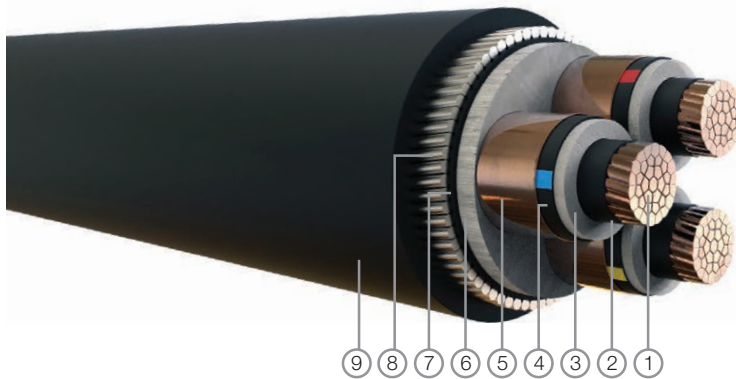
Cu/XLPE/CTS/SWA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
35	6.9	927	5.5	1.5	2.5	2.8	64	6,400
50	8.1	1,248	5.5	1.6	2.5	2.9	67	7,200
70	9.7	1,808	5.5	1.6	2.5	3.1	71	8,300
95	11.4	2,512	5.5	1.7	2.5	3.2	75	9,600
120	12.9	3,167	5.5	1.7	3.15	3.3	79	11,600
150	14.3	3,907	5.5	1.8	3.15	3.4	83	13,000
185	16.0	4,899	5.5	1.9	3.15	3.6	87	14,600
240	18.4	6,441	5.5	2.0	3.15	3.7	93	17,100
300	20.6	8,078	5.5	2.0	3.15	3.9	101	20,500
400	23.3	10,351	5.5	2.2	3.15	4.1	108	24,000

Table 24

XCTSP Cu/XLPE/CTS/SWA/PVC (Three Core)

XLPE Insulated, PVC Bedded, Steel Wire Armoured, PVC Sheathed Cable
19/33KV (Max 36), IEC 60502-2



Component

1. Conductor
2. Conductor screen
3. Insulation
4. Insulation screen
5. Metallic screen (copper wire or copper tape)
6. Filler & Binder Tape
7. Inner sheath
8. Armour
9. Outer sheath

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Conductor
Conductor Screen:	Extruded Semi Conductive Compound
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Screen:	Extruded Semi Conductive Compound
Metallic Screen:	Copper Tape Screen
Assembled Core:	PP Yarn Filler with Binder Tape
Inner Sheath:	Polyvinyl Chloride (PVC) Compound (LSZH upon request)
Armour:	Steel Wire Armour (SWA)
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2 (LSZH upon request)
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage:	19/33KV
Conductor Operating Temperature:	90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5U ₀

Cu/XLPE/CTS/SWA/PVC (Three Core)

Nominal Area of Conductor (mm ²)	Nominal Diameter of Conductor (mm)	Approximate Weight of Conductor (kg/km)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Inner Sheath (mm)	Nominal Armour Wire Diameter (mm)	Nominal Thickness of Outer Sheath (mm)	Approximate Overall Diameter (mm)	Approximate Cable Weight (kg/km)
50	8.1	1,248	8.0	1.8	3.15	3.4	80	10,000
70	9.7	1,808	8.0	1.8	3.15	3.5	84	11,000
95	11.4	2,512	8.0	1.9	3.15	3.6	88	12,000
120	12.9	3,167	8.0	2.0	3.15	3.7	92	14,000
150	14.3	3,907	8.0	2.0	3.15	3.8	95	15,000
185	16.0	4,899	8.0	2.1	3.15	4.0	99	17,000
240	18.4	6,441	8.0	2.2	3.15	4.1	105	19,000
300	20.6	8,078	8.0	2.3	3.15	4.3	113	23,000
400	23.3	10,351	8.0	2.4	3.15	4.5	120	26,000

