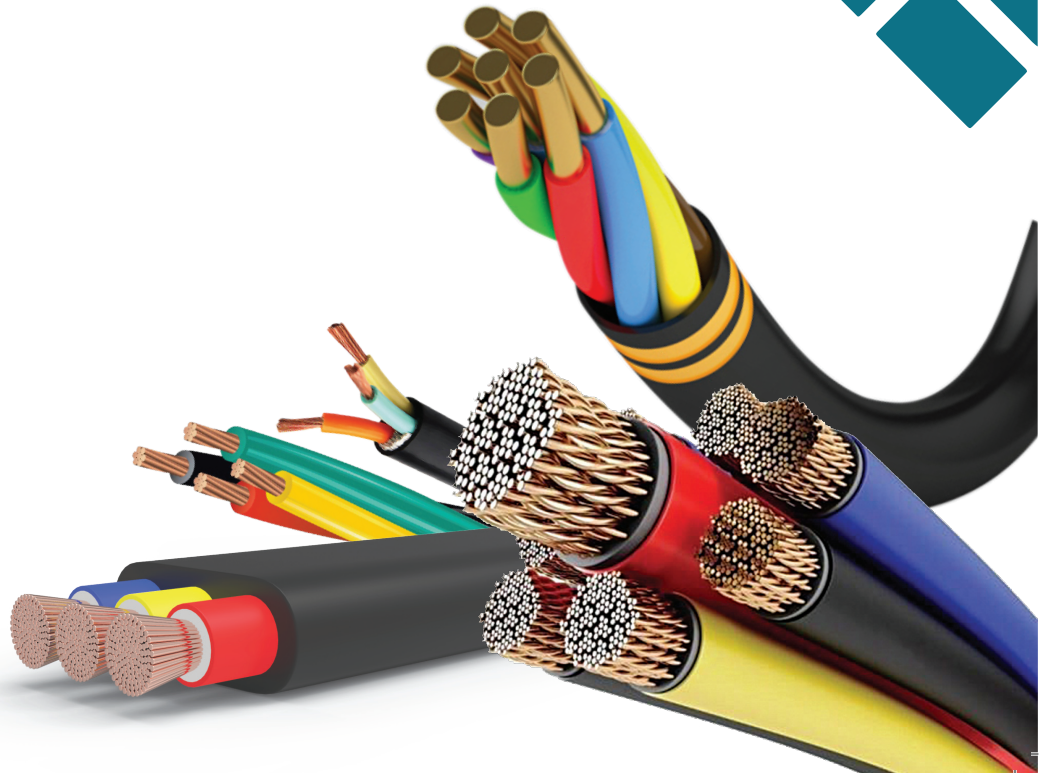


# PolyDelite

An ISO 9001 : 2015 Company



POLYDELITE

# ABOUT US



At present POLYDELITE covers a wide range of cables such as domestic cables, control cables, auto cables, instrumentation cables, telecommunications cables, special cables & cables with special heat resisting type insulation & sheath .

We are proud of having proved that the greatest asset of an industry is not its building & machine but its skilled work force managerial & technical & above all their commitment towards the making of a quality product. A niche in national markets & earned the respect of its customers maintaining the highest of standards in quality control & performance over its entire product range. The Bureau Of Indian Standards has gracefully awarded us to mark our product with their prestigious logo (ISI). We have been awarded ISI licence: ISI:694-2010 + FRLS No. 3072040

## OUTSTANDING PROPERTIES

In Service:

- High mechanical strength
- Moisture proof & weather proof
- High resistance to ageing & high resistance to corrosion
- Resistance to effects of the majority of acids & alkalis.
- Flame retarding does not support combustion & is self extinguishing when the source of ignition is removed
- Fast delivery
- Committed to commitment
- Zero manufacturing fault

## INSTALLATION

- Easy to install due to light weight
- Smooth surface & neat appearance
- Easy stripping of conductor ends

- Good bending properties
- High resistance to D.C. voltage effects
- Instant identification due to coloured cores

## GENERAL INSTRUCTION

PVC insulated & sheathed cables are manufactured conforming to IS:69-1990. The details are given below

## CONDUCTOR

A) Copper Conductor

The conductors of wires and cables are drawn from high conductivity electrolytic grade annealed copper to ensure compliance with national & international standards. For flexible cables drawn annealed conductors are bunched together on heavy duty bunching machines in circular construction to give a concentric shape.

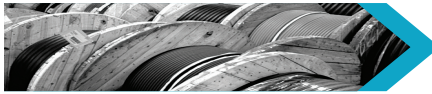
B) Aluminium Conductor:

The conductors of aluminium cables are normally made from special electrical purity (E.C. Grade) Aluminium wires All conductor conform to IS: 9130. The construction of the conductor shall be as per IS: 694-2010 or table 10.

## INSULATION

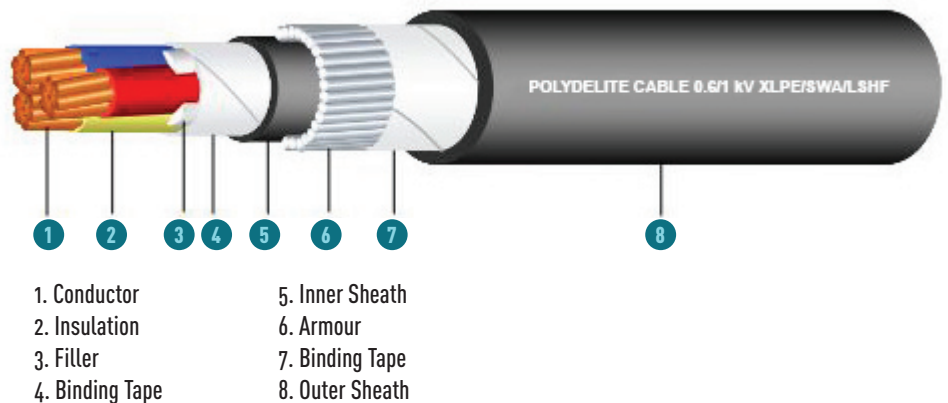
The conductor is insulated with suitable PVC compound by extrusion process. Insulating process is carried out on modern high speed extrusion lines having voltage test & consistency throughout the length of cables.

