

## 600/1000V, XLPE Insulated and Lead Sheathed Cables according to IEC 60502-1



Single core(unarmoured)

Two core(unarmoured)

Three core(unarmoured)

Three core +1(unarmoured)

Four core(unarmoured)

Single core(armoured)

Two core(armoured)

Three core(armoured)

Three core +1(armoured)

Four core(armoured)



# 600/1000V, XLPE Insulated and Lead Sheathed Cables according to IEC 60502-1

## Application:

These cables are used for electricity supply in low voltage installation system, They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where there is no risk of mechanical damage. The lead sheath brings an enhanced resistance to aromatic hydrocarbons.

## Construction

**Conductors** Conductors shall be Round Stranded (Non-compacted or Compacted) or shaped, Class 2 as per IEC 60228. For smaller sizes up to and including 4 mm<sup>2</sup>, Solid Conductors, Class 1 to IEC 60228 can also be provided based on special request.

**Insulation** XLPE Insulation material and thickness shall be as per IEC 60502-1 rated for 90°C continuous operation.

PVC Insulation material and thickness shall be as per IEC 60502-1 and BS 6346. PVC material shall be Type A as per IEC 60502-1 or T11 as per BS 6346.

PVC Insulation material as per SASO 1694 rated for 85°C continuous operation is also available upon special request.

**Colour Code** Colour Code (1) :

1 Core :	Red or Black
2 Cores :	Red, Black
3 Cores :	Red, Yellow, Blue
4 Cores :	Red, Yellow, Blue, Black
5 Cores :	Red, Yellow, Blue, Black, Green
Above 5 Cores :	Black Cores with White numerals

Colour Code (2) :

1 Core :	Brown or Blue
2 Cores :	Brown or Blue
3 Cores :	Brown, Black, Grey
4 Cores :	Blue, Brown, Black, Grey
5 Cores :	Green/Yellow, Blue, Brown, Black, Grey
Above 5 Cores :	Black Cores with White numerals



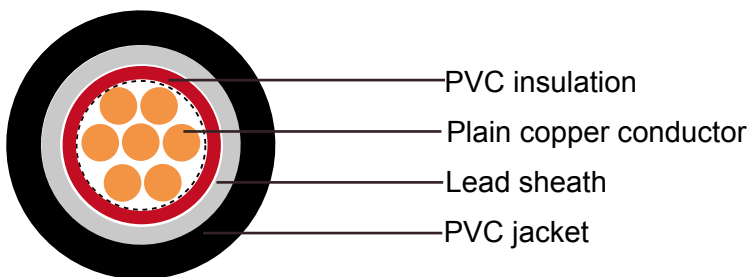
## XLPE Insulation with Lead Sheath

### IEC60502-1

- Assembly / Inner Sheath** Two, Three or Four insulated conductors are laid-up together with non-hygroscopic fillers compatible with the insulation material and the assembly is bedded with an extruded layer of PVC.
- Lead Sheath** Extruded lead Alloy Type "E" to BS 12548. Thickness of lead shall be as per IEC 60502-1. Cables with other thickness of Lead Sheath can also be provided based on specific request.
- Armour** Galvanized Steel Wires in accordance with IEC 60502-1 or BS 6346 or BS 5467 laid helically over PVC bedding as per requirement.  
Galvanized Steel Tapes applied helically over PVC bedding in accordance with IEC 60502-1
- Outer Sheath** Outer sheath shall be of Extruded PVC Type ST2 as per IEC 60502-1 or Type 9 as BS 6346/5467.  
Special type of PVC sheathing material such as Fire Retardant PVC, Anti-Termite PVC, Anti-Rodent PVC, Sunlight resistant PVC, Oil Resistant PVC are available on special request. Also, special sheathing materials such as LLDPE, MDPE, HDPE, LSF, CPE are available on request.

