



RR ✓ KÄBEL
INDUSTRIAL RANGE

WIRES ARE THE NERVES
OF A NEW ECONOMY,
A NEW INDIA.





RR✓KÄBEL

Electricity has evolved from a scientific curiosity, to a luxury of the affluent, to a modern need. We take electricity for granted one second and gawk at its power the next. One only needs to consider the consequences of a relatively short power outage - factories close down, phones and computers go dead, traffic slows to a crawl, food spoils in refrigerators. So there is a very intimate liaison between electricity and society.

Electricity powers our world and our bodies. Harnessing its energy, containing something as infinite as energy is not easy. That is what wires do. And yet, wires are like unsung heroes. Wires selflessly, continuously bring things to life. Spread high and low, across the length and breadth of the country, empowering, bringing convenience and productivity into our lives. And yet we do not spend a moment understanding the importance of the right wires for our homes and offices. To the ordinary buyer, no two wires seem different but there is a high degree of technological dynamism and this goes a long way in savings and safety of the premises. Just like nerves, without which we cannot do anything at all. Wires are entrenched in our homes, behind walls, through conduits, hidden in the corridors, laid under roads. But never quiet. Never idling. Wires move on, working relentless in unimaginable numbers, throughout the city, surpassing regions and binding India like a body of nerves, strong, sensitive and pulsating.

BHARAT KI NUBZ HAIN HUM.

System certifications:



Product certifications:





ENDURANCE

RR Kabel has always made the latest advances in wire design and engineering. RR Kabel wires have outstanding performance characteristics and represent contemporary design. We at RR Kabel think wires are not just objects, we believe that wires play the role of nerves in the body. And therefore we make wires a subject of scientific, design and engineering inquiry. When you believe this you have designers, engineers, fabricators, and other partners who need to have incredible design and commitment to pursue and create a product that can be trusted, and relied upon. Industrial wires work in extreme heat and cold, or chemical and radiation environments. They need to have the versatility to be hard or soft, small or large, structured or arbitrary, stiff or flexible. The future of such design lies with innovation to push boundaries, eliminate borders between sciences. The materials we use may sometimes be unique, sometimes experimental, many are collaborations but they all represent extraordinary research and dedication by engineers, designers and visionaries.

The logo consists of three parallel horizontal lines on the left, which curve downwards and then back to the right. The top line is grey, the middle is a lighter grey, and the bottom is a light blue. The text 'RAM RATNA GROUP' is positioned to the right of these lines.

RAM RATNA GROUP

Powering Ahead

The Ram Ratna group believes in sound strategies productively coupled with responsibility to advance goodwill, while building sustainable and impressive businesses. We respect the process of integrating social values and mission within business decision-making process.

This helps us set guidelines to achieve product quality, economic accountability, social responsibility and aim for industry leadership.

Our group believes in giving back in every way possible. It promotes 'linked prosperity' between the company, our employees, our partners and the community.

A look at each of our group company reveals that we achieve positive and sustainable outcomes towards the business and the community at large.

Index

Sr. No.	Cable Detail	Page No.
1	Ratnaflex Single Core	1 & 2
2	Ratnaflex -M	3 to 4
3	Braided Cable	5 to 6
4	Shielded Cable	7 to 10
5	Control Cable JZ - 500 flexible	11 to 12
6	XLPE CU Control Cable UNARM/ARM as per IS: 7098 P-1	13 to 16
7	PVC CU Control Cable UNARM/ARM as per IS: 1554 P-1	17 to 20
8	XLPE Arm Cable 3 core, AL/CU as per IS: 7098 P-1	21 to 22
9	XLPE Arm Cable 3.5 core, AL/CU as per IS: 7098 P-1	23 to 24
10	XLPE Arm Cable 4 core, AL/CU as per IS: 7098 P-1	25 to 26
11	PVC Arm Cable 3 core, AL/CU as per IS: 1554 P-1	27 to 28
12	PVC Arm Cable 3.5 core, AL/CU as per IS: 1554 P-1	29 to 30
13	PVC Arm Cable 4 core, AL/CU as per IS: 1554 P-1	31 to 32
14	XLPE Unarm Cable 3 core, AL/CU as per IS: 7098 P-1	33 to 34
15	XLPE Unarm Cable 3.5 core, AL/CU as per IS: 7098 P-1	35 to 36
16	XLPE Unarm Cable 4 core, AL/CU as per IS: 7098 P-1	37 to 38
17	PVC Un-Arm Cable 3 core, AL/CU as per IS: 1554 P-1	39 to 40
18	PVC Un-Arm Cable 3.5 core, AL/CU as per IS: 1554 P-1	41 to 42
19	PVC Un-Arm Cable 4 core, AL/CU as per IS: 1554 P-1	43 to 44
20	Silicon Rubber Cable	45
21	Welding Cable	46
22	Submersible Cable IS: 694 1990	47

RATNAFLEX

Single Core flexible cables for
electrical panel switch boards upto
and including 1100 V



Conductor : Electrolytic grade annealed copper with high flexibility Class 5 and uniform resistance properties. Conductor with Annealed tin copper can also be made available on request.

Cable colors : Available in Red, Yellow, Blue, Green, Green/Yellow, Grey & Black. Other colors available on request.

Insulation : All insulation grades in PVC exceed the requirements as stated in IS 5831/1984. All grades of insulation offered are RoHS compliant.

Legends in marking on cable : RR KABEL, Ratnaflex ISI, CM/L, CE

Packing: Standard packing of 100 meters in coils. Longer length available as per request

Table 1: Variants available

Brand	Applications	Specifications
RATNAFLEX	General wiring of panels for use in max operating temperatures upto and including 70°C	IS 694, IS 8130 Class 5, IS 5831
RATNAFLEX FR	Wiring in high density & critical installations	IS 694, Category C1, IS 8130 Class 5, IS 5831
RATNAFLEX FRLSH	Wiring in public places & fire prone areas	IS 694, Category C2, IS 8130 Class 5, IS 5831

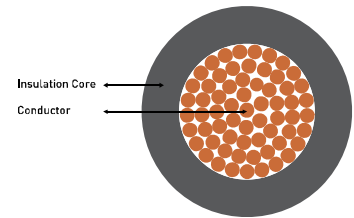
Table 2: Cable as per International Specification

Brand	Applications	Specifications
RR KABEL HFFR	Wiring for critical installation in public places and in vicinity of electronic systems	IEC 60228 Class 5, IEC 60332-1&3, IEC 60754-1&2
HR PVC 85°C/105°C	In high ambient temperature panels which can withstand upto and including 105°C	BS 6004-H07V2-K, BS 6231-type CK, UL 1569 300V, UL1015 600V, UL1275 600V
PVC 70°C	Wiring in public places & fire prone areas	IS 694, Category C2, IS 8130 Class5, IS 5831

Physical and Electrical Properties

Nominal Cross section mm ²	Wire Gauge	No. Of strands/Max Strand Diameter mm	Max DC Conductor Resistance at 20°C ©/Km	Nominal Insulation Thickness mm	Nominal Diameter over Insulation mm	Max. Permissible current Amps
0.5	22	16/0.2	39.0	0.6	2.1	4
0.75	20	24/0.2	26.0	0.6	2.3	7
1.0	18	32/0.2	19.5	0.6	2.5	12
1.5	16	30/0.25	13.3	0.6	3.0	15
2.5	14	50/0.25	7.98	0.7	3.5	20
4.0	12	56/0.3	4.95	0.8	4.1	27
6.0	10	84/0.3	3.30	0.8	4.8	35
10.0	8	140/0.3	1.91	1.0	6.3	46
16.0	6	126/0.4	1.21	1.0	7.1	62
25.0	4	196/0.4	0.780	1.2	8.75	80
35.0	2	276/0.4	0.554	1.2	10.0	102
50.0	1	396/0.4	0.386	1.4	11.85	138
70.0	2/0	360/0.5	0.272	1.4	15.0	214
95.0	3/0	480/0.5	0.206	1.6	17.5	260
120.0	4/0	608/0.5	0.161	1.6	18.3	305
150.0	250 MCM	750/0.5	0.129	1.8	21.5	355
185.0	350 MCM	931/0.5	0.106	2.0	23.5	415
240.0	450 MCM	1200/0.5	0.0801	2.2	26.0	500
300.0	550 MCM	1500/0.5	0.0641	2.4	29.0	550
400.0	-	2013/0.5	0.0486	2.6	33.0	590
500.0	-	2562/0.5	0.0384	2.8	37.0	660
630.0	-	3416/0.5	0.0287	2.8	41.5	725

Note: The configuration mentioned above are for reference purpose only. The conductors shall meet the resistance requirements as per class 5, IS 8130 or the relevant standards as applicable.



Ratnaflex Single Core:

They are typically used for wiring in high ambient temperature, such as wiring of internal electrical appliances.

Apart from this, Ratnaflex-FRLSH is also used in high density critical installations especially in public places and

fire prone areas and vicinity of electronics systems.

* The above data is indicative and may be revised without prior information.

RATNAFLEX-M

Multicore flexible cables

for appliances & machine

tools upto & including 1100 V



Flexible cables PVC Insulated and Sheathed for appliances & machine tools upto & including 1100V compact construction. Rugged yet flexible for industrial use. Combination of sheath available depending on type of application

Conductor : Electrolytic grade annealed copper with high flexibility Class 5 and uniform resistance properties. Conductor with annealed tin copper can also be made available on request.

Insulation : All insulation grades in PVC exceed the requirements as stated in IS 5831/1984. All grades of insulation offered are RoHS compliant.

Legends in marking on cable : RR KABEL ,RatnaflexM ISI, CM/L,CE

Table 1:

Brand	Applications	Specifications
RATNAFLEX-M	Power cords for appliances, temporary power supplies	IS 694, IS 8130 Class 5, IS 5831
FR	Wiring of critical installations	IS 694, IS 8130 Class 5, IS 5831
FRLSH	Wiring in high density locations	IS 694, IS 8130 Class 5, IS 5831

Table 3 : Cable design data

No. of cores x Nominal Cross section	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Cable Dimension ϕ mm
Single core sheathed cable			
1 x 0.5	0.6	0.9	4.0
1 x 0.75	0.6	0.9	4.2
1 x 1.0	0.6	0.9	4.7
1 x 1.5	0.7	0.9	4.9
1 x 2.5	0.8	1.0	5.6
1 x 4.0	0.8	1.0	6.2
1 x 6.0	0.8	1.0	6.9
1 x 10	1.0	1.1	8.4
1 x 16	1.0	1.1	9.5
1 x 25	1.2	1.3	11.7
1 x 35	1.2	1.3	12.9
1 x 50	1.4	1.5	15.6
Twin sheathed cable			
2 x 0.5	0.6	0.9	6 x 4
2 x 0.75	0.6	0.9	6.4 x 4.1
2 x 1	0.6	0.9	6.7 x 4.3
Round sheathed cable			
2 x 0.5	0.6	0.9	6.1
3 x 0.5		0.9	6.4
4 x 0.5		0.9	6.9

Sheath colors: Generally available in Black and Grey colors. White and other colors are offered on special request

Packing: 100 mtr. coils, Longer length made available in suitable wooden drums or spools.

Table 2 : Color codes

Sheath Color	Packaging
Black, Grey & White (Available in request)	100 meters coils, Longer length of 300,500 &1000 mtrs

Brand	Applications	Specifications
70°C Rated	Internal wiring appliances and cards	BS 6500, VDE 0281-5, DEMKO-IEC 60227-5, SABS-SANS 1574, (UL 2464,UL 2576, UL 2598 - all 30 V rated)
90°C Rated	For high ambient applications internal wiring of appliances and cards	BS 6500, UL 2587

No. of cores x Nominal Cross section Cores/mm ²	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Cable Diameter ϕ mm
Round sheathed cable			
5 x 0.5	0.6	0.9	7.5
2 x 0.75			6.5
3 x 0.75			6.8
4 x 0.75			7.4
5 x 0.75	0.6	0.9	6.7
2 x 1			7.1
3 x 1			7.7
4 x 1			7.7
5 x 1	0.7	0.9	7.7
2 x 1.5			8.2
3 x 1.5			9.1
4 x 1.5			9.1
5 x 1.5	0.8	1.0	8.9
2 x 2.5			9.5
3 x 2.5			10.3
4 x 2.5			10.3
5 x 2.5	0.8	1.0	10.2
2 x 4			10.9
3 x 4			10.9
4 x 4			11.9

Table 4: Cable design data

No. of cores No. of cores x Nominal Cross section Cores/mm ²	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Cable Dimension ø mm	No. of cores No. of cores x Nominal Cross section Cores/mm ²	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Cable Diameter ø mm
Round sheathed cable				Round sheathed cable			
2 x 6	0.8	1.1	11.8	2 x 25	1.2	1.4	20.5
3 x 6		1.1	12.7	3 x 25		1.5	22.1
4 x 6		1.2	14.1	4 x 25		1.6	24.6
2 x 10	1.0	1.2	14.8	2 x 35	1.2	1.5	23.2
3 x 10		1.2	15.8	3 x 35		1.6	24.9
4 x 10		1.3	17.6	4 x 35		1.7	27.7
2 x 16	1.0	1.3	17.0	2 x 50	1.4	1.6	26.6
3 x 16		1.3	18	3 x 50		1.7	29.1
4 x 16		1.4	20.1	4 x 50		1.8	32.5

Table 5 : Electrical Parameters on flexible multicore cables IS 694

Cross Sectional Area mm ²	0.5	0.75	1	1.5	2.5	4
No./Size of wire mm	16/0.2	24/0.2	32/0.2	30/0.25	50/0.25	56/0.3
DC resistance at 20°C Q/Km (max)	39.0	26.0	19.5	13.3	7.98	4.95
Twin core Amps	3.5	6.5	11	13	18	24
Three core Amps	3	5	9	11	14	18
Four core Amps	2.5	4.5	8	10	13	17

Table 6 : Electrical Parameters on flexible multi core cables IS 694

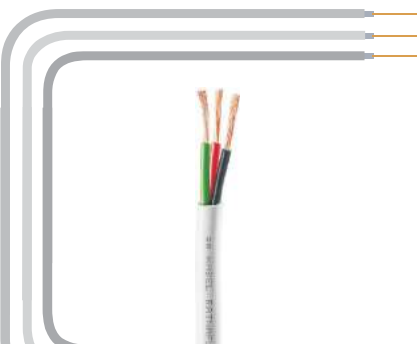
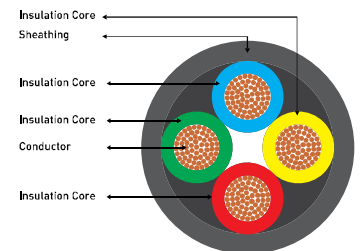
Cross Sectional Area mm ²	6	10	16	25	35	50
No./Size of wire mm	84/0.3	140/0.3	126/0.4	196/0.4	276/0.4	396/0.4
DC resistance at 20°C ?/Km (max)	3.30	1.91	1.21	0.78	0.554	0.386
Twin core Amps,	32	42	56	72	92	124
Three core Amps,	24	32	43	56	71	97
Four core Amps.	23	30	39	52	66	90

Note - Table 5 + 6, the data mentioned in individual is indicative for ambient temperature of 40°C

The conformity of conductor strand diameter and conductor resistance is as per the requirements of IS 694 + IS 8130

Table VII : Color codes

Type	Core colors
Single core sheathed	Red, Yellow, Blue, Black, Grey
Twin flat sheathed	Red, Black
Twin round sheathed	Red, Black
Three core round sheathed	Red, Black & Green
Four core round sheathed	Red, Yellow, Blue & Green



Ratnaflex- M

They are used as power cords for appliances such as Hi - power appliances like ovens and as temporary power supplies. They are also used as power cords for appliances that are used in fire prone areas, flame proof equipments, machine tools used in critical locations and heat zones and other high temperature areas.

* The above data is indicative and may be revised without prior information.

