UNIVERSAL CABLE
(SARAWAK) SDN BHD

Copper Products

Quality · Reliability · Sustainability

OUR VISION

To maintain as the leading power cable manufacturer in Sarawak; continues to be innovative and dynamic in attaining higher standard of products quality and services, and be a total power solutions provider for complete customer satisfaction.

OUR MISSION

We aim to be the leading provider of total / integrated power solutions, creating sustainable value for our stakeholders, and the communities in which we operate.

OUR VALUES

Integrity
Trust
Teamwork
Innovation
Performance
Customer/Client Focus
Caring

BACKGROUND

Universal Cable (Sarawak) Sdn. Bhd. ("UCS") is wholly owned subsidiary of Sarawak Cable Berhad.

Founded in 1980 and commenced operation in 1981 as a trading company, UCS ventured into the manufacturing business a year later and has since grown into an established and reputable manufacturer of power cables and electrical wires in East Malaysia.

In 2007, UCS moved its business operation from Bintawa Industrial Estate to a new site at Demak Laut Industrial Park, Kuching. The move to the new state-of-the-art manufacturing facilities enables UCS to extend its manufacturing scale and product range in tandem with its growth over the years. Apart from newer modern machineries, the facilities also comes equipped with modern testing equipment.

In 2008, a new branch office cum warehouse was setup in Kota Kinabalu, Sabah to serve its ever expanding business network.

BUSINESS ACTIVITIES

UCS mainly manufactures low voltage power cables & wires and high voltage bare conductors for transmission and distribution of electricity.

Production capacity currently stands at about 4,700 tons and 3,800 tons of aluminium and copper respectively.

Apart from its core manufacturing business, UCS is also actively involved in trading of all types of power cables and wires, which at times include installation and commissioning works as a total package.

QUALITY ACHIEVEMENT

In line with our Mission and Quality Policy, we continously strive to improve our products and stay ahead of our competitors.

In 1999, UCS had complied with and was certified ISO 9002:1996 Quality Management System by SIRIM QAS International.

In 2001, its Quality Management System was converted and certified ISO 9001:2000.

As of today, UCS has maintained its compliance with the standard and is certified with the latest ISO 9001:2008.

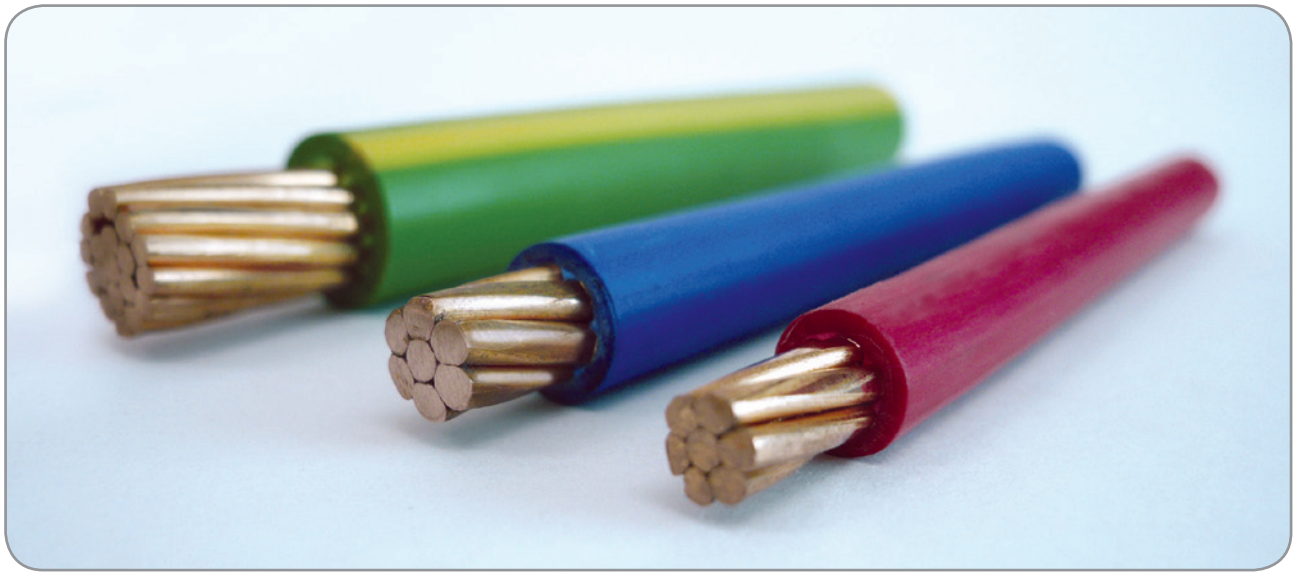
PVC Insulated Cable and PVC Insulated, PVC Sheathed Unarmoured Cable (1-Core)

Conductor	:	Plain annealed copper
Insulation	:	General purpose PVC compound
Colour of cores	:	Single core - Red, black, blue, yellow, green with yellow strips 2 cores - Red and black 3 cores - Red, yellow and blue 4 cores - Red, yellow, blue and black
Formation	:	(i) Single core (ii) 2, 3, or 4 cores - Stranded together and the interstices may be filled with the sheathing compound or textile. - a non-hygroscopic binder tape may be applied over the laid-up cores.
Sheath	:	Black general purpose PVC compound
Specifications	:	MS 136 & BS 6004, MS 274 & BS 6346

PVC Insulated Cable

Nominal Sectional Area	Conductor Shape	Construction, Number/ Wire Diameter	Thickness of Insulation	Approx. Overall Diameter	Approx. Net Weight
mm^2		No./mm	mm	mm	kg/km
MS 136 & BS 6004, 450/750V					
1.5 1.5 2.5 2.5	s. c. c. s. s. c. c. s.	1/1.38 7/0.53 1/1.78 7/0.67	0.7 0.7 0.8 0.8	2.9 3.1 3.5 3.7	21 23 33 35
4 6 10 16	c. s. c. s. c. c. c. c.	7/0.85 7/1.04 7/1.35 7/1.70	0.8 0.8 1.0 1.0	4.3 4.8 6.2 7.2	51 72 120 180
25 35 50 70 95	c. c. c. c. c. c. c. c. c. c.	7/2.14 19/1.53 19/1.78 19/2.14 19/2.52	1.2 1.2 1.4 1.4 1.6	8.9 10.2 11.9 13.7 16.0	283 380 510 720 990
120 150 185 240 300	c. c. c. c. c. c. c. c. c. c.	37/2.03 37/2.25 37/2.52 61/2.25 61/2.52	1.6 1.8 2.0 2.2 2.4	17.6 19.6 21.9 25.0 27.8	1230 1520 1900 2500 3130
400 500 630	c. c. c. c. c. c.	61/2.85 61/3.20 61/3.65	2.6 2.8 2.8	31.2 34.7 38.7	3980 4990 6380

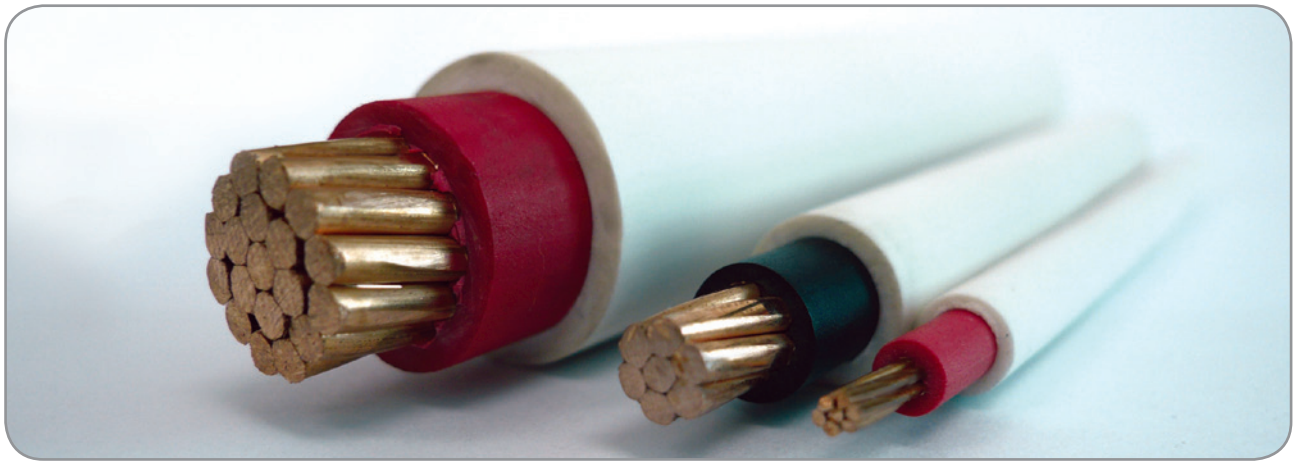
* NOTE: s. c. - Solid circular conductor
c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



