Tirupati Plastomatics Pvt. Ltd.

Quality you can trust...

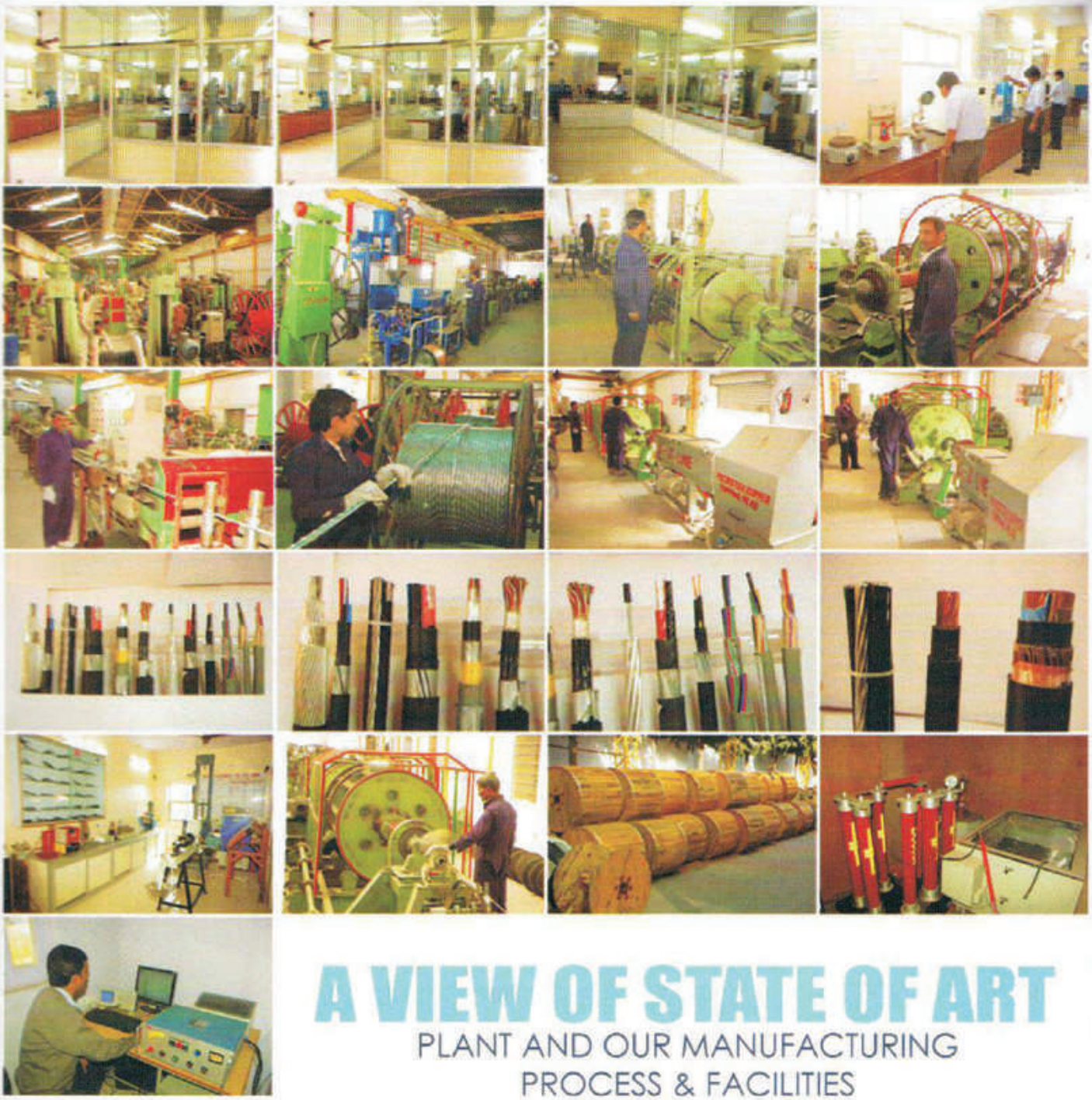
www.tirupatiplastomatics.com

Brand Name:
Gemini Cables

MOODY INTERNATIONAL

ISO 9001
ISO 14001
BS OHSAS 18001

PHOTOGRAPHS



A VIEW OF STATE OF ART

PLANT AND OUR MANUFACTURING
PROCESS & FACILITIES

Tirupati Plastomatics Pvt. Ltd.

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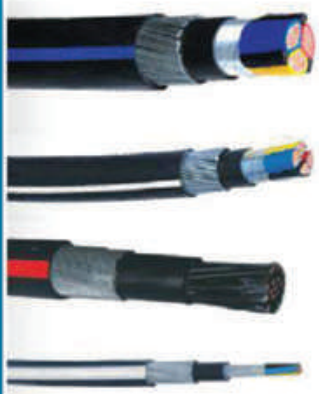
Product Range

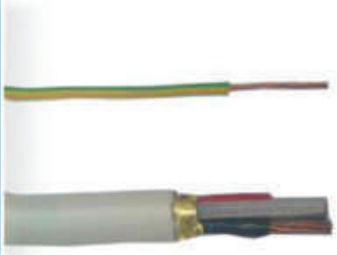


- **PVC DISTRIBUTION CABLE (300/500V, 450/750V, 600/1000V)**

WITH COPPER OR ALUMINIUM CONDUCTOR, ARMOURED OR UNARMOURED, WITH OR WITHOUT CONCENTRIC CONDUCTOR WITH NHLSFR & FR LOW HALOGEN & FR SHEATH 1.5SQ.MM TO 400SQ.MM (MULTI-CORE CABLES) & 1.0 TO 1200 SQ.MM. (SINGLE CORE CABLES) WIRING CABLES MULTI-CORE WITH ECC AS PER SANS 1507-2, SANS 1507-3 & SANS 1507-1, IEC 60502-1, DIN VDE 0276 & BS 6346 AND FLEXIBLE SINGLE CORE, MULTI-CORE FLAT CABLES AS PER SANS 1574-3

- **PVC FLEXIBLE CABLE**

ELECTRIC FLEXIBLE PVC CORES, CORDS AND CABLE WITH SOLID EXTRUDED DIELECTRIC INSULATION, FLEXIBLE SINGLE-CORE INSULATED CABLES, 450 / 750 V, FLEXIBLE SINGLE-CORE INSULATED CABLES, 600/1000 V, FLEXIBLE POWER CABLES CABTYRE & FLAT POWER CABLES, 450/750 V AND FLEXIBLE POWER CABLES, 600/1000 V AS PER SANS 1574-3.



- **PVC FLEXIBLE CABLE**

ELECTRIC CABLE WITH EXTRUDED SOLID DIELECTRIC INSULATION FOR FIXED INSTALLATIONS WIRING CABLES, INSULATED WIRE (600/1000 V), MULTI-CORE FLAT AND CIRCULAR SHEATHED CABLES (300/500 V), SINGLE-CORE UNSHEATHED PANEL/CUBICLE CABLES AND MULTI-CORE ROUND CABLES WITH ALUMINIUM / PVC LAMINATE AND AN EARTH CONTINUITY CONDUCTOR 300/500 V SURFIX AS PER SANS 1507-2.

Product Range

- **XLPE DISTRIBUTION CABLE (600/1000V)**

  WITH COPPER OR ALUMINIUM CONDUCTOR, ARMOURED OR UNARMOURED, WITH OR WITHOUT CONCENTRIC CONDUCTOR WITH NHLSFR & FR LOW HALOGEN & FR SHEATH 1.5 SQ.MM TO 400SQ.MM (MULTI-CORE CABLES) & 1.0 TO 1200 SQ.MM. (SINGLE CORE CABLES) AS PER SANS 1507-4, IEC 60502-1, DIN VDE 0276 & BS 5467

- **CONCENTRIC / SPLIT CONCENTRIC SERVICE CABLE (600/1000V)**

  4 SQ.MM TO 25 SQ.MM WITH OR WITHOUT COMMUNICATION CORES AS PER SANS 1507-6 &IEC 60502-1

- **AERIAL BUNDLED CONDUCTOR SYSTEMS (ABC) (600/1000V)**

  AS PER SANS 1418-1 & 2, IEC 60502-1 & NF C33-209

- **SOFT DRAWN COPPER CONDUCTOR** AS PER IEC 60228 & **HARD DRAWN COPPER CONDUCTOR** AS PER BS 7884

- **ALUMINIUM CONDUCTORS WITH STEEL REINFORCED (ACSR)**

  AS PER SANS 182-3, IEC 61089, NF C34-125, BS 215-2 & ASTM B-230

- **ALL ALUMINIUM ALLOY CONDUCTORS (AAAC)**

  AS PER IEC 61089, ASTM B-398, BS 3242, NF C34-125 & CSA-C49

- **ALUMINIUM CONDUCTOR WITH ALLOY REINFORCED (ACAR)**

  AS PER ASTM B-524, DIN 48201, BS 3242 & CSA-C49

About

Tirupati Plastomatics Pvt. Ltd. A flagship company of Gemini Group of industries Jaipur India. The founder of the company Mr. R. S. Gemini who is the managing director & a well-known industrialist & a renowned social worker. Tirupati Plastomatics enjoys the status of an ISO-9001:2008, 150 14001:2004, 01-15AS-18001, BIS, SMEC Australia, Scott Wilson-UK & SABS certified company having a group turnover of Rs. 250.00 crores US$ 53.76 Million The company is one of the leading manufacturer of all kind of LT PVC/XLPE insulated & sheathed cables, concentric service cable & conductors with own technical know-how for the last 11 years being widely used by Indian railways, utility service providers & private turnkey project executors in electricity distribution, transmission & generation. Tirupati has a dedicated & well-experienced team of techno-commercial experts.

In addition to serving Indian railways & electricity boards, Tirupati has also entered into overseas markets and have executed orders of aerial bunched cables, LV underground cables & AAA conductors, ACSR conductors as per IEC/VDE/DIN/SABS/ASTM/NF/BS specification to EDM, Mozambique, Mazare-E- Sharif power projects in Afghanistan and to South African customers.