Cables with heat resisting insulation are also available for maximum operating conductor temperature of 85°C. All insulation compound shall be conforming to the requirement of IS: 5831.



# FRLS FIRE RETARDANT LOW SMOKE CABLES

- Superior Fire Retardant Properties
- Emits Non-Toxic fumes
- Self Extinguishing
- Moisture Resistant
- Low Oxygen Entrapment
- Contains fire fighting molecules



## XTRA GARD-FRLS

Xtra Gard-FRLS has special flame retardant, low smoke emitting and toxic fumes suppressing properties, in addition to the properties required by IS-694:2010

In the case of fire, conventional PVC insulated wires give out thick black smoke and toxic fumes of hydrochloric acid gas. This impairs visibility and

hampers rescue operations. Xtra-Gard on the contrary, not only emits very little smoke and toxic gases, but also retards the spreading of the fire. It is thus ideal of concealed and conduit wiring in multi-storied high rise building such as hotels, banks, hospitals, factories, commercial complexes and residential apartments etc.

## RECOMMENDED APPLICATIONS

SIZES	APPLICATONS
0.75/1.0 Sq. mm	Pannels, Lights, Fans
1.5 Sq. mm	T.V./VCR/Cooler/Iron/Mixer/Vaccum Cleaner
2.5 Sq. mm	Fridge, Microwave/Washing Machine, Geyser
4.0 Sq. mm	AC/Pump motor
6.0 Sq. mm	Distribution Board Wiring

These are recommended application only. Exact load of appliances/Machinery should be checked for current requirement and appropriate wire size should be chosed accordingly.

## TECHNICAL DATA

Working Voltage	Upto 1100 V
Temperature range	-15°C to +70°C
Sizes Available	0.75, 1.0, 1.5, 2.5, 4.0 and 6.0 sq. mm.
Colour Codes	Red, Yellow, Blue, Black and Green ( for earthing)
Specification	IS 694: 2010
Approvals	FIA/TAC, ISI marked
Packing	in 90 meter coils in attractive cartons

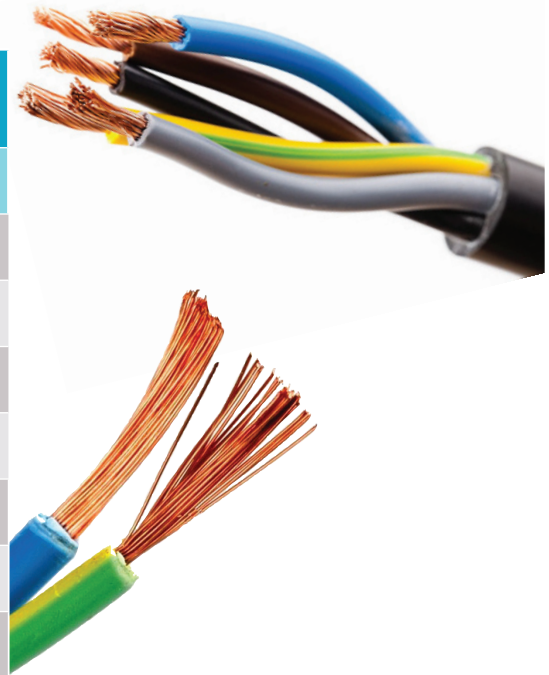
## ADDITIONAL FRLS PROPERTIES

TEST	SPECIFICATION	SPECIFIED VALUES
Critical Oxygen Index	ASTM-D-2863	Oxygen Index Min 29%
Temperature Index	ASTM-D-2863 & BICC Hand Book Ch. No. 6	Temp Index Min 250°C at 21% Oxygen
Smoke Density	ASTM-D-2843	Minimum average light transmission of 40%
Test for Halogen Acid Gas Evolution	IEC-60754-I	Hydrochloric acid gas released 20% max by weight

Also meets requirements of flammability Test as per IEC 332-1

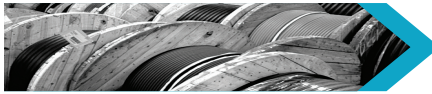
**PVC INSULATED (UNSHEATHED) SINGLE CORE FLEXIBLE CORDS WITH COPPER CONDUCTOR**

Nominal Area of Conductor	No. and Dia of Wires	Nominal Thickness of Insulation	App. overall Dia of Cable	Max D.C. Resis. of Cond. at 20°C	Current Rating 3 Phase A.C.
Sq.mm.	No./mm.	mm.	mm.	Ω/km	amps.
0.5	16/0.20	0.6	2.3	39.0	4
0.75	24/0.20	0.6	2.5	26.0	7
1.0	14/0.3	0.6	2.7	19.5	13
1.5	22/0.3	0.6	3.0	13.3	16
2.5	36/0.3	0.7	3.6	7.98	20
4.0	56/0.3	1.8	4.4	4.95	26
6.0	84/0.3	0.8	5.6	3.30	35

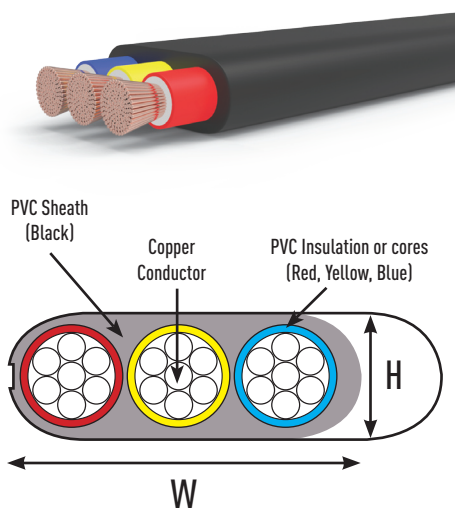


**PVC INSULATED & SHEATHED FLEXIBLE CORDS WITH COPPER CONDUCTOR**

Nominal Area of Cond.	No. and Dia of Wires	Max Cond. Resist. at 20°C	Nominal Thickness of Insulation	Nominal Sheath Thickness in mm.					Nominal overall Dia in mm. (Round Type)				
				1 Core	2 Core	3 Core	4 Core	5 Core	1 Core	2 Core	3 Core	4 Core	5 Core
Sq.mm.	No./mm	Ω/km	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
0.5	0.5	39.0	0.6	0.9	0.9	0.9	0.9	0.9	4.3	6.5	6.9	7.4	8.2
0.75	24/0.20	26.0	0.6	0.9	0.9	0.9	0.9	0.9	4.5	7.0	7.4	7.9	8.7
1.0	32/0.20	19.5	0.6	0.9	0.9	0.9	0.9	0.9	4.7	7.3	7.8	8.5	9.4
1.5	48/0.20 or 30/0.25	13.3	0.6	0.9	0.9	0.9	0.9	0.9	5.0	8.0	8.5	9.4	10.2
2.5	80/0.20 or 50/0.25	7.98	0.7	1.0	1.0	1.0	1.0	1.0	5.8	9.5	10.0	11.0	12.0
4.0	128/0.20 or 56/0.30	4.95	0.8	1.0	1.0	1.0	1.0	1.1	6.6	11.0	11.6	12.8	14.2