## Cable Parameters:

### Single core(unarmoured)

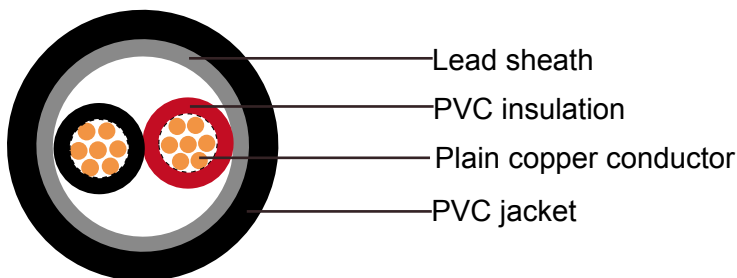


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
1x10 rm	4	0.7	1.2	1.4	16	715
1x16 rm	5	0.7	1.2	1.4	17	825
1x25 rm	6.3	0.9	1.2	1.4	19	1025
1x35 rm	7.4	0.9	1.2	1.4	20	1150
1x50 rm	8.8	1	1.2	1.4	21	1350
1x70 rm	10.6	1.1	1.2	1.5	23	1675



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
1x95 rm	12.4	1.1	1.2	1.5	25	2025
1x120 rm	14	1.2	1.2	1.6	27	2425
1x150 rm	15.5	1.4	1.3	1.7	29	2800
1x185 rm	17.4	1.6	1.4	1.7	31	3400
1x240 rm	20.3	1.7	1.4	1.8	35	4250
1x300 rm	22.7	1.8	1.5	1.9	37	5000
1x400 rm	25.4	2	1.6	2	42	6250
1x500 rm	28.8	2.2	1.7	2.2	46	7725
1x630 rm	30.4	2.4	1.8	2.3	48	9275

### Two cores(unarmoured)



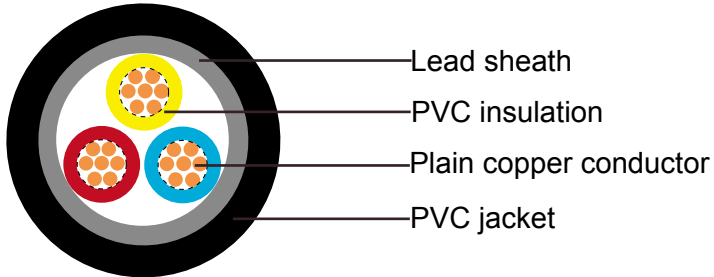
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
2x2.5 rm	2	0.7	1.2	1.8	18	825
2x4 rm	2.6	0.7	1.2	1.8	19	925
2x6 rm	3.1	0.7	1.2	1.8	20	1025
2x10 rm	4	0.7	1.2	1.8	22	1225
2x16 rm	5	0.7	1.2	1.8	24	1500
2x25 rm	6.3	0.9	1.2	1.8	27	1925
2x35 rm	7.4	0.9	1.2	1.8	29	2300
2x50 rm	8.8	1	1.3	1.8	33	2875



## XLPE Insulation with Lead Sheath

**IEC60502-1**

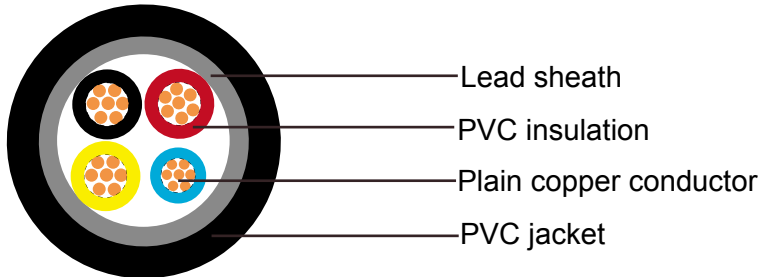
### Three cores(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
Round conductor						
3x1.5 rm	1.6	0.7	1.2	1.8	17	790
3x2.5 rm	2	0.7	1.2	1.8	18	875
3x4 rm	2.6	0.7	1.2	1.8	19	1000
3x6 rm	3.1	0.7	1.2	1.8	21	1125
3x10 rm	4	0.7	1.2	1.8	23	1375
3x16 rm	5	0.7	1.2	1.8	25	1700
3x25 rm	6.3	0.9	1.2	1.8	28	2225
3x35 rm	7.4	0.9	1.3	1.8	31	2650
3x50 rm	8.8	1	1.4	1.9	35	3350
3x70 rm	10.6	1.1	1.5	2	40	4425
3x95 rm	12.4	1.1	1.6	2.1	44	5625
3x120 rm	14	1.2	1.7	2.3	49	6850
3x150 rm	15.5	1.4	1.8	2.4	54	8250
3x185 rm	17.4	1.6	1.9	2.6	59	10025
3x240 rm	20.3	1.7	2.1	2.8	67	12900
3x300 rm	22.7	1.8	2.2	2.9	73	15550
Sectoral conductor						
3x50 sm	-	1	1.3	1.9	32	3000
3x70 sm	-	1.1	1.4	2	36	4000
3x95 sm	-	1.1	1.5	2.1	40	5075
3x120 sm	-	1.2	1.6	2.3	44	6175
3x150 sm	-	1.4	1.7	2.4	48	7525
3x185 sm	-	1.6	1.8	2.6	53	9125
3x240 sm	-	1.7	2	2.8	59	11650
3x300 sm	-	1.8	2.1	2.9	64	14025