Table 25

CABLE TECHNICAL DATA

Max. conductor DC resistance at 20°C								
Nominal Cross Section (mm ²)	25	35	50	70	95	120	150	185
Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991
Al	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Nominal Cross Section (mm ²)	240	300	400	500	630	800	1000	1200
Cu	0.0754	0.0601	0.0470	0.0366	0.0283	0.022	0.0176	0.0151
Al	0.125	0.100	0.0778	0.0605	0.0469	0.0367	0.0291	0.0247

Table 26

Frequency voltage test, partial discharge test and impulse voltage test						
Rated voltage (kV)		3.8/6.6	6.35/11	8.7/15	12.7/22	19/33
Frequency Voltage Test	Test voltage (kV)	13.3	22.2	30.5	44.5	66.5
	Duration (min)	5	5	5	5	5
Partial Discharge Test	Test voltage (kV)	6.6	11.0	15.1	22.0	32.9
	Max. partial discharge sensitivity, pC	10	10	10	10	10
Impulse Voltage Test	Test voltage (kV)	60	75	95	125	170

Table 27

Max. conductor short-circuit current at 250°C(kA / 1s)								
Conductor Cross Section (mm ²)	25	35	50	70	95	120	150	185
Cu	3.69	5.15	7.31	10.2	13.8	17.4	21.7	26.7
Al	2.42	3.37	4.79	6.68	9.03	11.4	14.2	17.4
Conductor Cross Section (mm ²)	240	300	400	500	630	800	1000	1200
Cu	34.6	43.1	57.4	71.7	88.8	114.5	143.1	171.7
Al	22.6	28.2	37.6	47.0	58.0	75.0	93.7	112.4

Table 28

Cable capacitance (µF/km)						
Conductor Cross Section (mm ²)	Rated Voltage (kV)	3.8/6.6	6.35/11	8.7/15	12.7/22	19/33
25		0.26	0.21	0.17	0.15	-
35		0.29	0.23	0.19	0.16	-
50		0.33	0.26	0.21	0.18	0.14
70		0.38	0.29	0.24	0.20	0.16
95		0.42	0.33	0.26	0.22	0.18
120		0.46	0.36	0.28	0.24	0.19
150		0.51	0.39	0.31	0.26	0.20
185		0.55	0.42	0.33	0.28	0.22
240		0.61	0.47	0.37	0.31	0.24
300		0.65	0.51	0.40	0.34	0.26
400		0.69	0.59	0.46	0.39	0.28
500		0.76	0.65	0.52	0.44	0.32
630		0.83	0.72	0.56	0.47	0.35

Table 29

XLPE INSULATED PVC OR LSZH SHEATHED CABLE CURRENT CARRYING CAPACITY

Current carrying capacity calculation conditions

- Conductor operating temperature: 90 °C.
- Ambient temperature: 40 °C,
- Ground temperature: 25 °C;
- Underground laying, the soil thermal resistivity of ground without moisture migration is 1.0 °C. M / W, and soil thermal resistivity of ground with moisture migration is 2.0 °C. M / W, 2.5 °C. M / W, or 3.0 °C. M / W.

Current carrying capacity correction factor

Correction factors for ambient temperature ground installation.

(1) Ambient temperature correction factor								
Conductor Temperature	Ambient temperature (in air)							
	20	25	30	35	40	45	50	55
90	1.23	1.17	1.12	1.06	1.00	0.94	0.87	0.81
Conductor Temperature	Ambient temperature (in ground)							
	10	15	20	25	30	35	-	-
90	1.11	1.07	1.04	1.00	0.96	0.92	-	-

Table 30

(2) Soil thermal resistivity correction factor				
Rated Voltage(kV)	Soil thermal resistivity °C.m/W			
	0.8	1.0	1.2	1.5
3.8/6.6	1.08	1.0	0.95	0.77
6.35/11 – 8.7/15	1.06	1.0	0.94	0.78
12.7/22 – 19/33	1.06	1.0	0.94	0.80