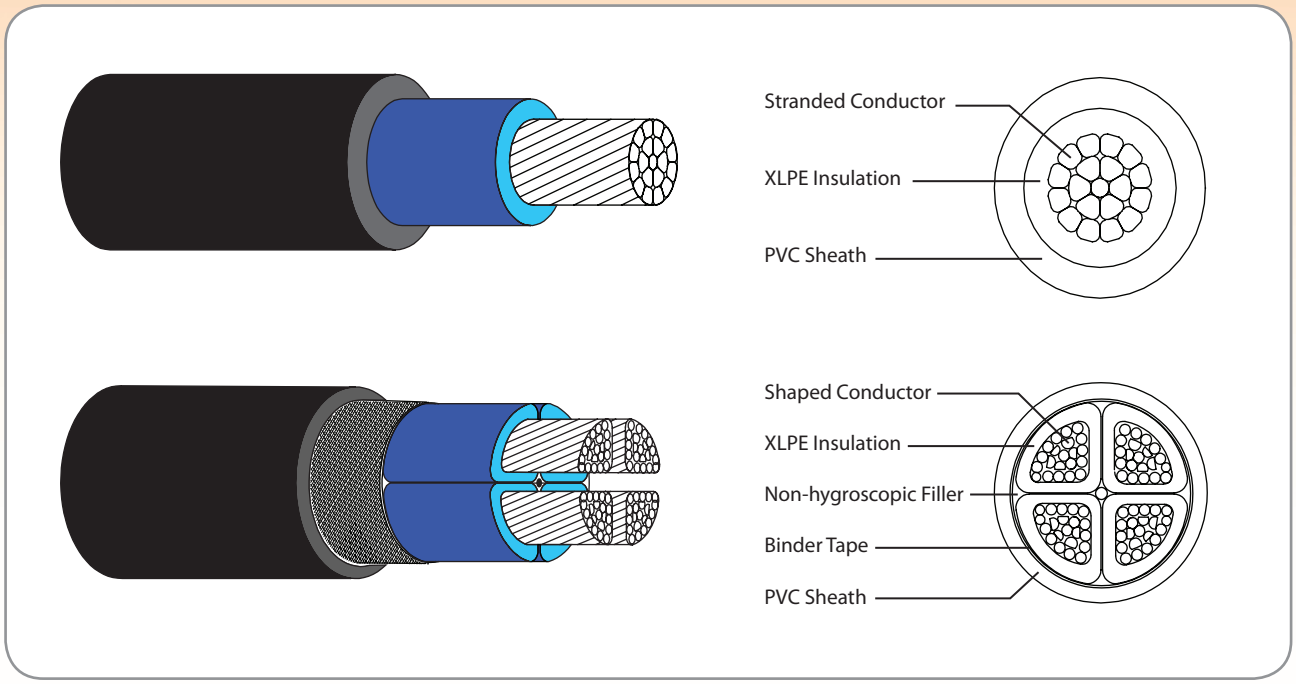
PVC Insulated, PVC Sheathed Unarmoured Cable (1-Core)

Nominal Sectional Area	Conductor Shape	Construction, Number/Wire Diameter	Thickness of Insulation	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
mm2		N0./mm	mm	mm	mm	kg/km
MS 136 & BS 6004, 300/500V						
1.5	s. c.	1/1.38	0.7	0.8	4.5	37
1.5	c. s.	7/0.53	0.7	0.8	4.6	40
2.5	s. c.	1/1.78	0.8	0.8	5.3	51
2.5	c. s.	7/0.67	0.8	0.8	5.4	60
4	c. s.	7/0.85	0.8	0.9	6.3	76
6	c. s.	7/1.04	0.8	0.9	6.8	99
10	c. c.	7/1.35	1.0	0.9	8.2	150
16	c. c.	7/1.70	1.0	1.0	9.4	220
25	c. c.	7/2.14	1.2	1.1	11.3	340
35	c. c.	19/1.53	1.2	1.1	12.6	440
MS 274 & BS 6346, 600/1000V						
50	c. c.	19/1.78	1.4	1.4	14.9	610
70	c. c.	19/2.14	1.4	1.4	16.9	830
95	c. c.	19/2.52	1.6	1.5	19.2	1130
120	c. c.	37/2.03	1.6	1.5	20.8	1380
150	c. c.	37/2.25	1.8	1.6	23.0	1690
185	c. c.	37/2.52	2.0	1.7	25.5	2100
240	c. c.	61/2.25	2.2	1.8	28.8	2740
300	c. c.	61/2.52	2.4	1.9	31.8	3410
400	c. c.	61/2.85	2.6	2.0	35.4	4310
500	c. c.	61/3.20	2.8	2.1	39.1	5380
630	c. c.	61/3.65	2.8	2.2	43.3	6820
800	c. s.	127/2.85	2.8	2.3	47.8	8590
1000	c. s.	127/3.20	3.0	2.5	53.1	10760

* NOTE: s. c. - Solid circular conductor
c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



0.6/1 (1.2) kV XLPE Insulated Unarmoured PVC Sheathed Cables



Description

Single core and multi-core cables with copper or aluminium conductor, XLPE insulated and PVC sheathed. Cables are rated at 0.6/1 (1.2) kV and comply with IEC 60502 or BS 5467.

Construction

Conductor
Plain circular, compacted or shaped stranded copper or aluminium conductor, comply to IEC 60228 class 2.

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

Colours for core identification

Single core	-	natural (black on request)
Two core	-	red, black
Three core	-	red, yellow and blue
Four core	-	red, yellow, blue and black

Assembly
Two, three or four insulated conductors are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.The filling may be omitted provided the outer shape of the cables remains practically circular and no adhesion occurs between cores and sheath.

Sheath
PVC type ST2 to IEC 60502, colour black.

Applications

These cables are designed for general use including underground burial, where they are not likely to suffer mechanical damage.

NOTE: Cables complying with customers specification are available upon request.

Single Core - XLPE Insulated Unarmoured PVC Sheathed Cable

XLPE / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
					Copper	Aluminium
mm^2		mm	mm	mm	kg/km	kg/km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	1.4 1.4 1.4	5.8 6.2 6.8	50 62 81	- - -
6 10 16	c. s. c. c. c. c.	0.7 0.7 0.7	1.4 1.4 1.4	7.3 8.3 9.0	105 151 211	- - 111
25 35 50	c. c. c. c. c. c.	0.9 0.9 1.0	1.4 1.4 1.4	10.6 11.8 13.2	315 414 542	156 193 243
70 95 120	c. c. c. c. c. c.	1.1 1.1 1.2	1.4 1.5 1.5	15.1 17.0 18.8	757 1025 1281	325 426 521
150 185 240	c. c. c. c. c. c.	1.4 1.6 1.7	1.6 1.6 1.7	20.8 23.0 25.8	1562 1940 2522	633 774 989
300 400 500	c. c. c. c. c. c.	1.8 2.0 2.2	1.8 1.9 2.0	28.5 31.9 35.5	3144 4006 5042	1217 1530 1906
630 800 1000	c. c. c. s. c. s.	2.4 2.6 2.8	2.2 2.3 2.4	40.0 46.9 52.0	6460 8300 10397	2420 3107 3850

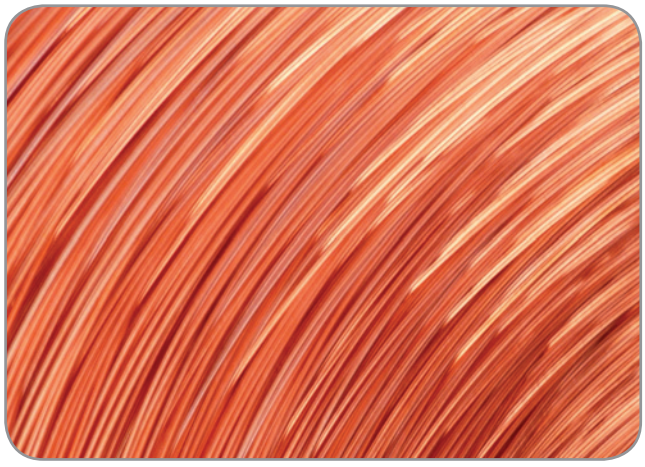
* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor

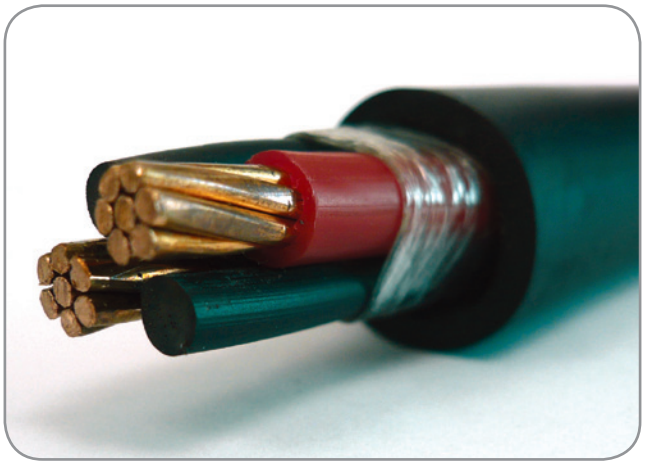
Two Cores - XLPE Insulated Unarmoured PVC Sheathed Cable

XLPE / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
					Copper	Aluminium
mm2		mm	mm	mm	kg/km	kg/km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	1.8 1.8 1.8	9.7 10.5 11.6	119 148 192	- - -
6 I0 16	c. s. c. c. c. c.	0.7 0.7 0.7	1.8 1.8 1.8	12.7 14.6 16.1	247 254 487	- - 282
25 35 50	c. c. c. c. c. c.	0.9 0.9 1.0	1.8 1.8 1.8	19.4 21.7 20.9	727 955 1116	403 505 507
70 95 120	c. c. c. c. c. c.	1.1 1.1 1.2	1.8 1.9 2.0	23.9 26.8 29.7	1553 2093 2629	672 872 1078
150 185 240	c. c. c. c. c. c.	1.4 1.6 1.7	2.2 2.3 2.5	33.1 36.8 41.3	3220 4012 5216	1324 1634 2088
300	c. c.	1.8	2.6	45.3	6482	2551

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



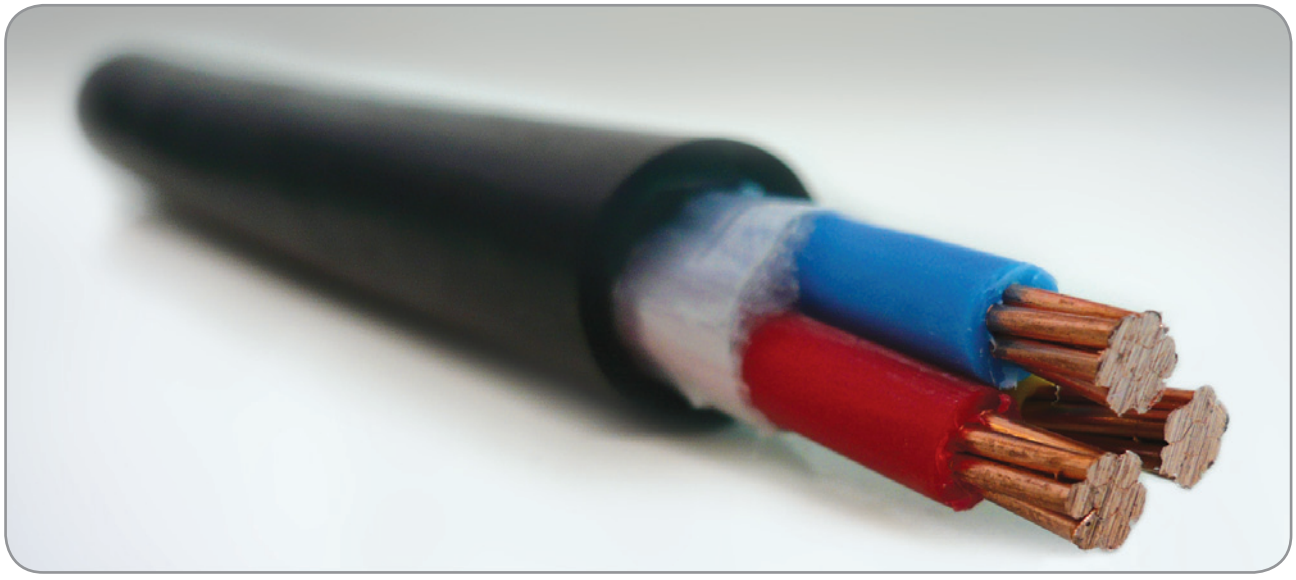


Three Cores - XLPE Insulated Unarmoured PVC Sheathed Cable

XLPE / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
					Copper	Aluminium
mm2		mm	mm	mm	kg/km	kg/km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	1.8 1.8 1.8	10.1 11.0 12.2	141 180 240	- - -
6 10 16	c. s. c. c. c. c.	0.7 0.7 0.7	1.8 1.8 1.8	13.4 15.4 17.0	314 461 649	- - 342
25 35 50	c. c. c. c. c. c.	0.9 0.9 1.0	1.8 1.8 1.8	20.6 23.1 24.1	982 1303 1633	495 628 719
70 95 120	c. c. c .c. c. c.	1.1 1.1 1.2	1.9 2.0 2.1	27.9 31.4 34.8	2299 3104 3902	978 1272 1576
150 185 240	c. c. c. c. c. c.	1.4 1.6 1.7	2.3 2.4 2.6	38.8 43.2 48.6	4782 5966 7761	1938 2399 3070
300	c. c.	1.8	2.8	53.4	9653	3757

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor

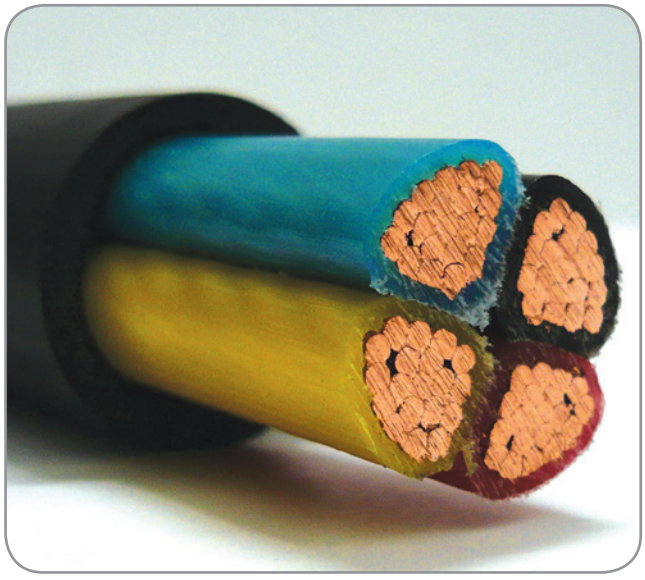


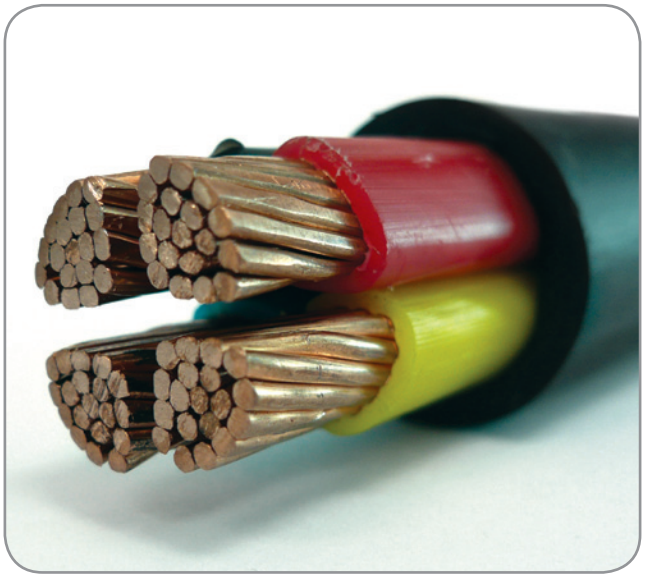
Four Cores - XLPE Insulated Unarmoured PVC Sheathed Cable