BRAIDED CABLE

(Data Transmission Cables)

Cable structure

- Annealed plain flexible copper
- Special grade of PVC insulation
- Colored cores upto 4 cores
- Black cores with white marking for 5 cores and above
- Cores twisted suitably to form a round shape
- Covered with insulating plastic foil
- Screen braiding generally of 65-70% with Fine Annealed tin copper
- Special grade PVC outer sheath
- Sheath color Grey / Black

Conductor : Class 5, IEC 60228, VDE 0295

Specific insulation resistance : 20 M Ohm Km

Temperature range :

Flexible application : -5 to +70°C

Fixed application : -20 to +80°C

Min bending radius :

Flexing : 20 x Cable diameter

Fixed Installation : 6 x Cable diameter

Test voltage :

Core/core : 4000V

Core/shield : 2000V

Rated Voltage : 300/500V

Braided cables:

Braided cables are most suitable for interconnection of electrical measuring devices to instrument panel or instrument. They are used for measuring, monitoring and controlling machine tool manufacture, plant engineering and in all places where electrical interference fields can distort a signal transmission.

Table - 1

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
1 x 0.25	3.6	7.2	27.0
2 x 0.25	5.3	15.8	31.0
3 x 0.25	5.6	18.6	36.0
4 x 0.25	6.0	22.0	40.0
5 x 0.25	6.5	26.5	51.0
6 x 0.25	7.0	32.4	58.0
7 x 0.25	7.2	35.0	64.0
8 x 0.25	7.7	42.1	82.0
10 x 0.25	8.7	49.9	85.0
12 x 0.25	9.0	58.0	90.0
14 x 0.25	9.4	62.0	144.0
16 x 0.25	9.9	67.0	110.0
18 x 0.25	10.4	78.0	142.0
19 x 0.25	10.8	79.0	146.0
20 x 0.25	11.3	88.0	152.0
24 x 0.25	10.2	96.0	163.0
25 x 0.25	12.5	99.0	169.0
27 x 0.25	12.7	122.0	176.0

Table - 2

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
1 x 0.5	4.0	15	40.0
2 x 0.5	6.3	29.0	45.0
3 x 0.5	6.6	39.0	55.0
4 x 0.5	7.2	46.0	61.0
5 x 0.5	6.7	52.0	76.0
6 x 0.5	7.2	66.0	89.0
7 x 0.5	7.4	68.0	98.0
8 x 0.5	7.9	80.0	117.0
10 x 0.5	8.9	93.0	135.0
12 x 0.5	9.2	117.0	157.0
14 x 0.5	9.6	122.0	190.0
16 x 0.5	10.1	129.0	210.0
18 x 0.5	10.6	152.0	217.0
19 x 0.5	11.7	156.0	246.0
20 x 0.5	12.6	173.0	275.0
24 x 0.5	13.7	236.0	337.0
25 x 0.5	13.9	250.0	351.0
27 x 0.5	14.0	265.0	373.0

Table - 3

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
1 x 0.75	4.4	19.0	41.0
2 x 0.75	6.7	38.0	59.0
3 x 0.75	7.0	50.0	66.0
4 x 0.75	7.6	57.0	77.0
5 x 0.75	7.3	70.0	93.0
6 x 0.75	7.9	87.0	113.0
7 x 0.75	8.1	96.0	130.0
8 x 0.75	8.8	110.0	145.0
10 x 0.75	9.9	140.0	180.0
12 x 0.75	10.2	151.0	202.0
14 x 0.75	10.7	167.0	225.0
16 x 0.75	11.2	183.0	275.0
18 x 0.75	11.8	207.0	292.0
19 x 0.75	13.2	221.0	322.0
20 x 0.75	14.0	238.0	362.0
24 x 0.75	15.5	270.0	435.0
25 x 0.75	15.5	278.0	415.0
27 x 0.75	16.2	287.0	467.0

Table - 5

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
2 x 1.5	8.0	63.0	88.0
3 x 1.5	8.5	76.0	100.0
4 x 1.5	9.2	98.0	126.0
5 x 1.5	8.6	116.0	160.0
6 x 1.5	9.3	140.0	192.0
7 x 1.5	9.5	152.0	208.0
8 x 1.5	10.4	172.0	244.0
10 x 1.5	11.7	193.0	315.0
12 x 1.5	12.0	254.0	338.0
14 x 1.5	12.7	172.0	383.0
16 x 1.5	13.4	285.0	424.0
19 x 1.5	17.1	387.0	506.0
24 x 1.5	19.5	448.0	690.0
27 x 1.5	19.8	506.0	781.0

Table - 8

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
2 x 6	11.6	175.0	268.0
3 x 6	12.4	240.0	330.0
4 x 6	14.1	335.0	415.0
5 x 6	15.7	441.0	509.0
7 x 6	16.6	505.0	672.0

Table - 4

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
2 x 1	7.0	46.0	65.0
3 x 1	7.4	56.0	80.0
4 x 1	8.0	69.0	98.0
5 x 1	7.8	89.0	127.0
6 x 1	8.4	105.0	144.0
7 x 1	8.6	111.0	158.0
8 x 1	9.3	130.0	197.0
10 x 1	10.5	140.0	232.0
12 x 1	10.8	168.0	260.0
14 x 1	11.3	198.0	302.0
16 x 1	12.0	218.0	346.0
19 x 1	12.6	268.0	412.0
24 x 1	16.5	320.0	493.0
27 x 1	16.8	360.0	562.0

Table - 6

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
1 x 2.5	5.5	39.0	50.0
2 x 2.5	9.0	96.0	130.0
3 x 2.5	9.5	146.0	167.0
4 x 2.5	10.4	174.0	195.0
5 x 2.5	10.6	200.0	223.0
7 x 2.5	11.3	235.0	344.0
12 x 2.5	14.8	441.0	522.0

Table - 7

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
2 x 4	10.5	135.0	185.0
3 x 4	11.2	178.0	240.0
4 x 4	12.2	240.0	310.0
5 x 4	13.4	328.0	400.0
7 x 4	14.0	355.0	500.0

Table - 9

No. of cores x Cross sectional area mm ²	Approx cable diameter Ø mm	Approx Copper weight Kg/km	Approx cable weight Kg/km
2 x 10	14.9	265.0	425.0
3 x 10	15.9	370.0	500.0
4 x 10	17.2	485.0	783.0
5 x 10	19.6	714.0	856.0
7 x 10	21.6	820.0	1300.0

* The above data is indicative and may be revised without prior information.

SHIELDED CABLE

Overall Shielded PVC/PVC(300/500 V)

Construction conductor

Annealed copper wires according to class 1 or 2 or 5 of BS EN 60228

Insulation: PVC Type TI 51 according to BS EN 50290-2-21

Pairs- Twisted

Identification pairs: Blue & White. Blue cores indicate pair identification

Assembly: Concentric layers

Overall screen : Aluminium / Polyester tape 0.024mm in electrical contact with tinned annealed copper wires of a total section of 0.5mm² Polyester tape 0.05 mm thick overall bonded.

Outer sheath: PVC TYPE TM51 according to BS EN 50290-2-22

Marking: RR KABEL n x m x csa 300/500 V PAS 5308 - Part 2

Application: PAS 5308-2 Design Guidelines

Standards: EC 60332-1 Flame retardant

Type	Cross section (mm ²)	Diameter of conductor (mm)	Maximum DC resistance at 20°C (Ω/km)	Diameter over insulation (mm)	Diameter over assembly plastic tape (mm)	Outer diameter approx. (mm)	Weight of cable approx. (kg/km)	Min bending radius (mm)
FRXHR	2 x 0.5	0.9	39.0	2.1	4.2	5.9	52	70
	2 x 2 x 0.5 Q	0.9	39.0	2.1	5.0	6.7	72	80
FRXOHR	5 x 2 x 0.5	0.9	39.0	2.1	11.0	13.3	169	160
	10x 2 x 0.5	0.9	39.0	2.1	13.7	16.2	284	195
	15 x 2 x 0.5	0.9	39.0	2.1	16.2	18.9	401	230
	20 x 2 x 0.5	0.9	39.0	2.1	18,6	21.2	508	250
	30 x 2 x 0.5	0.9	39.0	2.1	22.7	25.8	745	310
FRXHR	2 x 0.75	1.1	26.0	2.3	4.6	6.3	53	80
	2 x 2 x 0.75 Q	1.1	26.0	2.3	5.5	7.2	81	90
FRXOHR	5 x 2 x 0.75	1.1	26.0	2.3	12,1	14,6	212	180
	10x 2 x 0.75	1.1	26.0	2.3	15.0	17.7	360	210
	15 x 2 x 0.75	1.1	26.0	2.3	17.8	20.4	500	250
	20 x 2 x 0.75	1.1	26.0	2.3	20.4	23.5	665	280
	30 x 2 x 0.75	1.1	26.0	2.3	24,9	28,4	969	340
RRXHR	2 x 1.5	1.6	12.1	2.9	5.7	7.6	94	90
	2 x 2 x 1.5 Q	1.6	12.1	2.9	6.9	9.1	150	110
RRXOHR	5 x 2 x 1.5	1.6	12.1	2.9	14,9	17,4	328	210
	10 x 2 x 1.5	1.6	12.1	2.9	18.5	21.2	581	255
	15 x 2 x 1.5	1.6	12.1	2.9	21,9	24,9	850	300
	20 x 2 x 1.5	1.6	12.1	2.9	25.1	28.2	1097	340
	30 x 2 x 1.5	1.6	12.1	2.9	30.7	34.1	1612	410

Individual & Overall Shielded and PVC/PVC (300/500 V)

Construction conductor: Annealed copper wires according to Class 1,2 or 5 of BS EN 60228

Insulation: PVC type TI 51 according to BS EN 50290-2-21 ,

Pairs: Twisted ,

Identification pairs: Blue and White. Blue cores indicate pair identification

Individual dcreen: aluminium/polyester tape 0,024mm in electrical contact with tinned annealed copper wires of a total section of 0,5mm² polyester tape 0,023 mm thick bonded.

Assembly: Concentric layers,

Overall screen: Aluminium / Polyester tape of 0,024 mm in electrical contact with tinned annealed copper wires of a total section 0,5mm² polyester tape 0,05 mm, thick overall bonded.

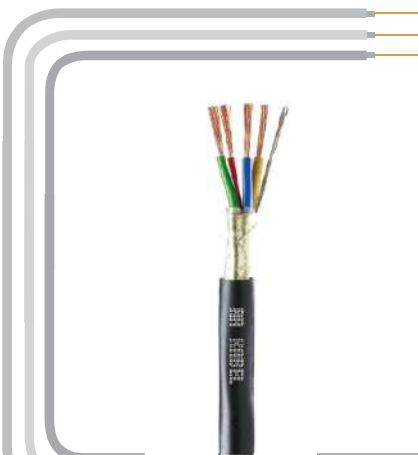
Outer sheath: PVC type TM51 according to BS EN 50290-2-22

Marking: RR KABEL - nx – m x csa 300/500 V BS 5308

Applicable: PAS 5308-2 DESIGN GUIDELINES

Standards: IEC 60332-1 FLAME RETARDANT

Type	Cross section (mm ²)	Diameter of conductor (mm)	Maximum DC resistance at 20°C (Ω/km)	Diameter over insulation (mm)	Diameter over assembly plastic tape (mm)	Outer diameter approx. (mm)	Weight of cable approx. (kg/km)	Min bending radius (mm)
FRXHOHR	2 x 2 x 0,5	0,9	39,0	2,1	7,9	10,2	108	120
	5 x 2 x 0,5	0,9	39,0	2,1	11,4	13,9	210	170
	10x 2 x 0,5	0,9	39,0	2,1	14,2	16,9	359	200
	15 x 2 x 0,5	0,9	39,0	2,1	16,8	19,8	519	240
	20 x 2 x 0,5	0,9	39,0	2,1	19,2	22,3	664	270
	30 x 2 x 0,5	0,9	39,0	2,1	23,5	27,0	968	320
FRXHOHR	2 x 2 x 0,75	1,1	26,0	2,3	8,6	10,9	124	130
	5 x 2 x 0,75	1,1	26,0	2,3	12,5	14,9	245	180
	10x 2 x 0,75	1,1	26,0	2,3	15,5	18,2	426	220
	15 x 2 x 0,75	1,1	26,0	2,3	18,3	21,4	620	260
	20 x 2 x 0,75	1,1	26,0	2,3	21,0	24,5	821	295
	30 x 2 x 0,75	1,1	26,0	2,3	25,7	29,8	1212	360
RRXHOHR	2 x 2 x 1,5	1,6	12,1	2,9	10,6	13,3	230	160
	5 x 2 x 1,5	1,6	12,1	2,9	15,2	17,9	373	215
	10x 2 x 1,5	1,6	12,1	2,9	18,9	22,0	676	260
	15 x 2 x 1,5	1,6	12,1	2,9	22,3	25,8	982	310
	20 x 2 x 1,5	1,6	12,1	2,9	25,7	29,1	1267	350
	30 x 2 x 1,5	1,6	12,1	2,9	31,4	35,4	1877	430



Shielded cables :

Shielded cables are used in security systems as it provides protection from power frequency and radio frequency interference, thus, reducing the number of false alarms being generated. For its optimum use it is necessary to keep the data or signal cables physically separated by at least 3 inches (75 mm) from 'heavy' power circuits which are in parallel.

SHIELDED CABLE

Overall Shielded Armoured PVC / PVC (300/500 V)

Construction conductor

Annealed copper wires according to class 1 or 2 or 5 of BS EN 60228

Insulation: PVC Type T1 51 according to BS EN 50290-2-21

Pairs- Twisted

Identification pairs: Blue & White, Blue cores indicate pair identification

Overall screen : Aluminium / Polyester tape 0.024mm in electrical contact with tinned annealed copper wires of a total section of 0.5mm² Polyester tape 0.023 mm.

Bedding: PVC TYPE TM51 according to BS EN 50290-2-22

Armour: Galvanized steel wire

Outer sheath: PVC TYPE TM51 according to BS EN 50290-2-22

Marking: RR KABEL n x m x csa 300/500 V PAS 5308 - Part 2

Application: BS 5308-2 Design Guidelines

Standards: IEC 60332-1 Flame retardant
IEC 60332-3C Flame retardant on bunched cables
(If applicable)

Type	Cross section [mm ²]	Diameter of conductor (mm)	Maximum DC resistance at 20°C (Ω/km)	Diameter over insulation (mm)	Diameter over assembly plastic tape (mm)	Diameter over inner sheath (mm)	Diameter of Armour wires (mm)	Diameter over Armour (mm)	Outer diameter approx. (mm)	Weight of cable approx. (kg/km)	Min bending radius (mm)
FRXHRFR	2 x 0.5	0.9	39.0	2.1	4.2	5.9	0.9	7.7	5.9	52	70
	4 x 0.5	0.9	39.0	2.1	4.2	6.8	0.9	8.6	6.7	72	80
FRXOHRFR	5 x 2 x 0.5	0.9	39.0	2.1	11.0	13.3	1.3	15.8	13.3	169	160
	10 x 2 x 0.5	0.9	39.0	2.1	13.7	16.2	1.3	18.7	16.2	284	195
	15 x 2 x 0.5	0.9	39.0	2.1	16.2	18.9	1.6	22.1	18.9	401	230
	20 x 2 x 0.5	0.9	39.0	2.1	18.6	21.2	1.6	24.4	21.2	508	250
	30 x 2 x 0.5	0.9	39.0	2.1	22.7	26.2	1.6	29.4	25.8	745	310
FRXHRFR	2 x 0.75	1.1	26.0	2.3	4.6	6.3	0.9	8.1	6.3	53	80
	4 x 0.75	1.1	26.0	2.3	4.6	7.2	0.9	9.0	7.2	81	90
FRXOHRFR	5 x 2 x 0.75	1.1	26.0	2.3	12.1	14.6	1.3	17.1	14.6	212	180
	10 x 2 x 0.75	1.1	26.0	2.3	15.0	17.7	1.6	20.9	17.7	360	210
	15 x 2 x 0.75	1.1	26.0	2.3	17.8	20.4	1.6	23.6	20.4	500	250
	20 x 2 x 0.75	1.1	26.0	2.3	20.4	23.5	1.6	26.7	23.5	665	280
	30 x 2 x 0.75	1.1	26.0	2.3	24.9	28.4	2.0	32.4	28.4	969	340
RRXHRFR	2 x 1.5	1.6	12.1	2.8	5.7	7.4	0.9	9.2	7.6	94	90
	4 x 1.5	1.6	12.1	2.8	5.7	8.7	0.9	10.5	9.1	150	110
RRXOHRFR	5 x 2 x 1.5	1.6	12.1	2.8	14.9	14.8	1.3	17.3	17.4	328	210
	10 x 2 x 1.5	1.6	12.1	2.8	18.5	21.2	1.6	24.4	21.2	581	255
	15 x 2 x 1.5	1.6	12.1	2.8	21.9	24.9	1.6	28.1	24.9	850	300
	20 x 2 x 1.5	1.6	12.1	2.8	25.1	28.2	2.0	32.2	28.2	1097	340
	30 x 2 x 1.5	1.6	12.1	2.8	30.7	34.1	2.0	38.1	34.1	1612	410

Individual & Overall Shielded Armoured PVC / PVC (300/500 V)

Construction conductor: Annealed copper wires according to Class 1,2 or 5 of BS EN 60228

Insulation: PVC type TI 51 according to BS EN 50290-2-21 ,

Pairs: Twisted ,

Identification pairs: Blue and White, Blue cores indicate pair identification

Individual screen: aluminium/polyester tape 0,024mm in electrical contact with tinned annealed copper wires of a total section of 0,5mm² polyester tape 0,023 mm.