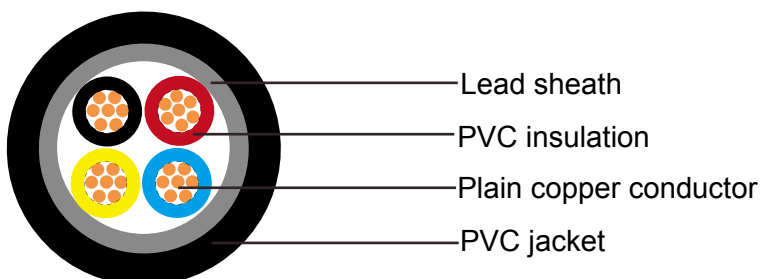


#### Three cores+1(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation Thickness		Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
	mm <sup>2</sup>	(3) mm	(1) mm	(3) mm				
3x10 rm+6	5	3.1	0.7	0.7	1.2	1.8	23	1475
3x16 rm+10	6.3	4	0.7	0.7	1.2	1.8	26	1850
3x25 rm+16	7.4	5	0.9	0.7	1.2	1.8	29	2425
3x35 sm+16	-	5	0.9	0.7	1.2	1.8	30	2575
3x50 sm+25	-	6.3	1	0.9	1.3	1.9	33	3325
3x70 sm+35	-	7.4	1.1	0.9	1.4	2	38	4450
3x95 sm+50	-	8.8	1.1	1	1.5	2.2	42	5675
3x120 sm+70	-	10.6	1.2	1.1	1.6	2.3	46	6975
3x150 sm+70	-	10.6	1.4	1.1	1.7	2.4	50	8325
3x185 sm+95	-	12.4	1.6	1.1	1.9	2.6	56	10400
3x240 sm+120	-	14	1.7	1.2	2	2.8	62	13025
3x300 sm+150	-	15.5	1.8	1.4	2.2	3	67	15950

#### Four cores(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
4x1.5 rm	1.6	0.7	1.2	1.8	18	850

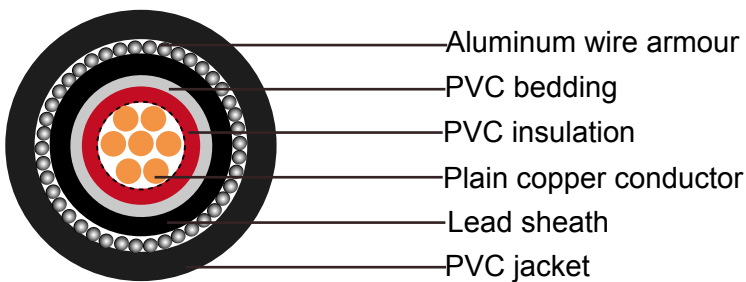


## XLPE Insulation with Lead Sheath

### IEC60502-1

Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km
4x2.5 rm	2	0.7	1.2	1.8	19	950
4x4 rm	2.6	0.7	1.2	1.8	20	1100
4x6 rm	3.1	0.7	1.2	1.8	22	1250
4x10 rm	4	0.7	1.2	1.8	24	1550
4x16 rm	5	0.7	1.2	1.8	26	1950
4x25 rm	6.3	0.9	1.3	1.8	31	2700
4x35 sm	-	0.9	1.2	1.8	31	2800
4x50 sm	-	1	1.4	2	35	3700
4x70 sm	-	1.1	1.5	2.1	40	4950
4x95 sm	-	1.1	1.6	2.3	44	6350
4x120 sm	-	1.2	1.7	2.4	48	7750
4x150 sm	-	1.4	1.8	2.6	53	9425
4x185 sm	-	1.6	2	2.7	58	11575
4x240 sm	-	1.7	2.2	3	65	14800
4x300 sm	-	1.8	2.3	3.2	71	17900

