

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



Single core(unarmoured)

Two core(unarmoured)

Three core(unarmoured)

Three core +1(unarmoured)

Four core(unarmoured)

Multi- core(unarmoured)

Single core(armoured)

Two core(armoured)

Three core(armoured)

Three core +1(armoured)

Four core(armoured)



# 600/1000V, XLPE Insulated 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.

## Construction:

**Conductors** The conductors shall be either of Class 1 or Class 2 of plain or metal-coated annealed copper or of plain aluminium or aluminium alloy, or of Class 5 of plain or metal-coated copper in accordance with IEC 60228.

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

**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, 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

Other colours can be manufactured upon request.



### Assembly / Inner Covering

The inner coverings may be extruded or lapped. For cables with circular cores, except cables with more than five cores, a lapped inner covering shall be permitted only if the interstices between the cores are substantially filled. A suitable binder is permitted before application of an extruded inner covering. The material is compatible with the insulating material. The materials used for inner coverings and fillers shall be suitable for the operating temperature of the cable and compatible with the insulating material. For halogen free cables, the inner covering and fillers shall also be halogen free compound.

### Armour

Aluminum/galvanized steel/steel wires applied helically over the Inner Covering as per IEC 60502-1, or double aluminum/steel tapes and copper/tinned copper wire can also be manufactured upon request.

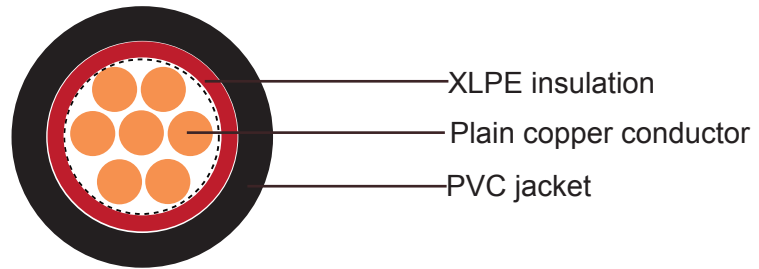
### Outer Sheath

Outer sheath shall be of extruded PVC Type ST1/ST2 as per IEC 60502-1, Polyethylene type ST3/ST7, Halogen free compound ST8, Polychloroprene, chlorosulfonated polyethylene or similar polymers, type SE1 are also available on request.

### Fire Performance of Cable Sheaths

Cables can be supplied with special flame retardant PVC outer sheath to comply with the flame test requirements of IEC 60332-3-22, IEC 60332-3-23 and IEC 60332-3-24, Halogen Free material comply to IEC60754-1/2 and IEC 60684-2.

## Cable Parameters:



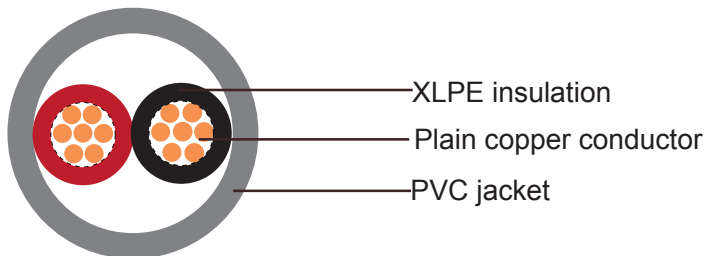
### Single core(unarmoured)

Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
1x1.5	1.4	0.7	1.4	5.6
1x2.5	1.8	0.7	1.4	6.0
1x4	2.3	0.7	1.4	6.5
1x6	2.8	0.7	1.4	7.0
1x10	3.6	0.7	1.4	7.8
1x16	4.5	0.7	1.4	8.7
1x25	5.6	0.9	1.4	10.2
1x35	6.7	0.9	1.4	11.3
1x50	8.0	1	1.4	12.8



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
1x70	9.4	1.1	1.4	14.4
1x95	11.0	1.1	1.5	16.1
1x120	12.4	1.2	1.5	17.8
1x150	13.8	1.4	1.6	19.8
1x185	15.3	1.6	1.6	21.8
1x240	17.5	1.7	1.7	24.4
1x300	19.5	1.8	1.8	26.7
1x400	22.6	2	1.9	30.5
1x500	25.2	2.2	2.0	33.7
1x630	28.3	2.4	2.2	37.4
1x800	31.9	2.6	2.3	41.7
1x1000	35.7	2.8	2.4	46.2