Mission

Guided by the philosophy 'create the best to be followed by the rest', Tirupati Plastomatics aims at building a zero-defect product, which will give value satisfaction to its huge clientele. Tirupati Plastomatics strongly believes that learning and improving is a continuous process for the total growth of the company.

Vision

Tirupati Plastomatics Pvt. Ltd., the name for dedication, devotion, discipline, discrimination, and determination has made a substantial growth plan with Rupees 1000 Crores turnover projection by 2015.

Awards & Recognition

- Arch of Excellence Award 2002, All India Organizational Confederation, New Delhi.
- Award from Business Initiative Development Board 2004, New Delhi,
- Indian Achiever Award of Industrial Excellence for the year 2008.

Mr. R.S. Gemini, Managing Director, receiving award presented by Business Initiative Development Organization in the year 2002.

Mr. Salaman Khurshid, Central Minister for External Affairs presenting the "RASHTRIYA GAURAV AWARD'2004" to Managing Director of our Company

Mr. Ravi Gemini (Director) receiving "Indian Achiever Award of Industrial Excellence" from Dr. Murali Manohar Joshi (Former Union Minister) for year 2008.

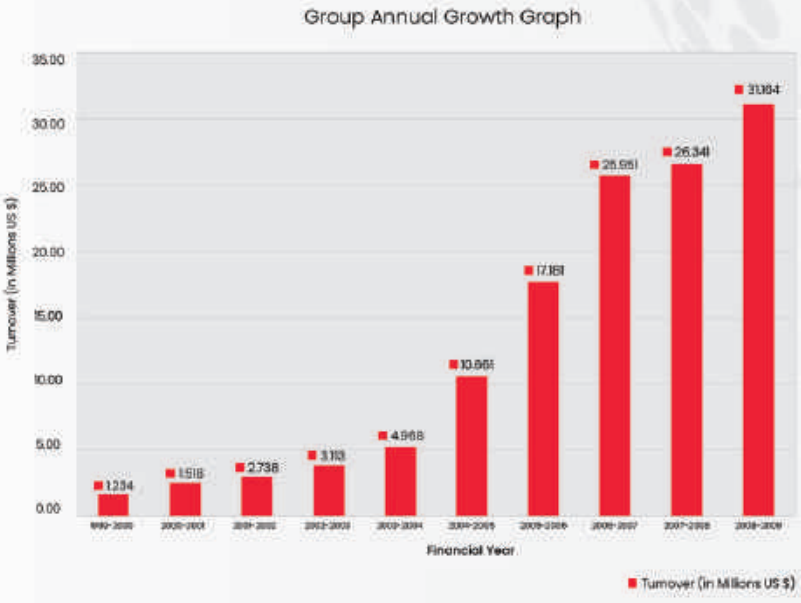
Policy

Grow with customers by providing full customer satisfaction through quality product, support, timely deliveries & new development, operate a safe, healthy & clean environment.

Comply with statutory requirements, all applicable environment, health & safety legislation, prevention of ill health and injury, interests of all stakeholders, prevention of pollution, and continual improvement in the effectiveness and performance of the Integrated Management System by improving process work practices and risk minimization through objective-driven targets.

Integrate quality safety, health & environmental matters in all existing activities and future planning. Create & enhance awareness among employees, society, and other stakeholders about environment protection, minimization of waste, the wise use of energy, water & other natural resources, improve the

Growth



HOUSE WIRE

LOW-FRICTION SINGLE CORE GENERAL PURPOSE CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High conductivity annealed stranded copper conductors to SANS 1411 Part 1. Insulated with PVC and skin-colored in plain colors to SANS 1411 Part 2. The cable is manufactured to SANS 1507 Part 2.

INSTALLATION INFORMATION

For the wiring of Industrial Buildings, Housing, Control Panels it will be easier to pull through conduit, than a standard house wire, particularly on long and difficult runs.

PROPERTIES

Specification	:	SANS 1507-2
Temperature Range	:	-10t to 70°C
Voltage Rating	:	300/500Vand 600/ 1000 V
Core Identification	:	Complete range of colours
Packaging	:	100m Shrink-wrapped perforated coils

A specially developed low friction PVC compound which is used in the insulation of House wire for supply to the South African market.
The decreased coefficient of friction is the result of the migration of the slip additives to the cable surface due to the defined incompatibility of the slip additive with the polymer. ("Slip is a term used to describe the sliding of parallel film surfaces over each other or the sliding of film surfaces over substrates.)

WHAT ARE THE BENEFITS OF THIS PRODUCT SOLUTION COMPARED TO STANDARD HOUSE WIRE?

The following benefits are relevant

- The pulling force required to pull the product through the conduit is significantly reduced, as the cable-to-conduit and cable to cable friction are lower than on the standard product.
- The product is neatly and accurately coiled on automatic toilers, which reduces the risk of entanglement.
- The heat-shrunk plastic used in the packaging keeps the coil in a sturdy, compact form until such time as it is used, thus there is a reduced risk of entanglement due to poor handling.

TECHNICAL DATA

Cable Size	Nominal Stranding No. x Diameter	Approx Overall No. x Diameter	Current Rating	Conductor Resistance @20°C Maximum	1 ø Volt Drop	Approx Cable Mass Per 100m Coil
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)	(kg)
			100V			
1	1/1,12	2,25	12	18,1	44	1,45
1.5	1/1,40	2,45	17	12,1	29	1,65
			600/1000V			
1	7/0,42	3,05	17	18,1	44	1,75
1.5	7/0,53	3,35	21	12,1	29	2,25
2.5	7/0,68**	3,65	27	7,41	18	3,25
4	7/0,86**	4,55	38	4,61	11	5,25
6	7/1,05**	5,05	47	3,08	7,3	7,05
10	7/1,38**	6,05	64	1,83	4,4	11,15
16	7/1,76**	6,95	85	1,15	2,8	16,75

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C '

* Note -Compacted Conductors

PANEL FLEX
SINGLE CORE FLEXIBLE WIRING CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High conductivity bunched plain flexible copper conductors to SANS 1411 Part 1. Insulated with general purpose flexible grade PVC in all colours to SANS 141 1 Part 2.

PROPERTIES

Specification	:	SANS1574
Temperature Range	:	-10'C to 70'C
Voltage Rating	:	300/500V and 600/ 1000 V
Core Identification	:	Blue, Black, Brown, Yellow/Green, Orange, Pink, Violet, Grey White, Red
Packaging	:	100m Shrink-wrapped coils 500m lengths available on request 5000m lengths down coiled in cardboard boxes available on request.

INSTALLATION INFORMATION

The following benefits are relevant

- Control Panels
- Communication Panels
- Light Fittings
- Appliance

TECHNICAL DATA

Cable Size	Nominal Stranding No. x Diameter	Approx Overall Diameter	Current Rating	Conductor Resistance @20°C Maximum	1ø Volt Drop	Approx Cable Mass Per 100m Coil
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)	(kg)
			100V			
0,2	7/0,2	1,25	1	92	248	0,45
			300/500V			
0,2	7/0,2	1,65	1	92	248	0,55
0,4	11/0,25	1,95	2	49	133	0,75
0,5	15/0,2	2,65	3	39	93	1,15
0,75	23/0,2	2,85	6	26	62	1,35
1	30/0,2	3,15	10	19,5	44	1,65
1,5	44/0,2	3,25	16	13,3	29	2,25
2,5	72/0,2	3,75	25	7,98	18	3,15
4	112/0,2	4,75	32	4,96	11	4,95
6	175/0,2	5,55	38	3,30	7,3	7,35
10	294/0,2	6,45	59	1,91	4,4	11,15
16	462/0,2	7,55	77	1,21	2,8	16,75
25	721/0,2	9,45	95	0,780	1,9	27,15
35	1026/0,2	10,05	116	0,554	1,3	35,85

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C '

* Note -Rating for 2 wires only

HQR INSULATED WIRE

HIGH TEMPERATURE INSULATED WIRE 105°C CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High conductivity solid copper conductor to SANS 1411 Port 1 Insulated with D5 High-temperature PVC 105°C to SANS 1411 Part 2,

INSTALLATION INFORMATION

For the wiring of

- Capacitor Tails
- Ballasts for Fluorescent Lights

PROPERTIES

Specification	:	SANS1574
Temperature Range	:	-10'C to 70'C
Voltage Rating	:	300/500V and 600/ 1000 V
Core Identification	:	White, Yellow, Black, Brown, Red, Orange, Tan, Light Blue and White with a choice of either Yellow, Orange, Red, Black, Blue, or Brown Stripes.
Packaging	:	1000m reels

TECHNICAL DATA

Cable Size	Nominal Stranding No. x Diameter	Approx Overall Diameter	Current Rating	Conductor Resistance @20°C Maximum	1ø Volt Drop	Approx Cable Mass Per 100m Coil
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)	(kg)
0,5	1 x 0.8	1,95	10	36	93	1,15

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 105°C

CABTYRE
FLEXIBLE WIRING CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High conductivity bunched plain flexible copper conductors to SANS 1411 Part 1. Insulated and colour coded with general purpose flexible grade PVC to SANS Part 1411 Part 2. Cores care twisted together and sheathed with a flexible grade PVC.