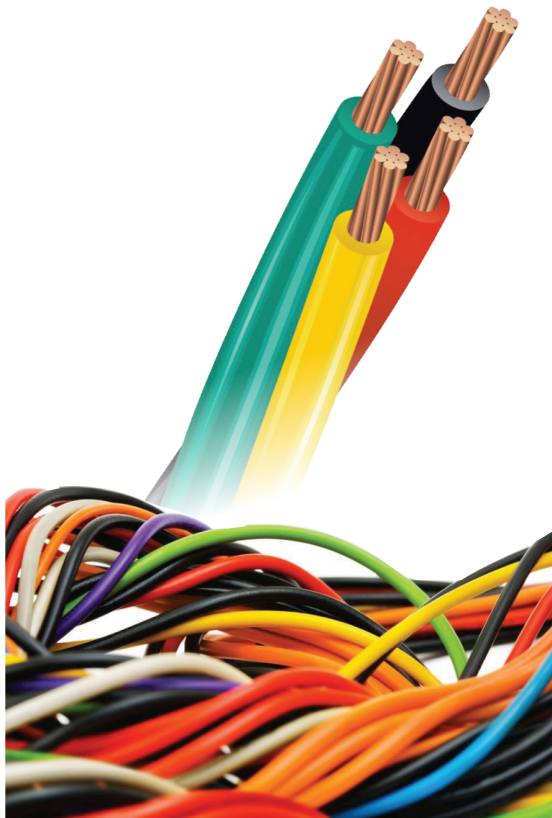


### THREE CORE FLAT SUBMERSIBLE FLEXIBLE CABLES PVC INSULATED & SHEATHED WITH COPPER CONDUCTOR (Mainly used for submersible pumps & motors)



Nominal Area of Conductor	No. and Dia of Wires	Nominal Thickness of Insulation	Nominal Sheath Thickness	Nominal overall Dia. of Cable	Max. Conductor at 20°C
Sq.mm.	No./mm.	mm.	mm.	mm.	Ω/km
1.5	22/0.30	0.6	0.9	4.9 x 10.6	13.3
2.5	36/0.30	0.7	1.0	5.5 x 13.0	7.98
4.0	56/0.30	0.8	1.1	6.7 x 15.5	4.95
6.0	85/0.30	0.8	1.1	7.7 x 18.4	3.30
10	141/0.30	1.0	1.2	9.3 x 22.8	1.91
16	226/0.30	1.0	1.3	10.7 x 26.7	1.21
25	354/0.30	1.2	1.5	13.1 x 33.0	0.780
35	494/0.30	1.2	1.6	14.7 x 37.1	0.554

### PVC INSULATED COPPER CONDUCTOR DOMESTIC CABLE AS PER B.S. 2004/61-650/1100 VOLTS GRADE



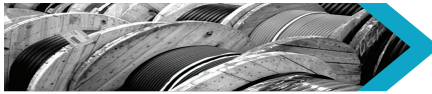
No. and Dia. of Wires	No. and Gauge of Wires	No. and Dia of Wires	App. overall Dia.	App. Weight	Current Rating
Inch	SWG.	mm.	mm.	kg/100 Mtrs.	Amps.
1/0.044	18	1/1.2	3.2	1.95	5
3/0.029	22	3/0.737	3.6	2.5	10
3/0.036	20	3/0.914	4	3.3	15
7/0.029	22	7/0.737	4.5	4.5	20
7/0.036	20	7/0.914	5.3	6.6	28
7/0.044	18	7/1.12	5.9	9.6	36
7/0.052	17	4/1.12	6.5	12.5	43
7/0.064	16	7/1.32	7.6	17.7	53
19/0.044	19/18	7/1.63	8.3	22	62
19/0.052	19/17	19/1.32	9.4	30	74
19/0.064	19/16	19/1.63	11.1	44	97
19/0.083	19/14	19/2.11	13.5	72	160
37/0.064	37/16	31/1.63	14.6	82	177
37/0.083	37/14	37/2.11	18	133.5	250

**HEAVY DUTY PVC INSULATED SINGLE CORE FLEXIBLE CABLES**

Nominal Area of Conductor	No. and Dia of Wires	Nominal thickness of Insulation	Nominal Overall Dia of Cable	Max. Cond. Resistance at 20°C	Current Rating
Sq. mm.	No./mm.	mm.	mm.	Ω/km	amps.
6	85/0.30	0.8	5.5	3.3	46
10	140/0.30	1.0	6.9	1.91	64
16	126/0.40	1.0	8.2	1.21	85
25	196/0.40	1.2	10.2	0.780	112
35	276/0.40	1.2	11.5	0.554	138
50	396/0.40	1.4	13.7	0.386	172
70	440/0.45mm or 360/0.50	1.4	15.8	0.272	214
95	596/0.45mm or 480/0.50	1.6	18.4	0.206	254
120	750/0.45mm or 608/0.50	1.6	20	0.161	300
150	940/0.45mm or 760/0.50	1.8	22.4	0.129	340
185	925/0.50	2.0	24.8	0.106	390
240	1221/0.50	2.2	28.4	0.0801	450

