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

Single core(unarmoured)

Two core(unarmoured)

Three core(unarmoured)

Four core(unarmoured)

Single core(armoured)

Two core(armoured)

Three core(armoured)

Four core(armoured)

600/1000V, PVC 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

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.

Insuation

PVC Insulation material and thickness shall be as per IEC 60502-1, PVC material shall be Type A as per IEC 60502-1.

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.

PVC Insulation with Lead Sheath

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 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.

Lead Sheath
lead or lead alloy and shall be applied as a reasonably tight-fitting seamless tube

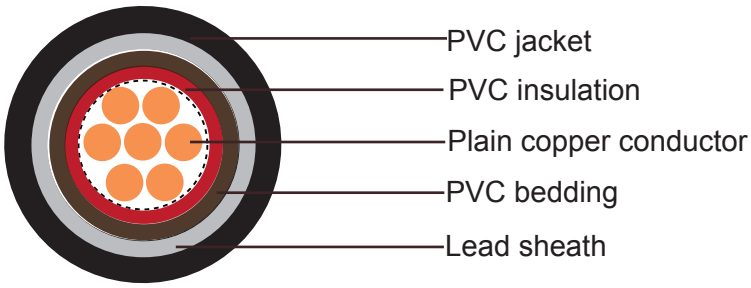
Seperation Sheath
The seperation sheath shall be of extruded PVC Type ST2 as per IEC 60502-1, or other material refer to outer sheath material.

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.

Cable Parameters:

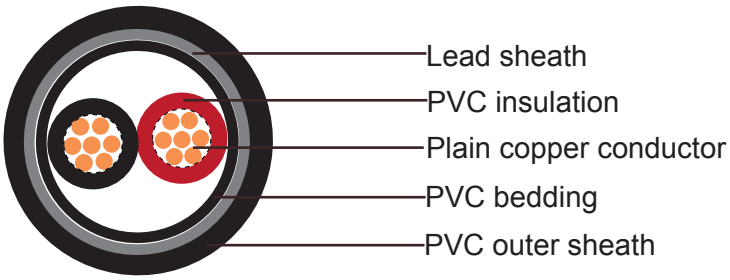
Single core(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
1x10	3.6	1.0	1.0	1.2	1.4	12.8
1x16	4.5	1.0	1.0	1.2	1.4	13.7
1x25	5.6	1.2	1.0	1.2	1.4	15.3
1x35	6.7	1.2	1.0	1.2	1.5	16.4

Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
1x50	8	1.4	1.0	1.2	1.5	18.3
1x70	9.4	1.4	1.0	1.2	1.6	19.8
1x95	11	1.6	1.0	1.3	1.7	22.1
1x120	12.4	1.6	1.0	1.3	1.7	23.7
1x150	13.8	1.8	1.0	1.4	1.8	25.7
1x185	15.3	2.0	1.0	1.4	1.8	27.9
1x240	17.5	2.2	1.0	1.5	1.9	30.8
1x300	19.5	2.4	1.0	1.6	2.0	33.5
1x400	22.6	2.6	1.2	1.7	2.2	38.0
1x500	25.2	2.8	1.2	1.8	2.3	41.4
1x630	28.3	2.8	1.2	1.9	2.4	44.9

Two cores(unarmoured)

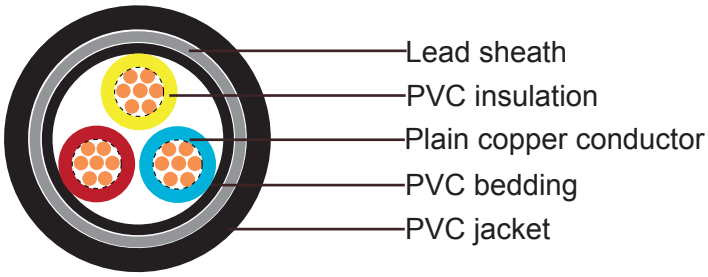


Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
2x2.5	1.8	0.8	1.0	1.2	1.8	14.8
2x4	2.3	1.0	1.0	1.2	1.8	16.6
2x6	2.8	1.0	1.0	1.2	1.8	17.6
2x10	3.6	1.0	1.0	1.2	1.8	19.2
2x16	4.5	1.0	1.0	1.2	1.8	21.0
2x25	5.6	1.2	1.0	1.2	1.8	24.1
2x35	6.7	1.2	1.0	1.3	1.8	26.4
2x50	8	1.4	1.0	1.4	1.9	30.3
2x70	9.4	1.4	1.0	1.5	2.0	33.4
2x95	11	1.6	1.2	1.6	2.2	38.4