INSTALLATION INFORMATION

For supplying power to all types of electrical, domestic and industrial appliances and equipment such as:

- Electric Lawnmowers
- Power Tools
- Kitchen Appliances
- Extension Leads
- Multi Plug Extensions
- Small Industrial Machinery

PROPERTIES

Specification	:	SANS1574
Temperature Range	:	-10'C to 70'C
Voltage Rating	:	Light Duty 300/300V Normal Duty 300/500V
Core Identification	:	2 Core - Blue and Brown :3 Core - Bluek, Brown and Yellow/Green 4 Core - Blue, Brown, Black and Yellwo/Green 5 Core - Blue, Black, Brown, Yellow/Green, Violet 7 Core - Blue, Brown, Black, Yellow/Green, Violet, Pink, Orange,
Sheath Colours	:	White, Black, Grey
Packaging	:	100m shrink-wrapped coils / 500m and 1000m lengths available or request

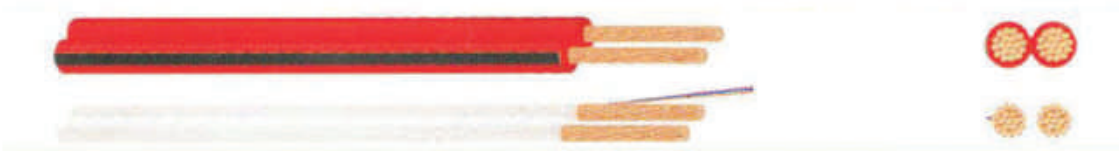
TECHNICAL DATA

Cable Size	Nominal of Cores	Approx Overall No. x Diameter	Approx Overall Diameter	Conductor Resistance @20°C	Current Rating		Volt Drop		Approx Cable Mass Per 100m Coil
					1Φ	3Φ	1Φ	3Φ	
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)				(kg)
Light Duty 300/300V									
0,5	2	15/0,2	5,25	39	3	3	93	80	3,95
	3		5,55		3	3	93	80	4,75
	4		6,05		3	3	93	80	5,55
	5		6,65		3	3	93	80	6,75
0,75	3	23/0,2	6,15	26	6	6	62		5,55
								54	
0,75	2	23/0,2	6,25	26	6	6	62	54	5,25
	3		7,05		6	6	62	54	6,75
	4		7,25		6	6	62	54	7,85
	5		8,25		6	6	62	54	9,95
	7		8,75		6	6	62	54	12,65
1	2	30/0,2	6,65	19,5	10	10	46	40	6,35
	3		7,05		10	10	46	40	7,65
	4		8,05		10	10	46	40	9,85
	5		8,65		10	10	46	40	11,65
	7		9,35		10	10	46	40	14,85
1,5	2	44/0,2	7,85	13,3	16	16	32	27	8,45
	3		8,35		16	16	32	27	10,85
	4		9,35		16	16	32	27	13,55
	5		10,05		16	16	32	27	16,25
	7		10,95		16	16	32	27	20,75
2,5	2	72/0,2	9,65	7,98	25	20	19	16	13,55
	3		10,35		25	20	19	16	16,85
	4		11,95		25	20	19	16	21,85
	5		12,25		25	20	19	16	24,25
	7		13,25		25	20	19	16	31,35
4	2	112/0,2	11,05	4,986	32	25	12	10	19,05
	3		11,45		32	25	12	10	25,05
	4		13,55		32	25	12	10	32,05
	5		14,15		32	25	12	10	33,95

Current Rating based on - Ambient Temperature, °C : 30 **Maximum Conductor** Temperature, °C 70

RIPCORD
FLEXIBLE WIRING CABLE

Tirupati Plastomatics Pvt. Ltd.



CABLE DESCRIPTION

High Conductivity Bunched Plain flexible copper conductors to SANS 1411 Part 1. 2 Core insulated with general purpose flexible grade PVC to SANS 1411 Part 2.

PROPERTIES

Specification	:	SANS1574
Temperature Range	:	-10°C to 70°C
Voltage Rating	:	300/300V
Core Identification	:	Standard Colours - White, Brown, Grey, Black, Transparent, and Red with Back Stripe Other Colour available on request
Packaging	:	100m Shrink-wrapped coils 500m lengths available on request

INSTALLATION INFORMATION

For the wiring of all types of

- Light Household Appliance
- Lamps
- Intercoms
- Alarm Systems
- Audio and Visual Equipment
- Solo Industry

TECHNICAL DATA

Cable Size	Nominal Stranding No. x Diameter	Approx Overall Diameter	Current Rating	Conductor Resistance @20°C Maximum	1ϕ Volt Drop	Approx Cable Mass Per 100m Coil
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)	(kg)
			100V			
0,2	7/0,2	1,6x3,25	1	92	248	0,94
0,4	11/0,2	2,1x4,25	2	48,8	98	1,7
0,5	15/0,2	2,5x5,05	3	39	93	2,3
0,75	23/0,2	2,7x5,45	6	26	62	2,9
1.00	30/0,2	2,9x5,85	10	19,5	46	3,7
1,5	44/0,2	3,2x6,45	16	13,3	32	4,4
2,5	72/0,2	3,9x7,95	25	7,98	19	6,8
4	112/0,2	4,7x9,45	32	4,96	12	10,8

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C

PVC HOUSE WIRE
SINGLE CORE GENERAL PURPOSE CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High Conductivity annealed stranded or solid copper conductors to SANS 1411 Part 1. Insulated with general purpose grade PVC in plain colors to SANS 1411 Part 2.

INSTALLATION INFORMATION

For the wiring of

- Industrial
- Control Panels
- Light Fittings
- Housing
- Appliance
- Communication Panels

PROPERTIES

Specification	:	SANS1507-2
Temperature Range	:	-10°C to 70°C
Voltage Rating	:	600/1000V
Core Identification	:	Blue, Black, Brown, Yellow/Green, Orange, Pink, Violet, Grey, White Red
Packaging	:	100m Shrink-wrapped coils up to 70mm²
		Over 70mm² on 300m drums

TECHNICAL DATA

Cable Size	Nominal Stranding No. x Diameter	Approx Overall Diameter	Current Rating	Conductor Resistance @20°C Maximum	1ϕ Volt Drop	Approx Cable Mass Per 100m Coil
(mm2)		(mm)	(A)	(Ω/km)	(mV/A/m)	(kg)
25	19/1,38**	8,45	110	0,73	1,8	25,65
35	19/1,62**	9,55	135	0,52	1,3	34,75
50	19/1,88**	11,35	170	0,39	0,9	47,25
70	19/2,28**	12,65	220	0,27	0,7	66,15
95	19/2,50	15,85	270	0,19	0,50	97,65
120	37/2,03	17,55	320	0,15	0,41	120,05
150	37/2,28	19,75	365	0,12	0,35	147,05
185	37/2,50	22,05	425	0,10	0,30	182,25
240	61/2,28	25,05	500	0,08	0,25	235,05
300	61/2,50	27,55	580	0,06	0,23	298,05
400	61/2,80	31,05	680	0,05	0,21	379,05
500	61/2,15	34,55	780	0,04	0,19	483,15
630	91/2,93	38,05	900	0,03	0,18	622,55

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C

* Note Compacted Conductors

FLATWIN AND EARTH
INNOVATIVE WIRING CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Copper Conductors to SANS 1411 Part 1, PVC insulated to SANS 1411 Part 2, Laid up with a bare copper earth-continuity-conductor between them, PVC sheathed to SANS 1 411 Part 2.

INSTALLATION INFORMATION

Complies with SANS 10142/2001 Code of Practice for the Wiring of Premises" Section 6h.

- Surface Wiring
- Wiring in hollow walls
- Under- plaster wiring
- Roof access wiring

PROPERTIES

Specification	:	SANS1507- 2
Temperature Range	:	-10°C to 70°C
Voltage Rating	:	300/500V
Sheath Identification	:	White & Black
Core Identification	:	2 Core- Red & Black
		3 Core- Red, Yellow, Blue
		4 Care- Red, Yellow, Blue, Black
Packaging	:	100m shrink-wrapped coils
		Available in 500 & 1000 meter wooden drums on request.

TECHNICAL DATA

Cable Size * (mm²)		Electrical Properties				Physical Properties		
		Conductor Resistance (dc @ 20° C) (Ω/km)		Current Rating ** (A)	Volt Drop ** (mV/A/m)	1 Sec Short Circuit Rating (kA)	Overall Diameter (Approx.) (mm)	Cable Mass (Approx.) (kg / 100m)
Phase	Earth	Phase	Earth					
2 Core								
1,5	1	12,1	18,1	17	29	0,14	8,7 x 4,75	8,75
2,5	1,5	7,4	12,1	23	18	0,24	10,3 x 5,55	12,85
4	1,5	4,61	12,1	30	11	0,38	11,9 x 6,45	17,55
6	2,5	3,08	7,41	38	7,3	0,58	13,4 x 7,05	23,35
10	4	1,83	4,61	52	4,4	0,96	16,5 x 8,35	36,15
16	6	1,15	3,08	69	2,8	1,54	18,7 x 9,25	51,65
3 Core								
1	1	18,2	18,2	12	38	0,11	4,4 x 10,45	8,95
1,5	1	12,1	18,2	15	25	0,14	4,8 x 10,55	9,95
2,5	1,5	7,4	12,2	20	15	0,24	5,5 x 12,35	14,15
4 Core								
1	1	18,2	18,2	12	38	0,11	4,4 x 4,05	11,45
1,5	1	12,1	18,2	15	25	0,14	4,8 x 14,55	14,55

* Conductors larger than 2,5mm2a re usually stranded.
** Maximum conductor temperature 70°C, and instated as per installation Method 3 of SANS 10142-1.
*** 2 Core - Volt drop is phase to Neutral (ie. Single-phase).
3 and 4 Core - Volt drop is phase-to-phase. (ie. Three p hase AC).

SURFIX
INNOVATIVE WIRING CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Copper Conductors to SANS 1411 Part 1, PVC insulated to SANS 1411 Part 2, laid up with a bare tinned copper earth wire in contact with a longitudinal aluminum/polyethylene laminate, UV stable PVC sheathed to SANS1411 Part 2.

INSTALLATION INFORMATION

Complies with SANS 10142 "Code of Practice for the Wiring of Premises" Section 6.

- Surface Wiring
- Under- plaster wiring
- Wiring in hollow walls
- Wiring in roof spaces

PROPERTIES

Specification	:	SANS1507- 2
Temperature Range	:	-10°C to 70°C
Voltage Rating	:	300/500V
Sheath Identification	:	White & Black
Core Identification	:	2 Core- Red & Black
		3 Core- Red, Yellow, Blue
		4 Care- Red, Yellow, Blue, Black
Packaging	:	100m shrink-wrapped coils
		Available in 500 & 1000 meter wooden drums on request.

