

CATALOGUE

PROFILE

&

QUALITY MANUAL

AN IS/ISO 9001 COMPANY

# Superlite®

CABLES



**Superlite®**  
CABLES

NO ELECTRICAL SHOCKS

NO SHORT CIRCUITS

NO ELECTRICAL FIRES

SAVES POWER CONSUMPTION

WORLD CLASS CABLES

MAXIMUM VALUE FOR YOUR MONEY

**TOTAL SAFETY**  
IS : 694/1990  
CM/L-8311360  
**SUPERLITE CABLES**

IS : 694/1990  
CM/L-8311360

IS : 694/1990



CM/L-8311360

**FR**

**FIA**

**TAC**

**CETL**

**ERDA**

*An Attempt To Serve You Better*

AN IS/ISO 9001 COMPANY



THE LIFE LINE OF EVERY HOUSE HOLD & INDUSTRY

## || About Ourselves ||

SUPERLITE PVC wires and cables are one of the Premier qualities of cables in our country in this most advanced new millennium . At present **Supperlite** PVC Cables covers a wide range of wires & cables such as Domestic, House wiring cables, Industrial Cables, Telecom Cables, Submersible cables, Panel Control multi core cables, FRLS cables, Screened cables, Auto cables and many others with special heat Resisting Type PVC Insulation and Sheathed. Special cables can also be manufactured according to specific requirements of customers to even foreign standards(i.e.,) B.S.

Future plan includes manufacturing of Armoured L.T.,H.T. Cables and Armoured Telephone Jelly Filled cables.

Today it is a matter of gratitude and pleasure that **Supperlite** cables enjoy high degree of reputation and confidence among esteemed and reputed customers such as E.C.C., L.& T., All India Radio, Chennai Port Trust, Southern Railways, BPCL, Airports Authority of India, Nuclear Power Corporation, H.T.L., and many other government and private Departments.

We are proud of having proved that the greatest asset of an Industry is not its Buildings & Machines but its work force-skilled managerial and technical labour and above all their commitment towards the manufacturing of a quality product. We have quality inbuilt in every process including raw materials. We have a technical team independent of production for quality assurance, research and development activities.

We have infrastructure for manufacturing and testing of cables. We have designed, manufactured and supplied cables conforming to very stringent physical and electrical parameters. We are known for our quality products. We are updating our quality to cater for cables used in different environments in our country such as temperature, humidity and climate conditions.

Our **Supperlite** cables have proved their performance in different environments.

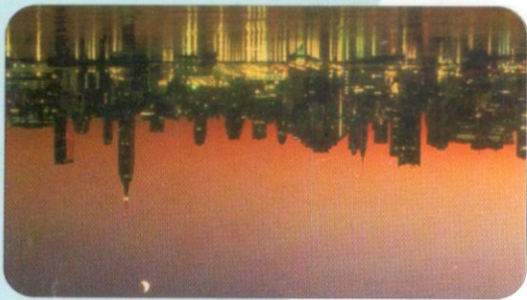
This Booklet describes **Supperlite** PVC cables which are manufactured according to IS 694/1990. 1100 Volts grade. All Superlite cables have ISI Specification marks.

## || RANGE OF OUR PRODUCTS : ||

- ❖ HOUSE WIRING & INDUSTRIAL CABLES
- ❖ F.R.L.S./F.R.H.R P.V.C. CABLES
- ❖ SUBMERSIBLE CABLES
- ❖ TELE-COMMUNICATIONS-ARMOURED / UN ARMOURED
- ❖ MULTI CORE FLEXIBLE CABLES
- ❖ T.R.S./T.R.S. BRAIDED AND WELDING CABLES.
- ❖ HOOK-UP WIRES, TV FEEDER WIRES, CO-AXIAL CABLES, SHIELDED CABLES AND MINING CABLES.

## || NORMAL MANUFACTURING RANGE : ||

- ❖ SINGLE CORE UPTO 400 SQ.MM.
- ❖ ROUND FLEXIBLE UPTO 120 SQ.MM x 4 CORE.
- ❖ MULTICORE FROM .5 SQ.MM TO 2.5 MM UP TO 48 CORES.



❖

## INTRODUCTION :

In the field of electric cables, particularly those with PVC (poly vinyl chloride) insulated and sheathed have found a very wide field of application due to their Technical and Economical advantages over conventional paper insulated cables in the 1100 volts grade. **Superlite** PVC cables have proved highly satisfactory as the carrier of electrical power and control currents and distribution systems, utility networks and all type of Industrial plants. **Superlite** PVC cables have got certain Technical and Economical advantages for certain applications. The outstanding properties of **Superlite** cables could be identified as follows.