Assembly: Concentric layers,

Overall screen: Aluminium / Polyester tape of 0,024 mm in electrical contact with tinned annealed copper wires of a total section 0,5mm² polyester tape 0,05 mm, thick overall bonded.

Bedding: PVC type TM51 according to BS EN 50290-2-22

Armour: Galvanized steel wire

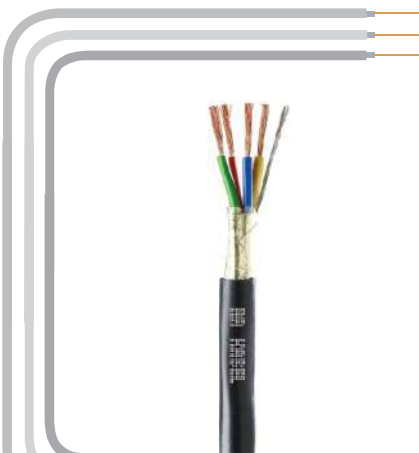
Outer sheath: PVC type TM51 according to BS EN 50290-2-22

Marking: RR KABEL - n x – m x csa 300/500 V PAS 5308 Part 2

Applicable: PAS 5308-2 DESIGN GUIDELINES

Standards: IEC 60332-1 FLAME RETARDANT
IEC 60332-1 FLAME RETARDANT on bunched cables
(If applicable)

Type	Cross section (mm ²)	Diameter of conductor (mm)	Maximum DC resistance at 20°C (Ω/km)	Diameter over insulation (mm)	Diameter over assembly plastic tape (mm)	Diameter over inner sheath (mm)	Diameter of Armour wires (mm)	Diameter over Armour (mm)	Outer diameter approx. (mm)	Weight of cable approx. (kg/km)	Min bending radius (mm)
FRXHORFR	2 x 0.5	0.9	39.0	2.1	4.2	5.9	0.9	7.7	5.9	52	70
	4 x 0.5	0.9	39.0	2.1	4.2	6.8	0.9	8.6	6.7	72	80
	5 x 2 x 0.5	0.9	39.0	2.1	11.0	13.3	1.3	15.8	13.3	169	160
	10 x 2 x 0.5	0.9	39.0	2.1	13.7	16.2	1.3	18.7	16.2	284	195
	15 x 2 x 0.5	0.9	39.0	2.1	16.2	18.9	1.6	22.1	18.9	401	230
FRXHOHRFR	20 x 2 x 0.5	0.9	39.0	2.1	18.6	21.2	1.6	24.4	21.2	508	250
	30 x 2 x 0.5	0.9	39.0	2.1	22.7	26.2	1.6	29.4	25.8	745	310
	2 x 0.75	1.1	26.0	2.3	4.6	6.3	0.9	8.1	6.3	53	80
	4 x 0.75	1.1	26.0	2.3	4.6	7.2	0.9	9.0	7.2	81	90
	5 x 2 x 0.75	1.1	26.0	2.3	12.1	14.6	1.3	17.1	14.6	212	180
RRXHOHRFR	10 x 2 x 0.75	1.1	26.0	2.3	15.0	17.7	1.6	20.9	17.7	360	210
	15 x 2 x 0.75	1.1	26.0	2.3	17.8	20.4	1.6	23.6	20.4	500	250
	20 x 2 x 0.75	1.1	26.0	2.3	20.4	23.5	1.6	26.7	23.5	665	280
	30 x 2 x 0.75	1.1	26.0	2.3	24.9	28.4	2.0	32.4	28.4	969	340
	2 x 1.5	1.6	12.1	2.8	5.7	7.4	0.9	9.2	7.6	94	90
	4 x 1.5	1.6	12.1	2.8	5.7	8.7	0.9	10.5	9.1	150	110
	5 x 2 x 1.5	1.6	12.1	2.8	14.9	14.8	1.3	17.3	17.4	328	210
	10 x 2 x 1.5	1.6	12.1	2.8	18.5	21.2	1.6	24.4	21.2	581	255



Shielded cables :

Shielded cables are used in security systems as it provides protection from power frequency and radio frequency interference, thus, reducing the number of false alarms being generated. For its optimum use it is necessary to keep the data or signal cables physically separated by at least 3 inches (75 mm) from 'heavy' power circuits which are in parallel.

CONTROL CABLES

JZ - 500 Flexible

Technical data:

- Control cables, special PVC
- Requirements adapted to DIN VDE 0245,0281,0293,0295
- **Temperature range:**
 - Flexing -5°C to + 80°C
 - Fixed installation -20°C to + 80°C
- **Nominal voltage:** U_o/U 300/500 V
- **Test voltage** 4000 V
- **Breakdown voltage:** Min. 8000 V
- **Insulation resistance:** Min. 20 MΩ x km
- **Minimum bending radius:** flexing 7,5 x cable Ø
- **Fixed installation:** 4 x cable Ø

Cable structure

- Bare copper, fine wire conductor, according to DIN VDE 0295 CL5, BSEN 50228 CL,5 and IEC 60228 CL 5
- Core insulation of PVC TI 2, BS 7655 section to 3.1 to BS EN 50363-3

- Core black with continuous white numbering according to DIN VDE 0293
- Green - Yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal length
- Outer sheath of special PVC, TM2 to VDE 0281 part 1 and HD 21.1, BS 7655 section 4.1 to BS EN 50363-4,1
- Color grey (RAL 7046)

Properties:

- Extensively oil resistant
- Also available with PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, IEC 60332-1-2/IEC 60332-1 (equivalent DIN VDE 0472) part 804 test method B)
- The materials used in manufacture are cadmium contains no Silicone and free from substances harmful to the wetting properties of lacquers

NOTE:

G = with Green - Yellow earth core;

Insulated conductors:

Table 1

Nominal Section (mm ²)	Thickness of Insulation (mm)	Diameter Over Insulation ±0,05 (mm)	Max. DC Conductor Resistance (*) (Ω/km)
0,50	0,3/0,4	1,60	39,0
0,75	0,3/0,4	1,80	26,0
1,00	0,3/0,4	2,00	19,5
1,50	0,3/0,4	2,20	13,3
2,50	0,4/0,5	2,85	7,98

* According to CLASS-5/IEC 60228, BSEN 60228, DIN VDE 0295

Table 2

Nominal Section mm ²	Indicative construction number of wire x diameter of wire (mm)
0,5	16 x 0,2
0,75	24 x 0,2
1	32 x 0,2
1,5	30 x 0,25
2,5	50 x 0,25

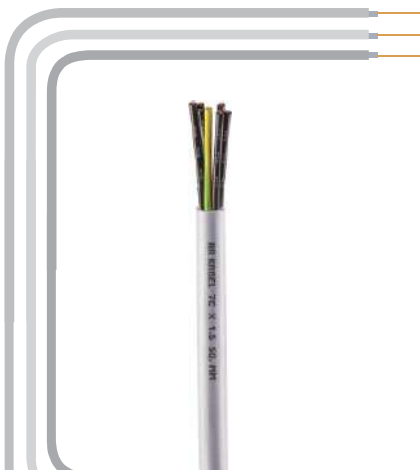
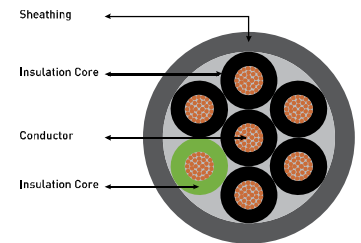
Nominal section mm ² x Number of Core	Cable dimension mm	Approx. Cable wt Kg/Km
5 G 0,5	6	61
6 G 0,5	6,7	76
7 G 0,5	7,4	91
8 G 0,5	8	106
10 G 0,5	8,8	129
11 G 0,5	8,8	133
12 G 0,5	9,1	143
14 G 0,5	9,5	158
16 G 0,5	10	177
17 G 0,5	10,7	198
19 G 0,5	11,1	216
20 G 0,5	11,2	222
24 G 0,5	13	289
27 G 0,5	13,4	312

INSULATED CONDUCTORS:

Nominal section mm ² x Number of Core	Cable dimension mm	Approx. Cable wt Kg/Km
5 G 0.75	6.8	82
6 G 0.75	7.5	100
7 G 0.75	8.1	116
8 G 0.75	8.9	138
10 G 0.75	9.6	164
11 G 0.75	9.6	169
12 G 0.75	9.9	182
14 G 0.75	10.6	209
16 G 0.75	11.6	247
17 G 0.75	11.9	261
19 G 0.75	12.3	283
20 G 0.75	12.6	297
24 G 0.75	14.5	381
27 G 0.75	15.2	421
5 G 1.0	6.6	87
6 G 1.0	8	119
7 G 1.0	8.6	139
8 G 1.0	9.4	163
10 G 1.0	10.4	201
11 G 1.0	10.4	208
12 G 1.0	10.7	222
14 G 1.0	11.3	252
16 G 1.0	12	286
17 G 1.0	12.7	314
19 G 1.0	13	337
20 G 1.0	13.5	360
24 G 1.0	14.7	429
27 G 1.0	15.8	490

INSULATED CONDUCTORS:

Nominal section mm ² x Number of Core	Cable dimension mm	Approx. Cable wt Kg/Km
5 G 1.5	8.4	136
6 G 1.5	8.9	156
7 G 1.5	9.8	186
8 G 1.5	10.6	216
10 G 1.5	11.7	266
11 G 1.5	11.7	275
12 G 1.5	12.1	297
14 G 1.5	12.9	341
16 G 1.5	13.6	383
17 G 1.5	14.5	424
19 G 1.5	15.2	469
20 G 1.5	15.2	479
24 G 1.5	17.8	623
27 G 1.5	19	707
5 G 2.5	10.2	209
6 G 2.5	11.5	260
7 G 2.5	12.1	294
8 G 2.5	13.2	344
10 G 2.5	15	439
11 G 2.5	15	455
12 G 2.5	15.2	479
14 G 2.5	16.1	546
16 G 2.5	17	615
17 G 2.5	18.1	679
19 G 2.5	18.4	725
20 G 2.5	20.3	832
24 G 2.5	22.2	996
27 G 2.5	22	1033



Control cables :

These cables are used for flexible use for medium mechanical stresses with free movements in dry, moist and wet rooms but not suitable for open air, as measuring control cables in tool machines, conveyor belts, production lines in machinery production lines, in air conditioning and in steel production. The cores have been numbered in such way that there is no difficulty in recognising them. Even if only a small piece of sheathing has been removed, the numbers have been underlined to avoid confusion. The earth core is laid in the outer layer. Selected PVC - Compound guarantees a good flexibility as well as a fast and economic installation.

XLPE CU CONTROL CABLE UNARMoured / ARMoured

1.5 SQ.MM

AS PER IS: 7098 P-1

Technical Detail For 1.5 SQ.MM Copper Conductor, XLPE Insulated Unarmoured & Galvanized Steel Strip / Wire Armoured Control Cables Type / Code Of Cable: 2XY/2XFY/2XWY, as per IS: 7098 (P-1)

Conductor: CU conductor solid as per class -1 IS:8130 or stranded as per Class-2 IS:8130.

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Insulation Material: Crosslink Polyethylene XLPE Compound.
Insulation Thickness 0,7 mm.

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

Inner Sheath : PVC / PVC tape as per IS: 7098 (P-1)

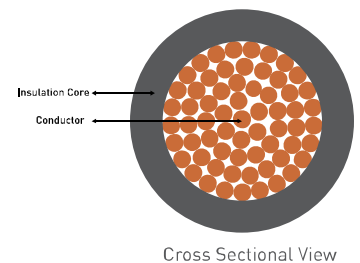
Color Of Outer Sheath: Black. (Options: Any other color as per requirement).

A. Cable Design Parameters

No. of Cores	Minimum Thickness of Inner Sh. mm	Unarmoured (2XY)			Armoured with Flat Strips (2XFY)				Armoured with round wires (2XWY)			
		Nom. Thick. of Out. Sh. mm	Approx. Overall Dia. mm	Approx. Net wt. Of Cable Kg/Km	Nom. Thick. of Strip for Arm. mm	Min. Thick. of Out. sheath mm	Approx. Overall Dia. mm	Approx. Net wt. Kg/Km	Nom. Thick. of Strip for Arm. mm	Min. Thick. of Out. sheath mm	Approx. Overall Dia. mm	App. Net wt. Kg/Km
2	0.3	1.8	10.0	140	N/A	N/A	N/A	N/A	1.4	1.24	11.5	370
3	0.3	1.8	10.5	160	N/A	N/A	N/A	N/A	1.4	1.24	12.2	390
4	0.3	1.8	11.5	200	N/A	N/A	N/A	N/A	1.4	1.24	13.0	415
5	0.3	1.8	12.5	225	N/A	N/A	N/A	N/A	1.4	1.24	13.7	465
6	0.3	1.8	13.5	250	N/A	N/A	N/A	N/A	1.4	1.24	14.6	500
7	0.3	1.8	13.5	260	N/A	N/A	N/A	N/A	1.4	1.24	14.6	520
10	0.3	1.8	17.0	340	N/A	N/A	N/A	N/A	1.4	1.24	18.5	655
12	0.3	1.8	17.5	390	N/A	N/A	N/A	N/A	1.6	1.40	19.0	720
14	0.3	1.8	18.0	430	N/A	N/A	N/A	N/A	1.6	1.40	20.0	825
16	0.3	1.8	18.5	475	0.8	1.40	19	750	1.6	1.40	21.0	925
19	0.3	2.0	19.5	540	0.8	1.40	20	815	1.6	1.40	22.0	1010
24	0.3	2.0	22.5	665	0.8	1.40	23	1000	1.6	1.40	25.0	1250
27	0.3	2.0	23.0	750	0.8	1.40	23.5	1050	1.6	1.40	25.5	1330
30	0.3	2.0	23.5	820	0.8	1.40	24	1125	1.6	1.40	26.0	1400
37	0.3	2.0	26.0	665	0.8	1.40	26	1325	1.6	1.40	28.0	1550
40	0.3	2.0	26.0	1050	0.8	1.40	26.5	1400	1.6	1.40	29.5	1700
44	0.3	2.0	28.0	1150.0	0.8	1.40	28.5	1500	1.6	1.56	30.5	1850
52	0.3	2.0	29.0	1300	0.8	1.56	30.5	1700	1.6	1.56	32.0	2050
61	0.4	2.2	31.0	1500	0.8	1.56	32	1950	2.0	1.56	34.5	2550

B. Electrical Parameters

No. of Cores	Maximum Cond. D.C. Resistance at Ω/Km	Approx. Cond. A.C. Resistance at 90°C in Ω/Km	Resistance of cable at 50 Hz in Ω/km	Approx. Capcetit. of cable in microf/KM	Normal Current Rating in Amps with XLPE Insulation			Short Circuit Current Rating for 1 sec Duration with XLPE Insulation
					Ground	Duct	Air	
2	12.1	15.2	0.11	0.096	30.0	27.0	28.0	0.215
3	12.1	15.2	0.11	0.096	28.0	23.0	24.0	0.215
4	12.1	15.2	0.11	0.096	28.0	23.0	24.0	0.215
5	12.1	15.2	0.11	0.096	28.0	23.0	24.0	0.215
6	12.1	15.2	0.11	0.096	20.5	18.0	19.0	0.215
7	12.1	15.2	0.11	0.096	19.5	18.0	19.0	0.215
10	12.1	15.2	0.11	0.096	18.0	15.5	16.5	0.215
12	12.1	15.2	0.11	0.096	17.0	14.5	15.0	0.215
14	12.1	15.2	0.11	0.096	15.5	14.5	15.0	0.215
16	12.1	15.2	0.11	0.096	15.5	13.0	14.0	0.215
19	12.1	15.2	0.11	0.096	14.5	13.0	14.0	0.215
24	12.1	15.2	0.11	0.096	13.0	12.0	12.5	0.215
27	12.1	15.2	0.11	0.096	13.0	12.0	12.5	0.215
30	12.1	15.2	0.11	0.096	12.0	10.5	11.0	0.215
37	12.1	15.2	0.11	0.096	11.0	9.5	10.5	0.215
40	12.1	15.2	0.11	0.096	11.0	9.5	10.5	0.215
44	12.1	15.2	0.11	0.096	10.0	8.5	9.0	0.215
52	12.1	15.2	0.11	0.096	9.5	7.5	8.0	0.215
61	12.1	15.2	0.11	0.096	8.5	7.0	7.5	0.215



XLPE Cu control cables Unarmoured :

XLPE control cables are used in industrial power or control circuits for conveying electrical signals to the associated devices. These cables can be laid in tunnels, cable trenches, indoors, pipelines, bridges and other fixed installation applications. However they are best for installation in cable trays, cable ducts, conduits or underground buries, raceways etc.