Table 31

Single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

A. Non Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

3.8/6.6 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}\text{C.m/W}$ (Without moisture migration)		$\rho D^{\circ}\text{C.m/W}$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	135	105	190	145	180	140	175	135	175	135
35	165	130	230	175	215	165	210	165	210	160
50	200	155	275	210	255	200	250	195	245	190
70	250	195	335	260	315	245	305	235	300	235
95	305	235	400	315	375	290	365	285	360	280
120	355	275	465	360	430	330	415	325	410	320
150	405	315	525	410	480	375	470	365	460	355
185	465	360	600	465	545	425	530	410	520	405
240	550	430	695	540	630	490	615	480	600	470
300	635	495	785	615	710	555	690	540	675	530
400	745	585	895	705	810	640	785	620	770	605
500	855	685	1010	810	910	730	885	710	865	695
630	980	800	1140	920	1020	830	990	805	970	790
800	1130	930	1270	1050	1130	940	1100	910	1080	890
1000	1240	1050	1390	1170	1240	1040	1200	1010	1175	980
1200	1330	1140	1460	1250	1300	1190	1260	1080	1230	1050

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}\text{C} \cdot \text{m} / \text{w}$;
 ρ_D — With moisture migration, $^{\circ}\text{C} \cdot \text{m} / \text{w}_0$.
 2, The current carrying capacity of single core XLPE armoured (ATA, AWA) cables, is 60%-70% of that of non armoured ones of bigger cross section.

Table 32

B. Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

3.8/6.6 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}\text{C.m/W}$ (Without moisture migration)		$\rho D^{\circ}\text{C.m/W}$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	165	130	160	125	145	110	140	110	135	105
35	205	155	195	150	170	135	165	130	160	125
50	245	190	230	175	200	155	195	150	190	145
70	305	240	280	215	245	190	240	185	235	180
95	375	290	335	260	295	230	285	220	275	215
120	435	340	385	295	335	260	325	250	315	245
150	495	385	430	335	375	290	365	285	355	275
185	575	445	485	380	425	330	410	315	400	310
240	675	525	565	440	495	385	475	370	460	360
300	785	610	640	500	555	435	535	415	520	405
400	910	715	735	575	635	500	615	480	595	465
500	1081	840	840	660	725	570	695	550	680	535
630	1240	990	950	760	825	655	795	630	770	615
800	1440	1160	1080	870	930	750	895	720	870	700
1000	1620	1320	1190	970	1020	835	980	805	960	780
1200	1740	1450	1270	1060	1090	910	1050	875	1020	850

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}\text{C} \cdot \text{m} / \text{w}$;
 ρ_D — With moisture migration, $^{\circ}\text{C} \cdot \text{m} / \text{w}_0$.

Table 33

Single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

A. Non Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

6.35/11—8.7/15 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	140	110	190	145	180	140	175	135	175	135
35	175	135	225	175	215	165	210	165	210	160
50	205	160	270	210	255	200	250	195	250	190
70	260	200	335	260	315	245	305	240	305	235
95	315	245	405	315	375	290	370	285	365	280
120	365	285	460	360	430	330	420	325	410	320
150	415	320	520	405	480	370	470	365	460	360
185	475	370	585	455	540	420	530	410	520	405
240	565	440	690	535	630	490	615	480	605	470
300	643	505	775	605	710	555	695	545	680	530
400	750	590	890	705	810	640	790	620	775	610
500	865	690	1010	805	910	730	890	710	870	695
630	990	800	1130	920	1020	830	1000	805	980	790
800	1140	940	1270	1050	1140	940	1100	910	1090	895
1000	1250	1050	1380	1160	1240	1040	1200	1010	1180	990
1200	1340	1140	1460	1240	1310	1110	1270	1080	1240	1060

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}C . m / w$;
 ρ_D — With moisture migration, $^{\circ}C . m / w_e$;
 2, The current carrying capacity of single core XLPE armoured (ATA, AWA) cables, is 60%-70% of that of non armoured ones of bigger cross section.