**THREE AND FOUR CORE HEAVY DUTY FLEXIBLE CABLES FOR WORKING VOLTAGE 1100 V.**

Nominal Area of Conductor	CONDUCTOR		Nominal thickness of Insulation	Nominal Overall Dia of Cable		Overall Diameter	
	No. & Size of Wires	Max. Res. at 20°C		3 Core	4 Core	3 Core	4 Core
Sq. mm.	No./mm.	Ω/Km	mm.	mm.	mm.	mm.	mm.
6	85/0.30	3.3	0.8	1.1	1.2	13.9	15.7
10	141/0.30	1.91	1	1.2	1.3	17.2	19.2
16	226/0.30	1.21	1	1.3	1.4	20.3	22.4
25	354/0.30	0.78	1.2	1.5	1.6	25	27.6
35	494/0.30	0.554	1.2	1.6	1.7	28	31
50	396/0.40	0.386	1.4	1.7	1.8	32.9	36.3



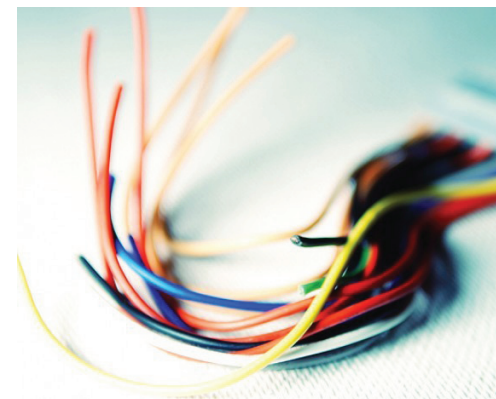
### PVC INSULATED (UNSHEATHED) WITH ALUMINIUM CONDUCTOR CABLES 1100V TO IS: 694-2010

Nominal Area of Conductor	No. of Wires	Nominal Thickness of Insulation	App. Overall Diameter	App. Weight	Max. D.C. Resistance at 20°C
Sq.mm.	No.	mm.	mm.	Kg/Km	Ω/km
1.5	1	0.7	3.0	12.0	18.1
1.5	3	0.7	3.3	14.2	18.1
2.5	1	0.8	3.6	17.5	12.1
2.5	3	0.8	3.9	21.0	12.1
4	1	0.8	4.0	23.4	7.41
4	7	0.8	4.3	26.0	7.41
6	1	0.8	4.5	31.0	4.61
6	7	0.8	4.9	35.3	4.61
10	1	1.0	5.7	50.2	3.08
10	7	1.0	6.2	56.0	3.08
16	7	1.0	7.3	81.0	1.91
25	7	1.2	9.0	125.0	1.2
35	7	1.2	10.1	162.0	0.868
50	19	1.4	11.9	202.0	0.641
70	19	1.4	13.7	272	0.443
95	19	1.6	16.0	373	0.32
120	37	1.6	17.6	455	0.253
150	37	1.8	19.6	561	0.206
185	37	2.0	21.8	701	0.164
240	37	2.2	24.6	892	0.125
300	61	2.4	27.7	1140	0.1
400	61	2.5	31.1	1450	0.0778



### PVC INSULATED (UNSHEATHED) TWIN FLAT WITH ALUMINIUM CONDUCTOR CABLES 1100V TO IS694-2010

Nominal Area of Conductor	No. of Wires	Nominal Thickness of Insulation	Nominal Thickness of Sheath	App. overall Dia. of Cable	Max. D.C. Resistance of Cond. at 20°C
Sq.mm.	No.	mm.	mm.	mm.	Ω/km
1.5	7	0.6	0.9	7.60 x 4.80	18.1
2.5	7	0.7	1.0	8.50 x 5.30	12.1
4	7	0.8	1.0	9.90 x 5.95	7.41
6	7	0.8	1.1	11.10 x 6.98	4.61
10	7	1.0	1.2	14.5 x 8.45	3.08
16	7	1.0	1.3	16.95 x 9.76	1.91



**SOLID/STANDARD CONDUCTOR** "PolyDelite" PVC insulated unsheathed single core wire with high conductivity plain annealed electrolytic grade copper conductor 450/750 volts grade conform to IS:694/2010 and ISI marked

Nominal Cross Sectional area for the Conductor	Nos./nominal dia. of strand	Nominal Thickness of Insulation	Approx. Overall Dia.	Max. Conductor resistance	Current Rating (Amps.) 2 Wires, Single Core	
					In Conduit/ Trunking	Clipped Directly to surface or on cable tray
Sq. mm	No./mm	mm	mm	Ω/km at 20°C		
1.0	1/1.13	0.7	2.8	18.1	11	12
1.5	1/1.38	0.7	3.0	12.1	13	16
1.5	7/0.52	0.7	3.1	12.1	13	16
2.5	1.1.78	0.8	3.6	7.41	18	22
2.5	7/0.67	0.8	3.8	7.41	18	22
4.0	1/2.25	0.8	4.1	4.61	24	29
4.0	7/0.85	0.8	4.3	4.61	24	29
6.0	1/2.76	0.8	4.6	3.08	31	37
6.0	7/1.04	0.8	5.2	3.08	31	37
10	7/1.35	1.0	6.3	1.83	42	51
16	7/1.70	1.0	7.3	1.15	57	68
25	7/2.14	1.2	9.0	0.727	71	86
35	7/2.52	1.2	10.2	0.524	91	110
50	19/1.78	1.4	12.0	0.387	120	145

Note: • Current rating at ambient temp. 40°C • Current rating as per IS: 3961 (part-V) • Conductor: Class 2 as per IS: 8130 • PVC Insulation: Type 'A' as per IS: 5831