### 1) OUTSTANDING PROPERTIES :

- ❖ In Service-high Mechanical Strength.
- ❖ High Resistance.
- ❖ Moisture proof.

### 2) INSTALLATION

- ❖ Easy to install due to smooth surface and appearance.
- ❖ High resistance of D.C. Voltage cables.
- ❖ Instant Identification due to coloured cores for control cables.

### 3) GENERAL CONSTRUCTION

- ❖ PVC **SUPERLITE** CABLES are manufactured conforming to IS:694 and the technical details are given below.



## TECHNICAL ASPECTS :

**Superlite** believes in manufacturing cables to standards for providing complete safe electrical usage for the consumers.

The cables are ISI marked assuring the quality and are manufactured on the state-of-the-art lines with assured testing of every meter of cable, In a market flooded with unbranded cables, the customer who cares for safety, shall go with only one name **Superlite**, which offers complete safety and protection against electrical shocks, short-circuits and fires.

**Superlite** with its wide range of products offers the most safe and complete solutions for all your electrical installation requirements. We enjoy your confidence, thus making **Superlite** PVC wires & Cables your **First Choice**.

### SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) HEAVY DUTY CABLES FOR FLEXIBLE WIRING IN VOLTAGE GRADE 650/1100 V

Nominal Cross Sectional area of conductor mm <sup>2</sup>	Numbers/Nom. Dia of Wires mm	Thickness of Insulation (Nom) mm	Current Rating Amps	Voltage Drop DC/1Ø Ac 3ØAc		Resistance Max. Per km@20°C Ohms
				mV	mV	
1.0	14/0.3	0.8	11	42	37	18.10
1.5	22/0.3	0.9	15	27	23	12.10
2.5	36/0.3	0.9	20	-	-	7.41
4.0	56/0.3	1.0	26	-	-	4.95

Standard Colours : Black, Red Blue, Yellow and Green ( For earthing ) Any other colour on specific request can also be supplied. Supplied in 90 meters lengths in attractive packing. Generally conform to IS 694/1990

### SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) HEAVY DUTY CABLES FOR DOMESTIC WIRING IN VOLTAGE GRADE 250/440V.&660/1100V.

No of Wires SWG	Number & diameter of wires inch	Standard Resistance at 20°C ohm/km	250/440 V Grade		660/1100 V Grade		Current Rating Amps
			Radial thickness of Insulation inch	Overall Diameter inch	Radial thickness of Insulation inch	Overall Diameter inch	
1/18	1/0.044	17.58	0.035	0.119	0.045	0.139	5
3/22	3/0.029	13.76	0.035	0.135	0.045	0.157	10
3/20	3/0.036	8.927	0.035	0.153	0.045	0.173	15
7/22	7/0.029	5.879	0.035	0.162	0.045	0.182	20
7/20	7/0.036	3.185	0.040	0.193	0.050	0.213	28
7/18	7/0.044	2.555	0.040	0.217	0.050	0.237	36
7/16	7/0.064	1.207	0.040	0.277	0.050	0.297	53

**SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) CABLES FOR FLEXIBLE WIRING IN VOLTAGE GRADE 650/1100 V**

Nominal Cross Sectional area of conductor mm <sup>2</sup>	Numbers/Nom. Dia of Wires mm	Thickness of Insulation (Nom) mm	Approx Overall Diameter mm	Current Carrying in Conduit/ Trunking*	Capacity 2 cables singleØ Unenclosed clipped directly to a surface or on cable trays		Resistance Max.per km @20° c Ohms
				Amps	Amps	Amps	
0.5	16/0.2	0.6	2.2	4	5	39.00	
0.75	24/0.2	0.6	2.5	7	8	26.00	
1.0	32/0.2	0.7	2.8	11	12	18.10	
1.5	48/0.2 (30/0.25)	0.7	3.1	13	16	12.10	
2.5	80/0.2(50/0.25)	0.8	3.8	18	22	7.41	
4.0	128/0.2	0.8	4.4	24	29	4.95	
6	85/0.3	0.8	5.3	31	37	3.30	
10	140/0.3	1.0	6.8	42	51	1.91	
16	226/0.3	1.0	8.2	57	68	1.21	
25	354/0.3	1.2	10.0	71	86	0.780	
35	495/0.3	1.2	11.2	91	110	0.554	
50	707/0.3	1.4	13.5	120	145	0.386	