XLPE / PVC Cable 0.6 /1 (1.2) kV

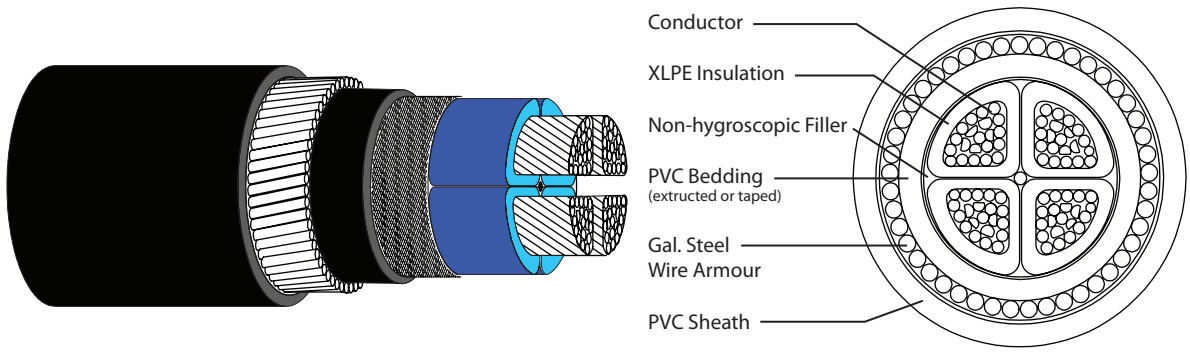
Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
					Copper	Aluminium
mm2		mm	mm	mm	kg/km	kg/km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	1.8 1.8 1.8	10.9 11.9 13.2	168 217 294	- - -
6 10 16	c. s. c. c. c. c.	0.7 0.7 0.7	1.8 1.8 1.8	14.6 16.9 18.6	394 586 832	- - 423
25 35 50	c. c. s. s. s. s.	0.9 0.9 1.0	1.8 1.8 1.8	22.6 25.4 27.1	1268 1690 2180	619 790 961
70 95 120	s. s. s. s. s. s.	1.1 1.1 1.2	2.0 2.1 2.3	31.6 35.7 39.8	3086 4163 5253	1325 1721 2151
150 185 240	s. s. s. s. s. s.	1.4 1.6 1.7	2.4 2.6 2.8	44.1 49.3 55.4	6414 8030 10434	2623 3274 4179
300	s. s.	1.8	3.0	61.3	13008	5146

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor
s. s. - shaped stranded conductor, circular conductor can be produced on request





0.6/1 (1.2) kV XLPE Insulated Armoured PVC Sheathed Cables



Description

Single core and multi-core cables with copper or aluminium conductor, XLPE insulated, armoured and PVC sheathed. Cables are rated at 0.6/1 (1 .2) kV and comply with IEC 60502 or BS 5467.

Construction

Conductor
Plain circular, compacted or shaped stranded copper or aluminium conductor, comply with IEC 60228 class 2.

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

Colours for core identification
Single core - natural (black on request)
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black

Assembly
Two, three or four insulated conductors are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation and covered with a layer of PVC bedding which may be an integral part of the filling.

Armour
Single core - Aluminium wire shall be applied over the PVC bedding.
Multi cores - Galvanized steel wire shall be applied over the PVC bedding.

Sheath
PVC type ST2 to IEC 60502 colour black.

Applications

These cables are most suitable for underground burial where there is a risk of mechanical damage.

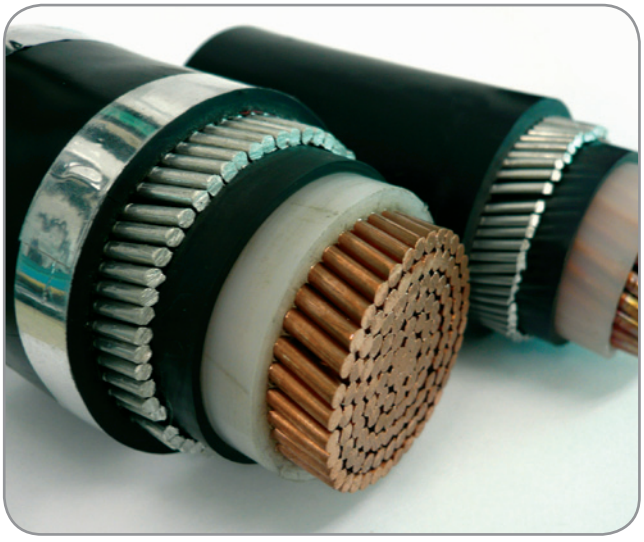
NOTE: Cables complying with customers specification are available upon request.

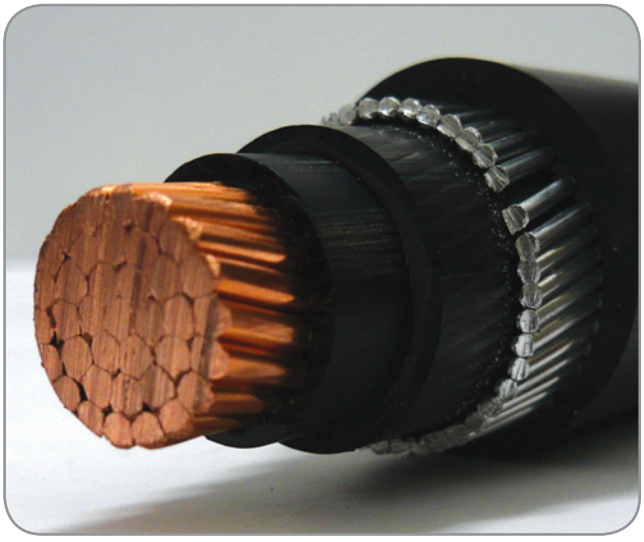
Single Core - XLPE Insulated Armoured PVC Sheathed Cable

XLPE / PVC / AWA / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Diameter of Aluminium Wire	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
						Copper	Aluminium
mm^2		mm	mm	mm	mm	Kg/Km	Kg/Km
50	c. c.	1.0	1.25	1.8	18.5	788	489
70	c. c.	1.1	1.25	1.8	20.4	1032	600
95	c. c.	1.1	1.25	1.8	22.1	1319	720
120	c. c.	1.2	1.6	1.8	25.1	1657	897
150	c. c.	1.4	1.6	1.8	26.9	1960	1031
185	c. c.	1.6	1.6	1.8	29.1	2375	1209
240	c. c.	1.7	1.6	1.9	31.9	3004	1471
300	c. c.	1.8	1.6	1.9	34.4	3655	1728
400	c. c.	2.0	2.0	2.1	39.2	4725	2249
500	c. c.	2.2	2.0	2.2	42.8	5836	2700
630	c. c.	2.4	2.0	2.3	47.1	7325	3285
800	c. s.	2.6	2.5	2.5	55.6	9555	4362
1000	c. s.	2.8	2.5	2.7	60.9	11798	5251

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



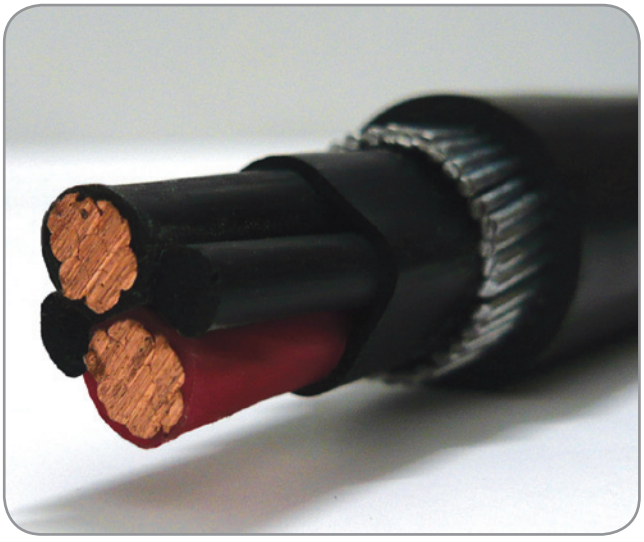


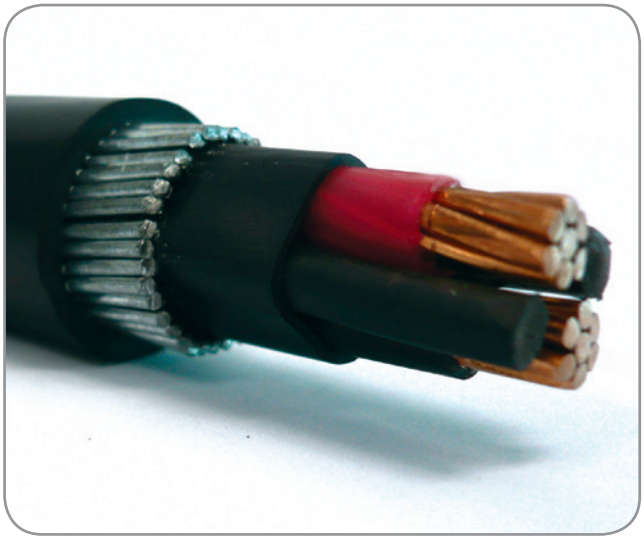
Two Cores - XLPE Insulated Armoured PVC Sheathed Cable