* The above data is indicative and may be revised without prior information.

XLPE CU CONTROL CABLE UNARMoured / ARMoured

2.5 SQ.MM

AS PER IS: 7098 P-1

Technical Detail For 2.5 SQ.MM Copper Conductor, XLPE Insulated Unarmoured & Galvanized Steel Strip / Wire Armoured Control Cables Type / Code Of Cable: 2XY/2XFY/2XWY. As per IS: 7098 (P-1)

Conductor : CU Conductor solid as per Class-1 IS:8130 or stranded as per class-2 IS:8130.

Insulation Material: Crosslink Polyethylene XLPE Compound. Insulation Thickness 0.7 mm.

Inner Sheath : PVC / PVC tape as per IS: 7098 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

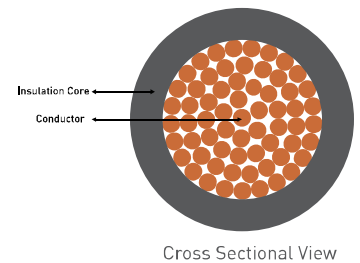
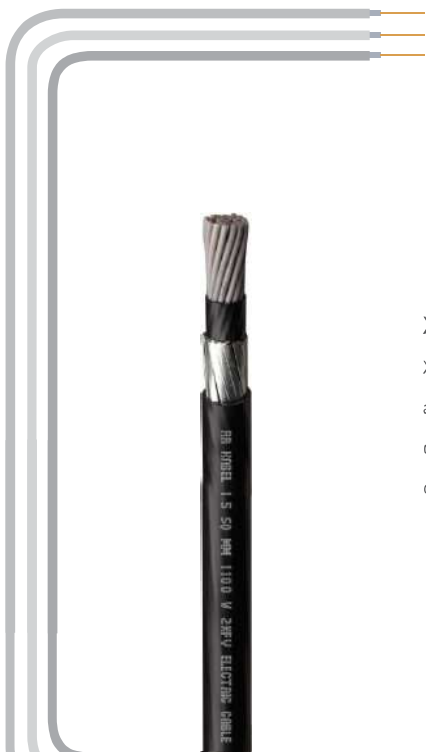
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

A. Cable Design Parameters

No. of Cores	Minimum Thickness of Inner Sh. mm	Unarmoured (2XY)			Armoured with Flat Strips (2XFY)				Armoured with round wire (2XWY)			
		Nom. Thick. of Out. Sh. mm	Approx. Overall Dia. mm	Approx. Net wt. of Cable Kg/Km	Nom. Thick. of Strip for Arm. mm	Min. Thick. of Out. Sheath mm	Approx. Overall Dia. mm	Approx. Net wt. Kg/Km	Nom. Thick. of strip for Arm. mm	Min. Thick. of Out. sheath mm	Approx. Overall Dia. mm	App. Net wt. Kg/Km
2	0.3	1.8	10.5	170	N/A	N/A	N/A	N/A	1.4	1.24	12.5	390
3	0.3	1.8	11.5	200	N/A	N/A	N/A	N/A	1.4	1.24	13.0	635
4	0.3	1.8	12.0	235	N/A	N/A	N/A	N/A	1.4	1.24	14.0	585
5	0.3	1.8	13.0	270	N/A	N/A	N/A	N/A	1.4	1.24	15.0	540
6	0.3	1.8	14.0	310	N/A	N/A	N/A	N/A	1.4	1.24	15.5	595
7	0.3	1.8	14.0	335	N/A	N/A	N/A	N/A	1.4	1.24	15.5	620
10	0.3	1.8	17.0	350	N/A	N/A	N/A	N/A	1.6	1.40	19.5	870
12	0.3	1.8	19.0	520	0.8	1.40	19.0	760	1.6	1.40	21.0	985
14	0.3	1.8	19.5	575	0.8	1.40	19.5	820	1.6	1.40	21.5	1030
16	0.3	2.0	20.0	655	0.8	1.40	20.0	890	1.6	1.40	22.0	1105
19	0.3	2.0	21.0	745	0.8	1.40	21.0	990	1.6	1.40	23.0	1225
24	0.3	2.0	23.5	910	0.8	1.40	24.0	1210	1.6	1.40	25.5	1470
27	0.3	2.0	24.0	1040	0.8	1.40	24.5	1300	1.6	1.40	26.5	1580
30	0.3	2.0	25.0	1085	0.8	1.40	25.5	1400	1.6	1.40	27.0	1680
37	0.3	2.0	27.0	1290	0.8	1.40	27.5	1635	1.6	1.56	29.0	1950
40	0.3	2.0	28.0	1390	0.8	1.56	28.5	1770	1.6	1.56	30.5	2145
44	0.4	2.2	31.0	1550	0.8	1.56	31.0	1950	2.0	1.56	33.5	2525
52	0.4	2.2	32.0	1790	0.8	1.56	32.5	2200	2.0	1.56	35.0	2785
61	0.4	2.2	34.0	2050	0.8	1.56	34.0	2490	2.0	1.56	36.5	3105

B. Electrical Parameters

No. of Cores	Maximum Cond. D.C. Resistance at Ω/Km	Approx. Cond. A.C. Resistance at 90° C in Ω/Km	Resistance of cable at 50 Hz in Ω/km	Approx. Capacit. of cable in microf/KM	Normal Current Rating in Amps with XLPE Insulation			Short Circuit Current Rating for 1 sec Duration with XLPE Insulation
					Ground	Duct	Air	
2	7.41	9.34	0.105	0.108	41.0	36.0	37.0	0.358
3	7.41	9.34	0.105	0.108	35.0	32.0	33.0	0.358
4	7.41	9.34	0.107	0.108	35.0	32.0	33.0	0.358
5	7.41	9.34	0.107	0.108	35.0	32.0	33.0	0.358
6	7.41	9.34	0.107	0.108	27.5	24.5	25.5	0.358
7	7.41	9.34	0.107	0.108	26.5	23.5	24.0	0.358
10	7.41	9.34	0.107	0.108	24.0	21.0	21.5	0.358
12	7.41	9.34	0.107	0.108	23.0	19.5	20.5	0.358
14	7.41	9.34	0.107	0.108	21.5	18.5	19.0	0.358
16	7.41	9.34	0.107	0.108	20.5	18.5	19.0	0.358
19	7.41	9.34	0.107	0.108	19.5	17.0	17.5	0.358
24	7.41	9.34	0.107	0.108	18.0	16.0	16.5	0.358
27	7.41	9.34	0.107	0.108	17.0	14.5	14.0	0.358
30	7.41	9.34	0.107	0.108	16.0	13.5	14.0	0.358
37	7.41	9.34	0.107	0.108	14.5	12.5	13.0	0.358
40	7.41	9.34	0.107	0.108	14.5	12.5	13.0	0.358
44	7.41	9.34	0.107	0.108	13.5	11.5	12.0	0.358
52	7.41	9.34	0.107	0.108	12.0	10.0	11.0	0.358
61	7.41	9.34	0.105	0.108	11.0	9.0	10.0	0.358



XLPE Cu control cables Unarmoured :

XLPE control cables are used in industrial power or control circuits for conveying electrical signals to the associated devices. These cables can be laid in tunnels, cable trenches, indoors, pipelines, bridges and other fixed installation applications. However they are best for installation in cable trays, cable ducts, conduits or underground buries, raceways etc.

* The above data is indicative and may be revised without prior information.

PVC CU CONTROL CABLE UNARMoured / ARMoured

1.5 SQ.MM

AS PER IS: 1554 P-1

Technical Detail For 1.5 SQ.MM Copper Conductor, PVC Insulated Unarmoured & Galvanized Steel Strip / Wire Armoured Control Cables Type / Code of Cable: YY/YFY/YWY. As per IS: 1554 (P-1)

Conductor : CU Conductor solid as per Class-1 IS:8130 or stranded as per class-2 IS:8130.

Inner Sheath : PVC/ PVC tape as per IS: 1554 (P-1)

Insulation Material: PVC Type-A as per IS:5831/Option:HR PVC (Type-C) as per IS:5831.

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Nominal Thickness of Insulation is 0.8 mm. Upto 5 cores by colour coding & more than 5 cores number printing on core as per IS:1554 (P-1)

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC Type ST-2 as per IS:5831, FR Type/ FRLS Type)

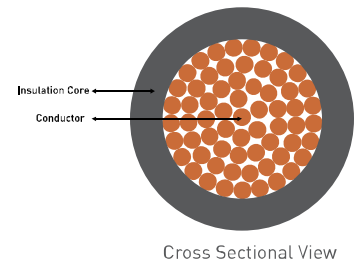
Color Of Outer Sheath: Black (Options: Any other color as per requirement)

A. Cable Design Parameters

No. of Cores	Minimum Thickness of Inner Sh. mm	Unarmoured (YY)			Armoured with Flat Strips (YFY)				Armoured with round wire (YWY)			
		Nom. Thick. of Out. Sh. mm	App. Overall Dia. mm	App. Net wt. Of Cable Kg/Km	Nom. Thick. of Strip for Arm. mm	Min. Thick. of Out. Sheath mm	App. Overall Dia. mm	Approx. Net wt. Kg/Km	Nom. Thick. of stri for Arm.p mm	Min. Thick. of Out. sheath mm	App. Overall Dia. mm	App. Net wt. Kg/Km
2	0.3	1.8	12	180	N/A	N/A	N/A	N/A	1.4	1.24	13	380
3	0.3	1.8	12.5	200	N/A	N/A	N/A	N/A	1.4	1.24	14	440
4	0.3	1.8	13	230	N/A	N/A	N/A	N/A	1.4	1.24	15	480
5	0.3	1.8	14	250	N/A	N/A	N/A	N/A	1.4	1.24	16	510
6	0.3	1.8	15	290	N/A	N/A	N/A	N/A	1.4	1.24	17	570
7	0.3	1.8	15	310	N/A	N/A	N/A	N/A	1.4	1.24	17	630
10	0.3	1.8	18	420	N/A	N/A	N/A	N/A	1.4	1.24	20	780
12	0.3	1.8	19	470	0.8	1.24	19	700	1.6	1.40	21	900
14	0.3	1.8	20	530	0.8	1.40	20	800	1.6	1.40	22	980
16	0.3	1.8	21	600	0.8	1.40	21	850	1.6	1.40	23	1050
19	0.3	2.0	22	700	0.8	1.40	22	950	1.6	1.40	24	1160
24	0.3	2.0	25	850	0.8	1.40	25	1150	1.6	1.40	27	1400
27	0.3	2.0	26	920	0.8	1.40	26	1250	1.6	1.40	28	1480
30	0.3	2.0	27	1000	0.8	1.40	27	1330	1.6	1.40	29	1600
37	0.3	2.0	28	1200	0.8	1.40	29	1530	1.6	1.40	30	1800
40	0.3	2.0	29	1270	0.8	1.40	30	1650	1.6	1.56	32	1980
44	0.3	2.0	31	1400	0.8	1.56	32	1850	1.6	1.56	34	2150
52	0.4	2.0	33	1650	0.8	1.56	34	2050	2.0	1.56	36	2650
61	0.4	2.2	35	1850	0.8	1.56	35	2300	2.0	1.56	38	2950

B. Electrical Parameters

No. of Cores	Maximum Cond. D.C. Resistance at Ω/Km	APP. Cond. A.C. Resistance at In Ω/Km		Resistance of cable at 50 hz in Ω/km	Approx. Capacitance of cable in microf/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1 Sec. Duration	
		at 70° C	at 85° C			With general Insulation			With H.R. Insulation			With Gen. Purpose Insulation	With Heat Resistance Insulation
						Ground	Duct	Air	Ground	Duct	Air		
2	12.1	14.52	15.2	0.112	0.2	23	20	20	26	24	24	0.153	0.173
3	12.1	14.52	15.2	0.112	0.2	21	17	17	24	21	21	0.153	0.173
4	12.1	14.52	15.2	0.112	0.2	21	17	17	24	21	21	0.153	0.173
5	12.1	14.52	15.2	0.112	0.2	21	17	17	24	21	21	0.153	0.173
6	12.1	14.52	15.2	0.112	0.2	15	13	13	17	16	16	0.153	0.173
7	12.1	14.52	15.2	0.112	0.2	14	13	13	16	15	15	0.153	0.173
10	12.1	14.52	15.2	0.112	0.2	13	11	11	15	13	13	0.153	0.173
12	12.1	14.52	15.2	0.112	0.2	12	10	10	14	12	12	0.153	0.173
14	12.1	14.52	15.2	0.112	0.2	11	10	10	13	12	12	0.153	0.173
16	12.1	14.52	15.2	0.112	0.2	11	9	9	13	11	11	0.153	0.173
19	12.1	14.52	15.2	0.112	0.2	10	9	9	11	11	11	0.153	0.173
24	12.1	14.52	15.2	0.112	0.2	9	8	8	10	10	10	0.153	0.173
27	12.1	14.52	15.2	0.112	0.2	9	8	8	10	10	10	0.153	0.173
30	12.1	14.52	15.2	0.112	0.2	9	7	7	10	8	8	0.153	0.173
37	12.1	14.52	15.2	0.112	0.2	8	7	7	9	8	8	0.153	0.173
40	12.1	14.52	15.2	0.112	0.2	8	7	7	9	8	8	0.153	0.173
44	12.1	14.52	15.2	0.112	0.2	7	7	7	8	7	7	0.153	0.173
52	12.1	14.52	15.2	0.112	0.2	6	6	6	7	7	7	0.153	0.173
61	12.1	14.52	15.2	0.112	0.2	6	6	6	7	7	7	0.153	0.173



PVC unarmoured cable:

These power cables for energy supply are installed outdoors, in water, cable ducts, power stations, in distribution boards and in subscriber networks, where mechanical damages are not to be expected. They are largely used in fixed wiring, underground wiring as well as industrial control wiring.