Table 34

B. Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

6.35/11—8.7/15 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	170	130	160	125	145	110	140	110	140	105
35	205	160	195	150	175	135	170	130	165	125
50	245	190	230	175	205	160	200	155	195	150
70	310	240	280	215	250	195	240	185	235	180
95	380	295	335	260	300	230	290	225	280	220
120	435	340	385	295	340	260	325	255	320	245
150	495	385	430	335	380	295	365	285	355	275
185	570	440	485	380	430	330	415	320	405	315
240	680	530	565	440	495	385	480	370	465	365
300	780	605	640	500	560	435	540	420	525	410
400	910	715	735	575	640	500	615	485	600	475
500	1060	835	840	660	730	575	705	555	685	540
630	1230	930	950	755	830	660	800	635	775	615
800	1440	1160	1080	870	940	755	900	725	880	705
1000	1600	1310	1190	970	1030	840	990	805	960	785
1200	1740	1440	1270	1050	1100	910	1060	875	1030	850

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}C . m / w$;
 ρ_D — With moisture migration, $^{\circ}C . m / w_e$;

Table 35

Single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

A. Non Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

12.7/22 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	145	110	185	145	180	140	180	140	175	135
35	175	135	225	175	215	165	210	165	210	165
50	210	160	270	210	255	200	250	195	250	190
70	260	200	330	255	315	240	310	240	305	235
95	320	245	400	310	375	290	370	285	365	280
120	370	285	460	340	430	335	420	325	415	320
150	420	325	520	400	480	375	470	365	465	360
185	480	375	585	455	545	425	530	415	525	405
240	565	440	680	530	630	490	615	480	605	470
300	650	510	775	605	710	555	695	545	685	535
400	755	595	885	700	810	640	790	620	775	610
500	865	690	1000	795	910	725	890	710	875	695
630	1000	810	1140	920	1030	835	1000	810	980	795
800	1140	940	1270	1040	1140	940	1110	910	1090	895
1000	1250	1050	1370	1150	1240	1040	1200	1010	1180	990
1200	1340	1140	1450	1240	1310	1120	1270	1080	1240	1060

Note: 1, d — Cable OD, mm ;
 ρw — Without moisture migration, $^{\circ}C . m / w$;
 ρD — With moisture migration, $^{\circ}C . m / w_e$;
 2, The current carrying capacity of single core XLPE armoured (ATA, AWA) cables, is 60%-70% of that of non armoured ones of bigger cross section.

Table 36

B. Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

12.7/22 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	170	130	160	125	145	115	140	110	140	105
35	205	160	190	150	175	135	170	130	165	130
50	245	190	230	175	205	160	200	155	195	150
70	310	240	280	215	250	195	240	185	235	185
95	380	295	335	260	300	230	290	225	285	220
120	440	340	385	295	340	265	330	255	325	250
150	500	385	430	335	380	295	370	285	360	280
185	570	445	490	380	430	335	415	325	405	315
240	675	525	565	440	500	385	480	375	470	365
300	780	610	640	500	565	440	545	425	530	410
400	910	710	735	575	645	505	620	485	605	475
500	1050	825	835	660	730	575	705	555	685	540
630	1230	970	960	760	830	660	800	635	780	620
800	1420	1140	1080	865	940	755	900	725	880	705
1000	1580	1290	1180	970	1030	840	990	810	960	785
1200	1730	1430	1270	1050	1100	910	1060	875	1030	850

Note: 1, d — Cable OD, mm ;
 ρw — Without moisture migration, $^{\circ}C . m / w$;
 ρD — With moisture migration, $^{\circ}C . m / w_e$.