XLPE / PVC / SWA / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Diameter of Steel Wire	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
						Copper	Aluminium
mm^2		mm	mm	mm	mm	Kg/Km	Kg/Km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	0.9 0.9 0.9	1.8 1.8 1.8	13.5 14.3 15.4	347 394 463	- - -
6 10 16	c. s. c. c. c. c.	0.7 0.7 0.7	0.9 1.25 1.25	1.8 1.8 1.8	16.5 19.1 20.6	543 804 980	- - 775
25 35 50	c. c. c. c. c. c.	0.9 0.9 1.0	1.6 1.6 1.6	1.8 1.8 1.8	24.6 26.9 26.1	1467 1782 1910	1143 1332 1301
70 95 120	c. c. c. c. c. c.	1.1 1.1 1.2	1.6 2.0 2.0	2.0 2.1 2.2	29.5 33.6 36.5	2488 3410 4053	1607 2189 2502
150 185 240	c. c. c. c. c. c.	1.4 1.6 1.7	2.0 2.5 2.5	2.3 2.5 2.7	39.7 46 50.5	4789 6186 7645	2893 3808 4517
300	c. c.	1.8	2.5	2.8	54.9	9205	5274

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



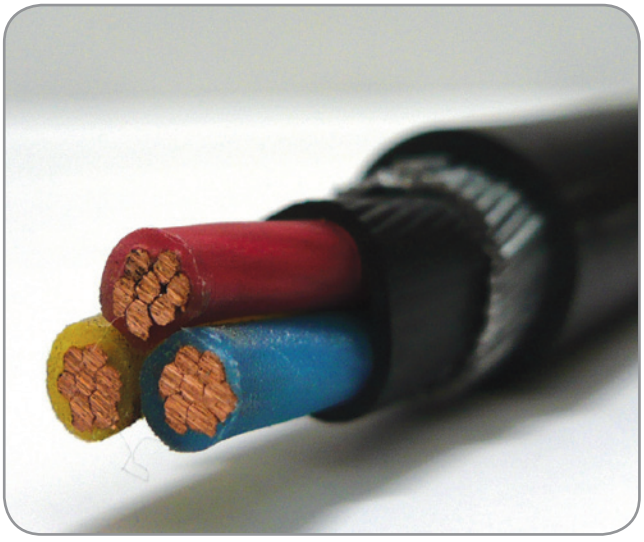


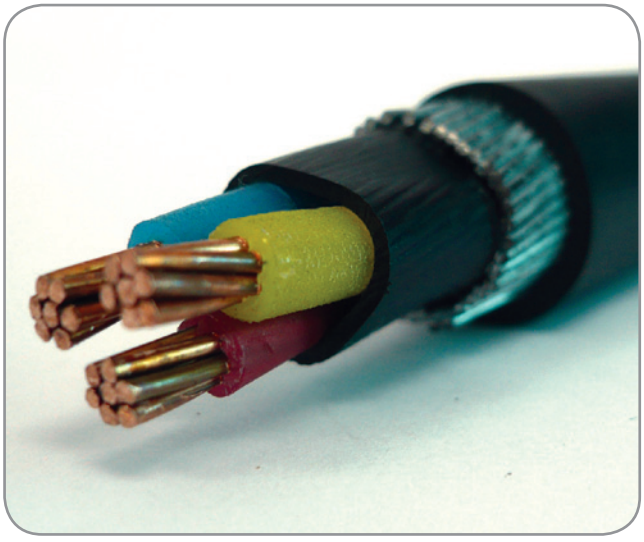
Three Cores - XLPE Insulated Armoured PVC Sheathed Cable

XLPE / PVC / SWA / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Diameter of Steel Wire	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
						Copper	Aluminium
mm^2		mm	mm	mm	mm	Kg/Km	Kg/Km
1.5 2.5 4	c. s. c. s. c. s.	0.7 0.7 0.7	0.9 0.9 0.9	1.8 1.8 1.8	13.9 14.8 16.0	378 437 525	- - -
6 10 16	c. s. c. c. c. c.	0.7 0.7 0.7	0.9 1.25 1.25	1.8 1.8 1.8	17.2 19.9 21.5	627 937 1171	- - 864
25 35 50	c. c. c. c. c. c.	0.9 0.9 1.0	1.6 1.6 1.6	1.8 1.8 1.9	25.8 28.3 29.5	1769 2179 2563	1282 1504 1649
70 95 120	c. c. c. c. c. c.	1.1 1.1 1.2	2.0 2.0 2.0	2.0 2.2 2.3	34.5 38.2 41.6	3637 4621 5557	2316 2789 3231
150 185 240	c. c. c. c. c. c.	1.4 1.6 1.7	2.5 2.5 2.5	2.5 2.6 2.8	48.0 52.4 58.2	7099 8492 10683	4255 4925 5992
300	c. c.	1.8	2.5	3.0	63.2	12865	6969

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor



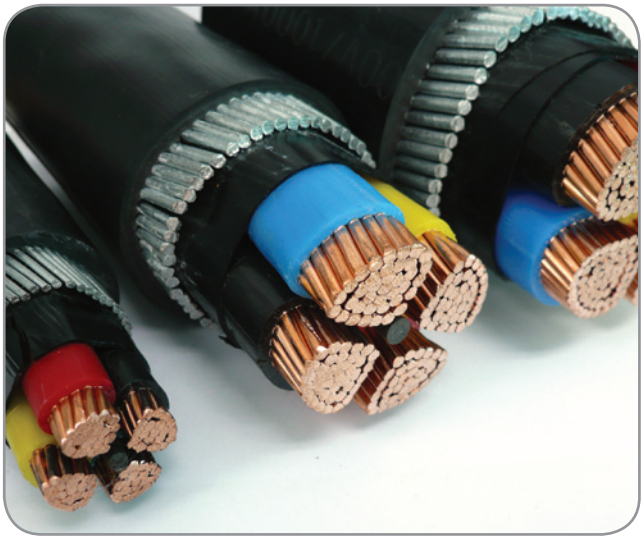


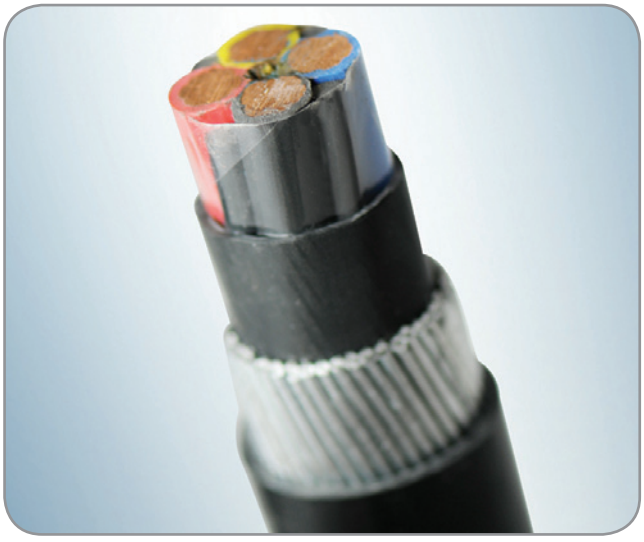
Four Cores - XLPE Insulated Armoured PVC Sheathed Cable

XLPE / PVC / SWA / PVC Cable 0.6 /1 (1.2) kV

Nominal Cross-Sectional Area	Conductor Shape	Nominal Thickness of Insulation	Nominal Diameter of Steel Wire	Nominal Thickness of Sheath	Approx. Overall Diameter	Approx. Cable Weight	
						Copper	Aluminium
mm^2		mm	mm	mm	mm	Kg/Km	Kg/Km
1.5	c. s.	0.7	0.9	1.8	14.7	422	-
2.5	c. s.	0.7	0.9	1.8	15.7	495	-
4	c. s.	0.7	0.9	1.8	17.0	601	-
6	c. s.	0.7	1.25	1.8	19.1	844	-
10	c. c.	0.7	1.25	1.8	21.4	1104	-
16	c. c.	0.7	1.6	1.8	23.8	1544	1135
25	c. c.	0.9	1.6	1.8	27.8	2128	1479
35	s. s.	0.9	1.6	1.9	30.8	2665	1765
50	s. s.	1.0	1.6	2.0	32.7	3232	2013
70	s. s.	1.1	2.0	2.2	38.4	4605	2844
95	s. s.	1.1	2.0	2.3	42.5	5877	3435
120	s. s.	1.2	2.5	2.5	49.0	7621	4519
150	s. s.	1.4	2.5	2.6	53.3	8990	5199
185	s. s.	1.6	2.5	2.8	58.5	10909	6153
240	s. s.	1.7	2.5	3.0	65.0	13722	7467
300	s. s.	1.8	2.5	3.2	70.9	16610	8748

* NOTE: c. s. - circular stranded conductor
c. c. - compacted circular stranded conductor
s. s. - shaped stranded conductor, circular conductor can be produced on request