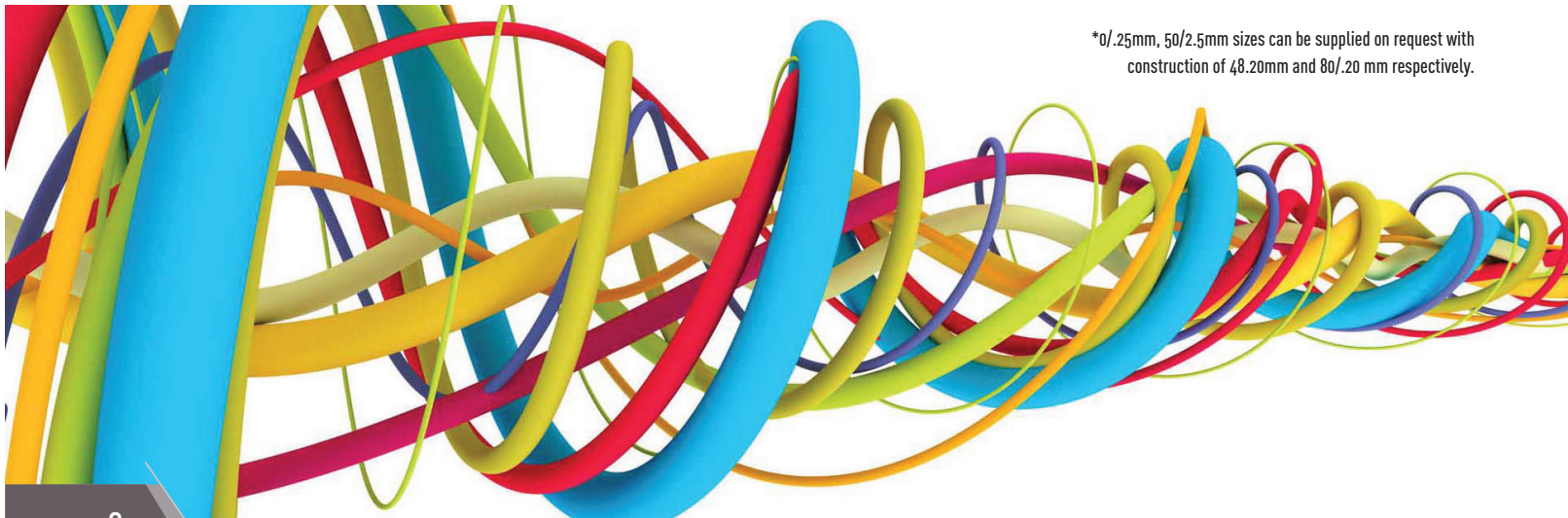


**FLEXIBLE WIRES** "Polydelite" PVC insulated unsheathed single core wire with high conductivity plain annealed electrolytic grade copper conductor  
450/750 volts grade confirm to IS:694/2010 and ISI marked

Nominal Cross Sectional area fo the Conductor	Nos./nominal dia. of strand	Nominal Thickness of Insulaion	Approx. Overall Dia.	Max. Conductor resistance	Current Rating
Sq. mm	No./mm	mm	mm	Ω/km at 200C	Amps.
0.5	16/.20	0.6	2.4	39.0	4
0.75	24/.20	0.6	2.6	26.0	7
1.0	32/.20	0.6	2.7	19.5	12
1.5	30/.25*	0.6	3.1	13.3	16
2.5	50/.25*	0.7	3.8	7.98	22
4	56/.30	0.8	4.3	4.95	29
6	84/.30	0.8	5.2	3.30	37
10	80/.40	1.0	6.3	1.91	51
16	126/.40	1.0	8.0	1.21	68
25	196/.40	1.2	9.7	0.780	86
35	276/.40	1.2	11.0	0.554	110
50	396/.40	1.4	13.2	0.386	145
70	360/.50	1.4	15.5	0.272	215
95	475/.50	1.6	18.0	0.206	260
120	608/.50	1.6	19.5	0.161	305
150	756/.50	1.8	22.0	0.129	355
185	925/.50	2.0	24.5	0.106	415
240	1221/.50	2.2	28.0	0.080	500

Note: • Current rating as per IS: 3961 (part-V) • Conductor: Class 2 as per IS: 8130 • PVC Insulation: Type 'A' as per IS: 5831 • PVC Sheath: Type 'ST-I' as per IS: 5831

\*0/.25mm, 50/2.5mm sizes can be supplied on request with construction of 48.20mm and 80/.20 mm respectively.



# HEAT RESISTANT AND FLAME RETARDANT (HR-FR) CABLES

## ROHS COMPLIANT CABLE

**APPLICATION** Suitable for wiring in all types of residential and commercial infrastructure, where fire and electrical safety is utmost important.

**Approvals:** IS694/2010 marked

**Voltage Grade:** Up to and including 450/750V

**Conductors:** Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility. The strands are twisted with high precision to impart circularity for the conductor.

**Insulation:** Specially formulated heat resistant & flame retardant PVC insulation is used. The HR FR property retards the propagation of flame without compromising safety.

**Insulation Conformity:** IS 5831, TYPE C-HR 850C+FR

**Marking:** The cables are printed with marking of Polydelite 'HR FR' upto and onwards size.

**Packing:** 90 mtr. coil is packed in protective cartons. Project packing of 180 mtr. also available.

## DATA SHEET

### CABLE DESIGN PARAMETERS

Nominal Cross Sectional area	Nominal Insulation Thickness	Number *Nominal Dia. of Strands	Approx. Overall Dia.	Max. DC Conductor resistance	Current Rating (Amps.)	
					Casing	Concealed
Sq. mm	mm	mm	mm	Ω/km at 200C		
0.5	0.6	16/0.2	2.1	39.0	5	4
0.75	0.6	24/0.2	2.3	26.0	9	8
1	0.7	32/0.2	2.7	18.1	14	13
1.5	0.7	30/0.25	3.0	12.1	18	16
2.5	0.8	50/0.25	3.7	7.41	24	20
4	0.8	56/0.3	4.1	4.95	30	26
6	0.8	84/0.3	4.6	3.30	38	33
10	1.0	80/0.4	7.0	1.91	52	45
16	1.0	126/0.4	8.1	1.21	70	60

\* Conductor as per IS 8130

### PROPERTIES

Test	Test Method	Values
Sq. mm	mm	mm
Limited Oxygen Index	IS 10810 P-58	> 29%
Limited Temperature Index	IS 10810 P-64	> 250°C



# FLAME RETARDANT LOW SMOKE HALOGEN (FR-LSH) CABLES

## ROHS COMPLIANT CABLE

**APPLICATION** Suitable for use in conduit and for fixed, protected installation particularly suitable for wiring in fire and explosion prone areas, chemical factories, densely wired area, public buildings, schools, hospitals, commercial complexes, theatres, etc.