PVC Insulation with Lead Sheath

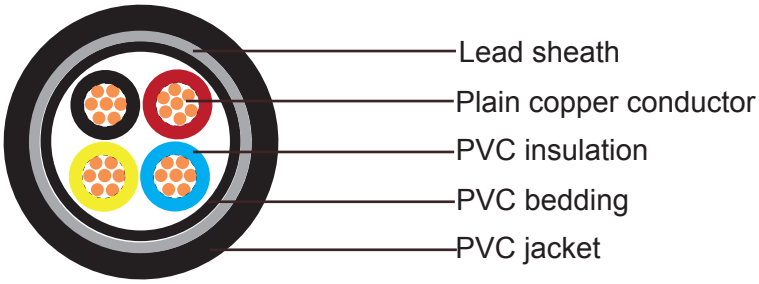
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
2x120	12.4	1.6	1.2	1.7	2.3	41.6
2x150	13.8	1.8	1.2	1.8	2.4	45.7
2x185	15.3	2.0	1.4	1.9	2.6	50.5
2x240	17.5	2.2	1.4	2.1	2.8	56.4
2x300	19.5	2.4	1.6	2.3	3.0	62.2

Three cores(unarmoured)



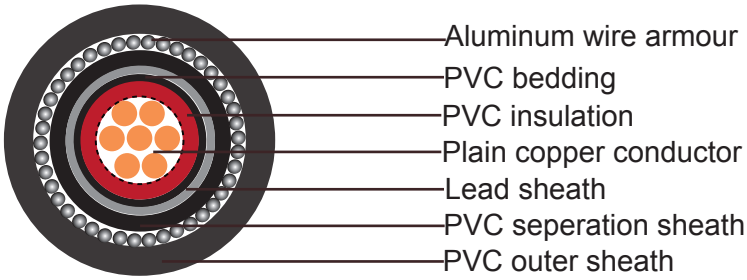
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
3x1.5	1.4	0.8	1.0	1.2	1.8	14.5
3x2.5	1.8	0.8	1.0	1.2	1.8	15.3
3x4	2.3	1.0	1.0	1.2	1.8	17.3
3x6	2.8	1.0	1.0	1.2	1.8	18.3
3x10	3.6	1.0	1.0	1.2	1.8	20.1
3x16	4.5	1.0	1.0	1.2	1.8	22.0
3x25	5.6	1.2	1.0	1.3	1.8	25.4
3x35	6.7	1.2	1.0	1.3	1.9	28.0
3x50	8	1.4	1.0	1.5	2.0	32.2
3x70	9.4	1.4	1.2	1.6	2.1	36.0
3x95	11	1.6	1.2	1.7	2.3	40.9
3x120	12.4	1.6	1.2	1.8	2.4	44.3
3x150	13.8	1.8	1.4	1.9	2.5	49.2
3x185	15.3	2.0	1.4	2.0	2.7	53.8
3x240	17.5	2.2	1.6	2.2	2.9	60.6
3x300	19.5	2.4	1.6	2.4	3.1	66.5

Four cores(unarmoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm
4x1.5	1.4	1.0	1.0	1.2	1.8	15.2
4x2.5	1.8	1.0	1.0	1.2	1.8	16.2
4x4	2.3	1.0	1.0	1.2	1.8	18.4
4x6	2.8	1.0	1.0	1.2	1.8	19.6
4x10	3.6	1.0	1.0	1.2	1.8	21.5
4x16	4.5	1.0	1.0	1.2	1.8	23.8
4x25	5.6	1.0	1.0	1.3	1.8	27.7
4x35	6.7	1.0	1.0	1.4	1.9	30.7
4x50	8	1.2	1.2	1.6	2.1	35.8
4x70	9.4	1.2	1.2	1.7	2.2	39.6
4x95	11	1.2	1.2	1.8	2.4	45.1
4x120	12.4	1.4	1.4	1.9	2.6	49.4
4x150	13.8	1.4	1.4	2.0	2.7	54.3
4x185	15.3	1.6	1.6	2.2	2.9	60.0
4x240	17.5	1.6	1.6	2.4	3.1	67.1
4x300	19.5	1.6	1.6	2.6	3.3	73.7