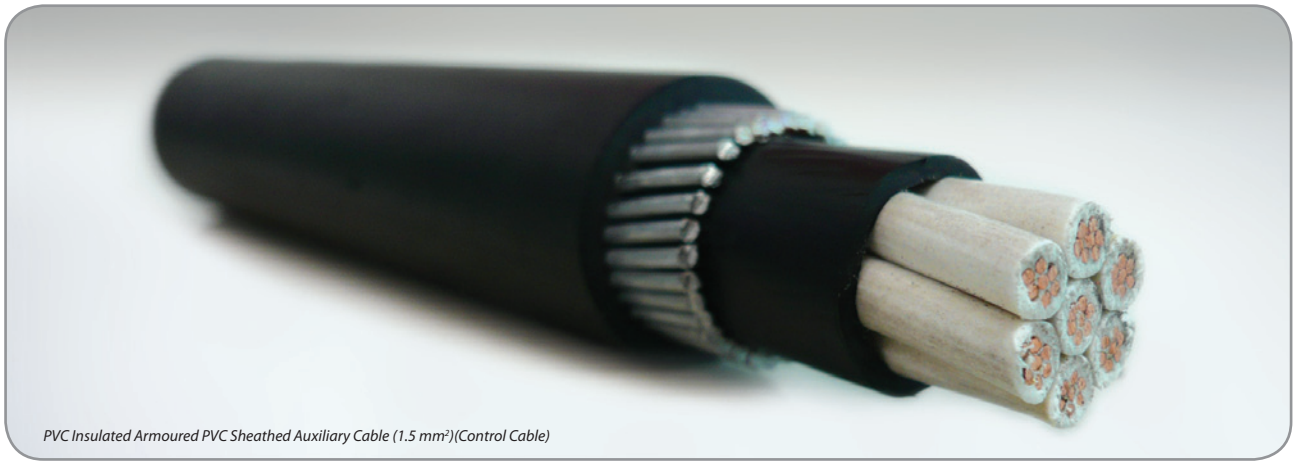


PVC Insulated Armoured PVC Sheathed Auxiliary Cable

Conductor : Plain annealed copper
Insulation : General purpose PVC compound
Colour of cores : White with black numbering
Formation : Stranded together and the interstices may be filled with the sheathing compound. A non-hygroscopic binder tape may be applied over the laid-up cores.
Bedding : Black general purpose PVC compound / PVC sheathing
Armour : Galvanised steel wire
Sheath : Black general purpose PVC compound

PVC Insulated Armoured PVC Sheathed Auxiliary Cable (1.5 mm^2 - Control Cable)

Number of core	Nominal Sectional Area	Construction, Number/Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour Wire	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
	mm^2	No. /mm	mm	mm	mm	mm	mm	kg/km
BS 6346 & MS 274, 600/1000V								
5	1.5	7/0.53	0.6	0.8	0.9	1.4	14.5	430
7	1.5	7/0.53	0.6	0.8	0.9	1.4	15.4	500
10	1.5	7/0.53	0.6	0.8	1.25	1.5	19.2	780
12	1.5	7/0.53	0.6	0.8	1.25	1.5	19.6	830
19	1.5	7/0.53	0.6	0.8	1.25	1.6	22.3	1090
27	1.5	7/0.53	0.6	1.0	1.6	1.7	26.9	1600
37	1.5	7/0.53	0.6	1.0	1.6	1.8	29.5	1940
48	1.5	7/0.53	0.6	1.0	1.6	1.9	33.1	2360



PVC Insulated Armoured PVC Sheathed Auxiliary Cable (1.5 mm^2)(Control Cable)

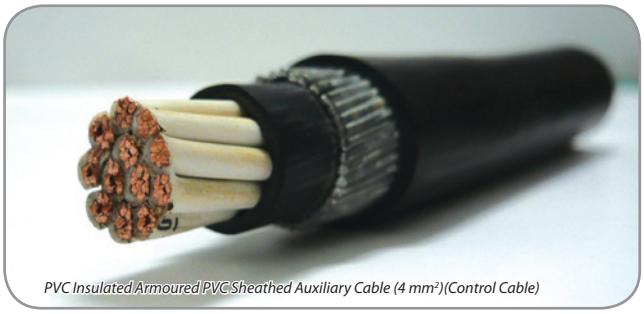
PVC Insulated Armoured PVC Sheathed Auxiliary Cable (2.5 mm² - Control Cable)

Number of core	Nominal Sectional Area	Construction, Number/Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour Wire	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
	mm²	N0./mm	mm	mm	mm	mm	mm	kg/km
BS 6346 & MS 274, 600/1000V								
5	2.5	7/0.67	0.7	0.8	0.9	1.5	16.4	550
7	2.5	7/0.67	0.7	0.8	1.25	1.5	18.1	750
10	2.5	7/0.67	0.7	0.8	1.25	1.6	21.8	1000
12	2.5	7/0.67	0.7	0.8	1.25	1.6	22.4	1080
19	2.5	7/0.67	0.7	1.0	1.6	1.7	26.7	1640
27	2.5	7/0.67	0.7	1.0	1.6	1.8	30.9	2110
37	2.5	7/0.67	0.7	1.0	1.6	1.9	34.1	2600
48	2.5	7/0.67	0.7	1.2	2.0	2.1	39.8	3520

PVC Insulated Armoured PVC Sheathed Auxiliary Cable (4 mm² - Control Cable)

Number of core	Nominal Sectional Area	Construction, Number/Wire Diameter	Thickness of Insulation	Thickness of Bedding	Diameter of Armour Wire	Thickness of Sheath	Approx. Overall Diameter	Approx. Net Weight
	mm²	N0./mm	mm	mm	mm	mm	mm	kg/km
BS 6346 & MS 274, 600/1000V								
5	4	7/0.85	0.8	0.8	1.25	1.5	19.1	820
7	4	7/0.85	0.8	0.8	1.25	1.6	20.6	970
10	4	7/0.85	0.8	1.0	1.6	1.7	26.1	1500
12	4	7/0.85	0.8	1.0	1.6	1.7	26.8	1630
19	4	7/0.85	0.8	1.0	1.6	1.8	30.6	2170
27	4	7/0.85	0.8	1.2	2.0	2.0	37.2	3170
37	4	7/0.85	0.8	1.2	2.0	2.1	41.0	3910
48	4	7/0.85	0.8	1.2	2.0	2.2	46.1	4970

PVC Insulated Armoured PVC Sheathed Auxiliary Cable (2.5 mm²)(Control Cable)



PVC Insulated Armoured PVC Sheathed Auxiliary Cable (4 mm²)(Control Cable)

Appendix: Technical Data

Current Carrying, Capacity for Single-Core, Non-Armoured With or Without Sheath to BS 6004 and BS 6346

Ambient Temperature: 30°C
Conductor Operating Temperature: 70°C

Conductor cross sectional area	Current-carrying capacity										
	Method of installation										
	Enclosed in conduit in thermally insulated wall etc.		Enclosed in conduit on a wall or in trunking etc.		Clipped direct		On a perforated cable tray horizontal or vertical		In tree air		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables three-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables three-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables three-phase a.c. flat and touching	2 cables, single-phase a.c. flat and touching	3 or 4 cables three-phase a.c. flat and touching or tretoil	2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c.	2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c.	3 cables, trefoil, three-phase a.c.
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	19.5	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	126	112	146	130	110
35	99	89	125	110	141	129	156	141	181	162	137
50	119	108	151	134	182	167	191	172	219	197	167
70	151	136	192	171	234	214	246	223	281	254	216
95	182	164	232	207	284	261	300	273	341	311	264
120	210	188	269	239	330	303	349	318	396	362	308
150	240	216	300	262	381	349	404	369	456	419	356
185	273	245	341	296	436	400	463	424	521	480	409
240	320	286	400	346	515	472	549	504	615	569	485
300	367	328	458	394	594	545	635	584	709	659	561
400	-	-	546	467	694	634	732	679	852	795	656
500	-	-	626	533	792	723	835	778	982	920	749
630	-	-	720	611	904	826	953	892	1138	1070	855
800	-	-	-	-	1030	943	1086	1020	1265	1188	971
1000	-	-	-	-	1154	1058	1216	1149	1420	1337	1079

Current Carrying Capacity
for 0.6/1 kV Armoured XLPE Cables

The Current Carrying Capacity given In the following tables are based on the assumptions shown below:

(1) Max. Conductor Temperature ..... 90°C
(2) Max. Ambient Temperature : In Air ..... 40°C
In Ground ..... 25°C
(3) Ground Thermal Resistivity ..... 1.2°C m/W
(4) Laying Depth : For Voltage up to 1KV 0.5m
(5) Spacing Between Cables Laid: In Flat Formation ..... 2 times of cable overall diameter
In Trefoil ..... with cable touching
(6) For other conditions, the rating factors included should be applied.