Standard Colours : Insulation in Black, Red, Blue, Yellow & Green (For earthing) . Any other colour on specific request can also be supplied. (Supplied in 90 metres lengths in attractive packing) Generally conform to IS 694/1990

**MULTICORE ROUND FLEXIBLE PVC INSULATED \* COPPER CONDUCTOR AND SHEATHED CABLES FOR FLEXIBLE WIRING IN VOLTAGE GRADE 650/1100V**


Nominal Cross Sectional area of conductor mm <sup>2</sup>	Number/ Nom. Dia of Wires mm	Thickness of Insulation (Nom) mm	Nominal thickness of sheath				Overall dimension				Current Rating AC Amps	Voltage Drop		Resistance Max.per km @20°C Ohms
			Twin Core	Three Core	Four Core	Five Core	Twin Core	Three Core	Four Core	Five Core		DC/ 1ØAC mv	3Ø AC mv	
6	85/0.3	0.80	1.15	1.15	1.40	-	12.60	13.40	15.20	-	31	7.1	6.2	3.30
10	140/0.3	1.00	1.40	1.40	1.40	-	16.00	17.00	18.80	-	42	4.2	3.7	1.91
16	226/0.3	1.00	1.40	1.40	1.40	-	18.30	20.10	22.20	-	57	2.7	2.3	1.21
25	354/0.3	1.20	2.00	2.00	2.00	-	24.00	25.60	28.20	-	71	1.7	1.5	0.780
35	495/0.3	1.20	2.00	2.00	2.00	-	26.30	28.00	31.00	-	97	1.3	1.1	0.554
50	707/0.3	1.40	2.00	2.00	2.00	-	30.90	33.00	36.50	-	120	0.97	0.84	0.386

**MULTICORE ROUND FLEXIBLE PVC INSULATED \* COPPER CONDUCTOR AND SHEATHED CABLES FOR FLEXIBLE WIRING IN VOLTAGE GRADE 650/1100V**

Nominal Cross Sectional area of conductor mm <sup>2</sup>	Numbers/ Nom. Dia of Wires mm	Thickness of Insulation (Nom) mm	Nominal thickness of sheath				Overall dimension				Current Rating AC Amps	Voltage Drop		Resistance Max.per km @20°C Ohms
			Twin Core	Three Core	Four Core	Five Core	Twin Core	Three Core	Four Core	Five Core		DC/ 1ØAC mv	3Ø AC mv	
0.5	16/0.2	0.6	0.9	0.9	0.9	0.9	6.2	6.6	7.2	9.0	4	83	72	39.0
0.75	24/0.2	0.6	0.9	0.9	0.9	0.9	6.5	6.9	7.6	9.6	7	56	48	26.0
1.0	32/0.2	0.6	0.9	0.9	0.9	1.0	6.9	7.3	8.2	10.5	11	43	37	19.5
1.5	48/0.2	0.6	0.9	0.9	1.0	1.0	7.6	8.2	9.3	11.0	15	31	26	13.3
2.5	80/0.2	0.7	1.0	1.0	1.0	1.0	9.0	9.6	10.5	13.0	20	18	16	7.98
4.0	128/0.2	0.8	1.0	1.0	1.0	1.0	10.3	10.9	12.3	15.5	26	11	9.6	4.95

**SINGLE CORE PVC INSULATED\*COPPER CONDUCTOR (UNSHEATHED) CABLES FOR FIXED WIRING IN VOLTAGE GRADE 650/1100V**

Nominal Cross Sectional area of conductor	Numbers/ Nom.Dia of Wires	Stranding No/Nom Dia of Wires	Thickness of Insulation (Nom)	Approx Overall Diameter	Current Carrying in Conduit/ Trunking*	Capacity 2 cables singleØ Unenclosed clipped directly to a surface or on cable trays	Resistance Max.per km @20° c
mm <sup>2</sup>	mm	mm	mm	mm	Amps	Amps	Ohms
1.0	1/1.13	7/0.43	0.7	2.8	11	12	18.10
1.5	1/1.38	7/0.52	0.7	3.1	13	16	12.10
2.5	1/1.78	7/0.67	0.8	3.8	18	22	7.41
4.0	-	7/0.85	0.8	4.4	24	29	4.61
6.0	-	7/1.04	0.8	5.3	31	41	3.08
10	-	7/1.35	1.0	6.8	42	55	1.83
16	-	7/1.70	1.0	8.2	57	74	1.15
25	-	7/2.14	1.2	10.0	71	97	0.727
35	-	7/2.50	1.2	11.2	91	119	0.524
50	-	19/1.78	1.4	13.5	120	145	0.387