### Single core( aluminum wire armoured)

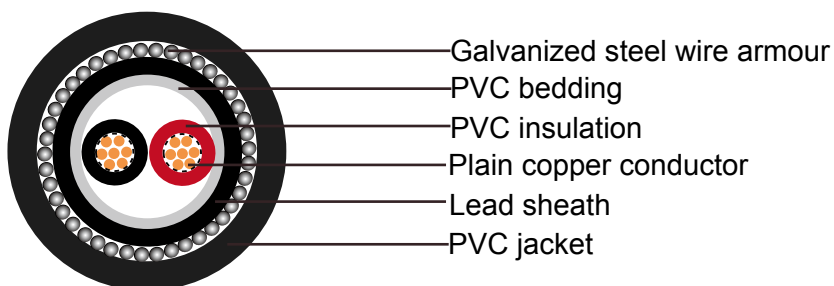


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal dia. of Alum. wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km	Kg/Km
1x35 rm	7.4	0.9	1.2	1.3	1.8	24	1450
1x50 rm	8.8	1	1.2	1.3	1.8	26	1750
1x70 rm	10.6	1.1	1.2	1.6	1.8	28	2075
1x95 rm	12.4	1.1	1.2	1.6	1.8	30	2450
1x120 rm	14	1.2	1.2	1.6	1.8	32	2900



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal dia. of Alum. wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km	Kg/Km
1x150 rm	15.5	1.4	1.3	1.6	1.9	34	3300
1x185 rm	17.4	1.6	1.4	1.6	2	37	3950
1x240 rm	20.3	1.7	1.4	2	2.1	41	5000
1x300 rm	22.7	1.8	1.5	2	2.1	44	5825
1x400 rm	25.4	2	1.6	2	2.3	48	7150
1x500 rm	28.8	2.2	1.7	2.5	2.4	54	8900
1x630 rm	30.4	2.4	1.8	2.5	2.6	57	10600

### Two cores(Galvanized steel wire armoured)



Nominal Cross Section	Nominal Diameter of Conductor	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal dia. of Steel wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km	Kg/Km
2x2.5 rm	2	0.7	1.2	1.3	1.8	22	1325
2x4 rm	2.6	0.7	1.2	1.3	1.8	23	1450
2x6 rm	3.1	0.7	1.2	1.3	1.8	24	1600
2x10 rm	4	0.7	1.2	1.6	1.8	27	2025
2x16 rm	5	0.7	1.2	1.6	1.8	29	2350
2x25 rm	6.3	0.9	1.2	1.6	1.8	32	2900
2x35 rm	7.4	0.9	1.2	1.6	1.9	35	3350
2x50 rm	8.8	1	1.3	2	2	39	4375