COPPER CONDUCTORS Current Carrying Capacity of 600 / 1000V						
	Continuous Current Rating (Unit Amperes)					
Nominal sectional area mm²	In air at 40°C			In the ground 25°C		
	Single conductor 3 cables	Twin conductor	Three and four conductor	Single conductor 3 cables	Twin conductor	Three and four conductor
2.5	36	34	29	44	45	37
4	47	45	38	56	58	49
6	61	57	48	70	75	61
10	85	79	66	94	98	81
16	113	105	88	120	125	100
25	150	140	115	155	165	135
35	181	168	141	190	197	162
50	265	215	178	250	240	200
70	290	265	220	270	290	240
95	347	316	263	320	345	285
120	410	370	300	370	380	325
150	470	430	350	420	450	370
185	530	485	409	465	500	410
240	640	570	480	550	580	480
300	725	680	574	615	650	535
400	845	780	670	740	780	640
500	980	-	-	810	-	-
630	1150	-	-	945	-	-
800	1380	-	-	1100	-	-
1000	1605	-	-	1225	-	-

Short circuit current carrying capacity of XLPE cable

Copper conductor $I = 224 \frac{A}{\sqrt{t}} \sqrt{\ln \frac{234 + \emptyset_1}{234 + \emptyset_0}} = 142 \frac{A}{\sqrt{t}}$

Aluminium conductor $I = 150 \frac{A}{\sqrt{t}} \sqrt{\ln \frac{230 + \emptyset_1}{234 + \emptyset_0}} = 96 \frac{A}{\sqrt{t}}$

I : Short circuit current (A)
A : Cross-sectional area (mm^2)
t : Short circuit duration (sec.)
$\emptyset_0$: Max. permissible continuous operation temp. (90°C)
$\emptyset_1$: Max. permissible temperature at short circuit (250°C)

Rating Factors

Rating Factors for Cables in Ambient Air Temperature

Ambient Air Temperature	20°C	25°C	30°C	35°C	40°C	45°C	50°C
Rating Factors	1.18	1.14	1.10	1.05	1.00	0.95	0.89

Rating Factors for Cables in Ground Temperature

Ground Temperature	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C
Rating Factors	1.11	1.07	1.04	1.00	0.96	0.92	0.88	0.83

Rating Factors for Thermal Resistivity Ground

Conductor size (mm^2)	Thermal Resistivity (°Cm/W)						
	0.8	0.9	1.0	1.5	2.0	2.5	3.0
Single-core cables							
Up to 150	1.16	1.11	1.07	0.91	0.81	0.73	0.67
From 185 to 400	1.17	1.12	1.07	0.90	0.80	0.72	0.66
From 500 to 1200	1.18	1.13	1.08	0.90	0.79	0.71	0.65
Multicore cables							
Up to 16	1.09	1.06	1.04	0.95	0.86	0.79	0.74
From 25 to 150	1.14	1.10	1.07	0.93	0.84	0.76	0.70
From 185 to 400	1.16	1.11	1.07	0.92	0.82	0.74	0.68

Rating Factors for Depth of Laying

Depth of Laying (m)	0.6/1 kV cables		
	up to 50 mm^2	70 mm^2 to 300 mm^2	above 300 mm^2
0.50	1.00	1.00	1.00
0.60	0.99	0.98	0.97
0.80	0.97	0.96	0.94
1.00	0.95	0.94	0.92
1.25	0.94	0.92	0.90
1.50	0.93	0.91	0.89
1.75	0.92	0.89	0.87
2.00	0.91	0.88	0.86
2.50	0.90	0.87	0.85
3.00 or above	0.89	0.86	0.83

Metric Conductor Sizes and Resistances

Normal cross-sectional area	Minimum number of wires in the conductor						Maximum resistance of conductor at 20°C		
	Circular conductor		Circular compacted conductor		Shaped conductor		Annealed copper conductor		Plain aluminium conductor
							Plain wires	Metal-coated wires	
mm^2	Cu	Al	Cu	Al	Cu	Al	ohm/km	ohm/km	ohm/km
1.5	7	-	6	-	-	-	12.1	12.2	-
2.5	7	-	6	-	-	-	7.41	7.56	-
4	7	7	6	-	-	-	4.61	4.70	7.41
6	7	7	6	-	-	-	3.08	3.11	4.61
10	7	7	6	-	-	-	1.83	1.84	3.08
16	7	7	6	6	-	-	1.15	1.16	1.91
25	7	7	6	6	6	6	0.727	0.734	1.20
35	7	7	6	6	6	6	0.524	0.529	0.868
50	19	19	6	6	6	6	0.387	0.391	0.641
70	19	19	12	12	12	12	0.268	0.270	0.443
96	19	19	15	15	15	15	0.193	0.195	0.320
120	37	37	18	15	18	15	0.153	0.154	0.253
150	37	37	18	15	18	15	0.124	0.126	0.206
185	37	37	30	30	30	30	0.0991	0.100	0.164
240	61	61	34	30	34	30	0.0754	0.0762	0.125
300	61	61	34	30	34	30	0.0601	0.0607	0.100
400	61	61	53	53	53	53	0.0470	0.0475	0.0778
500	61	61	53	53	53	53	0.0366	0.0369	0.0605
630	91	91	53	53	53	53	0.0283	0.0286	0.0469
800	91	91	53	53	-	-	0.0221	0.0224	0.0367
1000	91	91	53	53	-	-	0.0176	0.0177	0.0291

Formula for Electrical Calculation

To calculate	Given	D. C.	A. C. single phase	A. C. 3 phase
Current (A)	kW	$A = \frac{1000 \times kW}{V}$	$A = \frac{1000 \times kW}{V \times pf}$	$A = \frac{1000 \times kW}{1.73 \times V \times pf}$
Current (A)	kVA	-	$A = \frac{1000 \times kVA}{V}$	$A = \frac{1000 \times kVA}{1.73 \times V}$
Current (A)	hp	$A = \frac{746 \times hp}{V \times eff}$	$A = \frac{746 \times hp}{V \times eff \times pf}$	$A = \frac{746 \times hp}{1.73 \times V \times eff \times pf}$
Power (kW)	VA	$kW = \frac{A \times V}{1000}$	$kW = \frac{A \times V \times pf}{1000}$	$kW = \frac{1.73 \times A \times V \times pf}{1000}$
Apparent Power (A)	kVA	-	$kVA = \frac{A \times V}{1000}$	$A = \frac{1.73 \times A \times V}{1000}$

pf : Power factor of equipment or system under consideration
eff : Efficiency of motor or machinery
V : Line voltage

Wire Gauges

Gauge System		Diameter		Cross-sectional area			Weight of copper	Weight of aluminium
A. W. G.	S. W. G.	mm	mil	mm²	sq. mil	CM	kg/km	kg/km
6/0	-	14.732	580	170.5	264200	336400	1515	460.2
5/0	-	13.119	516.5	135.2	209500	266800	1202	365.0
-	7/0	12.700	500	126.7	196400	250000	1126	342.0
-	6/0	11.786	464	109.1	169100	215300	969.9	294.6
4/0	-	11.684	460	107.2	166200	211600	953.2	289.5
-	5/0	10.973	432	94.56	146600	186600	840.6	255.3
3/0	-	10.404	409.6	85.01	131800	167800	755.8	229.5
-	4/0	10.160	400	81.07	125700	160000	720.7	218.9
-	3/0	9.449	372	70.12	108700	138400	623.4	189.3
2/0	-	9.266	364.8	67.43	104500	133100	599.5	182.1
-	2/0	8.839	348	61.36	95110	121100	545.5	165.7
0	-	8.252	324.9	53.49	82910	105600	475.5	144.4
-	0	8.230	324	53.19	82450	105000	472.9	143.6
-	1	7.620	300	45.60	70690	90000	405.4	123.1
1	-	7.348	289.3	42.41	65730	83690	377.0	114.5
-	2	7.011	276	38.60	59830	76180	343.2	104.2
2	-	6.544	257.6	33.63	52120	66370	299.0	90.80
-	3	6.401	252	32.18	49880	63500	286.1	86.88
-	4	5.893	232	27.27	42270	53820	242.4	73.63
3	-	5.827	229.4	26.66	41330	52620	237.0	71.99
-	5	5.385	212	22.77	35300	44940	202.4	61.49
4	-	5.189	204.3	21.15	32780	41730	188.0	57.10
-	6	4.877	192	18.68	28950	36860	166.1	50.43
5	-	4.621	181.9	16.77	26000	33100	149.1	45.28
-	7	4.470	176	15.69	24320	30970	139.5	42.37
6	-	4.115	162	13.30	20620	26250	118.3	35.92
-	8	4.064	160	12.97	20110	25600	115.3	35.02
7	-	3.665	144.3	10.55	16350	20820	93.78	28.48
-	9	3.658	144	10.50	16290	20740	93.41	28.37
8	-	3.264	128.5	8.367	12970	16510	74.39	22.59
-	10	3.251	128	8.302	12870	16380	73.80	22.42
-	11	2.946	116	6.818	10570	13460	60.61	18.41
9	-	2.906	114.4	6.633	10280	13090	58.96	17.91
-	12	2.642	104	5.481	8495	10820	48.72	14.80
10	-	2.588	101.9	5.261	8155	10380	46.77	14.21
-	13	2.337	92	4.289	6648	8465	38.13	11.58
11	-	2.305	90.74	4.172	6467	8234	37.09	11.26
12	-	2.053	80.81	3.309	5129	6531	29.42	8.935
-	14	2.032	80	3.243	5027	6400	28.83	8.756
-	15	1.829	72	2.627	4072	5185	23.35	7.093
13	-	1.828	71.96	2.624	4067	5178	23.33	7.085
14	-	1.628	84.08	2.081	3225	4107	18.50	5.618
-	16	1.626	64	2.075	3217	4096	18.45	5.604
15	-	1.450	57.07	1.650	2558	3257	14.67	4.456
-	17	1.422	56	1.589	2463	3136	14.13	4.290
16	-	1.291	50.82	1.309	2029	2583	11.63	3.534
-	18	1.219	48	1.167	1810	2304	10.38	3.152
17	-	1.150	45.26	1.0380	1609	2048	9.226	2.802
18	-	1.024	40.3	0.8227	1275	1624	7.314	2.221
-	19	1.016	40	0.8107	1257	1600	7.207	2.189
-	20	0.9144	36	0.6567	1018	1296	5.838	1.773
19	-	0.9117	35.89	0.6529	1012	1288	5.804	1.763
-	21	0.8128	32	0.5189	804.2	1024	4.613	1.401
20	-	0.8116	31.95	0.5174	801.9	1021	4.600	1.397
21	-	0.7230	28.46	0.4105	636.3	810.1	3.649	1.108

