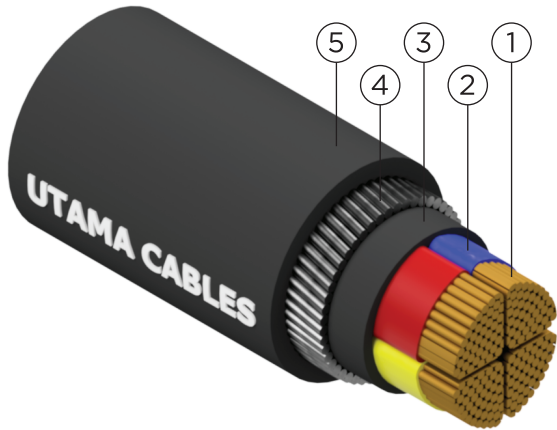


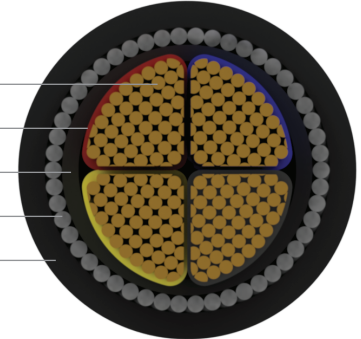


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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE – CU/XLPE/SWA/PVC



- 1. Cu Conductor
- 2. XLPE Insulation
- 3. Bedding
- 4. Steel Wire Armoured
- 5. PVC Outer Sheath



## APPLICATION

XLPE insulated cable with steel wire armour (SWA) suitable for use in power networks, underground, indoor and outdoor applications and also in cable ducting.

## STANDARDS

Design Specification	IEC 60502-1
Conductor	IEC 60228

## CABLE CONSTRUCTION

Conductor	Plain Annealed Copper, Class 2, Stranded Circular, Compacted or Sectored	
Insulation	Cross-linked Polyethylene (XLPE) compound rated 90°C	
Core Identification	Two Cores	Red and Black
	Three Cores	Red, Yellow and Blue
	Four Cores	Red, Yellow, Blue and Black
Assembly	2, 3 or 4 Cores	Insulated conductors are laid up together, if necessary, filled with non-hygroscopic material compatible with the insulation and cover with layer of PVC bedding which may be an integral part of the filling
Bedding	Polyvinyl Chloride (PVC) compound, PVC/ST-2	
Bedding Colour	Black	
Armour	Galvanised Steel Wire Armoured (SWA)	
Outer Sheath	Polyvinyl Chloride (PVC) compound, PVC/ST-2	
Outer Sheath Colour	Black	



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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE – CU/XLPE/SWA/PVC

## ELECTRICAL CHARACTERISTICS

Operating Voltage, U <sub>0</sub> /U	600/1000 V	Test Voltage	3.5kV for 5 minutes
Operating Temperature	-15°C to 90°C	Max Conductor Temperature	90°C

## CU/XLPE/SWA/PVC - 2 CORE

Conductor		Number / Wire Diameter (No./mm)	Nominal Thickness of Insulation (mm)	Armour Wire Diameter (mm)	Nominal Thickness of Sheath (mm)	Approx. Overall Diameter (mm)	Approx. Cable Weight (kg/km)
Nominal Cross-Sectional Area (mm <sup>2</sup> )	Shape						
16	c.c	7/1.70	0.70	1.25	1.80	20.90	860
25	c.c	7/2.14	0.90	1.60	1.80	24.80	1280
35	s.s	19/1.53	0.90	1.60	1.80	22.70	1525
50	s.s	19/1.78	1.00	1.60	1.80	25.00	1870
70	s.s	19/2.14	1.10	1.60	2.00	28.60	2450
95	s.s	19/2.52	1.10	2.00	2.10	32.60	3310
120	s.s	37/2.03	1.20	2.00	2.20	35.50	4010
150	s.s	37/2.25	1.40	2.00	2.30	38.00	4740
185	s.s	37/2.52	1.60	2.50	2.50	43.80	6120
240	s.s	61/2.25	1.70	2.50	2.70	48.00	7650
300	s.s	61/2.52	1.80	2.50	2.80	52.30	9115

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



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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE – CU/XLPE/SWA/PVC

## CU/XLPE/SWA/PVC - 3 CORE

Conductor		Number / Wire Diameter (No./mm)	Nominal Thickness of Insulation (mm)	Armour Wire Diameter (mm)	Nominal Thickness of Sheath (mm)	Approx. Overall Diameter (mm)	Approx. Cable Weight (kg/km)
Nominal Cross-Sectional Area (mm <sup>2</sup> )	Shape						
16	c.c	7/1.70	0.70	1.25	1.80	21.60	1030
25	c.c	7/2.14	0.90	1.60	1.80	25.70	1650
35	s.s	19/1.53	0.90	1.60	1.80	26.10	2015
50	s.s	19/1.78	1.00	1.60	1.90	29.00	2520
70	s.s	19/2.14	1.10	2.00	2.00	34.40	3535
95	s.s	19/2.52	1.10	2.00	2.20	40.60	4565
120	s.s	37/2.03	1.20	2.00	2.30	42.00	5510
150	s.s	37/2.25	1.40	2.50	2.50	48.00	6990
185	s.s	37/2.52	1.60	2.50	2.60	50.80	8120
240	s.s	61/2.25	1.70	2.50	2.80	56.60	10500
300	s.s	61/2.52	1.80	2.50	3.00	61.70	12695