TECHNICAL DATA

Cable Size * (mm²)		Electrical Properties				Physical Properties		
		Conductor Resistance (dc @ 20° C) (Ω/km)		Current Rating ** (A)	Volt Drop ** (mV/A/m)	1 Sec Short Circuit Rating (kA)	Overall Diameter (Approx.) (mm)	Cable Mass (Approx.) (kg / 100m)
Phase	Earth	Phase	Earth					
2 Core								
1,5	1	12,1	18,2	17	29	0,14	7,85	10,65
2,5	1,5	7,41	12,2	23	18	0,24	8,85	14,45
4	1,5	4,61	12,2	30	11	0,38	10,15	20,85
6	2,5	3,08	7,56	38	7,3	0,58	11,35	25,75
10	4	1,83	4,7	52	4,4	0,96	13,55	39,35
16	6	1,15	3,11	69	2,8	1,54	15,05	52,05
3 Core								
1,5	1	12,1	18,2	15	25	0,14	8,05	10,95
2,5	1,5	7,41	12,2	20	15	0,24	9,35	15,75
4	1,5	4,61	12,2	27	9,5	0,38	10,85	21,05
6	2,5	3,08	7,56	34	6,4	0,58	12,05	28,75
4 Core								
1,5	1	12,1	18,2	15	25	0,14	8,75	13,35
2,5	1,5	7,41	12,2	20	15	0,24	10,25	19,35
4	1,5	4,61	12,2	27	9,5	0,38	11,85	26,55
6	2,5	3,08	7,56	34	6,4	0,58	12,85	33,55

* Conductors larger than 2,5mm² are usually stranded.
** Maximum conductor temperature 70°C, and instated as per installation Method 3 of SANS 10142-1.
*** 2 Core - Volt drop is phase to Neutral (ie. Single-phase).
3 and 4 Core - Volt drop is phase-to-phase. (ie. Three p hase AC).

SUBMERSIBLE PUMP
3 AND 4 CORE CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

High conductivity bunch plain flexible copper conductors to SANS 1411 Part 1.. Cores insulated and bedded with Flexible PVC Grade. Final protection is given by a flexible PVC outer sheath.

INSTALLATION INFORMATION

Power supply of mobile and portable submersible pumps as used in

- Quarries
- Farms
- Cleaning and Sewerage extraction plants
- De-watering
- Appliance

PROPERTIES

Specification	:	SANS 1574
Temperature Range	:	-10°C to 70°C
Insulation & Sheath	:	Flexible grade waterproof PVC
Voltage Rating	:	600 / 1000V
Sheath Identification	:	3 Core - Blue
	:	4 Core - Green
Core Identification	:	3 Core - Red, Yellow, Blue
	:	4 Core - Red, Yellow, Blue, Black
Packaging	:	Available on 500-meter wooden drums

TECHNICAL DATA

Cable Size	Conducrtor Resistance @ 20 C Maximum	Current Rating *	Volt Drop		Approx. Overall Diameter	Minimum Bending Redius	Approx. Cable Mass
			1ϕ 220V	3ϕ 380V			
(mm2)	(Ω/km)	(A)	(mV/A/m)		(mm)	(mm)	(kg/m)
3 Core							
1,5x3	13,3	15	29	25	10,2	82	0,14
2,5x3	7,98	20	17	15	11,7	94	0,25
4x3	4,95	30	12	9,5	13,5	108	0,35
6x3	3,30	35	7,3	6,4	15,1	121	0,55
10x3	1,91	50	4,3	3,8	17,6	141	0,65
16x3	1,21	65	2,8	2,4	20,1	161	0,85
3 Core							
1,5x4	13,3	15	29	25	11,2	89	0,25
2,5x4	7,98	20	17	15	12,8	102	0,25
4x4	4,96	30	12	9,5	14,6	116	0,35
6x4	3,30	35	7,3	6,4	16,5	132	0,55
10x4	1,91	50	4,3	3,8	19,2	153	0,75
16x4	1,21	65	2,8	2,4	22,0	176	1,10

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C

1KV FLEXIBLE POWER CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Single-core flexible copper conductors to SANS 1411 Parts 1. insulated with general-purpose flexible grade PVC and sheathed with a flexible grade waterproof PVC.

INSTALLATION INFORMATION

A Flexible power cable where flexibility is needed in equipment such as

- LV transformer connections
- Motor control centers
- General wiring applications
- Distribution boards

PROPERTIES

Specification	:	Sons 1574
Temperature Range	:	-10°C to 70°C
Voltage Rating	:	600/1000V
Core Identification	:	Red, Black, Blue, Yellow, (Other colors on request).
Packaging	:	Shrink-wrapped coils from 16mm² to 70mm2 or 500m drums The product is sequentially marked at one meter intervals.

TECHNICAL DATA

Cable Size	Nominal Conductor Diameter	Approx Cable Diameter	Impedance @ 70° C	Approx. Volt Drop (mV/A/m)		Continuous Current Rating* (A)		Approx. Cable Mass
(mm^2)	(mm)	(mm)	(Ω/km)	1_ϕ	3_ϕ	1_ϕ	3_ϕ	(kg/m)
16	5,4	9,45	1,460	2,92	2,529	76	68	0,235
25	7,2	11,25	0,933	1,866	1,616	101	89	0,315
35	8,5	12,55	0,663	1,148	1,148	125	110	0,425
50	10,1	14,15	0,462	0,800	0,800	151	134	0,575
70	11,7	15,85	0,326	0,565	0,565	192	171	0,757
95	14,1	18,15	0,247	0,428	0,428	232	207	1,015
120	15,5	,19,65	0,193	0,334	0,334	169	239	1,295
150	17,0	24,05	0,163	0,282	0,282	300	262	1,725
185	18,9	27,15	0,140	0,242	0,242	341	296	2,207

* Current ratings are based on cable installed in a cubicle and may vary depending on other applications.

* Note -Assumed ambient air temperature 30°C.
-Assumed maximum conductor temperature 70°C
-Derating of maximum current for other ambient temperatures - use rating factor X as given below.

Ambient temperature,°C	: 25	30	35	40	45
Rating Factor, X	: 1, 04	1,00	0,95	0,91	0,85

Fault rating : 115A/mm^2 (1 Second)

LV CONCENTRIC
HOUSE SERVICE CABLE

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Circular stranded hard-drawn copper phase conductor, UV XLPE insulated with concentrically arranged bare earth conductors. Polyethylene sheathed 600/1000 V cable for house service connection. Nylon ripcord laid under the sheath. Manufactured to SANS 1507-6.

- Improved reliability - UV stable sheath and core insulation
- Increased safety - reliable earthing
- Lower mass - due to smaller diameter - no steel we armor
- Small overall diameter - concentric construction
- Easy strip with nylon ripcord

TECHNICAL DATA

PARTICULARS	UNIT	004	006	010	016	025
Conductor size	mm^2	4	6	10	16	25
Conductor diameter	mm	2,5	3,15	4	5,0	6,1
Insulation diameter	mm	4,5	5,0	6,0	7,0	8,0
Cable diameter	mm	9,0	10,0	11,0	12,5	15,0
Cable mass	kg/m	0,10	0,15	0,20	0,31	0,46
Gross mass	kg app.	80	120	132	185	260
Bending radius	mm min.	180	200	220	250	300
Current rating						
In air	Amps	30	55	80	100	TF
In ground	Amps	60	95	130	160	TF
Resistance						
dc @ 20°C	Ω/km Max	4,61	3,08	1,83	1,15	0,73
ac @ 90°C	Ω/km Max	5,88	3,92	2,33	1,47	0,93
Reactance	Ω/KM	0,103	0,096	0,091	0,091	0,083
Impedance	Ω/KM	5,879	3,890	2,335	2,335	0,931
Short circuit ratings						
Symmetrical	kA (1 Sec)	0,5	0,8	1,4	2,2	3,4
(Single Phase) Volt Drop	mV/A/m	11,76	7,84	4,67	2,94	1,86

LV SPLIT CONCENTRIC
HOUSE SERVICE CABLE (WITH OR WITHOUT COMMUNICATION CORES)

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Circular stranded hard drawn copper phase conductor,UV XLPE insulated with concentrically arranged identified neutral and bore earth conductors. Polyethylene sheathed 600/1000V service connection cable with or without communication core. Nylon ripcord laid under sheath. Manufactured to SANS 1507-6.

- Improved reliability - UV stable sheath and core insulation
- Increased safety - reliable earthing
- Lower mass - due to smaller diameter - no steel we armor
- Small overall diameter - concentric construction
- Easy strip with nylon ripcord

PARTICULARS	UNIT	004	006	010	016	025
Conductor size	mm²	4	6	10	16	25
Conductor diameter	mm	2,5	3,15	4	5,0	6,1
Insulation diameter	mm	4,5	5,0	6,0	7,0	8,0
Cable diameter	mm	9,0	10,0	11,0	12,5	15,0
Cable mass	kg/m	0,10	0,15	0,20	0,31	0,46
Gross mass (500 m)	kg app.	80	120	132	185	260
Bending radius	mm min.	180	200	220	250	300
Current rating						
In air	Amps	30	55	80	100	TF
In ground	Amps	60	95	130	160	TF
Resistance						
dc @ 20°C	Ω/km Max	4,61	3,08	1,83	1,15	0,73
ac @ 90°C	Ω/km Max	5,88	3,92	2,33	1,47	0,93
Reactance	Ω/KM	0,103	0,096	0,091	0,091	0,083
Impedance	Ω/KM	5,879	3,890	2,335	2,335	0,931
Short circuit ratings						
Symmetrical	kA (1 Sec)	0,5	0,8	1,4	2,2	3,4
(Single Phase) Volt Drop	mV/A/m	23,52	15,68	9,34	5,88	3,72
Communication Core						
Conductor Diameter	mm	0,80	0,80	0,80	0,80	0,80
DC Resistance@ 20°C	Ω/km	35,0	35,0	35,0	35,0	35,0
Maximum Stringing tension	N	220*	295*	521*	798*	1326*
Maximum Stringing length	m	30**	30**	30**	30**	30**

* Based on an ambient temperature 30°C

** Based on an ambient temperature 30°C, Conductor ultimate tensile strength and height between the pole and the house

SINGLE CORE
LAW-VOLTAGE PVC CABLE

Tirupati Plastomatics Pvt. Ltd.

Physical and Electrical parameters of single core PVC Insulated cables with stranded copper conductors, unarmoured, PVC sheathed 600 / 1000V manufactured to SANS 1507-3.