### Two cores(unarmoured)

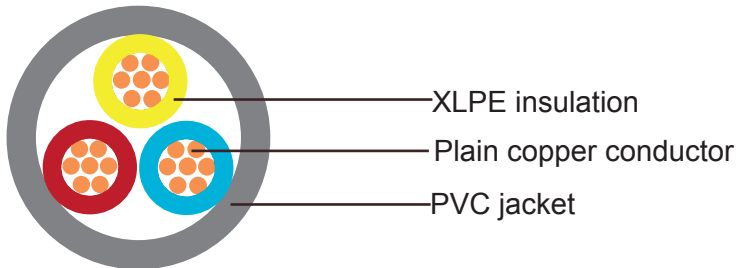


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
2x1.5	1.4	0.7	1.8	9.2
2x2.5	1.8	0.7	1.8	10.0
2x4	2.3	0.7	1.8	11.0
2x6	2.8	0.7	1.8	12.0
2x10	3.6	0.7	1.8	13.6
2x16	4.5	0.7	1.8	15.4
2x25	5.6	0.9	1.8	18.4
2x35	6.7	0.9	1.8	20.6
2x50	8.0	1	1.8	23.6
2x70	9.4	1.1	1.8	26.8
2x95	11.0	1.1	1.9	30.2



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
2x120	12.4	1.2	2.0	33.7
2x150	13.8	1.4	2.2	37.5
2x185	15.3	1.6	2.3	41.6
2x240	17.5	1.7	2.5	46.7
2x300	19.5	1.8	2.6	51.4
2x400	22.6	2	2.9	58.9

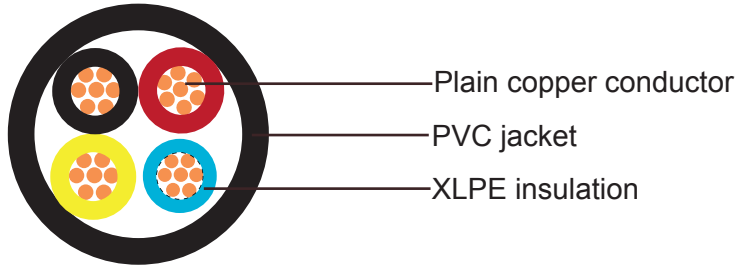
### Three cores(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
3x1.5	1.4	0.7	1.8	9.6
3x2.5	1.8	0.7	1.8	10.5
3x4	2.3	0.7	1.8	11.6
3x6	2.8	0.7	1.8	12.6
3x10	3.6	0.7	1.8	14.4
3x16	4.5	0.7	1.8	16.3
3x25	5.6	0.9	1.8	19.5
3x35	6.7	0.9	1.8	21.9
3x50	8.0	1	1.8	25.1
3x70	9.4	1.1	1.9	28.7
3x95	11.0	1.1	2.0	32.4
3x120	12.4	1.2	2.1	36.1
3x150	13.8	1.4	2.3	40.3
3x185	15.3	1.6	2.4	44.6
3x240	17.5	1.7	2.6	50.2
3x300	19.5	1.8	2.7	55.2
3x400	22.6	2	3.0	63.3

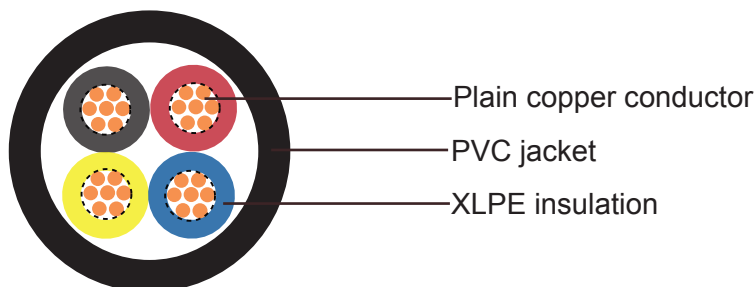


### Three cores+1(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation Thickness		Nominal Sheath Thickness	Overall Diameter (Approx.)	
	mm <sup>2</sup>	(3)mm	(1)mm	(3)mm			(1)mm
3x 16/10		4.5	3.6	0.7	0.7	1.8	17.5
3x 25/16		5.6	4.5	0.9	0.7	1.8	21.2
3x 35/16		6.7	4.5	0.9	0.7	1.8	23.8
3x 50/25		8	5.6	1	0.9	1.8	27.5
3x 70/35		9.4	6.7	1.1	0.9	2.0	31.7
3x 95/50		11	8	1.1	1	2.1	35.8
3x120/70		12.4	9.4	1.2	1.1	2.3	39.9
3x150/70		13.8	9.4	1.4	1.1	2.4	44.6
3x185/95		15.3	11	1.6	1.1	2.6	49.5
3x240/120		17.5	12.4	1.7	1.2	2.8	55.7
3x300/150		19.5	13.8	1.8	1.4	3.0	61.4
3x400/185		22.6	15.3	2	1.6	3.2	70.4