Table 37

Single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

A. Non Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

19/33 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	150	115	185	140	180	140	180	140	180	140
35	180	140	220	170	215	165	215	165	210	165
50	215	170	260	200	255	195	250	195	250	195
70	270	210	320	250	310	240	310	240	305	235
95	330	255	390	300	375	290	370	285	365	285
120	380	295	445	345	425	330	420	325	415	325
150	430	330	500	395	475	370	470	365	465	360
185	490	380	570	440	540	420	530	415	525	410
240	575	450	665	515	625	490	615	480	610	475
300	660	515	750	585	705	550	695	540	685	535
400	765	600	865	680	810	635	790	625	780	615
500	875	695	980	775	910	725	895	710	880	700
630	1010	810	1110	895	1030	830	1010	810	990	800
800	1150	940	1250	1020	1150	940	1130	920	1110	900
1000	1260	1050	1360	1130	1250	1040	1220	1020	1200	1000
1200	1370	1150	1450	1230	1330	1120	1300	1100	1280	1080

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}C . m / w$;
 ρ_D — With moisture migration, $^{\circ}C . m / w_e$.
 2, The current carrying capacity of single core XLPE armoured (ATA, AWA) cables, is 60%-70% of that of non armoured ones of bigger cross section.

Table 38

B. Armoured single-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

19/33 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	170	130	160	125	150	115	145	110	140	110
35	205	160	190	150	175	135	170	135	170	130
50	250	190	225	175	210	160	205	155	200	155
70	305	235	275	215	255	195	245	190	240	190
95	375	290	335	260	305	235	295	230	290	225
120	435	335	380	295	345	265	335	260	325	255
150	490	380	425	330	385	300	375	290	365	285
185	565	435	485	375	435	340	425	330	415	320
240	665	520	565	435	505	390	490	380	480	370
300	760	590	635	495	570	445	550	430	540	420
400	890	695	730	570	650	510	630	495	615	480
500	1030	810	830	655	740	580	715	560	695	550
630	1200	950	950	755	840	665	810	645	790	630
800	1380	1110	1080	865	950	760	920	735	895	720
1000	1540	1250	1190	960	1040	850	1010	820	980	800
1200	1680	1380	1270	1050	1110	920	1070	890	1050	865

Note: 1, d — Cable OD, mm ;
 ρ_w — Without moisture migration, $^{\circ}C . m / w$;
 ρ_D — With moisture migration, $^{\circ}C . m / w_e$.

Table 39

Three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

A. Non Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

3.8/6.6 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	120	93	135	105	130	100	125	99	125	97
35	145	110	165	125	155	120	150	115	150	115
50	175	135	195	150	180	140	180	140	175	135
70	215	170	240	185	220	170	215	170	215	165
95	265	205	290	225	265	205	260	200	255	200
120	305	235	325	255	300	235	295	230	290	225
150	345	270	370	285	340	265	330	255	325	250
185	400	310	415	325	380	300	370	290	365	285
240	470	365	485	380	440	345	430	335	420	330
300	535	420	540	425	495	390	480	380	475	370
400	620	495	620	490	560	450	545	435	535	425

Note: 1, d----Cable OD mm ;
 ρW ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 40

B. Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

3.8/6.6 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	-	-	140	105	100	75	85	65	75	60
35	145	110	165	125	115	90	100	75	90	70
50	170	130	195	150	135	105	120	90	110	85
70	210	165	240	185	165	130	145	115	130	100
95	265	200	285	220	200	155	175	135	155	120
120	300	235	325	255	225	175	200	155	175	140
150	340	265	370	285	255	195	220	170	200	155
185	390	305	415	325	285	220	250	195	225	175
240	455	355	480	375	330	255	285	225	255	200
300	520	410	545	425	370	290	325	255	290	225
400	600	475	615	485	420	335	365	290	335	260

Note: 1, d----Cable OD mm ;
 ρW ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 41

Three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity.