TECHNICAL DETAILS

Rated Area (Sq. mm)	Nominal Diameter		Nominal mass	Impdance	Cable A.C. or D.C.			Cable in Trifoil Formation			
					Current Ratings		Volt Drop (mV/A/m)	Current Rating*			Voltage drop per amp per meter mV
	Diameter over the Conductor	Diameter over the PVC Sheath	kg/km	Ω/km	Ground	Air		Ground	Duct	Air	
25	5,98	11,58	368	0,876	118	126	1,75	127	111	112	1,52
35	7,02	12,62	470	0,635	156	156	1,27	153	132	141	1,10
50	8,15	14,55	325	0,474	186	191	0,95	180	155	172	0,82
70	9,80	16,20	882	0,335	232	246	0,67	221	190	223	0,58
95	11,55	18,35	1165	0,250	281	300	0,50	265	226	273	0,43
120	12,98	19,78	1415	0,205	324	349	0,41	301	256	318	0,36
150	14,40	22,30	1735	0,173	370	404	0,35	338	287	369	0,30
185	16,15	24,15	2148	0,150	424	463	0,30	381	323	424	0,26
240	18,75	27,15	2728	0,127	498	549	0,25	442	372	504	0,22
300	21,45	30,25	3376	0,113	566	635	0,23	499	419	584	0,20
400	24,32	33,52	4395	0,103	651	742	0,21	565	472	679	0,18
500	26,55	36,55	5300	0,096	740	835	0,19	634	532	778	0,17
630	33,18	43,18	6966	0,089	836	953	0,18	718	603	892	0,15

Physical and Electrical parameters of single core PVC Insulated cables with stranded copper conductors, unarmoured, PVC sheathed 600 / 1000V manufactured to SANS 1507-3.

Rated Area (Sq. mm)	Nominal Diameter		Nominal mass	Impdance	Cable A.C. or D.C.			Cable in Trifoil Formation			
					Current Ratings		Volt Drop (mV/A/m)	Current Rating*			Voltage drop per amp per meter mV
	Diameter over the Conductor	Diameter over the PVC Sheath	kg/km	Ω/km	Ground	Air		Ground	Duct	Air	
25	5,98	11,58	368	0,876	118	126	1,75	127	111	112	1,52
35	7,02	12,62	470	0,635	156	156	1,27	153	132	141	1,10
50	8,15	14,55	325	0,474	186	191	0,95	180	155	172	0,82
70	9,80	16,20	882	0,335	232	246	0,67	221	190	223	0,58
95	11,55	18,35	1165	0,250	281	300	0,50	265	226	273	0,43
120	12,98	19,78	1415	0,205	324	349	0,41	301	256	318	0,36
150	14,40	22,30	1735	0,173	370	404	0,35	338	287	369	0,30
185	16,15	24,15	2148	0,150	424	463	0,30	381	323	424	0,26
240	18,75	27,15	2728	0,127	498	549	0,25	442	372	504	0,22
300	21,45	30,25	3376	0,113	566	635	0,23	499	419	584	0,20
400	24,32	33,52	4395	0,103	651	742	0,21	565	472	679	0,18
500	26,55	36,55	5300	0,096	740	835	0,19	634	532	778	0,17
630	33,18	43,18	6966	0,089	836	953	0,18	718	603	892	0,15

CURRENT RATINGS BASED ON THE FOLLOWING ENVIRONMENTAL PARAMETERS

Maximum sustained conductor temp.	Ground temp.	Ambient air temp.	Ground thermal resistivity	Depth of laying to top of cable or duct
70° C	25° C	30° C	1.2 K.m/W	500mm

PVC / SWA / PVC
LAW-VOLTAGE PVC CABLE

Tirupati Plastomatics Pvt. Ltd.

Electrical and physical properties of 3 core and 4 core PVC insulated PVC bedded Steel wire Armoured PVC sheathed 600/1000 V cables with aluminium or copper conductors manufactured to SANS 1507-3.

TECHNICAL DETAILS

Aluminium Conductors

Cable Size (Sq. mm)	Physical Parameters								Electrical Parameters					
	Nominal Diameter						Approx. Mass		Current ratings			Impe-dance	Volt drop	1 Sec short Circuit rating*
	Diameter over bedding shealth		Diameter of armour wire		Diameter over outer shealth		3c	4c	Ground	Duct	Air			
	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	(kg/km)	(kg/km)	(A)	(A)	(A)	(Ω/km)	(mV/A/m)	(kA)
25	17,79	20,66	1,60	1,60	24,80	27,70	1305	1550	90	73	80	1,444	2,502	1,80
35	19,31	21,98	1,60	1,60	26,35	29,15	1480	1760	108	87	99	1,046	1,813	2,52
50	21,84	25,08	1,60	1,60	29,10	32,30	1785	2155	129	104	119	0,774	1,342	3,61
70	24,79	29,26	1,60	1,60	32,00	37,70	2135	2935	158	130	151	0,538	0,9333	5,05
95	28,66	33,72	2,00	2,00	37,10	42,55	2910	3650	192	157	186	0,393	0,681	6,86
120	31,10	35,49	2,00	2,00	39,90	44,25	3320	4025	219	179	216	0,314	0,545	8,66
150	33,98	39,40	2,00	2,50	42,80	49,70	3830	5280	245	201	250	0,260	0,452	10,83
185	37,72	44,54	2,00	2,50	47,15	54,80	4560	6235	278	229	287	0,213	0,369	13,35
240	42,64	50,08	2,00	2,50	52,93	61,15	5980	7550	324	268	342	0,170	0296	17,32

*Under short circuit conditions a maximum conductor temperature of 1610°C is allowed far a maximum of 1 second

Copper Conductors

Cable Size (Sq. mm)	Physical Parameters								Electrical Parameters					
	Nominal Diameter						Approx. Mass		Current ratings			Impe-dance	Volt drop	1 Sec short Circuit rating*
	Diameter over bedding shealth		Diameter of armour wire		Diameter over outer shealth		3c	4c	Ground	Duct	Air			
	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	(kg/km)	(kg/km)	(A)	(A)	(A)	(Ω/km)	(mV/A/m)	(kA)
1,5	8,54	9,38	1,25	1,25	14,15	15,00	445	505	24	20	19	14,48	25,080	0,17
2,5	9,62	10,59	1,25	1,25	15,25	16,20	520	597	32	26	26	8,87	15,365	0,28
4	11,39	12,62	1,25	1,25	17,05	18,40	661	762	42	34	35	5,52	9,561	0,46
6	12,54	13,96	1,25	1,25	18,40	19,75	870	910	53	43	45	3,69	6,391	0,69
10	14,62	16,19	1,25	1,25	20,45	22,00	996	1169	70	58	62	2,19	3,793	1,15
16	16,58	19,20	1,25	1,25	22,44	25,95	1295	1768	91	75	83	1,38	2,390	1,84
25	19,49	21,38	1,60	1,60	26,50	28,35	1838	2196	119	96	110	0,874	1,515	2,87
35	20,92	23,99	1,60	1,60	27,90	31,18	2214	2732	143	116	135	0,633	1,097	4,02
50	24,24	28,15	1,60	1,60	31,45	36,58	3870	3890	169	138	163	0,471	0,817	5,75
70	27,10	31,28	2,00	2,00	35,50	40,10	3617	4837	210	171	207	0,332	0,576	8,05
95	31,16	35,80	2,00	2,00	40,00	44,65	4902	6115	251	205	251	0,246	0,427	10,92
120	33,68	38,16	2,00	2,00	42,20	47,45	5720	7269	285	234	290	0,201	0,348	13,80
150	36,64	42,14	2,00	2,00	46,00	52,65	6908	9250	320	263	332	0,170	0,294	17,25
185	40,84	46,79	2,50	2,50	51,15	57,45	8690	11039	361	298	378	0,144	0,250	21,27
240	46,49	53,19	2,50	2,50	57,15	64,16	10767	13926	416	344	445	0,122	0,211	27,60
300	51,19	58,58	2,50	2,50	61,25	70,15	12950	16540	465	385	510	0,109	0,189	34,50

CURRENT RATINGS BASED ON THE FOLLOWING ENVIRONMENTAL PARAMETERS

Maximum sustained conductor temp.	Ground temp.	Ambient air temp.	Ground thermal resistivity	Depth of laying to top of cable or duct
70° C	25° C	30° C	1.2 K.m/W	500mm

Control Cable

LOW-VOLTAGE PVC CONTROL CABLE

Tirupati Plastomatics Pvt. Ltd.

Physical and Electrical parameters of Multicore PVC Insulated PVC Bedded steel Wire Armoured PVC sheathed 600/1000V cables wit stranded copper conductors manufactured to SANS 1507-3.

Technical Detail

1.5mm2 Control Cables

No. of Cores	PHYSICAL PROPERTIES				ELECTRICAL PROPERTIES				
	Nominal Diameters (mm)			Mass (kg/km)	Current ratings			Impedance (Ω/km)	Capacitance (nF/km)
	Diameters over insulation	Diameters of armour wire	Diameters over outer sheath		Ground (A)	Ducts (A)	Air (A)		
2	8,12	1,25	13,82	424	29	23	22	14,479	422
3	8,60	1,25	14,30	454	24	20	19	14,479	422
4	9,51	1,25	15,11	510	24	20	19	14,479	422
5	10,33	1,25	15,83	575	21	17	17	14,479	422
6	11,42	1,25	17,02	613	20	16	16	14,479	422
7	11,42	1,25	17,02	630	18	15	15	14,479	422
8	12,60	1,25	18,20	710	17	14	14	14,479	422
10	14,81	1,25	20,71	837	16	13	13	14,479	413
12	15,30	1,25	21,20	901	15	12	12	14,479	413
14	16,22	1,60	22,02	980	14	11	12	14,479	413
19	19,23	1,60	25,93	1404	12	10	11	14,479	379
24	22,44	1,60	29,34	1689	11	9	10	14,479	379
27	22,93	1,60	29,83	1785	11	8	10	14,479	379
30	23,72	1,60	30,72	1870	10	8	9	14,479	379
37	25,95	1,60	32,85	2154	9	7	9	14,479	379