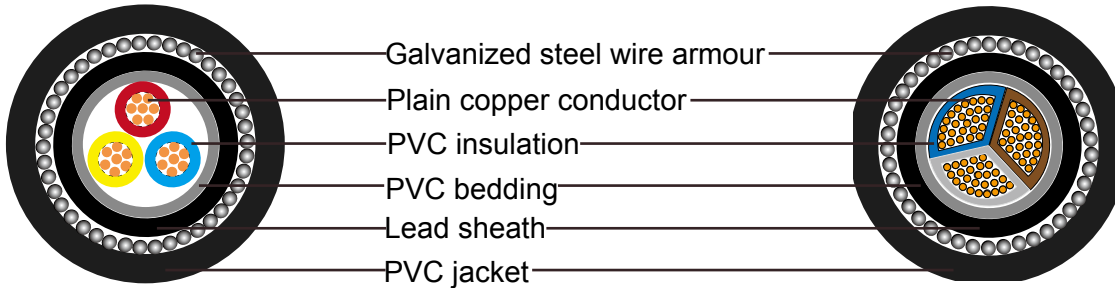




## XLPE Insulation with Lead Sheath

**IEC60502-1**

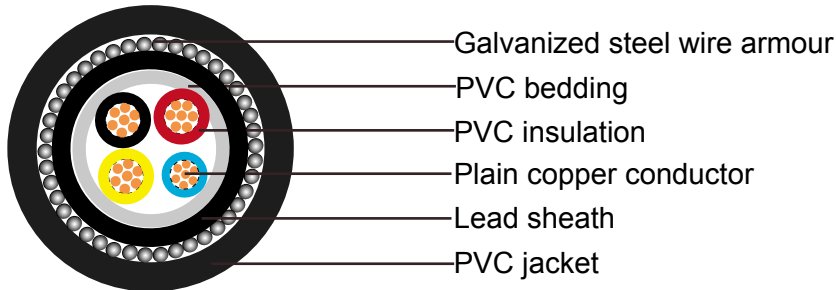
Three cores(Galvanized steel wire armoured)



Nominal Cross Section	Nominal Diameter of Conductor	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal dia. of Steel wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km	Kg/Km
Round conductor							
3x1.5 rm	1.6	0.7	1.2	1.3	1.8	22	1275
3x2.5 rm	2	0.7	1.2	1.3	1.8	23	1400
3x4 rm	2.6	0.7	1.2	1.3	1.8	24	1550
3x6 rm	3.1	0.7	1.2	1.3	1.8	25	1725
3x10 rm	4	0.7	1.2	1.6	1.8	28	2175
3x16 rm	5	0.7	1.2	1.6	1.8	30	2575
3x25 rm	6.3	0.9	1.2	1.6	1.9	34	3250
3x35 rm	7.4	0.9	1.3	1.6	1.9	36	3750
3x50 rm	8.8	1	1.4	2	2.1	41	4900
3x70 rm	10.6	1.1	1.5	2	2.2	47	6225
3x95 rm	12.4	1.1	1.6	2.5	2.4	51	7650
3x120 rm	14	1.2	1.7	2.5	2.5	57	9550
3x150 rm	15.5	1.4	1.8	2.5	2.7	62	11300
3x185 rm	17.4	1.6	1.9	2.5	2.8	68	13375
3x240 rm	20.3	1.7	2.1	2.5	3.1	76	16700
3x300 rm	22.7	1.8	2.2	2.5	3.2	82	19725
Sectoral conductor							
3x50 sm	-	1	1.3	2	2.1	39	4450
3x70 sm	-	1.1	1.4	2	2.2	43	5650
3x95 sm	-	1.1	1.5	2	2.4	47	6900
3x120 sm	-	1.2	1.6	2.5	2.5	52	8575
3x150 sm	-	1.4	1.7	2.5	2.7	57	10275
3x185 sm	-	1.6	1.8	2.5	2.8	61	12100
3x240 sm	-	1.7	2	2.5	3	67	14975
3x300 sm	-	1.8	2.1	2.5	3.2	73	17700