A. Non Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

6.35/11—8.7/15 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
	Current carrying capacity (A)									
25	120	95	135	105	130	100	125	100	125	100
35	145	115	165	125	155	120	150	115	150	115
50	175	135	190	150	180	140	180	140	175	135
70	220	170	240	185	225	175	220	170	215	170
95	265	205	285	220	265	205	260	205	255	200
120	305	235	320	250	300	235	295	230	290	225
150	350	270	365	280	340	265	330	260	325	255
185	395	310	410	320	380	295	370	290	365	285
240	470	370	480	375	440	345	430	340	425	335
300	535	420	540	425	495	390	485	380	475	375
400	610	485	610	485	560	445	545	435	535	425

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 42

B. Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

6.35/11—8.7/15 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
	Current carrying capacity (A)									
25	-	-	135	105	130	100	125	100	125	100
35	145	110	165	125	155	120	150	115	150	115
50	170	130	190	150	180	140	180	140	175	135
70	210	165	240	185	225	175	220	170	215	170
95	265	200	285	220	265	205	260	205	255	200
120	300	235	320	250	300	235	295	230	290	225
150	340	265	385	280	340	265	330	260	325	255
185	390	305	410	320	380	295	370	290	365	285
240	455	355	480	375	440	345	430	340	425	335
300	520	410	540	425	495	390	485	380	475	375
400	600	475	610	485	560	445	545	435	535	425

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 43

Three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity.

A. Non Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

12.7/22 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	120	96	135	105	130	100	125	99	125	98
35	150	115	160	125	155	120	150	120	150	115
50	175	135	190	150	180	140	180	140	175	135
70	220	170	235	185	220	175	220	170	215	165
95	263	205	285	220	265	205	260	200	255	200
120	305	235	320	250	300	235	295	230	290	225
150	350	270	365	285	340	265	335	260	330	255
185	395	310	410	320	380	300	375	290	370	290
240	465	365	475	370	440	345	430	340	425	335
300	530	415	535	420	495	390	485	380	475	375
400	615	485	605	480	560	445	545	435	535	425

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 44

B. Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

12.7/22 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	-	-	135	105	130	100	125	99	125	98
35	150	115	160	125	155	120	150	120	150	115
50	180	140	190	150	180	140	180	140	175	135
70	220	170	235	185	220	175	220	170	215	165
95	265	205	285	220	265	205	260	200	255	200
120	310	240	320	250	300	235	295	230	290	225
150	350	270	360	285	340	265	335	260	330	255
185	400	310	410	320	380	300	375	290	370	290
240	465	360	475	370	440	345	430	340	425	335
300	535	420	535	420	495	390	485	380	475	375
400	645	485	605	480	560	445	545	435	535	425

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 45

Three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity.

A. Non Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

19/33 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	125	98	135	105	130	100	130	100	130	100
35	150	115	160	125	155	120	155	120	155	120
50	180	140	190	145	185	140	180	140	180	140
70	220	170	230	180	225	175	220	170	220	170
95	265	205	275	215	265	205	265	205	260	200
120	305	235	315	245	300	235	300	230	295	230
150	345	270	355	275	335	260	330	260	330	255
185	390	305	400	310	380	295	375	290	370	290
240	455	355	460	360	440	345	430	340	425	335
300	525	410	520	410	495	390	485	385	480	375
400	600	470	590	465	560	440	550	435	540	430