2.5mm2 Control Cables

No. of Cores	PHYSICAL PROPERTIES				ELECTRICAL PROPERTIES				
	Nominal Diameters (mm)			Mass (kg/km)	Current ratings			Impedance (Ω/km)	Capacitance (nF/km)
	Diameters over insulation	Diameters of armour wire	Diameters over outer sheath		Ground (A)	Ducts (A)	Air (A)		
2	9,03	1,25	14,73	476	37	31	31	8,867	487
3	9,83	1,25	15,23	525	32	26	26	8,867	487
4	10,60	1,25	16,20	607	32	26	26	8,867	487
5	11,52	1,25	17,02	692	27	22	22	8,867	487
6	12,72	1,25	18,52	740	25	20	21	8,867	487
7	12,72	1,25	18,52	755	24	19	20	8,867	487
8	13,00	1,25	18,90	809	22	18	19	8,867	487
10	16,62	1,60	22,52	1005	21	17	18	8,867	477
12	18,10	1,60	24,80	1308	19	15	17	8,867	434
14	19,05	1,60	25,75	1425	18	14	16	8,867	434
19	21,43	1,60	28,13	1696	16	13	14	8,867	434
24	25,15	1,60	32,05	2052	14	12	13	8,867	434
27	25,70	1,60	32,60	2183	14	11	13	8,867	434
30	26,63	2,00	34,83	2595	13	10	12	8,867	434
37	29,45	2,00	37,65	3015	12	10	11	8,867	410

CURRENT RATINGS BASED ON THE FOLLOWING ENVIRONMENTAL PARAMETERS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
70° C	25° C	30° C	1.2 K.m/W	500mm

Control Cable

LOW-VOLTAGE PVC CONTROL CABLE

Tirupati Plastomatics Pvt. Ltd.

4mm² Control Cables

No. of Cores	PHYSICAL PROPERTIES				ELECTRICAL PROPERTIES				
	Nominal Diameters (mm)			Mass (kg/km)	Current ratings			Impedance (Ω/km)	Capacitance (nF/km)
	Diameters over insulation	Diameters of armour wire	Diameters over outer sheath		Ground (A)	Ducts (A)	Air (A)		
2	10,22	1,25	16,32	599	50	41	41	5,517	487
3	10,90	1,25	17,00	670	42	34	35	5,517	487
4	12,33	1,25	18,43	765	42	34	35	5,517	487
5	13,62	1,25	19,72	884	35	28	29	5,517	487
6	14,94	1,25	21,04	962	33	27	28	5,517	487
7	14,94	1,25	21,04	986	31	25	26	5,517	487
8	18,10	1,25	24,20	1080	29	24	25	5,517	487
10	20,24	1,60	27,04	1251	27	22	24	5,517	477
12	20,42	1,60	28,22	1211	25	20	22	5,517	434
14	22,80	1,60	29,60	1885	23	19	21	5,517	434
19	24,93	1,60	32,53	2282	21	16	19	5,517	434
24	31,05	2,00	38,65	3113	19	15	18	5,517	434
27	32,22	2,00	39,82	3355	18	14	17	5,517	434
30	35,85	2,00	43,45	3967	17	14	17	5,517	434
37	36,22	2,00	43,82	4122	16	13	15	5,517	410

6mm² Control Cables

No. of Cores	PHYSICAL PROPERTIES				ELECTRICAL PROPERTIES				
	Nominal Diameters (mm)			Mass (kg/km)	Current ratings			Impedance (Ω/km)	Capacitance (nF/km)
	Diameters over insulation	Diameters of armour wire	Diameters over outer sheath		Ground (A)	Ducts (A)	Air (A)		
2	11,78	1,25	17,38	685	62	51	53	3,687	556
3	12,61	1,25	18,41	792	53	43	45	3,687	556
4	13,92	1,25	19,72	912	53	43	45	3,687	556
5	15,30	1,25	21,00	1055	44	35	37	3,687	556
6	17,72	1,60	24,42	1378	14	33	36	3,687	521
7	17,72	1,60	24,42	1414	38	31	33	3,687	521

CURRENT RATING FACTORS FOR NON STANDARD CONDITIONS FOR BOTH PVC/SWA/PVC AND CONTROL LV PVC CABLES

Maximum Conductor Temp. (°c)	Ground Temp. (°c)			
70	25	30	35	40
	1,00	0,94	0,88	0,82

Maximum Conductor Temp. (°c)	Air Temp. (°c)			
70	30	35	40	45
	1,00	0,94	0,87	0,79

Depth of laying (mm)	Direct in Ground
500	500
800	800
1000	1000
1250	1250
1500	1500

No of Cables in Group	Direct in Ground Axial Spacing (mm)				
	Touching	150	300	450	600
500	0,81	0,91	0,91	0,93	0,94
800	0,70	0,78	0,84	0,90	0,90
1000	0,63	0,74	0,81	0,89	0,89
1250	0,59	0,70	078	0,87	0,87
1500	0,55	0,67	0,76	0,86	0,86

CURRENT RATING FACTORS FOR GROUPING OF CONTROL CABLES INSTALLED IN AIR

No of Cables in Group	2	3	5	6	9
Condition	DERATING FACTOR				
Clearance Overall diameter between cables	0,91	0,89	0,87	0,87	0,85
Cables touching	0,86	0,81	0,75	0,74	0,72

XLPE/SWA/PVC CABLES
600/1000V (LOW VOLTAGE XLPE CABLES)

Tirupati Plastomatics Pvt. Ltd.

CABLE DESCRIPTION

Electrical and physical properties of 3 core and 4 core XLPE insulated PVC bedded Steel wire Armoured PVC sheathed 600/1000 V cables with aluminium or copper conductors manufactured to SANS 1507-4.

PROPERTIES

SPECIFICATION	:	SANS 1507-4
TEMPERATURE RANGE	:	-10°C TO 90°C
VOLTAGE RATING	:	600 / 1000 V V
CORE IDENTIFICATION	:	RED, YELLOW, BLUE AND BARE TINNED EARTH CONDUCTOR
PACKAGING	:	AVAILABLE ON 500/1000 METRE WOODEN DRUMS

TECHNICAL DETAILS

Copper Conductors

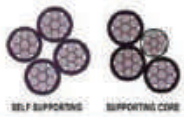
Cable Size (Sq. mm)	Physical Parameters								Electrical Parameters								
	Nominal Diameter						Approx. Mass		Current ratings						Impe-dance	Volt drop	1 Sec short Circuit rating*
	Diameter over bedding sheath		Diameter of armour wire		Diameter over outer sheath				Ground (A)		Duct (A)		Air (A)				
	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (kg/km)	4c (kg/km)	70°C	90°C	70°C	90°C	70°C	90°C	(Ω/km)	(mV/A/m)	(kA)
1,5	8,05	8,82	1,25	1,25	13,72	14,48	418	455	26	30	21	25	16	22	15,43	26,726	30,861
2,5	9,20	10,10	1,25	1,25	14,82	15,72	485	520	34	40	28	32	21	30	9,45	16,368	18,900
4	10,05	11,10	1,25	1,25	15,70	16,80	568	652	45	52	36	42	29	39	5,88	10,184	11,761
6	11,28	12,45	1,25	1,25	16,85	18,05	685	778	55	64	44	52	35	49	3,93	6,807	7,862
10	13,26	14,65	1,25	1,25	19,05	20,44	892	1035	75	87	60	70	48	68	2,33	4,053	4,663
16	15,58	17,70	1,25	1,25	21,01	24,45	1190	1545	94	110	75	89	60	85	1,46	2,546	2,924
25	18,15	19,85	1,60	1,60	25,16	26,85	1695	2020	123	143	88	113	107	132	0,932	1,613	1,863
35	19,55	22,35	1,60	1,60	26,54	29,54	2026	2513	148	172	119	138	132	163	0,674	1,167	1,348
50	22,50	25,75	1,60	1,60	29,70	32,98	2604	3244	177	306	152	167	163	200	0,501	0,868	1,002
70	25,75	,29,84	2,00	2,00	32,96	38,20	3525	4505	216	252	175	205	206	253	0,352	0,610	0,704
95	28,75	,33,14	2,00	2,00	37,18	41,92	4443	5652	258	302	209	248	251	312	0,259	0,448	0,518
120	31,40	,35,90	2,00	2,00	40,20	44,65	5336	6732	293	344	2	282	291	362	0,211	0,365	0,422
150	34,70	,40,10	2,50	2,50	43,50	50,50	6405	8710	329	387	268	318	334	416	0,178	0,307	0,355
185	39,05	44,75	2,50	2,50	49,38	55,15	8185	10345	371	435	302	359	33	478	0,150	0,260	0,300
240	44,25	,50,55	2,50	2,50	54,54	61,65	10075	1235	428	498	349	413	453	557	0,125	0,216	0,249
300	48,45	55,55	2,50	2,50	58,38	67,15	12078	15578	482	558	401	471	520	634	0,190	0,190	0,219

Aluminium Conductors

Cable Size (Sq. mm)	Physical Parameters								Electrical Parameters								
	Nominal Diameter						Approx. Mass		Current ratings						Impe-dance	Volt drop	1 Sec short Circuit rating*
	Diameter over bedding sheath		Diameter of armour wire		Diameter over outer sheath				Ground		Duct		Air				
	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (kg/km)	4c (kg/km)	(A)		(A)		(A)		(Ω/km)	(mV/A/m)	(kA)
25	15,55	19,15	1,25	1,60	21,55	26,20	930	1375	115		92		108		1,5408	2,669	3,082
35	18,02	20,45	1,60	1,60	25,07	27,45	1310	1550	138		111		131		1,1159	1,933	2,232
50	20,10	23,08	1,60	1,60	27,10	30,25	1555	1875	164		132		160		0,8258	1,430	1,652
70	23,45	27,40	1,60	1,60	30,65	35,00	1914	2375	199		161		200		0,5736	0,994	1,147
95	25,87	31,00	1,60	2,00	33,07	39,40	2258	3160	238		194		245		0,4178	0,724	0,836
120	29,10	33,24	2,00	2,00	37,50	42,02	2930	3588	272		221		285		0,3337	0,578	0,667
150	32,17	36,77	2,00	2,00	41,00	46,08	3460	4276	306		249		328		0,2756	0,477	0,551
185	36,05	42,54	2,00	2,50	45,35	52,85	4135	5655	344		283		378		0,2247	0,389	0,449
240	40,40	50,45	2,50	2,50	50,70	61,55	5377	7025	392		325		438		0,1785	0,309	0,357

ABC
LAW VOLTAGE (AERIAL BUNDLE CONDUCTOR) CABLE

Tirupati Plastomatics Pvt. Ltd.