Standard Colours : Insulation in Black, Red, Blue, Yellow & Green (For earthing) & sheath black or Grey. Any other colour on specific request can also be supplied. Supplied in 90 metres lengths in attractive packing, Generally conform to IS 694/1990 

**SINGLE CORE PVC INSULATED\*COPPER CONDUCTOR AND SHEATHED CABLES FOR FIXED WIRING IN VOLTAGE GRADE 650/1100V**

Nominal Cross Sectional area of conductor	Number/ Nom. Dia of Wires	Thickness of Insulation (Nom)	Nominal thickness of sheath	Overall dimension (Max)	Current Rating AC	Voltage Drop DC/ 1ØAC	3Ø AC	Resistance Max.per km @20°C
mm <sup>2</sup>	mm	mm	mm	mm	Amps	mV	mV	Ohms
1.0	7/0.43	0.6	0.8	4.7	11	42	37	18.1
1.5	7/0.52	0.6	0.8	5.0	15	28	24	12.1
2.5	7/0.67	0.7	0.8	5.8	20	17	15	7.41
4.0	7/0.85	0.8	0.9	6.8	26	11	9.2	4.61
6.0	7/1.04	0.8	0.9	7.8	31	7.1	6.2	3.08
10	7/1.35	1.0	0.9	8.8	42	4.2	3.7	1.83
16	7/1.70	1.0	1.0	10.5	57	2.7	2.3	1.15
25	7/2.24	1.2	1.1	12.5	71	1.7	1.5	0.727
35	7/2.50	1.2	1.1	13.5	91	1.3	1.1	0.524
50	19/1.78	1.4	1.2	15.5	120	0.97	0.84	0.387

**SUPERLITE THREE CORE FLAT HEAVY DUTY FLEXIBLE CABLE FOR WORKING VOLTAGE 1100V (COPPER CONDUCTOR)**

Nominal Cross Sectional area	No.of Wires and Diameter	Approx Diameter of conductor	Radial Thickness of insulation	Radial Thickness of sheath	calculated Resistance of conductor @20°C	Nominal Overall Parameters
mm <sup>2</sup>	mm	mm	mm	mm	Ohm/km	mm
1.5	22/0.30	1.70	0.80	1.15	12.7	11.70 x 5.70
2.5	36/0.30	2.10	0.90	1.15	7.6	13.5 x 6.03
4.00	56/0.30	2.70	1.00	1.15	4.71	15.4 x 6.05
6.00	85/0.30	3.50	1.00	1.15	3.14	17.10 x 7.50
10.00	140/0.30	4.60	1.00	1.40	1.82	21.40 x 9.50
16.00	226/0.30	5.90	1.00	1.40	1.16	24.60 x 10.40
25.00	345/0.30	7.60	1.20	1.65	0.743	34.30 x 13.80
35.00	495/0.30	8.80	1.20	1.80	0.527	37.2 x 14.80

Standard Colours : Core Red, Blue, Yellow Sheathing : Black. Any other colour on specific request can also be supplied. Conform to IS 694 : 1990.

## CORE IDENTIFICATION :-

<b>Core Identification</b>	<p>For power cables &amp; control cables upto 12 cores, the cores are identified by different colours.</p> <p>Single core : Red/Black/Yellow/Blue/Green/Grey. Two core : Red &amp; Black Three core : Red, Black &amp; Green Four core : Red, Yellow, Green &amp; black Five core : Red, Yellow, Blue, Black &amp; Green. Six core : Red, Yellow, Blue, Black, Green &amp; Grey. Seven core to 12 core All different colours</p> <p>Identification for cables having more than 12 cores :</p> <p>Where the No. Of cores exceed 12, two adjacent cores are Blue for reference &amp; Yellow for direction in each layer. The remaining cores in each layer are Grey. On specific request we can also provide cores in different colours.</p>
<b>Cable Core</b>	<p>The Cable core is formed by assembling the required number of elements, which are laid concentric layers as</p>
<b>Sheath</b>	<p>The laid core is sheathed with Black PVC or specified colour</p>

### Quality Manual

We have a vigorous Quality Manual Plan comprising testing of incoming material, inline checks during production and final testing. The Quality Manual Programma is evaluated regularly to upgrade it.

Our Laboratory is equipped with all the instruments to ensure that the various tests required under different specifications are conducted before cables are cleared for despatch. Each consignment of cables is despatched to the customers with an exhaustive test report results of tests conducted in our laboratory.

Based on the above, we are detailing the Quality Manual Programma.