* The above data is indicative and may be revised without prior information.

PVC CU CONTROL CABLE UNARMoured / ARMoured

2.5 SQ.MM

AS PER IS: 1554 P-1

Technical Detail For 2.5 SQ.MM Copper Conductor, PVC Insulated Unarmoured & Galvanized Steel Strip/Wire Armoured Control Cables Type / Code Of Cable: YY/YFY/YWY. As per IS: 1554 (P-1)

Conductor : CU Conductor solid as per class-1 IS:8130 or stranded as per class-2 IS:8130.

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Insulation Material: PVC Type-A as per IS:5831/Option:HR PVC (Type - C) as per IS:5831. Nominal Thickness of Insulation is 0.9 mm. Upto 5 cores by colour coding & more than 5 cores number printing on core as per IS:1554 (P-1)

Armouring: Single armouring of Galvanized Steel Strip / Wire.

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC Type ST-2 as per IS:5831, FR Type/ FRLS Type).

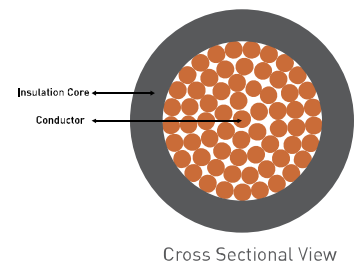
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

A. Cable Design Parameters

No. of Cores	Minimum Thickness of Inner Sh. mm	Unarmoured (YY)			Armoured with Flat Strips (YFY)				Armoured with round wire (YWY)			
		Nom. Thick. of Out. Sh. mm	Approx. Overall Dia. mm	Approx. Net wt. of Cable Kg/Km	Nom. Thick. of Strip for Arm. mm	Min. Thick. of Out. Sheath mm	Approx. Overall Dia. mm	Approx. Net wt. of Cable Kg/Km	Nom. Thick. of strip for Arm. mm	Min. Thick. of Out. sheath mm	Approx. Overall Dia. mm	Approx. Net wt. Kg/Km
2	0.3	1.8	13	220	N/A	N/A	N/A	N/A	1.4	1.24	14	440
3	0.3	1.8	14	260	N/A	N/A	N/A	N/A	1.4	1.24	15	480
4	0.3	1.8	15	310	N/A	N/A	N/A	N/A	1.4	1.24	16	560
5	0.3	1.8	16	340	N/A	N/A	N/A	N/A	1.4	1.24	17	600
6	0.3	1.8	17	390	N/A	N/A	N/A	N/A	1.4	1.24	19	685
7	0.3	1.8	17	424	N/A	N/A	N/A	N/A	1.6	1.24	19	720
10	0.3	1.8	20	570	0.8	1.40	21	850	1.6	1.40	23	1040
12	0.3	2.0	21	670	0.8	1.40	22	950	1.6	1.40	24	1130
14	0.3	2.0	22	750	0.8	1.40	23	1050	1.6	1.40	25	1080
16	0.3	2.0	24	840	0.8	1.40	24	1120	1.6	1.40	26	1180
19	0.3	2.0	25	950	0.8	1.40	25	1250	1.6	1.40	27	1340
24	0.3	2.0	28	1200	0.8	1.40	29	1550	1.6	1.56	31	1680
27	0.3	2.0	29	1300	0.8	1.40	30	1650	1.6	1.56	32	1840
30	0.3	2.0	30	1400	0.8	1.56	31	1800	1.6	1.56	33	1985
37	0.4	2.2	33	1700	0.8	1.56	34	2100	2.0	1.56	36	2580
40	0.4	2.2	34	1850	0.8	1.56	35	2300	2.0	1.56	37	2740
44	0.4	2.2	36	2000	0.8	1.56	37	2500	2.0	1.56	40	2980
52	0.4	2.2	38	2350	0.8	1.56	39	2850	2.0	1.72	42	3380
61	0.4	2.2	40	2700	0.8	1.56	41	3250	2.0	1.72	44	3780

B. Electrical Parameters

No. of Cores	Maximum Cond. D.C. Resistance at Ω/Km	APP. Cond. A.C. Resistance at $\ln \Omega/\text{Km}$		Resistance of cable at 50 hz in Ω/km	Approx. capacitance of Cable in microf/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1 Sec. Duration	
		at 70° C	at 85° C			With general Insulation			With H.R. Insulation			With Gen. Purpose Insulation	With Heat Resistance Insulation
						Ground	Duct	Air	Ground	Duct	Air		
2	7.41	8.89	9.34	0.107	0.22	32	27	27	38	32	32	0.26	0.288
3	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.26	0.288
4	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.26	0.288
5	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.26	0.288
6	7.41	8.89	9.34	0.107	0.22	21	18	18	24	21	21	0.26	0.288
7	7.41	8.89	9.34	0.107	0.22	20	17	17	22	20	20	0.26	0.288
10	7.41	8.89	9.34	0.107	0.22	18	15	15	20	16	16	0.26	0.288
12	7.41	8.89	9.34	0.107	0.22	17	14	14	19	16	16	0.26	0.288
14	7.41	8.89	9.34	0.107	0.22	16	13	13	18	15	15	0.26	0.288
16	7.41	8.89	9.34	0.107	0.22	15	13	13	17	15	15	0.26	0.288
19	7.41	8.89	9.34	0.107	0.22	14	12	12	16	14	14	0.26	0.288
24	7.41	8.89	9.34	0.107	0.22	13	11	11	14	13	13	0.26	0.288
27	7.41	8.89	9.34	0.107	0.22	12	10	10	13	12	12	0.26	0.288
30	7.41	8.89	9.34	0.107	0.22	12	10	10	13	12	12	0.26	0.288
37	7.41	8.89	9.34	0.107	0.22	11	9	9	12	10	10	0.26	0.288
40	7.41	8.89	9.34	0.107	0.22	11	9	9	12	10	10	0.26	0.288
44	7.41	8.89	9.34	0.107	0.22	10	9	9	11	10	10	0.26	0.288
52	7.41	8.89	9.34	0.107	0.22	9	8	8	10	10	10	0.26	0.288
61	7.41	8.89	9.34	0.107	0.22	8	8	8	9	9	9	0.26	0.288



PVC Unarmoured cable:

The PVC Unarmoured cables are widely used in fixed wiring, panel wiring, electric motors, D.C. power transformers, battery cables. Industries, distribution boards, underground installations and any other outdoor installations commonly utilise the PVC unarmoured cables.

* The above data is indicative and may be revised without prior information.

XLPE ARMoured CABLE

3 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 3 Cores AL/CU Conductor, XLPE Insulated, Galvanized Steel Strip/Wire Armoured Cables Type / Code Of Cable: A2XFY/2XFY, A2XWY/2XWY. As per IS: 7098 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2, round as per IS:8130. Above 10 sq.mm conductor are stranded compacted shaped as per class-2 IS:8130

Insulation: Crosslinked Polyethylene (XLPE) (Phase core colors - Red, Yellow, Blue).

Inner Sheath : PVC / PVC tape as per IS: 7098 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

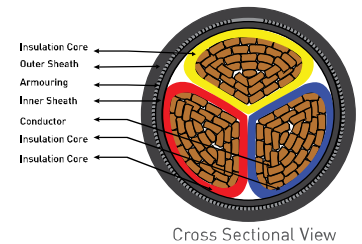
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

A. Cable Design Parameters

Size Cross Sectional Area Sq.mm	Minimum No. of Strands in conductor		Nominal Thickness of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip (A2XFY/2XFY)					Armouring with round wire (A2XWY/2XWY)				
					Nominal Thick. of Arm. Strip mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net Wt Of Cable (Kg/Km)		Nominal Diameter Of Wire mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net Wt Of Cable (Kg/Km)	
	AL	CU	Al Cable, A2XFY	Cu Cable, 2XFY				Al Cable, A2XWY	Cu Cable, 2XWY					
4	-	1/7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	18	430	510
6	1	1/7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	19	470	600
10	1	7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	20	520	750
16	6	6	0.7	0.3	0.8	1.24	19	590	890	1.6	1.40	20	730	1020
25	6	6	0.9	0.3	0.8	1.40	21	790	1190	1.6	1.40	23	940	1400
35	6	6	0.9	0.3	0.8	1.40	23	940	1490	1.6	1.40	25	1130	1750
50	6	6	1.0	0.3	0.8	1.40	26	1090	1990	1.6	1.56	29	1330	2180
70	12	12	1.1	0.4	0.8	1.56	29	1450	2690	2.0	1.56	32	1820	3070
95	15	15	1.1	0.4	0.8	1.56	32	1740	3490	2.0	1.56	35	2210	3950
120	15	18	1.2	0.4	0.8	1.56	35	2100	4190	2.0	1.72	39	2670	4840
150	15	18	1.4	0.5	0.8	1.72	42	2520	5200	2.0	1.88	43	3450	6150
185	30	30	1.6	0.5	0.8	1.88	44	2990	6300	2.5	2.04	48	3830	7160
240	30	34	1.7	0.6	0.8	2.04	49	3740	8190	2.5	2.20	53	4720	8870
300	30	34	1.8	0.6	0.8	2.20	54	4490	10000	2.5	2.36	58	6130	11380
400	53	53	2.0	0.7	0.8	2.52	60	5590	12990	3.2	2.68	65	7390	14410
500	53	53	2.2	0.7	0.8	2.68	66	6890	15990	3.2	2.84	72	9980	18490
630	53	53	2.4	0.7	0.8	2.84	74	8540	19990	4.0	3.00	81	11820	22560

B. Electrical Parameters

Size Cross Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20° C in Ω/km		Max. Cond. A.C. Resistance at 90° C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.9	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.9	3.94	0.09	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.94	1.43
16	1.91	1.15	2.44	1.47	0.08	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.08	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.08	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.1	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.10	0.0601	0.13	0.0778	0.071	0.33	370	305	461	460	390	590	28.2	42.9
400	0.0778	0.047	0.1023	0.0618	0.07	0.33	435	350	542	520	440	670	37.6	57.2
500	0.0605	0.0366	0.0808	0.0489	0.07	0.34	481	405	624	580	480	750	47.0	71.5
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



XLPE Armoured Cable:

XLPE Armoured cables has many advantages over paper insulated and PVC insulated cable. They have high electric as well as mechanical strength. These cables are commonly used in railways, lift cables and ship wiring. They are also used in ducts and direct burial in ground as they are subjected to immerse in water all the time.

* The above data is indicative and may be revised without prior information.

XLPE ARMoured CABLE

3.5 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 3.5 Cores AL/CU Conductor, XLPE Insulated, Galvanized Steel Strip / Wire Armoured Cables Type / Code Of Cable: A2XFY/2XFY, A2XWY/2XWY. As per IS: 7098

Conductor : AL/CU stranded compact shaped conductor as per class-2, IS:8130

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Insulation: Crosslinked Polyethylene (XLPE) (Phase core color - Red, Yellow, Blue) (Neutral core color - Black)

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

Inner Sheath : PVC/ PVC tape as per IS: 7098 (P-1)

Color Of Outer Sheath: Black (Options: Any other colors as per requirement).

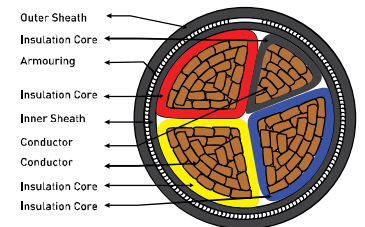
A. Cable Design Parameters

Table: I

Size Cores x Sq.mm Neutral Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness Of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip (A2XFY/ 2XFY)				Armouring with round wire (A2XWY/ 2XWY)					
					Nominal Thick. Of Arm. Strip mm	Minimum Thick. Of Out. Sth. mm	Approx. Overall Dia. mm	Approx. Net Wt Of Cable (Kg/Km)		Nominal Diameter Of Wire mm	Minimum Thick.of Out. Sth. mm	Approx. Overall Dia. mm	Approx. Net Wt Of Cable (Kg/Km)	
	AL	CU						Al Cable, A2XFY	Cu Cable, 2XFY				Al Cable, A2XWY	Cu Cable, 2XWY
3x25+16	6/6	6/6	0.9/0.7	0.3	0.8	1.4	23	900	1400	1.6	1.4	25	1080	1685
3x35+16	6/6	6/6	0.9/0.7	0.3	0.8	1.4	25	1000	1800	1.6	1.4	27	1285	1980
3x50+25	6/6	6/6	1.0/0.9	0.3	0.8	1.4	28	1200	2300	1.6	1.56	30	1580	2685
3x70+35	12/6	12/6	1.1/0.9	0.4	0.8	1.56	32	1600	3200	2.0	1.56	35	2190	3690
3x95+50	15/6	15/6	1.1/1.0	0.4	0.8	1.56	35	2000	4100	2.0	1.56	38	2580	4585
3x120+70	15/12	18/12	1.2/1.1	0.4	0.8	1.72	39	2400	5100	2.0	1.72	42	3085	5680
3x150+70	15/12	18/12	1.4/1.1	0.5	0.8	1.72	43	2800	6000	2.0	1.88	46	3590	6790
3x185+95	30/15	30/15	1.6/1.1	0.5	0.8	1.88	47	3400	7400	2.5	2.04	51	4675	8615
3x240+120	30/15	34/18	1.7/1.2	0.6	0.8	2.04	53	4300	9500	2.5	2.2	56	5680	10485
3x300+150	30/15	34/18	1.8/1.4	0.6	0.8	2.2	57	5000	11500	2.5	2.36	60	6685	12990
3x400+185	53/30	53/30	2.0/1.6	0.7	0.8	2.52	88	6400	14500	3.15	2.68	71	8980	16980
3x500+240	53/30	53/34	2.2/1.7	0.7	0.8	2.68	74	7900	18000	3.15	2.84	79	10985	21485
3x630+300	53/30	53/34	2.4/1.8	0.7	0.8	3.0	82	9900	23000	4.0	3	88	14490	27985

B. Electrical Parameters

Size Cores x Sq.mm Neutral Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 90°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
3x25+16	1.2	0.727	1.54	0.931	0.08	0.2	95	80	99	120	100	125	2.35	3.58
3x35+16	0.868	0.524	1.11	0.671	0.08	0.23	116	94	117	145	120	155	3.29	5.01
3x50+25	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.7	7.15
3x70+35	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
3x95+50	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
3x120+70	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
3x150+70	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.1	21.45
3x185+95	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
3x240+120	0.125	0.0754	0.162	0.098	0.072	0.31	325	270	402	410	350	510	22.56	34.32
3x300+150	0.1	0.0601	0.13	0.078	0.071	0.33	370	305	461	460	390	590	28.2	42.9
3x400+185	0.0778	0.047	0.1023	0.0618	0.07	0.33	435	350	542	520	440	670	37.6	57.2
3x500+240	0.0605	0.0366	0.0808	0.0489	0.07	0.34	481	405	624	580	480	750	47.0	71.5
3x630+300	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



Cross Sectional View



XLPE Armoured Cable:

XLPE Armoured cables has many advantages over paper insulated and PVC insulated cable. They have high electric as well as mechanical strength. These cables are commonly used in railways, lift cables and ship wiring. They are also used in ducts and direct burial in ground as they are subjected to immerse in water all the time.

* The above data is indicative and may be revised without prior information.

XLPE ARMoured CABLE

4 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 4 Cores AL/CU Conductor, XLPE Insulated, Galvanized Steel Strip/Wire Armoured Cables Type / Code Of Cable: A2XFY/2XFY, A2XWY/2XWY. As per IS: 7098 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2, round as per IS:8130. Above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130.