**Approvals:** IS694/2010 marked

**Voltage Grade:** Up to and including 450/750V

**Conductors:** Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility.

**Insulation:** Specially formulated flame retardant low smoke low halogen compound to restrict the spread of flames in fire situation. The smoke emitted by the burning cable is considerably low compared to traditional cables. This ensures improved visibility for evacuation of trapped victims and facilitates fire fighting operation.

**Insulation Conformity:** IS 5831, TYPE A/D FR-LSH 700C

**Marking:** The cables are printed with marking of Polydelite 'FR LSH'

**Packing:** 90 mtr. coil is packed in protective cartons. Project packing of 180 mtr. also available.

## DATA SHEET

### CABLE DESIGN PARAMETERS

Nominal Cross Sectional area	Nominal Insulation Thickness	Number *Nominal Dia. of Strands	Approx. Overall Diameter	Max. DC Conductor resistance	Current Rating (Amps.)	
					Casing	Concealed
Sq. mm	mm	mm	mm	Ω/km at 200C		
0.5	0.6	16/0.2	2.1	39.0	5	4
0.75	0.6	24/0.2	2.3	26.0	9	8
1	0.7	32/0.2	2.7	18.1	14	13
1.5	0.7	30/0.25	3.0	12.1	18	16
2.5	0.8	50/0.25	3.7	7.41	24	20
4	0.8	56/0.3	4.1	4.95	30	26
6	0.8	84/0.3	4.6	3.30	38	33
10	1.0	80/0.4	7.0	1.91	52	45
16	1.0	126/0.4	8.1	1.21	70	60

\* Conductor as per IS 8130

### PROPERTIES

Test	Test Method	Values
Sq. mm	mm	mm
Limited Oxygen Index	IS 10810 P-58	> 29%
Limited Temperature Index	IS 10810 P-64	> 250°C

### VARIANT AVAILABLE

Product Type	Specifications
PVC 700C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 sheath
HR 850C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type C insulation & ST-1 sheath
FR 700C	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 (FR) sheath
HR 850C+FR	IS 694, IS 8130 Class 1 & 2, IS 5831 Type C insulation & ST-2 (FR) sheath
FR-LSH	IS 694, IS 8130 Class 1 & 2, IS 5831 Type A insulation & ST-1 (FR-LSH) sheath

# HALOGEN FREE FLAME RETARDANT (HFFR) CABLE

## ROHS COMPLIANT CABLE

**APPLICATION** This is the wire & cable which is Non-Toxic & Non-Corrosive and does not propagate flame and fire. This is used in all installations where fire safety is of utmost importance like schools, theaters, commercial complexes, apartments, high rise buildings, laboratories etc.

**Voltage Grade:** Up to and including 1100V

**Conductors:** Thin strands of electrolytic copper are multi-drawn for uniformity of resistance, dimension and flexibility. The drawn strands are uni-laid with high precision and compacted. Thus forming a perfectly circular conductor which enable reduction in overall diameter for space saving in high density wiring.

**Conductor Speciality:** The strands do not get cut when stripping the insulation. The conductor offers perfect contact at pins, terminals and sockets. Thus, elimination of spot heating and sparking.

**Insulation:** Specially formulated grade of halogen free flame retardant (HFFR) compound is used. The insulation does not burn readily. It does not melt and drip, smoke is negligible, transparent, non-toxic. The victims trapped in fire do not suffocate and this facilitates fire fighting operations. Unlike PVC, the smoke emitted is non-corrosive.

**Insulation Conformity:**

**Marking:** The cables are printed with marking of Polydelite 'HFFR' upto and onwards size.

**Packing:** 90/100 mtr. coil and as per customer requirement packed in protective cations

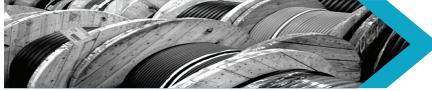
## DATA SHEET

### CABLE DESIGN PARAMETERS

Nominal Cross Sectional area	Nominal Insulation Thickness	Number *Nominal Dia. of Strands	Approx. Overall Dia.	Max. DC Conductor resistance	Current Rating (Amps.)	
Sq. mm	mm	mm	mm	Ω/km at 200C	Casing	Concealed
0.5	0.6	16/0.2	2.1	39.0	5	4
0.75	0.6	24/0.2	2.3	26.0	9	8
1	0.7	32/0.2	2.7	18.1	14	13
1.5	0.7	30/0.25	3.0	12.1	18	16
2.5	0.8	50/0.25	3.7	7.41	24	20
4	0.8	56/0.3	4.1	4.95	30	26
6	0.8	84/0.3	4.6	3.30	38	33
10	1.0	80/0.4	7.0	1.91	52	45
16	1.0	126/0.4	8.1	1.21	70	60

### PROPERTIES

Test	Test Method	Values
Sq. mm	mm	mm
Limited Oxygen Index	ASTM-D 2863	> 32%
Limited Temperature Index	ASTM-D 2863	> 250°C
Smoke Density (Light Absorption)	ASTM-D 2843	> 10%
Acid Gas Generation	IEC-60754	< 5%



**SPECIAL TEST ON “POLYDELITE” FRLS WIRES & CABLES**

Test	Function	Specification	Specified Values & Test	Obsd. Values
Critical Oxygen Index	To determine percentage of oxygen required for supporting combustion at room temperature of insulating material	ASTM-D-2863	<b>Oxygen Index: minimum 29%</b>	More than 32
Temperature Index	To determine at what temperature normal oxygen content of 21% in air will support combustion of insulating material	ASTM-D-2863	<b>Temperature Index: minimum 2500C</b> The aforesaid procedure at various temperature & then extrapolating to 250°C	Around 285°C
Smoke Density	To determine the visibility (light transmission) under fire of insulating material	ASTM-D-2843	<b>Light Transmission: minimum 40%</b> The test sample is exposed to flame at a 40psi pressure for 4 minutes, the light absorption data are plotted on a graph as smote density (%) versus time.	Around 45%
Acid Gas Generation	To ascertain the amount of hydrochloric acid gas evolved from PVC insulation of wire under fire conditions	IEC 754-1	<b>Hydrochloric acid gas released: 20% max</b> 0.5-1 gram of the material for the wire insulation/sheath is burnt in a ceramic tube inside a tubular furnace at 800°C. The volume of corrosive gases (HCL) present in the combustion products are analyzed chemically.	Around 15%
Flammability test on group of cables	To determine flame propagation of wires installed condition	IEEE-383	In total 20 minutes of burning 8ft wire length samples with flame temp. of app. 1500°F the burning of wires should not go to the top	Satisfactory
Flammability test	1) To determine ignition resistance & flame propagation under specified conditions	Swedish standard No. SS242-175 (class F3)	From test sample of 850mm length, the unburnt portion shall be more than 300mm from the top	Satisfactory
	2) To determine ignition resistance and flame propagation under specified conditions	IEC 332-1	In the calculated time duration of burning the wire sample of 600mm ± 25mm length, the length of un-burnt portion to be min. 50mm from the top	Satisfactory
	3) To determine ignition resistance and flame propagation, especially for bunch of wires under specified conditions	IEC 332-3	From test sample of 3.5 mtrs. length effected portion during, shall not reach 2.5 mtrs above from the bottom edge of the burner	Satisfactory