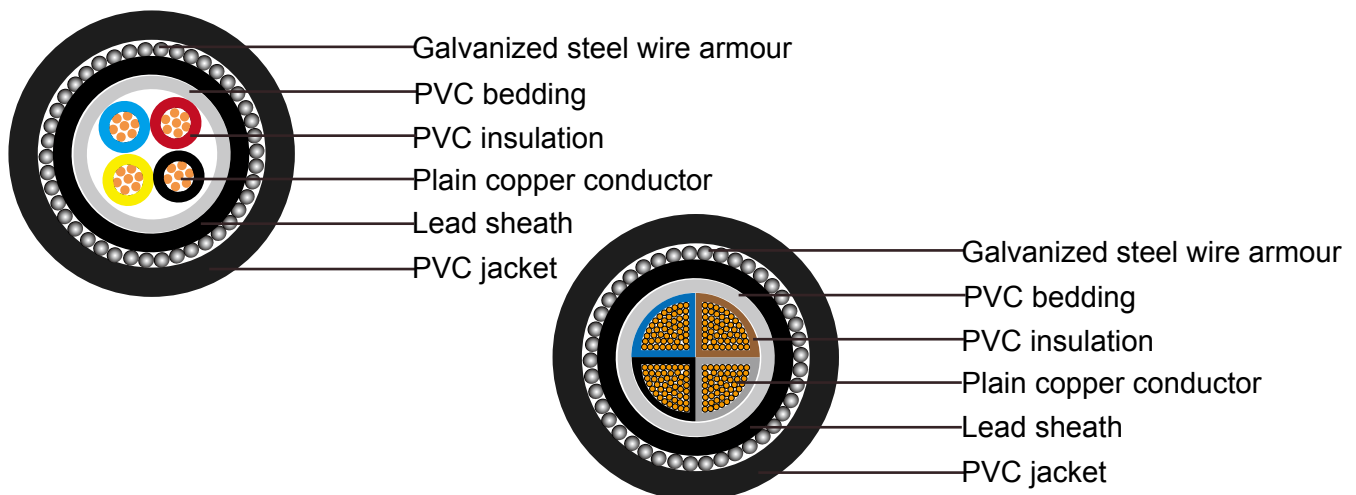


### Three cores+1(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation Thickness		Nominal Lead Sheath Thickness	Nominal dia. of Steel Wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
	mm <sup>2</sup>	(3) mm	(1) mm	(3) mm					
3x10 rm+6	5	3.1	0.7	0.7	1.2	1.8	1.6	29	2325
3x16 rm+10	6.3	4	0.7	0.7	1.2	1.8	1.6	31	2775
3x25 rm+16	7.4	5	0.9	0.7	1.2	1.9	1.6	35	3475
3x35 sm+16	-	5	0.9	0.7	1.2	2	1.6	35	3650
3x50 sm+25	-	6.3	1	0.9	1.3	2.1	2	40	4825
3x70 sm+35	-	7.4	1.1	0.9	1.4	2.3	2	45	6175
3x95 sm+50	-	8.8	1.1	1	1.5	2.4	2.5	50	8025
3x120 sm+70	-	10.6	1.2	1.1	1.6	2.6	2.5	54	9575
3x150 sm+70	-	10.6	1.4	1.1	1.7	2.7	2.5	59	11175
3x185 sm+95	-	12.4	1.6	1.1	1.9	2.9	2.5	64	13575
3x240 sm+120	-	14	1.7	1.2	2	3.1	2.5	70	16525
3x300 sm+150	-	15.5	1.8	1.4	2.2	3.4	3.15	78	20800

### Four cores(Galvanized steel wire armoured)





Nominal Cross Section	Nominal Diameter of Conductor	Nominal Insulation Thickness	Nominal Lead Sheath Thickness	Nominal dia. of Steel wire armour	Nominal PVC Sheath Thickness	Overall Diameter (Approx.)	Weight of Cable (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	Kg/Km	Kg/Km
4x1.5 rm	1.6	0.7	1.2	1.3	1.8	23	1350
4x2.5 rm	2	0.7	1.2	1.3	1.8	24	1500
4x4 rm	2.6	0.7	1.2	1.3	1.8	25	1700
4x6 rm	3.1	0.7	1.2	1.6	1.8	27	2050
4x10 rm	4	0.7	1.2	1.6	1.8	29	2425
4x16 rm	5	0.7	1.2	1.6	1.8	32	2875
4x25 rm	6.3	0.9	1.3	1.6	1.9	36	3800
4x35 sm	-	0.9	1.2	2	2.1	38	4200
4x50 sm	-	1	1.4	2	2.2	42	5300
4x70 sm	-	1.1	1.5	2	2.3	46	6775
4x95 sm	-	1.1	1.6	2.5	2.5	52	8800
4x120 sm	-	1.2	1.7	2.5	2.7	57	10500
4x150 sm	-	1.4	1.8	2.5	2.9	62	12450
4x185 sm	-	1.6	2	2.5	3	67	14950
4x240 sm	-	1.7	2.2	2.5	3.3	74	18550
4x300 sm	-	1.8	2.3	3.2	3.5	81	22900