CABLE DESCRIPTION

The self-supporting system consists of four cores of hard-drawn stranded and compacted aluminum conductors of equal crosssection and insulated with carbon loaded & UV protected XLPE compound. All cores strained equally.
The Supporting-core system consists of three-phase cores of hard-drawn stranded compacted aluminum conductors insulated with carbon- loaded & UV protected XLPE laid up around an aluminum-alloy supporting core insulated with carbon loaded & UV protected XLPE compound.
Additional sub-conductors optional in both self-supporting and supporting-core systems.

PROPERTIES

SPECIFICATION	:	SANS 1418 PART 1 AND 2
TEMPERATURE RANGE	:	-10°C TO 80°C
VOLTAGE RATING	:	600 / 1000 V
CORE IDENTIFICATION	:	PHASE 1,2 AND 3 NUMBERED
PACKAGING	:	AVAILABLE IN 500/1000 METRE WOODEN DRUMS

TECHNICAL DETAILS

Mechanical Properties

Cable Size mm²	Conductor Diameter mm		Core Diameter mm		Self Supporting System				Supporting Core System		
					Approximate Assembly Diameter (mm)	Approximate Assembly Mass (kg/km)	Maximum Design Load (kN)	Supporting Core Size mm²	Approximate Assembly Diameter (mm)	Approximate Assembly Mass (kg/km)	Maximum Design Load kN
Phase Cores	Min	Max	Min	Max							
25	5,6	6,5	8,4	9,6	25	403	5	54,6	26	505	6
35	6,6	7,5	9,8	11,1	27	542	7	54,6	28	615	6
50	7,7	8,6	10,9	12,3	29	693	9	54,6	32	733	6
70	9,3	10,2	12,9	14,3	33	985	14	54,6	34	944	6
95	11,0	12,0	14,6	16,2	37	1303	19	54,6	38	1183	6
120	12,5	13,5	16,1	17,5	41	1475	24	70,0	40	1604	8
150	13,9	15,0	17,5	19,2	47	2013	30	95,0	44	1873	13
Above Plus 25 mm² Auxiliary Core											
25	N/A	N/A	N/A	N/A	25	507	N/A	N/A	32	612	N/A
35					32	646			34	713	
50					34	804			36	837	
70					38	1089			38	1050	
95					42	1404			42	1290	
120					44	1574			50	1701	
150					48	2113			56	1980	

Electrical Properties

Cable Size mm²	Current Rating	Short Circuit rating kA (Note*)	Conductor Resistance	Conductor Resistance (ac)@80°C ohm/km	Self Supporting System		Supporting Core System		
					Inductive Reactance	Impedance (z) @ 50Hz at 80°C (Ohm/km)	Supporting	Inductiv Reactance @50Hz (Ohm/km)	Impedance (z)
25	5,6	9,6	25	403	5	54,6	26	505	6
35	6,6	11,1	27	542	7	54,6	28	615	6
50	7,7	12,3	29	693	9	54,6	32	733	6
70	9,3	14,3	33	985	14	54,6	34	944	6
95	11,0	16,2	37	1303	19	54,6	38	1183	6
120	12,5	17,5	41	1475	24	70,0	40	1604	8
150	13,9	19,2	47	2013	30	95,0	44	1873	13

Notes: * Continuous current ratings are given for ambienttemperature of 35°C, and maximum conductor temperature of 80°C. For other ambient temperatures use adjoining rating factors:
** Short circuit ratinas of 1 second duration. fora final conductortemoerature of 130°C.

Temp °c	25	30	35	40	45
Factor	1,11	1,05	1,00	0,94	0,88

Aluminium Conductor Steel Reinfrced-ACSR (As Per British Standards)

Code Name	Equival Copper Area	Stranding and Wire Diameter	Diameter Over steel	Overall Diameter (Std.)	Aluminium Area	Steel Area	Total Area	Mass kg/km			Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm²	mm	mm	mm	mm²	mm²	mm²	Aluminium	Steel	Total	Newton	/C°x10⁻⁶	MPa	MPa	Ω/km	A	M
MOLE	6,45	6/1/1,50	1,50	4,50	10,60	1,77	12,37	29,20	13,90	43,10	4780	19,31	65000	80400	2,7062	87	3000
SQUIRREL	12,90	6/1/2,11	2,11	6,33	20,98	3,50	24,48	57,70	27,50	85,20	8020	19,31	54600	80400	1,3677	130	3000
GOPHER	16,30	6/1/2,36	2,36	7,08	26,25	4,37	30,62	72,20	34,40	107	9610	19,31	52700	80400	1,0933	150	3000
WEASEL	19,35	6/1/2,59	2,59	7,77	31,61	5,27	36,88	87,00	41,50	129	11450	19,31	51500	80400	0,9077	170	2500
FOX	22,58	6/1/2,79	2,79	8,37	36,68	6,11	42,80	701	48,10	149	13100	19,37	50700	80400	0,7822	190	2500
FERRET	25,81	6/1/3,00	3,00	9,00	42,41	707	49,48	117	55,60	173	15200	19,37	50200	80400	0,6766	210	1500
RABBIT	32,26	6/1/3,35	3,35	10,05	52,88	8,81	61,70	145	69,40	214	18500	19,34	49500	80400	0,5426	240	1500
MINK	38,71	6/1/3,66	3,66	10,98	63,13	10,52	73,65	174	82,80	257	21900	19,31	49100	80400	0,4546	260	1500
SKUNK	38,71	12/7/2,59	7,77	12,95	63,22	36,88	100,10	175	292	467	52900	15,84	71900	108000	0,4571	270	2000
BEAVER	45,16	6/1/3,99	3,99	11,97	75,02	12,50	87,53	206	98,40	304	253900	19,37	48800	80400	0,3825	290	1500
HORSE	45,16	120/2,79	8,37	13,95	73,36	42,80	116,16	203	338	541	60700	15,84	71000	108000	0,3939	300	2000
RACCOON	48,39	6/1/4,09	4,09	12,27	78,83	13,14	91,97	217	103	320	27200	19,31	48700	80400	0,3640	300	1500
OITER	51,61	6/1/4,22	4,22	12,66	83,92	13,99	97,91	231	710	341	28900	19,37	48700	80400	0,3419	310	1500
CAT	58,06	6/1/4.50	4,50	13,50	95,43	15,90	111,33	263	125	388	32800	19,31	48500	80400	0,3007	340	1500
HARE	64,52	6/1/4,72	4,72	14,16	104,98	17,50	122,48	289	138	427	36000	19,37	48500	80400	0,2733	360	1500
DOG	64,52	6/4,72+7/1,57	4,71	14,15	104,98	13,55	118,53	289	100	389	34700	19,92	48800	76400	0,2733	360	2000
HYENA	64,52	7/4,39+7/1,93	5,79	14,57	105,95	20,48	126,43	291	162	453	41900	18,93	52400	82200	0,2697	360	2000
LEOPARD	80,65	6/5,28+7/1,75	5,25	15,81	131,37	16,84	148,21	361	133	494	42200	19,54	47800	76300	0,2184	410	2000
COYOTE	80,65	26/2,54+7/1,91	5,73	15,89	131,74	20,06	151,80	365	159	524	47300	19,54	51900	76000	0,3035	420	2000, 2000
TIGER	80,65	30/7/2,36	4,72	16,52	131,23	30,62	161,85	364	242	606	58700	18,43	56900	83400	0,2202	420	2000
WOLF	96,77	30/7/2,59	7,77	18,13	158,06	36,88	194,94	438	292	730	69200	18,43	55700	83400	0,1828	470	2000
LYNX	112,90	30/7/2,79	8,37	19,53	183,41	42,80	226,20	508	330	846	79300	18,43	54900	83400	0,1576	520	2000
PANTHER	129,00	30/7/3,00	9,00	21,00	212,06	49,48	261,54	588	391	970	90800	18,43	54300	83400	0,1363	560	2000
LION	145,20	30/7/3,18	9,54	22,26	238,27	55,60	293,86	660	440	1100	101000	18,43	53900	83400	0,1213	610	2000
BEAR	161,30	30/7/3,35	10,05	23,45	264,42	61,70	326,12	733	488	1220	112000	18,43	53600	83400	0,1093	650	2000
GOAT	193,50	30/7/3,71	11,13	25,97	324,31	75,67	399,98	899	598	1500	136000	18,43	53100	83400	0,0891	730	2000
SHEEP	225,80	30/7/3,99	11,97	27,93	375,11	87,53	462,63	1040	692	1730	157000	18,43	52900	83400	0,0770	800	2000
ANTELOPE	225,80	54/7/2,97	8,91	26,73	374,11	48,50	422,60	1040	383	1420	117000	19,97	47700	73200	0,0773	790	2000
BISON	225,80	54/7/3,00	9,00	27,00	381,70	49,48	431,18	1060	391	1450	119000	19,91	47600	73200	0,0757	800	2000
DEER	258,10	30/7/4,27	12,81	29,89	429,60	100,24	529,84	1190	792	1980	179000	18,43	52800	83400	0,0673	870	2000
ZEBRA	258,10	54/7/3,18	9,54	28,62	428,88	55,60	484,48	1190	440	1630	133000	19,94	47300	73200	0,0674	860	1500
ELK	290,30	300/4,50	13,50	31,50	477,13	111,33	588,46	1320	880	2200	199000	18,43	52700	83400	0,0606	930	2000
CAMEL	290,30	54/7/3,35	10,05	30,15	475,96	61,70	537,66	1320	488	1810	147000	19,94	47000	73200	0,0607	920	2000
MOOSE	322,60	54/7/3,53	10,59	31,77	528,49	68,51	596,99	1460	542	2000	162000	19,97	46700	73200	0,0547	980	2000
DINOSAUR	414,63	54/3,95+19/2,36	11,80	35,50	661,73	83,11	744,84	1835	658	2493	202920	19,91	46700	72200	0,0437	1110	2000
BERSFORD	430,70	48/4,27+7/3,32	9,96	35,58	687,36	60,60	747,96	1906	480	2386	177650	20,68	43200	68800	0,0420	1132	2000