**COMPARISION BETWEEN “POLYDELITE” FR/FRLS/FRLSH AND HFFR WIRES**

Test	Standard	Unit	Requirements	FR	FRLS/FR-LSH	HFFR
Critical oxygen index	ASTM-D-2863	%	Min. 20	30-32	30-32	> 40
Temperature index	ASTM-D-2863	°C	Min 250	260-300	280-350	> 350
Light Transmission	ASTM-D-2843	%	Min 40	30-33	42-45	> 75
Halogen Gas Generation	IEC-754-1	%	Max. 20	30-35	15-18	< 0.1
Thermal Decomposition	-	-	-	Good	Good	Excellent
Flame Retardency	-	-	-	Good	Good	Excellent
Safety During Burning	-	-	-	Average	Average	Excellent

# ARMoured / UNAMoured INSULATED CABLE

Current Carrying Capacities for PolyDelite Multi Core Flexible Trailing Cables  
Armoured / Unarmoured insulated with either VIR or EPR all Voltage Grades

Nominal Cross Sectional area of Conductor	Max Allowable Resistance at 20°C for linned wires Multi Core	CURRENT RATINGS UP TO 10kv GRADE		CURRENT RATINGS ABOVE TO 10kv GRADE	
		E1 (VIR) Insulated	E2 (EPR) Insulated	VIR Insulated	EPR Insulated
mm <sup>2</sup>	(ohms/km)	(A)	(A)	(A)	(A)
2.5	0.21	25	32	—	—
4	5.09	34	43	—	—
6	3.39	44	56	—	—
10	1.95	60	78	—	—
16	1.24	80	104	85	110
25	0.795	107	138	113	146
35	0.565	133	171	141	181
50	0.393	165	213	175	226
70	0.277	204	263	216	279
95	0.210	245	317	260	336
120	0.164	287	370	304	391
150	0.132	329	425	349	450
185	0.108	375	485	398	514

Note: (1) This table covers current ratings of flexings trailing cable armoured/unarmoured conforming to IS:9968 Part 1&2 IS:14494, VDE0250 NCB and other equivalent international specifications.

(2) The ratings as given above are based on ambient temp 30°C for higher temp refer to the following table of correction factors.

(3) Rating factor for "MONOSPIRAL" reeling drum winding duty is 0.85.

(4) For reeling-unreeling operation rating factors are as follows.

No. of times	1	2	3	4
Derating Factors	0.76	0.58	0.47	0.40

## Rating Factor for Ambient Temperature

Ambient Temperature (°C)	25	30	35	40	45	50	55	60	70
Factor for VIR insulation	1.08	1.0	0.91	0.82	0.74	0.58	0.41	—	—
Factor for EPR insulation	1.05	1.0	0.95	0.90	0.85	0.80	0.74	0.67	0.52
Ambient Temperature (°C)	—	—	35-85	90	100	110	120	130	140
Factor for SILICONE insulation	---	---	1.0	0.96	0.88	0.78	0.68	0.55	0.39

## POLYDELITE ELASTOMERIC INSULATED FLEXIBLE CABLES FOR USE IN MINES (AS PER IS : 1449/98) SIZE OF POWER, EARTHING & PILOT CONDUCTORS

Power Conductor	Sq.mm	2.5	4	6	10	16	25	35	50	70	95	120	150	185
Earthing Conductor	Type-A Sq.mm	2.5	4	6	10	16	16	16	25	35	50	70	70	95
	Type-A Sq.mm	2.5	4	6	10	16	25	35	50	70	95	120	150	185
Pilot Conductor	Sq.mm	2.5	4	6	10	16	16	16	25	35	50	70	70	95

## INSULATION THICKNESS

Nom. Area of conductor (Sq. mm)	Nom. Thickness of Insulation For Power Cables			
	1.1 kV (mm)	3.3 kV (mm)	3.8/6.6 kV (mm)	6.35/11 kV (mm)
2.5	1.0	—	—	—
4	1.0	—	—	—
6	1.0	—	—	—
10	1.2	—	—	—
16	1.2	2.2	3.0	4.0
25	1.4	2.2	3.0	4.0
35	1.4	2.2	3.0	4.0
50	1.6	2.2	3.0	4.0
70	1.6	2.2	3.0	4.0
95	1.8	2.4	3.0	4.0
120	1.8	2.4	3.0	4.0
150	2.0	2.4	3.0	4.0
185	2.0	2.4	3.0	4.0

Note: (1) The nominal thickness of insulation for pilot core(s) shall be mm, However, higher thickness whenever required to build up the diameter is permitted.  
 (2) The thickness of covering on earth conductor(s) shall be suitably selected for covered earth conductor(s).