Insulation: Crosslinked Polyethylene (XLPE) (Core colors - Red, Yellow, Blue, Black)

Inner Sheath : PVC/ PVC tape as per IS: 7098 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

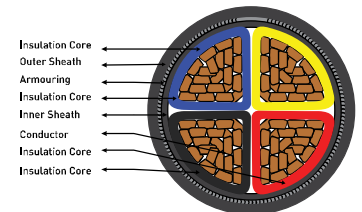
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

A. Cable Design Parameters

Size cross - Sectional Area Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip (A2XFY/2XFY)					Armouring with round wire (A2XWY/2XWY)				
					Nominal Thick. of Arm. Strip mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net wt of Cable (Kg/Km)		Nominal Diameter Of Wire mm	Minimum Thick.of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net wt Of Cable (Kg/Km)	
	AL	CU						Al Cable, A2XFY	Cu Cable, 2XFY				Al Cable, A2XWY	Cu Cable, 2XWY
4	-	1/7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	18	540	640
6	1	1/7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	19	590	760
10	1	7	0.7	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.40	21	655	940
16	6	6	0.7	0.3	0.8	1.4	20	700	1100	1.6	1.40	22	920	1280
25	6	6	0.9	0.3	0.8	1.4	24	900	1500	1.6	1.40	26	1185	1750
35	6	6	0.9	0.3	0.8	1.4	27	1100	2000	1.6	1.40	28	1420	2185
50	6	6	1.0	0.3	0.8	1.56	30	1400	2500	1.6	1.56	32	1730	2830
70	12	12	1.1	0.4	0.8	1.56	34	1800	3400	2.0	1.56	37	2375	3980
95	15	15	1.1	0.4	0.8	1.56	37	2200	4400	2.0	1.72	40	2870	5130
120	15	18	1.2	0.5	0.8	1.72	41	2700	5600	2.0	1.88	44	3475	6285
150	15	18	1.4	0.5	0.8	1.88	46	3200	6800	2.5	2.04	49	4480	7980
185	30	30	1.6	0.5	0.8	2.04	51	3900	8300	2.5	2.20	54	5185	9680
240	30	34	1.7	0.6	0.8	2.2	57	4850	10500	2.5	2.36	65	6385	11985
300	30	34	1.8	0.7	0.8	2.36	63	5850	13000	3.15	2.52	68	8280	15385
400	53	53	2.0	0.7	0.8	2.68	71	7320	17000	3.15	2.84	76	9985	19480
500	53	53	2.2	0.7	0.8	2.84	79	9000	21000	4.0	3.00	86	13480	24985
630	53	53	2.4	0.7	0.8	3	88	11000	27000	4.0	3.00	94	15975	30485

Electrical Parameters

Size cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 90°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K,Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.9	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.9	3.94	0.09	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.94	1.43
16	1.91	1.15	2.44	1.47	0.08	0.18	78	61	70	94	78	85	1.50	2.29
25	1.2	0.727	1.54	0.931	0.08	0.2	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.08	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.1	0.0601	0.13	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.9
400	0.0778	0.047	0.1023	0.0618	0.07	0.33	435	350	542	520	440	670	37.60	57.2
500	0.0605	0.0366	0.0808	0.0489	0.07	0.34	481	405	624	580	480	750	47.00	71.5
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



Cross Sectional View



XLPE Armoured Cable:

XLPE Armoured cables are widely used as power cables for power transmission in cable ducts, power stations, indoor - outdoor installations, as well as in water. They are often used in distribution line voltage rated at 35kV and below. Its simple structure along with stress - resistant and chemical corrosion - resistant makes it a better choice than the PVC insulated power cable.

* The above data is indicative and may be revised without prior information.

PVC ARMoured CABLE

3 CORE, AL/CU

AS PER IS: 1554 P-1

Technical Detail For 1.1 KV, 3 Cores AL/CU Conductor, PVC Insulated, Galvanized Steel Strip/Wire Armoured Cables Type / Code Of Cable: AYFY/YFY, AYWY/YWY. As per IS: 1554 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compacted shaped as per class-2 IS:8130.

Insulation: PVC Type-A as per IS:5831. [Option: HR PVC Type -C, as per IS:5831] [Phase core colors - Red, Yellow, Blue].

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC type ST-2 as per IS:5831, FR Type, FRLS Type).

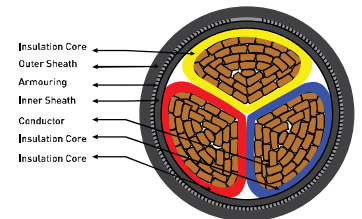
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

Cable Design Parameters

Size cross - Sectional Area Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness Of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip [AYFY/YFY]					Armouring with round wire [AYWY/YWY]				
					Nominal Thick, Of Arm. Strip mm	Minimum Thick, Of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net Wt Of Cable (Kg/Km)		Nominal Diameter Of Wire mm	Minimum Thick,of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net Wt Of Cable (Kg/Km)	
								Al Cable, AYFY	Cu Cable, YFY				Al Cable, AYWY	Cu Cable, YWY
4	-	1/7	1	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	18	570	620
6	1	1/7	1	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	19	670	780
10	1	7	1	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.40	21	870	1080
16	6	6	1	0.3	0.8	1.4	20	690	990	1.6	1.40	21	920	1230
25	6	6	1.2	0.3	0.8	1.4	23	890	1340	1.6	1.40	23	1070	1520
35	6	6	1.2	0.3	0.8	1.4	24	990	1640	1.6	1.56	26	1280	1930
50	6	6	1.4	0.4	0.8	1.56	27	1300	2220	1.6	1.56	29	1580	2510
70	12	12	1.4	0.4	0.8	1.56	31	1590	2900	2.0	1.56	33	2130	3430
95	15	15	1.6	0.4	0.8	1.56	35	1990	3740	2.0	1.72	37	2630	4380
120	15	18	1.6	0.5	0.8	1.72	37	2390	4620	2.0	1.88	39	2980	5180
150	15	18	1.8	0.5	0.8	1.88	41	2790	5600	2.0	2.04	43	3530	6280
185	30	30	2.0	0.6	0.8	1.88	46	3400	6830	2.5	2.20	49	4590	7980
240	30	34	2.2	0.6	0.8	2.20	51	4200	8640	2.5	2.36	54	5580	9980
300	30	34	2.4	0.7	0.8	2.36	56	5040	10620	2.5	2.68	59	6580	11980
400	53	53	2.6	0.7	0.8	2.68	63	6290	13730	3.2	2.84	68	8690	15990
500	53	53	3.0	0.7	0.8	3.00	70	7790	17090	3.2	3.00	75	10980	19980
630	53	53	3.4	0.7	0.8	3.00	78	9690	21410	4.0	3.00	84	15990	25480

Electrical Parameters

Size cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.46
6	4.61	3.08	5.53	3.7	0.096	0.28	35	30	30	45	38	39	0.456	0.69
10	3.08	1.83	3.7	2.2	0.091	0.34	46	39	40	60	50	52	0.76	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.2	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.32	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.9
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.8
150	0.206	0.124	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.4	17.3
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.1	21.3
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.2	27.6
300	0.1	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.8	34.5
400	0.0778	0.047	0.0961	0.058	0.072	0.70	335	290	375	425	360	435	30.4	46
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.0	57.5
630	0.0469	0.0283	0.061	0.0368	0.072	0.70	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC Armoured cables:

PVC Armoured cables are widely used to supply energy in indoor - outdoor installations, in water as well as for any underground installations. They are used in fixed wiring, underground wiring and industrial control wiring.

* The above data is indicative and may be revised without prior information.

PVC ARMoured CABLE

3.5 CORE, AL/CU

AS PER IS: 1554 P-1

Technical Detail For 1.1 KV, 3.5 Cores AL/CU Conductor, PVC Insulated, Galvanized Steel Strip/Wire

Conductor : AL/CU Stranded compact shaped conductor as per class-2, IS:8130 Cross - Sectional View

Insulation: PVC Type-A as per IS:5831. (Option: HR PVC Type -C, as per IS:5831) (Phase core colors - Red, Yellow, Blue) (Neutral core color Black)

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC type ST-2 as per IS:5831, FR Type, FRLS Type)

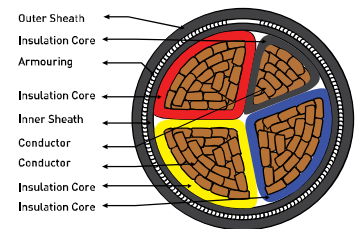
Color Of Outer Sheath: Black (Options: Any other color as per requirement)

Cable Design Parameters

Size Cores x Sq.mm Neutral Sq.mm	Minimum No. of Strands in conductor		Nominal Thickness of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip (AYFY/YFY)					Armouring with round wire (AYWY/YWY)				
					Nominal Thick. of Arm. Strip mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net wt of Cable (Kg/Km)		Nominal Diameter of Wire mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net wt Of Cable (Kg/Km)	
								Al Cable, AYFY	Cu Cable, YFY				Al Cable, AYWY	Cu Cable, YWY
3x25+16	6/6	6/6	1.2/1.0	0.3	0.8	1.40	24	1000	1550	1.6	1.40	26	1285	1825
3x35+16	6/6	6/6	1.2/1.0	0.3	0.8	1.40	26	1200	1950	1.6	1.40	28	1425	2125
3x50+25	6/6	6/6	1.4/1.2	0.3	0.8	1.56	30	1500	2600	1.6	1.56	31	1785	2790
3x70+35	12/6	12/6	1.4/1.2	0.4	0.8	1.56	34	1800	3300	2	1.56	36	2390	3780
3x95+50	15/6	15/6	1.6/1.4	0.4	0.8	1.56	37	2300	4350	2	1.72	39	2980	4980
3x120+70	15/12	18/12	1.6/1.4	0.5	0.8	1.72	41	2800	5450	2	1.88	43	3480	6080
3x150+70	15/12	18/12	1.8/1.4	0.5	0.8	1.88	45	3200	6400	2	1.88	47	3970	7180
3x185+95	30/15	30/15	2/1.6	0.5	0.8	2.04	49	3900	7900	2.5	2.04	53	5185	9150
3x240+120	30/15	34/18	2.20/1.6	0.6	0.8	2.20	55	4800	10000	2.5	2.30	58	6385	11480
3x300+150	30/15	34/18	2.4/1.8	0.6	0.8	2.36	61	5800	12300	3.15	2.52	65	8180	14480
3x400+185	53/30	53/30	2.6/2.0	0.7	0.8	2.68	69	7300	15800	3.15	2.63	75	9885	18380
3x500+240	53/30	53/34	3.0/2.2	0.7	0.8	2.84	77	9000	19500	4	3.00	84	13480	23985
3x630+300	53/30	53/34	3.4/2.40	0.7	0.8	3.00	87	11500	25000	4	3.00	92	15980	28480

Electrical Parameters

Size Cores x Sq.mm Neutral Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
							With AL Cond.			With CU Cond.				
	AL	CU	AL	CU			Ground	Duct	Air	Ground	Duct	Air	AL	CU
3x25+16	1.2	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.9	2.88
3x35+16	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
3x50+25	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.8	5.75
3x70+35	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
3x95+50	0.32	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.9
3x120+70	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.8
3x150+70	0.206	0.124	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.4	17.3
3x185+95	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.1	21.3
3x240+120	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.2	27.6
3x300+150	0.1	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.8	34.5
3x400+185	0.0778	0.047	0.0961	0.058	0.072	0.70	335	290	375	425	360	435	30.4	46.0
3x500+240	0.0605	0.0366	0.0759	0.459	0.072	0.70	370	320	425	470	390	520	38.0	57.5
3x630+300	0.0469	0.0283	0.061	0.0368	0.072	0.70	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC Armoured cables:

PVC Armoured cables are widely used to supply energy in indoor - outdoor installations, in water as well as for any underground installations. They are used in fixed wiring, underground wiring and industrial control wiring.

* The above data is indicative and may be revised without prior information.

PVC ARMoured CABLE

4 CORE, AL/CU

AS PER IS: 1554 P-1

Technical Detail For 1.1 KV, 4 Cores AL/CU Conductor, PVC Insulated, Galvanized Steel Strip/Wire Armoured Cables Type / Code Of Cable: AYFY/YFY, AYWY/YWY. As per IS: 1554 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compacted shaped class-2 as per IS:8130.

Insulation: PVC TYPE-A as per IS:5831. (Option: PVC TYPE - C as per IS:5831) (Core color - Red, Yellow, Blue, Black)

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Armouring: Single armouring of Galvanized Steel Strip/Wire.

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC TYPE - ST-2 as per IS:5831, FR Type, FRLS Type)

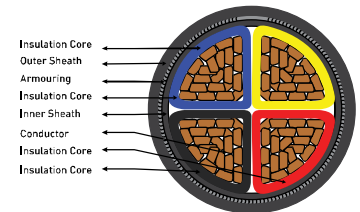
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

A. Cable Design Parameters

Size cross - Sectional Area Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness of Insu. mm	Minimum Thickness of Inn. Sth. mm	Armouring with flat strip [AYFY/YFY]					Armouring with round wire [AYWY/YWY]				
					Nominal Thick. of Arm. Strip mm	Minimum Thick. Of Out. Sth. mm	Approx. Overall Dia. mm	Approx. Net wt of Cable (Kg/Km)		Nominal Diameter of Wire mm	Minimum Thick. of Out. Sth. mm	Approx. Overall Dia. mm	Approx Net wt Of Cable (Kg/Km)	
								Al Cable. AYFY	Cu Cable. YFY				Al Cable. AYWY	Cu Cable. YWY
4	-	1/7	1	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	18	630	775
6	1	1/7	1	0.3	N/A	N/A	N/A	N/A	N/A	1.4	1.24	21	870	1010
10	1	7	1	0.3	0.8	1.40	21	750	998	1.6	1.40	22	890	1130
16	6	6	1	0.3	0.8	1.40	22	860	1260	1.6	1.40	23	1110	1500
25	6	6	1.2	0.3	0.8	1.40	25	1100	1720	1.6	1.40	27	1385	2000
35	6	6	1.2	0.3	0.8	1.40	28	1300	2170	1.6	1.56	30	1580	2450
50	6	6	1.4	0.4	0.8	1.56	32	1600	2850	2.0	1.56	34	2185	3425
70	12	12	1.4	0.4	0.8	1.56	35	2000	3740	2.0	1.56	37	2625	4370
95	15	15	1.6	0.4	0.8	1.72	40	2600	5000	2.0	1.72	42	3285	5640
120	15	18	1.6	0.5	0.8	1.88	43	3050	6030	2.0	1.88	47	3825	6820
150	15	18	1.8	0.5	0.8	1.88	48	3600	7325	2.5	2.04	51	4830	8560
185	30	30	2.0	0.6	0.8	2.04	52	4300	8890	2.5	2.20	56	5780	10370
240	30	34	2.2	0.6	0.8	2.36	59	5400	11355	2.5	2.36	62	7685	12940
300	30	34	2.4	0.7	0.8	2.52	67	6600	14050	3.15	2.68	70	9185	16630
400	53	53	2.6	0.7	0.8	2.84	74	8200	18128	3.15	2.84	76	10980	20390
500	53	53	3.0	0.7	0.8	3.00	80	10500	22900	4.0	3.00	86	14980	27360
630	53	53	3.4	0.7	0.8	3.00	90	13000	28625	4.0	3.00	96	17975	33600

A. Electrical Parameters

Size Cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.46
6	4.61	3.08	5.53	3.7	0.096	0.28	35	30	30	45	38	39	0.456	0.69
10	3.08	1.83	3.7	2.2	0.091	0.34	46	39	40	60	50	52	0.76	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.2	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.32	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.9
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.8
150	0.206	0.124	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.4	17.3
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.1	21.3
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.2	27.6
300	0.1	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.8	34.5
400	0.0778	0.047	0.0961	0.058	0.072	0.70	335	290	375	425	360	435	30.4	46
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.0	57.5
630	0.0469	0.0283	0.061	0.0368	0.072	0.70	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC armoured cables:

These power cables for energy supply are installed outdoors, in water, cable ducts, power stations, in distribution boards and in subscriber networks, where mechanical damages are not to be expected. They are largely used in fixed wiring, underground wiring as well as industrial control wiring.

* The above data is indicative and may be revised without prior information.

XLPE UNARMoured CABLE

3 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 3 Cores AL/CU Conductor, XLPE Insulated, Unarmoured Cables Type / Code Of Cable: A2XY/2XY. As per IS: 7098 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130.