Gauge System		Diameter		Cross-sectional area			Weight of copper	Weight of aluminium
A. W. G.	S. W. G.	mm	mil	mm²	sq. mil	CM	kg/km	kg/km
-	22	0.7112	28	0.3973	615.8	784.0	3.532	1.0730
22	-	0.6439	25.35	0.3256	504.7	642.6	2.895	0.8792
-	23	0.6096	24	0.2919	452.4	576.0	2.595	0.7880
23	-	0.5733	22.57	0.2581	400.1	509.4	2.295	0.6970
-	24	0.5588	22	0.2452	380.1	484.0	2.180	0.6622
24	-	0.5106	20.1	0.2047	317.3	404.0	1.820	0.5528
-	25	0.5080	20	0.2027	314.2	400.0	1.802	0.5472
-	26	0.4572	18	0.1642	254.5	324.0	1 .460	0.4433
25	-	0.4546	17.9	0.1623	251 .6	320.4	1.443	0.4383
-	27	0.4166	16.4	0.1363	211.3	269.0	1.212	0.3680
26	-	0.4049	15.94	0.1288	199.8	254.1	1.145	0.3477
-	28	0.3759	14.8	0.1110	172.0	219.0	0.9867	0.2997
27	-	0.3606	14.2	0.1021	158.3	201.5	0.9077	0.2757
-	29	0.3454	13.6	0.09372	145.3	185.0	0.8332	0.2530
28 -		0.3211	12.64	0.08097	125.5	159.8	0.7198	0.2186
-	30	0.3150	12.4	0.17791	120.8	153.8	0.6926	0.2104
-	31	0.2947	11.6	0.06819	105.7	134.6	0.6062	0.1841
29	-	0.2860	11.26	0.06422	99.54	126.7	0.5709	0.1734
-	32	0.2743	10.8	0.05908	91.58	116.6	0.5252	0.1595
30	-	0.2548	10.03	0.05097	79.01	100.6	0.4531	0.1376
-	33	0.2540	10	0.05067	78.54	100.0	0.4505	0.1368
-	34	0.2337	9.2	0.04289	66.48	84.64	0.3813	0.1158
31	-	0.2268	8.928	0.04039	62.60	79.71	0.3590	0.1090
-	35	0.2134	8.4	0.03575	55.42	70.56	0.3178	0.09653
32	-	0.2019	7.95	0.03203	49.64	63.20	0.2847	0.08647
-	36	0.1930	7.6	0.02927	45.36	57.76	0.2602	0.07902
33	-	0.1798	7.08	0.02540	39.37	50.13	0.2258	0.06858
-	37	0.1727	6.8	0.02343	36.32	46.24	0.2083	0.06326
34	-	0.1602	6.305	0.02014	31.22	39.75	0.1791	0.05439
-	38	0.1524	6	0.01824	28.27	36.00	0.1622	0.04925
35	-	0.1426	5.615	0.01597	24.76	31.53	0.1420	0.04313
-	39	0.1321	5.2	0.01370	21.24	27.04	0.1218	0.03700
36	-	0.1270	5	0.01267	19.63	25.00	0.1126	0.03420
-	40	0.1219	4.8	0.01167	18.10	23.04	0.1038	0.03152
37	-	0.1131	4.453	0.01005	15.57	19.83	0.08931	0.02713
-	41	0.1118	4.4	0.009810	15.21	19.36	0.08721	0.02649
-	42	0.1016	4	0.008107	12.57	16.00	0.07207	0.02189
38	-	0.1007	3.965	0.007968	12.35	15.72	0.07084	0.02151
-	43	0.09140	3.6	0.006567	10.18	12.96	0.05838	0.01773
39	-	0.08970	3.531	0.006319	9.794	12.47	0.05618	0.01706
-	44	0.08128	3.2	0.005189	8.042	10.24	0.04613	0.01401
40	-	0.07988	3.145	0.005012	7.768	9.891	0.04456	0.01353
41	45	0.07113	2.8	0.003973	6.159	7.842	0.03532	0.01073
42	-	0.06334	2.494	0.003151	4.884	6.219	0.02801	0.008508
-	46	0.06096	2.4	0.002919	4.524	5.760	0.02595	0.007880
43	-	0.05641	2.221	0.002499	3.873	4.932	0.02222	0.006747
-	47	0.05080	2	0.002027	3.142	4.000	0.01802	0.005472
44	-	0.05023	1.978	0.001982	3.072	3.911	0.01762	0.005351
45	-	0.04474	1.761	0.001572	2.436	3.102	0.01397	0.004244
-	46	0.04064	1.6	0.001297	2.011	2.560	0.01153	0.003502
46	-	0.03984	1.568	0.001246	1.932	2.460	0.01108	0.003365
47	-	0.03548	1.397	0.0009884	1.532	1.951	0.008787	0.002669
48	-	0.03159	1.244	0.0007838	1.215	1.547	0.006968	0.002116
-	49	0.03048	1.2	0.0007297	1.131	1.440	0.006487	0.001970
49	-	0.02813	1.108	0.0006216	0.9635	1.227	0.005526	0.001678
-	50	0.02540	1	0.0005067	0.7354	1.000	0.004505	0.001368
50	-	0.02505	0.9863	0.0004929	0.7641	0.9728	0.004382	0.001331

Corporate Data

Company Name	:	Universal Cable (Sarawak) Sdn Bhd
Company No.	:	060048-A
Incorporated	:	9th July 1980
Commencement	:	1981
Certification	:	ISO9001: 2008
Shareholder	:	100% owned by Sarawak Cable Berhad
No. of Employees	:	Approx. 100
Business Activities	:	Manufacturing of power cables & wires

Universal Cable (Sarawak) Sdn Bhd

(Company No. 060048-A)

Kuching Office / Factory

Lot 767, Block 8,
Muara Tebas Land District,
Demak Laut Industrial Estate Phase III,
Jalan Bako, 93050 Kuching,
Sarawak, Malaysia.
Tel : +6 082 433 111
Fax : +6 082 433 311
Website: www.ucssb.com.my

Sabah Office / Warehouse

Lot 35, No. 6, Pusat Industri Kolombong,
Lorong Pusat Industri,
88450 Kota Kinabalu, Sabah, Malaysia.
Tel : +6 088-440 600
Fax : +6 088-440 700

www.ucssb.com.my

QUALITY SYSTEM SIRIM

STANDARDS MALAYSIA ACCREDITED CERTIFICATION BODY
MS ISO/IEC 17021:2006
QS 02121999 CB 01

UKAS QUALITY MANAGEMENT 074

IQNet THE INTERNATIONAL CERTIFICATION NETWORK