### THICKNESS OF INNER & OUTER SHEATH (expect for Collective Metallic Screened and Pliable Wire Armoured Cables)

Calculated Dia. Under Inner Sheath		Thickness of Sheath	
Over (mm)	Up to and Including (mm)	Inner Min. (mm)	Outer Nom. (mm)
—	10	1.4	2.0
10	15	1.6	2.4
15	20	1.8	2.6
20	25	2.0	2.8
25	30	2.2	3.0
30	40	2.4	3.2
40	50	2.8	3.6
50	60	3.2	4.0
60	70	3.6	4.5
70	80	4.0	5.0
80	—	4.4	5.5

### DIMENSION OF PLIABLE WIRE ARMOUR AND BRAIDING WIRE (As per IS : 9968:Pt-II/81 & IS : 14494/98)

Diameter Under Armour		Size of Armour Strand (Nos. / mm)	Diameter of Braiding Wire (mm)
Above (mm)	Up to and Including (mm)		
—	25	7/0.45	0.30
25	40	7/0.71	0.45
40	60	7/0.90	0.45
60	—	7/1.25	0.45

### THICKNESS OF INNER & OUTER SHEATH (expect for Collective Metallic Screened and Pliable Wire Armoured Cables)

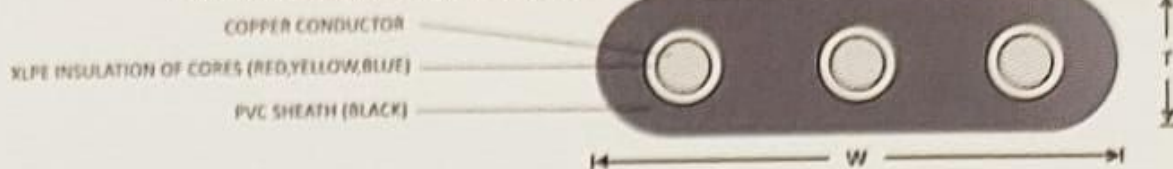
Calculated Dia. Under Inner Sheath for choosing thickness of inner sheath & calculated dia. under outer sheath for choosing thickness of outer sheath		Thickness of sheath	
Over (mm)	up to and including (mm)	Inner Min. (mm)	Outer Nom. (mm)
—	10	1.6	2.5
10	15	1.8	2.8
15	20	2.0	3.2
20	25	2.2	3.6
25	30	2.4	4.0
30	40	2.6	4.5
40	50	3.0	5.0
50	60	3.5	5.7
60	70	4.0	6.4
70	80	4.5	7.1
80	90	5.5	7.8
90	100	5.5	8.5
100	—	6.0	9.0

### Why " PolyDelite " are better?

1. High current carrying capacity due to low conductor resistance.
2. High insulation resistance.
3. Small bending radii.
4. Long service life.
5. Good Ageing.
6. Heat resisting, Oil resisting & Flame retardant Property.
7. Ozone resistant.
8. Extra Flexibility due to super annealed copper wire & good elasticity of compound.
9. Excellent mechanical features of the insulation improves the protection against external effects.
10. Packing material suitable for handling.
11. Fast delivery period for any cable.

## XLPE INSULATED / PVC SHEATHED 3 CORE FLAT SUBMERSIBLE CABLES, 1.1 KV

### For Submersible Pump Motors



XLPE-PVC flat cables are manufactured with rigid manufacturing controls to sustain complete immersion in water and 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 machine with inline monitoring of cable diameter and high voltage spark testing.

#### Application

These 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.

#### Technical Data

**Conductor :** Electrolytic grade annealed plain copper to IS 8130/ EN 60228, bunched to form a circular shape

**Insulation :** Cross linked polyethylene XLPE

**Core Colours :** Red, Yellow, Blue

**Sheath :** PVC Type ST2 1S5831 / IEC 60502-I with excellent water resistant properties

**Sheath Colour :** Black

#### Variants Available

Product Type	Specifications
XLPE/PVC	IS 8130 class 5/EN 60228, XLPE insulation & PVC ST-2 (IS5831) sheath

#### Variants Available

Conductor Construction		Max. Conductor Resistance at 200C (Ω/km)	Nominal Insulation Thickness (mm)	Nominal Sheath Thickness (mm)	Approx. Overall Dimensions (W x T) (mm) +/- 0.5mm	Current Carrying Capacity (Amp.)
Nominal Cross Sectional Area (Sq. mm)	No. of Strands/Max. Strands Dia. (mm)					
1	14/0.3	18.1	0.7	1.0	10.6 x 5.2	12
1.5	22/0.3	12.1	0.7	1.0	11.6 x 5.5	20
2.5	36/0.3	7.41	0.7	1.1	13.1 x 6.2	30
4	56/0.3	4.95	0.8	1.1	15.0 x 6.8	37
6	84/0.3	3.30	0.8	1.2	17.2 x 7.7	48
10	140/0.3	1.91	0.8	1.3	20.2 x 8.8	66
16	126/0.4	1.21	0.8	1.4	23.6 x 10.0	85
25	194/0.4	0.78	1.0	1.5	28.9 x 12.0	113
35	276/0.4	0.554	1.1	1.6	32.7 x 13.4	139
50	396/0.4	0.386	1.2	1.7	38.7 x 15.5	156

#### Current rating conversion factor for deviating ambient temperature

Ambient Temperature (°C)	25	30	35	40	45	50
Factor	1.18	1.12	1.06	1.00	0.94	0.88



## Technical Information

Max. DC Resistance - IS 8130/EN 60228

Max. DC Conductor resistance as per IS 8130/EN 60228 for conductor made of soft-annealed copper.

Nominal Cross-Section (mm <sup>2</sup> )	Max. DC Conductor resistance at 20 C ( $\Omega$ /km)			
	Tin Coated Copper Conductor		Plain Copper Conductor	
	Class 1/2	Class 5/6	Class 1/2	Class 5/6
0.5	36.7	40.1	36	39.0
0.75	24.8	26.7	24.5	26.0
1	18.2	20.0	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	1.21	7.41	7.98
4	4.70	5.09	4.61	4.95
6	3.11	3.39	3.08	3.30
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.780
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.270	0.277	0.268	0.272
95	0.195	0.210	0.193	0.206

- Product Range
- FR/FRLS & ZHFR cables
- Domestic & House wiring cables
- Single & Multicore cables
- XLPE Insulated Cables
- PVC Submersible 3 core flat cables
- Telephone & Switch Board Cables
- Co-axial cables
- Industrial & Agriculture wiring cables
- Copper Control Cables
- A B C Cables
- Railway signaling cables
- Mining Cables

## PolyDelite Wires & Cables

An ISO 9001 : 2015 Company

Delhi-110032

e-mail: polydelite@gmail.com

 Customer Care No. 9899095449