### Four cores(unarmoured)

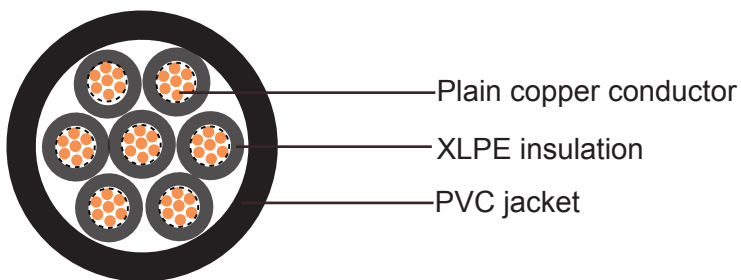


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
4x1.5	1.4	0.7	1.8	10.4
4x2.5	1.8	0.7	1.8	11.3



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
4x4	2.3	0.7	1.8	12.5
4x6	2.8	0.7	1.8	13.7
4x10	3.6	0.7	1.8	15.7
4x16	4.5	0.7	1.8	17.8
4x25	5.6	0.9	1.8	21.5
4x35	6.7	0.9	1.8	24.1
4x50	8.0	1	1.8	27.8
4x70	9.4	1.1	2.0	32.0
4x95	11.0	1.1	2.1	36.1
4x120	12.4	1.2	2.3	40.2
4x150	13.8	1.4	2.4	44.9
4x185	15.3	1.6	2.6	49.8
4x240	17.5	1.7	2.8	56.0
4x300	19.5	1.8	3.0	61.7
4x400	22.6	2	3.2	70.7

### Multi-cores(unarmoured)

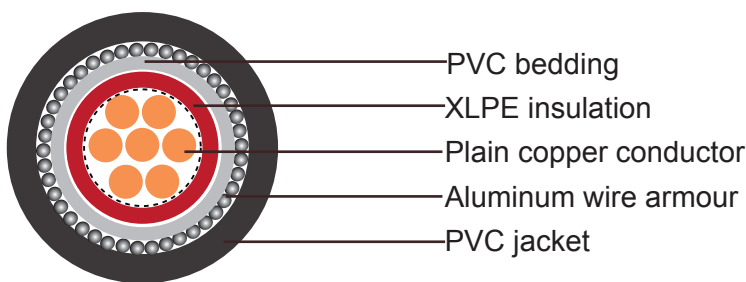


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
5x1.5	1.4	0.7	1.8	11.2
7x1.5	1.4	0.7	1.8	12.0
10x1.5	1.4	0.7	1.8	14.8
12x1.5	1.4	0.7	1.8	15.2
14x1.5	1.4	0.7	1.8	16.0
19x1.5	1.4	0.7	1.8	17.6
21x1.5	1.4	0.7	1.8	18.4



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm
24x1.5	1.4	0.7	1.8	20.4
30x1.5	1.4	0.7	1.8	21.6
40x1.5	1.4	0.7	1.8	26.0
48x1.5	1.4	0.7	1.8	26.4
61x1.5	1.4	0.7	1.9	29.0
5x2.5	1.8	0.7	1.8	12.2
7x2.5	1.8	0.7	1.8	13.2
10x2.5	1.8	0.7	1.8	16.4
12x2.5	1.8	0.7	1.8	16.9
14x2.5	1.8	0.7	1.8	17.7
19x2.5	1.8	0.7	1.8	19.6
21x2.5	1.8	0.7	1.8	20.6
24x2.5	1.8	0.7	1.8	22.8
30x2.5	1.8	0.7	1.8	24.1
40x2.5	1.8	0.7	1.9	29.4
48x2.5	1.8	0.7	1.9	29.9
61x2.5	1.8	0.7	2.0	32.8