Inner Sheath : PVC / PVC tape as per IS: 7098 (P-1)

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

Color Of Outer Sheath: Black (Options: Any other color as per requirement).

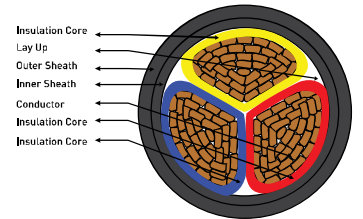
Insulation: Crosslinked Polyethylene [XLPE] (core color - Red, Yellow, Blue)

Cable Design Parameters

Size Cross Sectional Area Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness of Insulation mm	Minimum Thickness of Inner Sheath mm	Nominal Thickness of Outer Sheath mm	Approx. Overall Diameter mm	Approx. Net wt Of Cable (Kg/Km)	
	AL	CU					Al Cable. A2XY	Cu Cable. 2XY
4	-	1/7	0.7	0.3	1.8	14	170	240
6	1	1/7	0.7	0.3	1.8	16	200	300
10	1	7	0.7	0.3	1.8	18	250	430
16	6	6	0.7	0.3	1.8	18	310	600
25	6	6	0.9	0.3	2.0	21	470	920
35	6	6	0.9	0.3	2.0	22	570	1210
50	6	6	1.0	0.3	2.0	25	720	1590
70	12	12	1.1	0.4	2.2	30	950	2200
95	15	15	1.1	0.4	2.2	32	1250	2980
120	15	18	1.2	0.4	2.2	35	1520	3720
150	15	18	1.4	0.5	2.4	39	1840	4550
185	30	30	1.6	0.5	2.6	43	2310	5700
240	30	34	1.7	0.6	2.8	49	3010	7390
300	30	34	1.8	0.6	3.0	53	3600	9190
400	53	53	2.0	0.7	3.2	59	4560	11700
500	53	53	2.2	0.7	3.6	66	5780	14940
630	53	53	2.4	0.7	3.8	73	7360	19230

Electrical Parameters

Size Cross Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 90°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.9	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.9	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.94	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.10	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.9
400	0.0778	0.047	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.2
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.5
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



Cross Sectional View



XLPE Unarmoured Cable:

XLPE Unarmoured cables are used to supply energy for underground installations, in water, power stations, in industries as well as in distribution boards. They are also used in subscriber networks, where mechanical damages are not to be expected.

* The above data is indicative and may be revised without prior information.

XLPE UNARMoured CABLE

3.5 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 3.5 Cores AL/CU Conductor, XLPE Insulated, Unarmoured Cables Type / Code Of Cable: A2XY/2XY as per IS: 7098 (P-1)

Conductor : AL/CU Stranded compact shaped conductor as per class-2, IS:8130

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

Insulation: Crosslinked Polyethylene [XLPE](Phase core colors - Red, Yellow, Blue,) [Neutral core color - Black]

Color Of Outer Sheath: Black (Options: Any other color as per requirement).

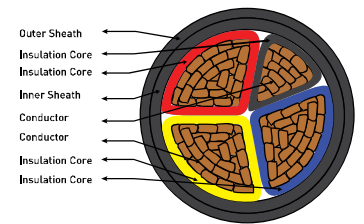
Inner Sheath : PVC/ PVC tape as per IS: 7098 (P-1)

Cable Design Parameters

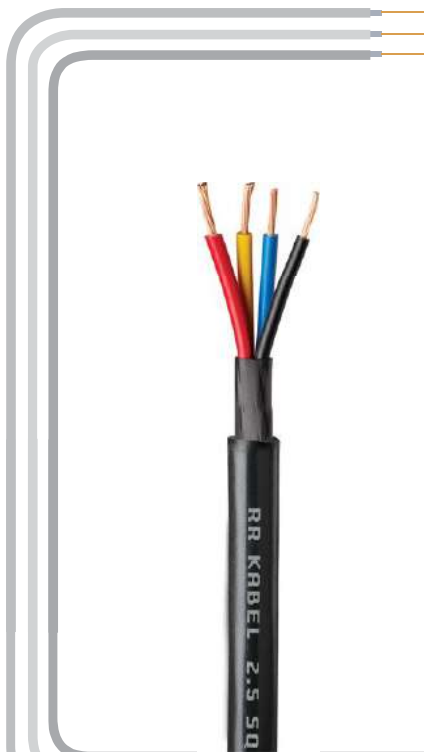
Size cores x Sq.mm + Neutral Sq.mm	Minimum No. of Strands in conductor		Nominal Thickness of Insulation mm	Minimum Thickness of Inner Sheath mm	Nominal Thickness of Outer Sheath mm	Approx. Overall Diameter mm	Approx. Net wt Of Cable (Kg/Km)	
	AL	CU					Al Cable, A2XY	Cu Cable, 2XY
3x25+16	6/6	6/6	0.9/0.7	0.3	2.0	22	575	1125
3x35+16	6/6	6/6	0.9/0.7	0.3	2.0	24	685	1425
3x50+25	6/6	6/6	1.0/0.9	0.3	2.0	27	880	1980
3x70+35	12/6	12/6	1.1/0.9	0.4	2.2	31	1185	2680
3x95+50	15/6	15/6	1.1/1.0	0.4	2.2	34	1480	3580
3x120+70	15/12	18/12	1.2/1.1	0.4	2.2	38	1880	4480
3x150+70	15/12	18/12	1.4/1.1	0.5	2.4	43	2275	5485
3x185+95	30/15	30/15	1.6/1.1	0.5	2.6	46	2770	6785
3x240+120	30/15	34/18	1.7/1.2	0.6	2.8	52	3580	8675
3x300+150	30/15	34/18	1.8/1.4	0.6	3.0	57	4380	10780
3x400+185	53/30	53/30	2.0/1.6	0.7	3.4	65	5580	13980
3x500+240	53/30	53/34	2.2/1.7	0.7	3.6	73	6980	17425
3x630+300	53/30	53/34	2.4/1.8	0.7	4.0	82	8885	21970

Electrical Parameters

Size cores x Sq.mm + Neutral Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 90°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
3x25+16	1.2	0.727	1.54	0.931	0.08	0.20	95	80	99	120	100	125	2.35	3.58
3x35+16	0.868	0.524	1.11	0.671	0.08	0.23	116	94	117	145	120	155	3.29	5.01
3x50+25	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.7	7.15
3x70+35	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
3x95+50	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
3x120+70	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
3x150+70	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
3x185+95	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
3x240+120	0.125	0.0754	0.162	0.098	0.072	0.31	325	270	402	410	350	510	22.56	34.32
3x300+150	0.1	0.0601	0.13	0.078	0.071	0.33	370	305	461	460	390	590	28.20	42.9
3x400+185	0.0778	0.047	0.1023	0.0618	0.07	0.33	435	350	542	520	440	670	37.60	57.2
3x500+240	0.0605	0.0366	0.0808	0.0489	0.07	0.34	481	405	624	580	480	750	47.00	71.5
3x630+300	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



Cross Sectional View



XLPE Unarmoured cable:

XLPE Unarmoured cables are used to supply energy for underground installations, in water, power stations, in industries as well as in distribution boards. They are also used in subscriber networks, where mechanical damages are not to be expected.

* The above data is indicative and may be revised without prior information.

XLPE UNARMoured CABLE

4 CORE, AL/CU

AS PER IS: 7098 P-1

Technical Detail For 1.1 KV, 4 Cores AL/CU Conductor, XLPE Insulated, Unarmoured Cables Type / Code of Cable: A2XY/2XY as per IS: 7098 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130.

Inner Sheath : PVC/ PVC tape as per IS: 7098 (P-1)

Outer Sheath: PVC Type ST-2 as per IS:5831 (Option: FR Type/ FRLS Type)

Color Of Outer Sheath: Black (Options: Any other color as per requirement)

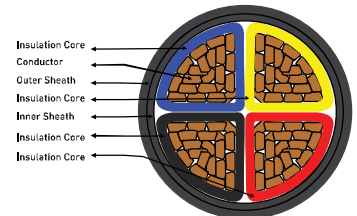
Insulation: Crosslinked Polyethylene (XLPE) (Core colors - Red, Yellow, Blue, Black)

Cable Design Parameters

Size Cross - Sq,mm Neutral Sq,mm	Minimum No. of Strands in conductor		Nomin Thickness of Insulation mm	Minimum Thickness of Inner Sheath mm	Nomina Thickness of Outer Sheath mm	Approx. Overall Diameter mm	Approx. Net wt of Cable (Kg/Km)	
	AL	CU					Al Cable. A2XY	Cu Cable. 2XY
4	-	1/7	0.7	0.3	1.8	17	240	340
6	1	1/7	0.7	0.3	1.8	18	340	480
10	1	7	0.7	0.3	1.8	20	390	640
16	6	6	0.7	0.3	1.8	20	440	840
25	6	6	0.9	0.3	2.0	24	650	1290
35	6	6	0.9	0.3	2.0	26	780	1685
50	6	6	1.0	0.3	2.0	29	985	2190
70	12	12	1.1	0.4	2.2	34	1380	3090
95	15	15	1.1	0.4	2.2	37	1685	3980
120	15	18	1.2	0.5	2.4	41	2125	5130
150	15	18	1.4	0.5	2.6	45	2630	6230
185	30	30	1.6	0.5	2.8	50	3230	7830
240	30	34	1.7	0.6	3.0	56	4080	9980
300	30	34	1.8	0.7	3.2	63	5030	12030
400	53	53	2.0	0.7	3.6	70	6385	15980
500	53	53	2.2	0.7	3.8	79	7980	19985
630	53	53	2.4	0.7	4.0	88	9985	25985

Electrical Parameters

Size Cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 90°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K,Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.9	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.9	3.94	0.09	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.94	1.43
16	1.91	1.15	2.44	1.47	0.08	0.18	78	61	70	94	78	85	1.50	2.29
25	1.2	0.727	1.54	0.931	0.08	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.08	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.82	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.32	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.124	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.1	0.0601	0.13	0.0778	0.071	0.33	370	305	461	460	390	590	28.2	42.9
400	0.0778	0.047	0.1023	0.0618	0.07	0.33	435	350	542	520	440	670	37.6	57.2
500	0.0605	0.0366	0.0808	0.0489	0.07	0.34	481	405	624	580	480	750	47.0	71.5
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09



Cross Sectional View



XLPE Cu control cables Unarmoured/Armoured:

Due to their composition, the XLPE Cu control cables can be used in severe working temperature conditions like heaters, boilers and can be exposed to oil, chemicals and other solvents. They are also suitable for use in dry, humid and wet rooms. In case of outdoors, they can be used only with UV-protection.

* The above data is indicative and may be revised without prior information.

PVC UNARMoured CABLE

3 CORE, AL/CU

AS PER IS: 1554 P-1

Technical Detail For 1.1 KV, 3 Cores AL/CU Conductor, PVC Insulated, Unarmoured Cables

Type/Code Of Cable: AYY/YY as per IS: 1554 (P-1)

Conductor : AL upto 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC TYPE-ST-2 as per IS:5831, FR Type/ FRLS Type)

Color Of Outer Sheath: Black (Options: Any other color as per requirement).

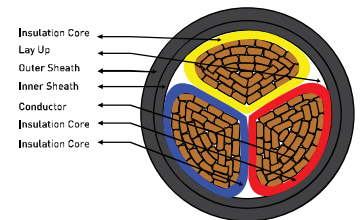
Insulation: PVC TYPE - A as per IS:5831, (Option: HR PVC TYPE - C, as per IS:5831) (Core color - Red, Yellow, Blue)

Cable Design Parameters

Size Cross - Sectional Area Sq.mm	Minimum No. of Strands in conductor		Nomin Thickness of Insulation mm	Minimum Thickness of Inner Sheath mm	Nomina Thickness of Outer Sheath mm	Approx. Overall Diameter mm	Approx. Net wt of Cable (Kg/Km)	
	AL	CU					Al Cable. AYY	Cu Cable. YY
4	-	1/7	1.0	0.3	1.8	16	280	330
6	1	1/7	1.0	0.3	1.8	18	350	460
10	1	7	1.0	0.3	1.8	19	430	640
16	6	6	1.0	0.3	1.8	19	450	720
25	6	6	1.2	0.3	2.0	22	610	1070
35	6	6	1.2	0.3	2.0	24	730	1390
50	6	6	1.4	0.3	2.0	27	930	1860
70	12	12	1.4	0.4	2.2	30	1190	2490
95	15	15	1.6	0.4	2.2	34	1590	3340
120	15	18	1.6	0.4	2.4	37	1890	4090
150	15	18	1.8	0.5	2.6	40	2290	5090
185	30	30	2.0	0.5	2.8	44	2740	6190
240	30	34	2.2	0.6	3.0	50	3490	7940
300	30	34	2.4	0.6	3.2	55	4290	9890
400	53	53	2.6	0.7	3.6	62	5430	12790
500	53	53	3.0	0.7	3.8	69	6900	16190
630	53	53	3.4	0.7	4.0	77	8690	20390

Electrical Parameters

Size Cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in micro/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.46
6	4.61	3.08	5.53	3.7	0.096	0.28	35	30	30	45	38	39	0.456	0.69
10	3.08	1.83	3.7	2.2	0.091	0.34	46	39	40	60	50	52	0.76	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.2	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.32	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.9
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.8
150	0.206	0.124	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.4	17.3
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.1	21.3
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.2	27.6
300	0.1	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.8	34.5
400	0.0778	0.047	0.0961	0.058	0.072	0.70	335	290	375	425	360	435	30.4	46
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.0	57.5
630	0.0469	0.0283	0.061	0.0368	0.072	0.70	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC Unarmoured cable:

For the purpose of supplying energy, these power cables are installed outdoors, underground, in cable ducts and in power stations. They are of great use in panel wiring, in electric motors, D.C power transformers, battery cables and in the transmission of low-voltage signals and in wiring of control panels.

* The above data is indicative and may be revised without prior information.