### 1. Test on Raw Materials :

Copper Conductor	: 100% With the help of Micrometer
Conductor Resistance	: 100% with the help of kelvin bridge for wire upto 0.4mm Finer wires by Sampling of 10% on lot basis.
Conductor Elongation	: 100% on Tensile Testing Machine for wires up to 0.4mm dia Finer wires by Sampling of 10% on lot basis.
Solder Bath/ Persulphate test (for conductors only)	: 100% for wires up to 0.40mm dia. Finer wires by sampling of 10% on lot basis.
Wrapping test and breaking load ( for cadmium cu. Conductor only)	: 100% wrapping is done manually and breaking load on Tensile Testing Machine.

### 2. PVC/POLYETHELENE

Sample of every consignment is first run on trial basis and the following tests are conducted :

Insulation Resistance	: with Megohms Meter
Elongation	: with Tensile Testing Machine.
Tensile Strength	: with Tensile Testing Machine.
Spark Testing	: with online spark testers.
High voltage Test	: with High Voltage Testing

The following Type Tests are conducted on monthly basis :

Bleeding & Blooming	: with Bleeding & Blooming tape and HST oven.
Ageing	: with Ageing chamber .
Hot deformation	: with Hot Deformation Apparatus.

### **3. INLINE QUALITY CONTROL - EXTRUSION :**

On line spark Testers	: 100% performed by spark Testers on each extruder
Dimension & Centering	: On line, sampling basis
Insulation Resistance	: Sampling Basis
High Voltage	: Sampling Basis
Tensile Strength of PVC	: Sampling basis performed as described before.

### **4. CABLING BRAND-MARKING :**

High Voltage tests on 10 mtrs of every spool before it goes in for brand marking.  
HVT after brand marking on 10 mtrs of every spool.

### **5.VISUAL EXAMINATION :**

Colour Fastness  
Finish  
Band Width

### **6.TWISTING & LAYING**

Heat Shock Test	: 100% Performed in Hot Air Oven.
High voltage test	: 100% Performed as described before.
Conductors Resistance	: 100% on digital Resistance Meter
Size of Conductor	: 100% By Micrometer.
Centering	: 100% Visual Examination.

### **7.LAYING :**

Visual Examination for	
Colour Coding	: 100%
Tape overlap by vernier	
Callipers	: 100%
Dimensions	: Conductor Diameter by Micrometer on sampling basis.

### **8.SHEATHING :**

Continuity of each core before Sheathing : 100% by continuity tester.  
Same is applied for extrusion stage.

The material tested for High Voltage before any new process commences.

### **SELECTION OF CABLES :**

The following points should be taken into consideration before selecting any particular size & type of cables.

- \* The system of power & voltage source where the cables are being used.
- \* Conditions of installation of cable
- \* Voltage drop of the cables.
- \* Short circuit capacity of cable
- \* Availability of the selected size of cables.

### **PACKAGING**

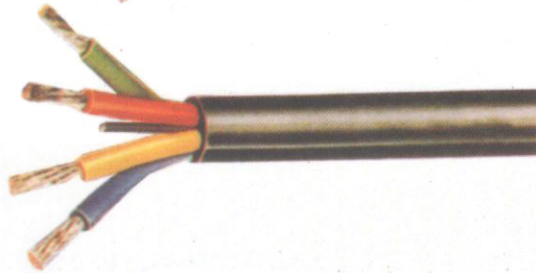
Superlite PVC cables are wound and packed with sealed corrugated cartoons with necessary particulars required by IS : 694

**NOTE : IN VIEW OF CONTINUOUS IMPROVEMENTS IN OUR DESIGN AND PROCESS, SPECIFICATIONS GIVEN HERE -IN-ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL INFORMATION GIVEN HERE IS IN GOOD FAITH. SUPERLITE SHALL NOT BE LIABLE FOR ANY DAMAGES ARISING OUT OF INCORRECT USE.**

AN IS/ISO 9001 COMPANY



# Our Product Range :-



Flexible PVC. House / Industrial wiring Cable



Trailing Cable for Quarries & Mines



Field Service & Ribbon & Low Feq. Cable



Jelly Filled Armoured Telecommunication Cable (Under Process)



Coaxial Cable



Submersible Cable



Auto Cable



Lift Cable



Welding Cable



Elastomeric Single Core Cable



Elastomeric Screened Cable



Instrumentation Cable



Unarmoured Telecom Cable



Pannel Wiring Cable

Mfg. By.: Midland Appliances Pvt. Ltd.  
J-40, Sector-63, Noida.UP-201307 India

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