### Single core( aluminum wire armoured)



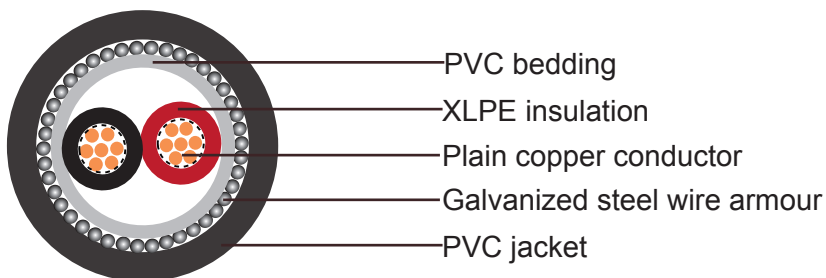
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Alum Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
1x4	2.3	0.7	1.0	0.8	1.8	10.9
1x6	2.8	0.7	1.0	0.8	1.8	11.4
1x10	3.6	0.7	1.0	0.8	1.8	12.2
1x16	4.5	0.7	1.0	0.8	1.8	13.1
1x25	5.6	0.9	1.0	0.8	1.8	14.6





Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Alum Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
1x35	6.7	0.9	1.0	1.25	1.8	16.6
1x50	8.0	1	1.0	1.25	1.8	18.1
1x70	9.4	1.1	1.0	1.25	1.8	19.7
1x95	11.0	1.1	1.0	1.6	1.8	22.0
1x120	12.4	1.2	1.0	1.6	1.8	23.6
1x150	13.8	1.4	1.0	1.6	1.8	25.4
1x185	15.3	1.6	1.0	1.6	1.8	27.4
1x240	17.5	1.7	1.0	1.6	1.9	29.9
1x300	19.5	1.8	1.0	2.0	2.0	33.1
1x400	22.6	2	1.2	2.0	2.2	37.3
1x500	25.2	2.2	1.2	2.0	2.3	40.5

### Two cores(Galvanized steel wire armoured)

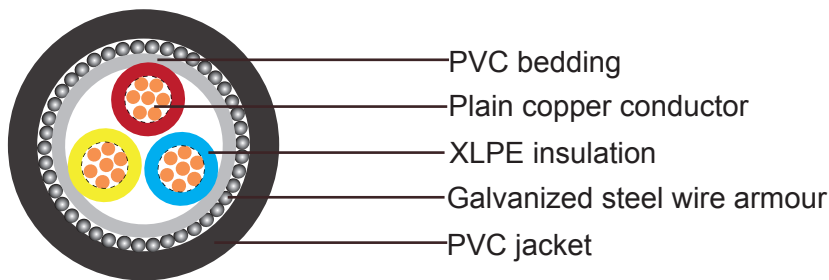


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
2x1.5	1.4	0.7	1.0	0.8	1.8	12.8
2x2.5	1.8	0.7	1.0	0.8	1.8	13.6
2x4	2.3	0.7	1.0	0.8	1.8	14.6
2x6	2.8	0.7	1.0	1.25	1.8	16.5
2x10	3.6	0.7	1.0	1.25	1.8	18.1
2x16	4.5	0.7	1.0	1.25	1.8	19.9
2x25	5.6	0.9	1.0	1.6	1.8	23.6
2x35	6.7	0.9	1.0	1.6	1.8	25.8
2x50	8.0	1	1.0	1.6	1.9	29.0
2x70	9.4	1.1	1.0	2.0	2.0	33.2



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
2x95	11.0	1.1	1.2	2.0	2.1	37.1
2x120	12.4	1.2	1.2	2.0	2.3	40.5
2x150	13.8	1.4	1.2	2.5	2.4	45.4
2x185	15.3	1.6	1.4	2.5	2.6	49.9
2x240	17.5	1.7	1.4	2.5	2.7	55.1
2x300	19.5	1.8	1.6	2.5	2.9	60.2
2x400	22.6	2	1.6	2.5	3.1	67.7