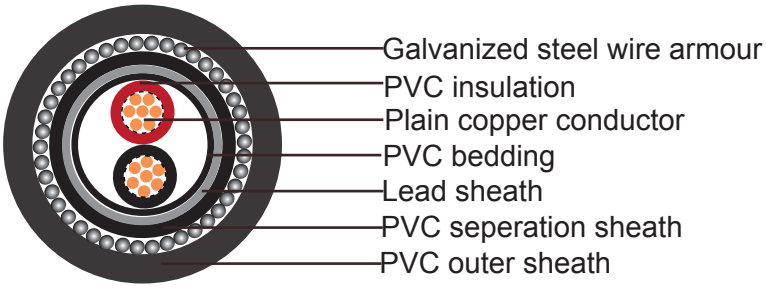
Single core(aluminum wire armoured)



PVC Insulation with Lead Sheath

Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Seperation Thickness	Nominal dia. of Aluminium wire armour	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm	mm	mm
1x35	6.7	1.2	1.0	1.2	1.0	1.6	1.8	22.0
1x50	8	1.4	1.0	1.2	1.0	1.6	1.8	23.8
1x70	9.4	1.4	1.0	1.2	1.0	1.6	1.8	25.3
1x95	11	1.6	1.0	1.3	1.0	1.6	1.8	27.6
1x120	12.4	1.6	1.0	1.3	1.0	1.6	1.9	29.2
1x150	13.8	1.8	1.0	1.4	1.0	1.6	2.0	31.4
1x185	15.3	2.0	1.0	1.4	1.1	2.0	1.9	29.1
1x240	17.5	2.2	1.0	1.5	1.1	2.0	2.0	31.9
1x300	19.5	2.4	1.0	1.6	1.2	2.0	2.1	34.4
1x400	22.6	2.6	1.2	1.7	1.3	2.5	2.2	39.7
1x500	25.2	2.8	1.2	1.8	1.3	2.5	2.3	42.9
1x630	28.3	2.8	1.2	1.9	1.4	2.5	2.4	46.2

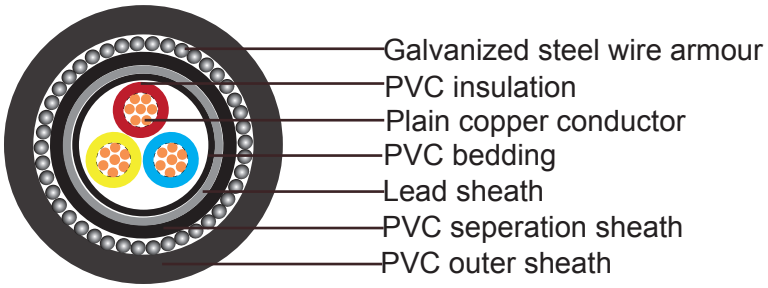
Two cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Seperation Thickness	Nominal dia. of Steel wire armour	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm	mm	mm
2x2.5	1.8	0.8	1.0	1.2	1.0	1.25	1.8	14.9
2x4	2.3	1.0	1.0	1.2	1.0	1.25	1.8	16.7
2x6	2.8	1.0	1.0	1.2	1.0	1.6	1.8	18.4
2x10	3.6	1.0	1.0	1.2	1.0	1.6	1.8	20.0
2x16	4.5	1.0	1.0	1.2	1.0	1.6	1.8	21.8
2x25	5.6	1.2	1.0	1.2	1.0	1.6	1.8	24.8
2x35	6.7	1.2	1.0	1.3	1.1	1.6	1.8	27.0
2x50	8	1.4	1.0	1.4	1.1	2.0	2.0	31.5
2x70	9.4	1.4	1.0	1.5	1.2	2.0	2.1	34.5
2x95	11	1.6	1.2	1.6	1.3	2.5	2.3	40.3

Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Seperation Thickness	Nominal dia. of Steel wire armour	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm	mm	mm
2x120	12.4	1.6	1.2	1.7	1.3	2.5	2.4	43.3
2x150	13.8	1.8	1.2	1.8	1.4	2.5	2.5	47.2
2x185	15.3	2.0	1.4	1.9	1.5	2.5	2.6	51.6
2x240	17.5	2.2	1.4	2.1	1.6	2.5	2.8	57.2
2x300	19.5	2.4	1.6	2.3	1.7	2.5	3.0	62.8

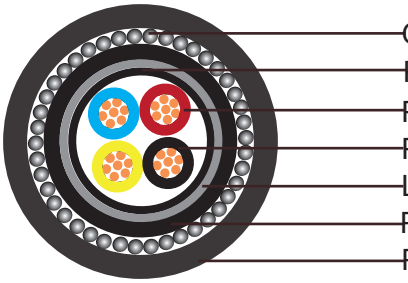
Three cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Seperation Thickness	Nominal dia. of Steel wire armour	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm	mm	mm
3x1.5	1.4	0.8	1.0	1.2	1.0	1.25	1.8	14.6
3x2.5	1.8	0.8	1.0	1.2	1.0	1.25	1.8	15.4
3x4	2.3	1.0	1.0	1.2	1.0	1.6	1.8	18.1
3x6	2.8	1.0	1.0	1.2	1.0	1.6	1.8	19.1
3x10	3.6	1.0	1.0	1.2	1.0	1.6	1.8	20.9
3x16	4.5	1.0	1.0	1.2	1.0	1.6	1.8	22.8
3x25	5.6	1.2	1.0	1.3	1.0	1.6	1.8	26.0
3x35	6.7	1.2	1.0	1.3	1.1	2.0	1.9	29.4
3x50	8	1.4	1.0	1.5	1.2	2.0	2.0	33.3
3x70	9.4	1.4	1.2	1.6	1.2	2.0	2.1	37.0
3x95	11	1.6	1.2	1.7	1.3	2.5	2.3	42.6
3x120	12.4	1.6	1.2	1.8	1.4	2.5	2.4	45.9
3x150	13.8	1.8	1.4	1.9	1.5	2.5	2.6	50.4
3x185	15.3	2.0	1.4	2.0	1.6	2.5	2.7	54.8
3x240	17.5	2.2	1.6	2.2	1.7	2.5	2.9	61.2
3x300	19.5	2.4	1.6	2.4	1.8	3.15	3.2	68.2

PVC Insulation with Lead Sheath

Four cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Inner Covering Thickness	Nominal Lead Sheath Thickness	Nominal Seperation Thickness	Nominal dia. of Steel wire armour	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm²	mm	mm	mm	mm	mm	mm	mm	mm
4x1.5	1.4	0.8	1.0	1.2	1.0	1.25	1.8	15.3
4x2.5	1.8	0.8	1.0	1.2	1.0	1.25	1.8	16.3
4x4	2.3	1.0	1.0	1.2	1.0	1.6	1.8	19.2
4x6	2.8	1.0	1.0	1.2	1.0	1.6	1.8	20.4
4x10	3.6	1.0	1.0	1.2	1.0	1.6	1.8	22.3
4x16	4.5	1.0	1.0	1.2	1.0	1.6	1.8	24.5
4x25	5.6	1.2	1.0	1.3	1.1	2.0	1.9	29.1
4x35	6.7	1.2	1.0	1.4	1.1	2.0	2.0	31.9
4x50	8	1.4	1.2	1.6	1.2	2.0	2.1	36.7
4x70	9.4	1.4	1.2	1.7	1.3	2.5	2.3	41.4
4x95	11	1.6	1.2	1.8	1.4	2.5	2.5	46.6
4x120	12.4	1.6	1.4	1.9	1.5	2.5	2.6	50.6
4x150	13.8	1.8	1.4	2.0	1.6	2.5	2.7	55.3
4x185	15.3	2.0	1.6	2.2	1.7	2.5	2.9	60.6
4x240	17.5	2.2	1.6	2.4	1.8	3.15	3.2	68.7
4x300	19.5	2.4	1.6	2.6	1.9	3.15	3.4	74.9