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



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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE – CU/XLPE/SWA/PVC

## CU/XLPE/SWA/PVC - 4 CORE

Conductor		Number / Wire Diameter (No./mm)	Nominal Thickness of Insulation (mm)	Armour Wire Diameter (mm)	Nominal Thickness of Sheath (mm)	Approx. Overall Diameter (mm)	Approx. Cable Weight (kg/km)
Nominal Cross-Sectional Area (mm <sup>2</sup> )	Shape						
16	c.c	7/1.70	0.70	1.60	1.80	24.00	1530
25	c.c	7/2.14	0.90	1.60	1.80	27.80	2030
35	s.s	19/1.53	0.90	1.60	1.90	29.00	2525
50	s.s	19/1.78	1.00	1.60	2.00	32.60	3160
70	s.s	19/2.14	1.10	2.00	2.20	38.60	4555
95	s.s	19/2.52	1.10	2.00	2.30	42.30	5795
120	s.s	37/2.03	1.20	2.50	2.50	45.60	7485
150	s.s	37/2.25	1.40	2.50	2.60	50.10	8925
185	s.s	37/2.52	1.60	2.50	2.80	54.60	10830
240	s.s	61/2.25	1.70	2.50	3.00	61.20	13720
300	s.s	61/2.52	1.80	2.50	3.20	65.00	16585
400	s.s	61/2.85	2.00	3.15	3.50	78.90	21580

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



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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE – CU/XLPE/SWA/PVC

## Electrical Characteristic – XLPE/SWA/PVC Steel Wire Armoured Cables

Table A7.1: Current Carrying Capacity

Conductor Cross-Sectional Area (mm <sup>2</sup> )	Reference Method C (Clipped Direct)		Reference Method E (In Free Air or On A Perforated Cable Tray, Horizontal or Vertical)		Reference Method D (Direct In Ground or In Ducting In Ground, In or Around Buildings)	
	One 2-Core Cable, Single-Phase AC or DC (Amp)	One 3 or 4-Core Cable, Three-Phase AC (Amp)	One 2-Core Cable, Single-Phase AC or DC (Amp)	One 3 or 4-Core Cable, Three-Phase AC (Amp)	One 2-Core Cable, Single-Phase AC or DC (Amp)	One 3 or 4-Core Cable, Three-Phase AC (Amp)
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	28
4	49	42	52	44	43	36
6	62	53	66	56	53	44
10	85	73	90	78	71	58
16	110	94	115	99	91	75
25	146	124	152	131	116	96
35	180	154	188	162	139	115
50	219	187	228	197	164	135
70	279	238	291	251	203	167
95	338	289	354	304	239	197
120	392	335	410	353	271	223
150	451	386	472	406	306	251
185	515	441	539	463	343	281
240	607	520	636	546	395	324
300	698	599	732	628	446	365
400	787	673	847	728	-	-

Ambient Air Temp 30°C

Ambient Ground Temp 20°C

Conductor Operating Temp 70°C

Soil Thermal Resistivity (cable buried in ground): 2.5 K.m/W

**NOTE:**

1. Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature, see Regulation 512.1.2 of the 18<sup>th</sup> Edition of IEE Wiring Regulations).
2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables must be used (see also Regulation 523.1 of the 18<sup>th</sup> Edition of IEE Wiring Regulations).
3. The above table is in accordance with 18<sup>th</sup> Edition of IEE Wiring Regulations.



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# XLPE INSULATED, PVC SHEATHED ARMoured CABLE — CU/XLPE/SWA/PVC

**Table A7.2: Voltage Drop**

Conductor Cross-Sectional Area (mm <sup>2</sup> )	2-Core Cable, DC (mV/A/m)	2-Core Cable, Single-Phase AC (mV/A/m)			3, 4-Core Cable, Three-Phase AC (mV/A/m)		
		r	x	z	r	x	z
1.5	31.000						
2.5	19.000						
4	12.000						
6	7.900						
10	4.700						
16	2.900						
25	1.850	1.850	0.160	1.900	1.600	0.140	1.650
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165

Ambient Air Temp 30°C

Ambient Ground Temp 20°C

Conductor Operating Temp 70°C

Soil Thermal Resistivity (cable buried in ground): 2.5 K.m/W

**NOTE:**

- Correction factors for ambient temperature and group installation, please refer Derating Factor section.
- r = Resistive Component, x = Reactive Component, z = Impedance Value  
The above table is in accordance with the 18<sup>th</sup> Edition of IEE Wiring Regulations.
- For cables having conductors of 16mm<sup>2</sup> or less cross sectional area their inductances can be ignored and (mV/A/m)<sub>r</sub> values only are tabulated. For cables having conductors greater than 16mm<sup>2</sup>, cross sectional area the impedance values are given as (mV/A/m)<sub>z</sub>, together with the resistive component (mV/A/m)<sub>r</sub> and the reactive component (mV/A/m)<sub>x</sub>.  
The above paragraph is extracted from Appendix 4 of the 18<sup>th</sup> Edition of IEE Wiring Regulations.

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.