### Three cores(Galvanized steel wire armoured)

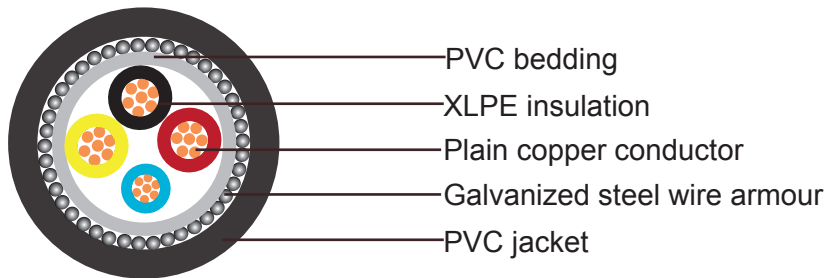


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
3x1.5	1.4	0.7	1.0	0.8	1.8	13.2
3x2.5	1.8	0.7	1.0	0.8	1.8	14.1
3x4	2.3	0.7	1.0	0.8	1.8	15.2
3x6	2.8	0.7	1.0	1.25	1.8	17.1
3x10	3.6	0.7	1.0	1.25	1.8	18.9
3x16	4.5	0.7	1.0	1.25	1.8	20.8
3x25	5.6	0.9	1.0	1.6	1.8	24.7
3x35	6.7	0.9	1.0	1.6	1.8	27.2
3x50	8.0	1	1.0	1.6	1.9	30.6
3x70	9.4	1.1	1.0	2.0	2.1	35.2
3x95	11.0	1.1	1.2	2.0	2.2	39.3
3x120	12.4	1.2	1.2	2.0	2.3	43.0
3x150	13.8	1.4	1.4	2.5	2.5	48.6
3x185	15.3	1.6	1.4	2.5	2.7	53.0



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
3x240	17.5	1.7	1.4	2.5	2.8	58.5
3x300	19.5	1.8	1.6	2.5	3.0	64.0
3x400	22.6	2	1.6	3.15	3.3	73.5

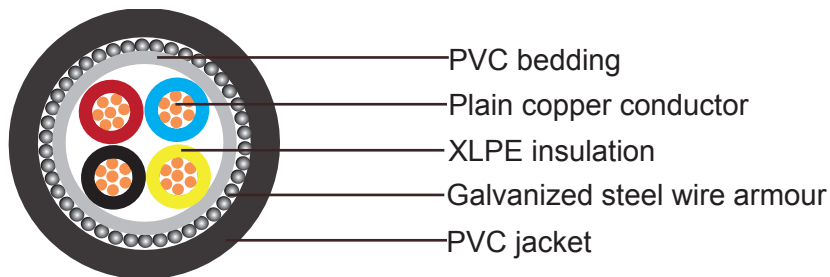
### Three cores+1(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation thickness		Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
	(3) mm	(1) mm	(3) mm	(1) mm				
3x 16/10	4.5	3.6	0.7	0.7	1	1.6	1.8	22.7
3x 25/16	5.6	4.5	0.9	0.7	1	1.6	1.8	26.5
3x 35/16	6.7	4.5	0.9	0.7	1	1.6	1.9	29
3x 50/25	8.0	5.6	1	0.9	1	1.6	2.1	33
3x 70/35	9.4	6.7	1.1	0.9	1.2	2	2.2	38
3x 95/50	11.0	8.0	1.1	1	1.2	2	2.3	42.4
3x120/70	12.4	9.4	1.2	1.1	1.2	2	2.5	48.0
3x150/70	13.8	9.4	1.4	1.1	1.4	2.5	2.7	52
3x185/95	15.3	11.0	1.6	1.1	1.4	2.5	2.8	57.2
3x240/120	17.5	12.4	1.7	1.2	1.6	2.5	3.1	64
3x300/150	19.5	13.8	1.8	1.4	1.6	2.5	3.2	69.8
3x400/185	22.6	15.3	2	1.6	1.6	3.15	3.6	78.6



### Four cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm <sup>2</sup>	mm	mm	mm	mm	mm	mm
4x1.5	1.4	0.7	1.0	0.8	1.8	14.0
4x2.5	1.8	0.7	1.0	0.8	1.8	14.9
4x4	2.3	0.7	1.0	1.25	1.8	17.0
4x6	2.8	0.7	1.0	1.25	1.8	18.2
4x10	3.6	0.7	1.0	1.25	1.8	20.2
4x16	4.5	0.7	1.0	1.6	1.8	23.0
4x25	5.6	0.9	1.0	1.6	1.8	26.7
4x35	6.7	0.9	1.0	1.6	1.9	29.5
4x50	8.0	1	1.0	2.0	2.1	34.2
4x70	9.4	1.1	1.2	2.0	2.2	38.8
4x95	11.0	1.1	1.2	2.0	2.3	42.9
4x120	12.4	1.2	1.4	2.5	2.5	48.6
4x150	13.8	1.4	1.4	2.5	2.7	53.2
4x185	15.3	1.6	1.4	2.5	2.8	58.1
4x240	17.5	1.7	1.6	2.5	3.1	64.8
4x300	19.5	1.8	1.6	2.5	3.2	70.4
4x400	22.6	2	1.8	3.15	3.6	81.3