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 46

B. Armoured three-core XLPE insulated PVC or LSZH sheathed cable current carrying capacity

19/33 kV

Arrangement		Trefoil								
Laying	In air		In ground							
			$\rho W^{\circ}C.m/W$ (Without moisture migration)		$\rho D^{\circ}C.m/W$ (With moisture migration)					
			1.0		2.0		2.5		3.0	
Cross Section (mm ²)	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
Current carrying capacity (A)										
25	-	-	135	105	130	100	130	100	130	100
35	150	115	160	125	155	120	155	120	155	120
50	180	140	190	145	185	140	180	140	180	140
70	220	170	230	180	225	175	220	170	220	170
95	265	205	275	215	265	205	265	205	260	200
120	310	240	315	245	300	235	300	230	295	230
150	350	270	355	275	335	260	330	260	330	255
185	400	310	400	310	380	395	375	290	370	290
240	465	360	460	380	440	345	430	340	425	335
300	535	420	520	410	495	390	485	385	480	375
400	645	485	590	465	560	440	550	435	540	430

Note: 1, d----Cable OD mm ;
 ρw ----Moisture migration did not occur, $^{\circ}C . m / w$;
 ρD ----Moisture migration occurs, $^{\circ}C . m / w_s$.
 2, Adjacent cable surfaces separated by one cable diameter.

Table 47

TERMS & CONDITIONS OF SALES

1. APPLICATION OF TERMS & CONDITIONS

These conditions govern the sale and purchase of goods ordered by Buyer from Seller ("the goods") and shall override any terms and conditions whether previously or hereafter stipulated incorporated or referred to by Buyer whether orally in its purchase order or other documents.

2. DELIVERY

- Any time for delivery named by Seller is an estimate only and Seller is not liable to make good any damage or loss arising out of any such delay.
- Delivery shall be deemed to have been made if Seller delivers the goods to the location specified by the Buyer and Delivery Order is endorsed by any person present thereat. Seller is not responsible to ensure the goods have been delivered to or is collected by Buyer or its authorised personnel and shall not be liable for any loss or damage to Buyer by reason of unauthorised collection of the goods.
- Should Buyer fail to take delivery of goods, Seller shall be entitled (without derogation of its rights under Law) to charge Buyer for storage and insurance for the goods calculated from the date fixed for delivery.
- The Seller reserves the right to deliver the goods by instalments and each instalment shall be deemed to have been sold under a separate contract. Failure to deliver any instalment shall not entitle the buyer to repudiate the contract.
- Off loading and/or handling will in all events be the responsibility of the Buyer.
- If the goods to be delivered are, at the Buyer's discretion, delivered to the destination other than the Buyer's premises, the Seller will arrange such delivery for the Buyer and all costs for carriage and insurance will be borne by the Buyer.
- Availability of the goods when offered ex-stock is subject to such goods being sold in another transaction between the date when the Seller advises the goods are available, and the date when it receives the Buyer's order. Any delivery time offered for products made to special customer order is indicative only, and the Seller shall not be liable for any loss or damage whatsoever arising as a consequence or result of any such failure to deliver.

3. PRICE

The quoted prices for the goods are subject to change in the event of any imposition or increase in taxes, levies or duties whatsoever on the goods, its components or raw materials.

4. PAYMENT

Payment for the goods shall be made within the time stipulated in the invoice. Interest at 1.5% per month will be charged on late payment.

5. TIME OF THE ESSENCE

Time within which the Buyer is to buy for the goods shall be of the essence of this Contract.

6. ACCEPTANCE

Buyer shall inspect the goods immediately upon delivery. Unless Seller receives notice that the goods are not in accordance with the Buyer's order and the goods returned to Seller within 24 hours from the date of delivery, the goods shall be deemed to have been accepted by the Buyer PROVIDED ALWAYS Seller will not accept return of used goods and Buyer shall not reject any goods which are in accordance with the Buyer's order.

7. DESCRIPTION

Notwithstanding any description of the goods given by the Seller or Buyer, no sale of goods shall constitute or be construed as a sale by description.

8. WARRANTIES

Save and except for written warranties (if any) given by Seller, the Seller does not give any warranties as to the quality, state, condition or fitness of the goods or their suitability for any purpose or for use under any specific conditions, notwithstanding that such purpose or condition may be known or make known to Seller.