PVC UNARMoured CABLE

3.5 CORE, AL/CU

AS PER IS: 1554 P-1

Technical detail For 1.1 KV, 3.5 Cores AL/CU Conductor, PVC Insulated, Unarmoured Cables Type / Code Of Cable: AYY/YY as per IS: 1554 (P-1)

Conductor : AL/CU Stranded compact shaped conductor as per class-2, IS:8130

Inner Sheath : PVC/ PVC tape as per IS: 1554 (P-1)

Insulation: PVC Type-A as per IS:5831. (Option: HR PVC Type - C, as per IS:5831) (Phase core colors - Red, Yellow, Blue) (Neutral core color Black)

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC type ST-2 as per IS:5831 / FR Type/ FRLS Type)

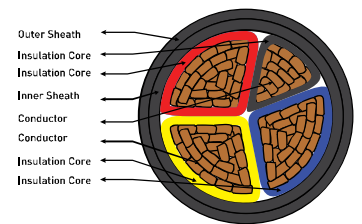
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

Cable Design Parameters

Size cores x Sq.mm + Neutral Sq.mm	Minimum No. Of Strands in conductor		Nominal Thickness of Insulation mm	Minimum Thickness of Inner Sheath mm	Nominal Thickness of Outer Sheath mm	Approx. Overall Diameter mm	Approx. Net wt of Cable (Kg/Km)	
	AL	CU					Al Cable. AYY	Cu Cable. YY
3x25+16	6/6	6/6	1.2/1.0	0.3	2.0	24	680	1250
3x35+16	6/6	6/6	1.2/1.0	0.3	2.0	26	830	1585
3x50+25	6/6	6/6	1.4/1.2	0.3	2.0	29	1030	2080
3x70+35	12/6	12/6	1.4/1.2	0.4	2.2	32	1380	2880
3x95+50	15/6	15/6	1.6/1.4	0.4	2.2	36	1785	3885
3x120+70	15/12	18/12	1.6/1.4	0.5	2.4	40	2190	4830
3x150+70	15/12	18/12	1.8/1.4	0.5	2.4	44	2580	5780
3x185+95	30/15	30/15	2.0/1.6	0.5	2.6	48	3185	7180
3x240+120	30/15	34/18	2.20/1.6	0.6	3.0	54	4085	9280
3x300+150	30/15	34/18	2.4/1.8	0.6	3.2	62	4980	11480
3x400+185	53/30	53/30	2.6/2.0	0.7	3.4	68	6280	14985
3x500+240	53/30	53/34	3.0/2.2	0.7	3.8	77	7985	18480
3x630+300	53/30	53/34	3.4/2.40	0.7	4.0	87	9980	23485

Electrical Parameters

Size cores x Sq.mm + Neutral Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	Normal* Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU		With AL Cond.			With CU Cond.			AL	CU
						Ground	Duct	Air	Ground	Duct	Air		
	3x25+16	1.2	0.727	1.44		0.87	0.083	76	63	70	99	81	90
3x35+16	0.868	0.524	1.04	0.63	0.082	92	77	86	120	99	110	2.66	4.03
3x50+25	0.641	0.387	0.769	0.464	0.082	110	95	105	145	125	135	3.80	5.75
3x70+35	0.443	0.268	0.532	0.322	0.076	135	115	130	175	150	165	5.32	8.05
3x95+50	0.32	0.193	0.384	0.232	0.076	165	140	155	210	175	200	7.22	10.9
3x120+70	0.253	0.153	0.304	0.184	0.075	185	155	180	240	195	230	9.12	13.8
3x150+70	0.206	0.124	0.247	0.1488	0.074	210	175	205	270	225	265	11.4	17.3
3x185+95	0.164	0.0991	0.197	0.1189	0.074	235	200	240	300	255	305	14.1	21.3
3x240+120	0.125	0.0754	0.151	0.0912	0.073	275	235	280	345	295	355	18.2	27.6
3x300+150	0.1	0.0601	0.122	0.0733	0.073	305	260	315	385	335	400	22.8	34.5
3x400+185	0.0778	0.047	0.0961	0.058	0.072	335	290	375	425	360	435	30.4	46.0
3x500+240	0.0605	0.0366	0.0759	0.459	0.072	370	320	425	470	390	520	38.0	57.5
3x630+300	0.0469	0.0283	0.061	0.0368	0.072	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC Armoured Cables:

These power cables for energy supply are installed outdoors, in water, cable ducts, power stations, in distribution boards and in subscriber networks, where mechanical damages are not to be expected. They are largely used in fixed wiring, underground wiring as well as industrial control wiring.

* The above data is indicative and may be revised without prior information.

PVC UNARMoured CABLE

4 CORE, AL/CU

AS PER IS: 1554 P-1

Technical detail For 1.1 KV, 4 Cores AL/CU Conductor, PVC Insulated, Unarmoured Cables

Type/Code Of Cable: AYY/YY as per IS: 1554 (P-1)

Conductor : AL up to 10 sq.mm conductor are solid class-1 as per IS:8130. And above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130. In CU 4 & 6 sq.mm conductor are solid class-1 or stranded class-2 as per IS:8130. 10 sq.mm conductor is stranded class-2 round as per IS:8130. Above 10 sq.mm conductor are stranded compact shaped as per class-2 IS:8130.

Insulation: PVC TYPE - A as per IS:5831.(Option : HR PVC TYPE -C, as per IS:5831) (Core colors - Red, Yellow, Blue, Black)

Inner Sheath : PVC / PVC tape as per IS: 1554 (P-1)

Outer Sheath: PVC Type ST-1 as per IS:5831 (Option: PVC TYPE-ST-2 as per IS:5831, FR Type / FRLS Type)

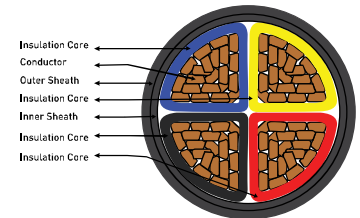
Color Of Outer Sheath: Black (Options: Any other color as per requirement).

Cable Design Parameters

Size Cross - Sectional Area Sq,mm	Minimum No. Of Strands in conductor		Nomin Thickness of Insulational mm	Minimum Thickness of Inner Sheath mm	Nomina Thickness of Outer Sheathl mm	Approx. Overall Diameter mm	Approx. Net wt of Cable (Kg/Km)	
	AL	CU					Al Cable. AYY	Cu Cable. YY
4	-	1/7	1.0	0.3	1.8	16	290	390
6	1	1/7	1.0	0.3	1.8	18	380	530
10	1	7	1.0	0.3	1.8	20	530	770
16	6	6	1.0	0.3	2.0	23	550	940
25	6	6	1.2	0.3	2.0	26	740	1350
35	6	6	1.2	0.3	2.0	30	925	1785
50	6	6	1.4	0.4	2.2	34	1230	2480
70	12	12	1.4	0.4	2.2	38	1540	3285
95	15	15	1.6	0.4	2.4	43	2030	4385
120	15	18	1.6	0.5	2.4	46	2385	5360
150	15	18	1.8	0.5	2.6	51	2925	6650
185	30	30	2.0	0.6	2.8	55	3630	8230
240	30	34	2.2	0.6	3.0	60	4580	10530
300	30	34	2.4	0.7	3.4	66	5480	12950
400	53	53	2.6	0.7	3.6	73	6780	16700
500	53	53	3.0	0.7	4.0	82	8580	20980
630	53	53	3.4	0.7	4.0	92	10980	25980

Electrical Parameters

Size Cross - Sectional Area Sq.mm	Max. Cond. D.C. Resistance at 20°C in Ω/km		Max. Cond. A.C. Resistance at 85°C in Ω/km		App. Resistance at 50 hz in Ω/km	App. capacitance of cable in microf/KM	Normal Current Rating In Amps						Short Circuit Current Rating for 1sec. Duration in K.Amps	
	AL	CU	AL	CU			With AL Cond.			With CU Cond.			AL	CU
							Ground	Duct	Air	Ground	Duct	Air		
4	-	4.61	-	5.81	0.098	0.23	28	23	23	36	30	30	0.304	0.46
6	4.61	3.08	5.81	3.88	0.096	0.28	35	30	30	45	38	39	0.456	0.69
10	3.08	1.83	3.88	2.31	0.091	0.34	46	39	40	60	50	52	0.76	1.15
16	1.91	1.15	2.41	1.45	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.2	0.727	1.51	0.916	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.094	0.660	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.808	0.488	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.558	0.338	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.32	0.193	0.403	0.243	0.076	0.58	165	140	155	210	175	200	7.22	10.9
120	0.253	0.153	0.319	0.193	0.075	0.63	185	155	180	240	195	230	9.12	13.8
150	0.206	0.124	0.260	0.156	0.074	0.63	210	175	205	270	225	265	11.4	17.3
185	0.164	0.0991	0.207	0.1249	0.074	0.64	235	200	240	300	255	305	14.1	21.3
240	0.125	0.0754	0.158	0.0950	0.073	0.67	275	235	280	345	295	355	18.2	27.6
300	0.100	0.0601	0.126	0.0757	0.073	0.68	305	260	315	385	335	400	22.8	34.5
400	0.0778	0.047	0.0980	0.0592	0.072	0.70	335	290	375	425	360	435	30.4	46.0
500	0.0605	0.0366	0.0762	0.0461	0.072	0.70	370	320	425	470	390	520	38.0	57.5
630	0.0469	0.0283	0.0591	0.0357	0.072	0.70	405	350	480	555	470	675	47.9	72.5



Cross Sectional View



PVC Unarmoured cable:

For the purpose of supplying energy, these power cables are installed outdoors, underground, in cable ducts and in power stations. They are of great use in panel wiring, in electric motors, D.C power transformers, battery cables and in the transmission of low-voltage signals and in wiring of control panels.

* The above data is indicative and may be revised without prior information.



SILICON RUBBER CABLES

Design: We offer an assortment of silicon rubber cables which have been ruggedly tested for their durability and reliable performance. The entire assortment is fabricated using optimum quality silicon rubber and offered in conformance with various specifications.

Moreover, we also have the ability to customize our assortment as per the specification detailed by the clients.

Conforming standards: IS:9968 P-1BS: 6007 Table 8 & table 10 BS:6195, Din VDE 0282-7

Operating Temperature:

The cables are flexible and it can be retained over wide range of temperature [-60C TO +180 C]

Salient features :

- high temperature operation
- excellent electrical properties
- moisture abrasion resistant
- long service life
- light weight and good anti friction properties
- flexibility over wide range of temperature
- high thermal conductivity
- resistance to ozone and sunlight

Products:

0,5 to 6 mm²; all colors 10 to 50 mm²: White or Black, other colors on request separating tape on core for cross sections 10 mm² and above

Packaging:

			c/s←10mm²
c/s→10mm²			
Rolls, spools	Working voltage	450/750V	600/1000 V

Silicon rubber cables:

The silicon rubber insulated cables are used in the generation and transmission of electricity. When exposed to fire, the silicon offers circuit integrity, low smoke evolution and freedom halogen acids. They are commonly used in steel mills, petrochemical industries, paper and pulp industries, Nuclear and Thermal stations and also in airport lighting.

Table 1 : Cable with silicon rubber insulation(IS 9968 Part 1)

No of Cores x Nominal Cross Sectional Area (mm ²)	Nominal Insulation Thickness mm	Nominal Outer Diameter mm
1 x 0.50	1.00	2.9
1 x 0.75	1.00	3.1
1 x 1.0	1.00	3.3
1 x 1.5	1.00	3.5
1 x 2.5	1.00	4.0
1 x 4.0	1.00	4.5
1 x 6.0	1.00	5.1
1 x 10.0	1.20	6.4
1 x 16.0	1.20	7.4
1 x 25.0	1.40	9.0
1 x 35.0	1.40	10.2
1 x 50.0	1.60	12.1

Table 2:Cable with Silicon rubber insulation with reinforcing braid of Polyester Yarn / Glass Fibre

No of Cores x Nominal Cross Sectional Area (mm ²)	Nominal Stranding	Nominal Outer Diameter mm
1 x 0.50	16 x 0.20	2.0
1 x 0.75	24 x 0.20	2.2
1 x 1.0	32 x 0.20	2.3
1 x 1.5	30 x 0.25	2.7
1 x 2.5	50 x 0.25	3.4
1 x 4.0	56 x 0.30	4.2
1 x 6.0	84 x 0.30	5.2
1 x 10.0	140 x 0.30	7.0
1 x 16.0	126 x 0.40	8.6
1 x 25.0	196 x 0.40	10.4
1 x 35.0	276 x 0.40	11.9
1 x 50.0	396 x 0.40	14.1

WELDING CABLE

The cable has high flexibility subjected to light, ozone, oxygen, inert gas, and oil, and it is also resistant to the effects of cold, heat, and fire. Suitable for use in open air, in dry as well as damp interiors. The high degree of flexibility does not form knots on the cable which could lead to internal break of conductors.

MINIMUM BENDING RADIUS:

5X cable diameter

TEMPERATURE RANGE:

-20°C to + 60°C

Welding cables:

In welding cable, a highly flexible Elastomeric PVC jacket surrounds fully annealed rope-stranded bare copper. The insulated flexible cables are used to connect welding machines. The heavy duty welding cable is resistant to flame, oil, abrasions, tar and grease.

CABLE CONSTRUCTION:

Super fine strands of plain Copper with single elastomeric insulation. Type SE 1 Conforming to the requirements of IS 6380 : 1984

TEST VOLTAGE: 1000 V

SPECIFICATION:

IS 9857 : 1990, IS 6380 : 1984, IS 8130 : 1984

No. of Cores x Nominal Cross Sectional Area (mm ²)	Max. Strand Diameter (mm)	Max. CR (Spec) Ω/km	Nominal Insulation Thickness mm	Nominal Cable Diameter mm
16	0.21	1.21	2.00	9.2
25	0.21	0.78	2.00	10.5
35	0.21	0.554	2.00	11.5
50	0.31	0.386	2.20	13.5
70	0.31	0.272	2.40	15.5
95	0.31	0.206	2.60	17.7

The conductor construction given above is indicative and will comply for conductor diameter and resistance as per IS : 8130-1984

Current Rating of General Service Normal Duty Elastomeric Compound Covered Cable with Copper Conductor					
No. of Cores x Nominal Cross Sectional Area (mm ²)	Current Rating at a Maximum Duty Cycle of				
	100%	85%	60%	30%	20%
mm ²	A	A	A	A	A
16	94	102	121	172	210
25	125	136	161	228	279
35	156	169	201	285	349
50	197	214	254	360	440
70	248	269	320	453	555
95	299	342	386	546	669

Ambient air temperature = 30°C

Maximum conductor temperature 60°C

SUBMERSIBLE CABLES

IS: 694 1990

RR Kabel Shramik brand of flat cables are manufactured with rigid manufacturing controls to sustain complete immersion in water, protection against rain water. The conductors are uniformly drawn from high purity electrolytic grade copper on high precision drawing machines with superb flexibility. Compactly bunched to offer uniform resistance across all conductors extruded on dual screw extrusion machines with inline monitoring of cable diameter and high voltage spark testing. Finally, sheathed with abrasion resistant PVC compound impervious to oil, grease and water.

Conductor: Annealed plain copper to IS 8130, uniformly bunched to form a circular shape

Sheath: Type ST1, IS5831, with excellent water resistant properties.

Insulation: Type A, IS 5831, with very high insulation resistance under damp conditions

Submersible flat cable:

The submersible flat cables are mainly used in pump connection. Though they are mainly used to supply power to pumps, they are also used in industrial applications. These cables are specially manufactured keeping in mind the severe, tough and difficult conditions in which they are used.

RR KABEL SHRAMIK - 3 Core Flat Cables (as per IS 694 : 1990 - ISI marked)

Conductor		Insulation	Sheath		Conductor Resistance @ 20°C (Max.) Ω/km	Current Carrying Capacity @40°C Amps
Area (Nom.) Sq.mm	No/dia. of strands mm		Thickness (Nom.)mm	Overall dimensions		
		Thickness (nom.)mm		Size (Approx.) (W x T) mm		
1.5	22/0.3	0.7	1	11,40 X 5,20	12,1	16
2.5	36/0.3	0.7	1.1	13,80 X 6,20	7,41	22
4,0	56/0,3	0,8	1,2	16,20 X 7,10	4,95	29
6,0	84/0,3	0,8	1,2	18,00 X 8,00	3,30	37
10,0	140/0,3	1,0	1,3	22,50 X 9,50	1,91	51
16,0	126/0,4	1,0	1,4	25,30 X 11,00	1,21	68
25,0	196/0,4	1,2	1,5	29,4 X 11,80	0,78	86
35,0	276/0,4	1,2	1,6	33,30 X 13,30	0,554	110
50	396/0,5	1,4	1,7	40,1 X 15,7	0,386	125

Note : Insulation thickness, sheath thickness and overall dimensions given in this table are nominal values. The conductor is designed to satisfy the requirement of conductor resistance as per IS 8130 : 1984

RR KABEL SHRAMIK - 3 Core Flat Cables (generally conforming to IS : 694 1990)

Conductor		Insulation	Sheath		Conductor Resistance @ 20°C (Max.) Ω/km	Current Carrying Capacity @40°C Amps
Area (Nom.) Sq.mm	No/dia. of strands mm		Thickness (Nom.)mm	Overall dimensions		
		Thickness (nom.)mm		Size (Approx.) (W x T) mm		
1.5	22/0.3	0.7	1.3	11,80 X 5,80	12,1	16
2.5	36/0.3	0.7	1.5	14,10 X 6,75	7,41	22
4,0	56/0,3	0,8	1,6	16,40 X 7,50	4,95	29
6,0	84/0,3	0,8	1,7	18,10 X 8,30	3,30	37
10,0	140/0,3	1,0	1,7	22,50 X 9,50	1,91	51
16,0	126/0,4	1,0	1,8	25,30 X 11,30	1,21	68

Note : The overall dimensions exceed the maximum requirements stated in IS 694 1990

Note

Lined writing area consisting of 20 horizontal lines.



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