9. DEFECTS

Save and except as notified pursuant to Clause (6) above, Seller shall be under no liability to Buyer either in contract or tort for loss, injury or damage sustained by Buyer or any third party by reason of defects in the goods whether latent or otherwise but Buyer will keep Seller indemnified against any such claim.

10. TITLE

Title to the goods remains vested in Seller until Seller receives payment for the full purchase price. If such payment is overdue, the Seller may without prejudice to any other rights sue for the purchase price, recover or re-sell the goods and the Buyer grants the Seller, its servants/agents the right and/or licence to enter the Buyer's premise and/or any other premise where the goods are stored. If any of the goods are sold by Buyer before title has passed to Buyer, Buyer shall hold the proceeds of sale and all rights against purchaser in trust for Seller.

11. RISK

Risk passes to Buyer upon delivery of goods to Buyer.

12. DEFAULT

If Buyer fail to pay Seller on due date, commits a breach of any of its obligation herein, becomes insolvent or commits an act of bankruptcy, Seller may without prejudice to its other rights and without giving any notice, suspend/cancel further deliveries, stop any delivery in transit under this Contract or any other contracts and/or limit/cancel the Buyer's credit as to time and/or amount for executed, executory or future orders, and/or request for securities or guarantees. Seller shall not be liable to Buyer for any damages which Buyer may suffer or incur by reason thereof.

13. CANCELLATION OF CREDIT

Notwithstanding anything herein contained, Seller reserves the right to limit/cancel the credit of the Buyer as to time and/or amount without giving any reasons thereof and to demand full settlement immediately of all sums that may be owing by Buyer notwithstanding that the credit period has not expired.

14. FORCE MAJEURE

Seller shall not be liable to Buyer for failure to deliver the goods by reason of any breakdown of plant, fire, explosion, Act of God, or outbreak of hostilities, national emergency, industrial disputes, shortage of labour, raw materials, energy or any causes beyond Seller's control and which Seller is unable to prevent by the exercise of reasonable diligence, whether of the class of causes enumerated herein or not.

15. APPROPRIATION OF PAYMENTS

All payments received from the Buyer will be applied towards settlement of the Buyer's oldest debts comprising of the earliest invoices, debit notes (including debit notes for overdue interest) and other charges howsoever arising PROVIDED ALWAYS Seller may appropriate any payments towards account of interest before principal in respect of any debt as the Seller shall in its absolute discretion deem fit.

16. STATEMENT OF ACCOUNT

All amounts stated in the invoices and statement of accounts of Seller shall be conclusive of the amounts due and owing by Buyer to Seller and shall be binding against Buyer in any legal proceedings.

17. RIGHTS OF SET-OFF

Seller entitled to set-off against Buyer's debts all monies now or hereafter standing to the credit of Buyer's account with Seller and for this purpose Buyer shall give irrevocable authority to Seller to collect on behalf of Buyer and give valid receipt and discharge in respect of all such monies owing to the Buyer.

18. WAIVER

No failure or delay by the Seller in exercising any rights hereunder shall operate as a waiver hereof nor shall any single or partial exercise of right preclude any further exercise thereof or the exercises of any other right.

19. SALE OF GOODS ACT ("the Act")

The terms and conditions in favour of the Seller hereunder shall be in addition to and not in substitution for any term condition warranty expressed or implied in favour of the Seller under the Act or any statutory and re-enactment thereto for the time being enforced.

20. INFRINGEMENT OF PATENTS DESIGNS

Buyer shall indemnify Seller against all damages, claims, costs and expenses which Seller may become liable as a result of work done or goods sold in accordance with Buyer's specifications which involves infringement of any patents, registered designs or trademarks.

21. NOTICES

Any notices, communications or demands shall be deemed to have been sufficiently given if sent by prepaid post to the address of the addressee stated herein or to the addressee's last known place of business and shall be presumed to have reached the address in ordinary course of post.

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