All Aluminium Conductor -AAC (As Per British Standards

Code Name	Equival Copper Area	Stranding and Wire Diameter	Overall Diameter	Aluminium Area	Mass	Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm^2	mm	mm	mm^2	kg/km	Newton	$/C°x10^{-6}$	MP_a	MP_a	Ω/km	A	M
MIDGE	14,19	7/2,06	6,18	23,33	64,00	4340	23	52400	61000	1,2271	139	3000
APHIS	16,13	3/3,35	424	26,44	72,10	4340	23	50000	69000	1,0810	154	3000
GNAT	16,13	7/2,21	6,63	26,85	73,70	4860	23	52400	61000	1,0662	152	3000
WEEVIL	19,35	3/3,66	491	31,56	86,80	5130	23	60000	69000	0,9078	472	3000
MOSQUITO	22,58	7/2,59	477	36,88	101	6360	23	52400	61000	0,7763	185	2500
LADYBIRD	25,81	7/2,79	8,37	42,80	117	7250	23	52400	61000	0,6690	203	2500
ANT	32,26	7/3,10	9,30	52,83	145	8770	23	52400	61000	0,5419	231	2500
FLY	38,71	7/3,40	10,20	63,55	174	10400	23	52400	61000	0,4505	259	2500
BLUEBOTTLE	45,16	7/3,66	10,98	73,65	202	12000	23	52400	61000	0,3887	284	2500
EARWIG	48,39	7/3,78	11,34	78,55	216	12700	23	52400	61000	0,3644	296	2500
GRASSHOPPER	51,61	7/3,91	11,73	84,05	231	13600	23	52400	61000	0,3406	308	2000
CLEGG	58,06	7/4,17	12,51	95,60	262	15400	23	52400	61000	0,2995	334	1500
WASP	64,52	7/4,39	13,17	105,95	291	17000	23	52400	61000	0,2702	356	1500
BEETLE	64,52	19/2,67	13,35	106,38	293	18200	23	49650	59650	0,2704	358	2000
BEE	80,64	7/4,90	14,70	132,00	362	21000	23	52400	61000	0,2169	408	1000
CRICKET	96,77	7/5,36	16,08	157,95	434	25100	23	52400	61000	0,1813	456	1000
HORNET	96,77	19/3,25	16,25	157,95	435	26000	23	49650	59650	06,1825	457	2000
CATERPILLAR	112,90	19/3,53	17,65	185,95	513	30300	23	49650	59650	0,1547	506	2000
CHAFER	129,00	19/3,78	18,30	213,22	588	34500	23	49650	59650	06,1349	551	2000
SPIDER	145,20	19/3,99	19,95	237,57	655	38300	23	49650	59650	0,1211	589	1600
COCKROACH	161,30	19/4,22	21,10	265,75	733	42700	23	49650	59650	0,1083	632	1500
BUTTERFLY	193,50	19/4,65	23,25	322,66	830	51500	23	49650	59650	0,0892	713	1000
MOTH	225,80	19/5,00	25,00	373,06	1030	59400	23	49650	59650	0,0771	779	1000
DRONE	225,80	37/3,58	25,06	372,44	1030	60600	23	48250	58600	0,0774	779	1000
LOCUST	258,10	19/5,36	26,80	428,72	1180	68200	23	49650	59650	0,0671	849	2000
CENTIPEDE	258,10	37/3,78	26,46	415,22	1150	67200	23	48250	58600	0,0694	833	1000
MAYBUG	290,30	37/4,09	28,63	486,11	1340	78200	23	48250	58600	0,0593	918	1000
SCORPION	322,60	37/4,27	29,89	529,84	1460	85000	23	48250	58600	0,0544	967	1000
CICADA	387,10	37/4,65	32,55	628,34	1740	100000	23	48250	58600	0,0459	1070	1000
TARANTULA	483,90	37/5,23	36,61	794,87	2200	126000	23	48250	58600	0,0363	1230	1000
BULL	527,87	61/4,25	38,25	865,36	2400	139000	23	46200	57570	0,0334	1300	1000

All Aluminium Allay Conductor -AAAC (As Per British Standards)

Code Name	Equival Copper Area	Stranding and Wire Diameter	Overall Diameter	Aluminium Area	Mass	Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm^2	mm	mm	mm^2	kg/km	Newton	$/C°x10^{-6}$	MP_a	MP_a	Ω/km	A	M
MIDGE	14,19	7/2,06	6,18	23,33	64,00	4340	23	52400	61000	1,2271	139	3000
APHIS	16,13	3/3,35	424	26,44	72,10	4340	23	50000	69000	1,0810	154	3000
GNAT	16,13	7/2,21	6,63	26,85	73,70	4860	23	52400	61000	1,0662	152	3000
WEEVIL	19,35	3/3,66	491	31,56	86,80	5130	23	60000	69000	0,9078	472	3000
MOSQUITO	22,58	7/2,59	477	36,88	101	6360	23	52400	61000	0,7763	185	2500
LADYBIRD	25,81	7/2,79	8,37	42,80	117	7250	23	52400	61000	0,6690	203	2500
ANT	32,26	7/3,10	9,30	52,83	145	8770	23	52400	61000	0,5419	231	2500
FLY	38,71	7/3,40	10,20	63,55	174	10400	23	52400	61000	0,4505	259	2500
BLUEBOTTLE	45,16	7/3,66	10,98	73,65	202	12000	23	52400	61000	0,3887	284	2500
EARWIG	48,39	7/3,78	11,34	78,55	216	12700	23	52400	61000	0,3644	296	2500
GRASSHOPPER	51,61	7/3,91	11,73	84,05	231	13600	23	52400	61000	0,3406	308	2000
CLEGG	58,06	7/4,17	12,51	95,60	262	15400	23	52400	61000	0,2995	334	1500
WASP	64,52	7/4,39	13,17	105,95	291	17000	23	52400	61000	0,2702	356	1500
BEETLE	64,52	19/2,67	13,35	106,38	293	18200	23	49650	59650	0,2704	358	2000
BEE	80,64	7/4,90	14,70	132,00	362	21000	23	52400	61000	0,2169	408	1000
CRICKET	96,77	7/5,36	16,08	157,95	434	25100	23	52400	61000	0,1813	456	1000
HORNET	96,77	19/3,25	16,25	157,95	435	26000	23	49650	59650	06,1825	457	2000
CATERPILLAR	112,90	19/3,53	17,65	185,95	513	30300	23	49650	59650	0,1547	506	2000
CHAFER	129,00	19/3,78	18,30	213,22	588	34500	23	49650	59650	06,1349	551	2000
SPIDER	145,20	19/3,99	19,95	237,57	655	38300	23	49650	59650	0,1211	589	1600
COCKROACH	161,30	19/4,22	21,10	265,75	733	42700	23	49650	59650	0,1083	632	1500
BUTTERFLY	193,50	19/4,65	23,25	322,66	830	51500	23	49650	59650	0,0892	713	1000
MOTH	225,80	19/5,00	25,00	373,06	1030	59400	23	49650	59650	0,0771	779	1000
DRONE	225,80	37/3,58	25,06	372,44	1030	60600	23	48250	58600	0,0774	778	1000
LOCUST	258,10	19/5,36	26,80	428,72	1180	68200	23	49650	59650	0,0671	849	2000
CENTIPEDE	258,10	37/3,78	26,46	415,22	1150	67200	23	48250	58600	0,0694	833	1000
MAYBUG	290,30	37/4,09	28,63	486,11	1340	78200	23	48250	58600	0,0593	918	1000
SCORPION	322,60	37/4,27	29,89	529,84	1460	85000	23	48250	58600	0,0544	967	1000
CICADA	387,10	37/4,65	32,55	628,34	1740	100000	23	48250	58600	0,0459	1070	1000
TARANTULA	483,90	37/5,23	36,61	794,87	2200	126000	23	48250	58600	0,0363	1230	1000
BULL	527,87	61/4,25	38,25	865,36	2400	139000	23	46200	57570	0,0334	1300	1000

Aluminium Conductor Steel Reinfrced-ACSR (As Per South African Standards)

Code Name	Equival Copper Area	Stranding and Wire Diameter	Diameter Over steel	Overall Diameter (Std.)	Aluminium Area	Steel Area	Total Area	Mass kg/km			Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm^2	mm	mm	mm	mm^2	mm^2	mm^2	Aluminium	Steel	Total	Newton	$/C°x10^{-6}$	MP_a	MP_a	Ω/km	A	M
* 21/3,5	12,8	6/1/2,11	2,11	6,33	20,9	3,5	24,5	88	27	85	7710	39,33	54600	80400	1,395	130	3000
* 26/4,4	16,0	6/1/2,36	2,36	7,16	26,3	44	30,6	72	34	106	9610	19,31	52700	80400	1,116	150	3000
* 37/6,1	22,4	6/1/2,79	2,79	8,45	36,7	6,1	42,8	100	48	148	13150	19,31	50700	80400	0,798	190	2500
* 42/7,1	25,8	6/1/3,00	3,00	9,09	42,4	71	49,5	117	55	172	15200	19,31	50200	80400	0,690	210	1500
* 53/8,8	32,3	6/1/3,35	3,35	10,15	52,9	8,8	61,7	145	69	214	18400	19,31	49500	80400	0,553	240	1500
* 63/11	38,5	6/1/3,66	3,66	11,09	63,1	10,5	73,7	173	83	255	22500	19,31	49100	80400	0,463	260	1500
105/17	64,0	6/1/4,72	4,72	14,30	105	17,5	122	288	137	425	36540	19,31	48500	80400	0,278	360	1500
105/14	64,0	6/4,75 +7/1,57	4,71	14,29	105	12,7	118	292	102	394	32640	19,92	48800	76400	0,278	360	2000
158/37	96,4	30/7/2,59	7,77	18,31	158	36,9	195	436	290	726	69250	18,43	55700	83400	0,186	470	2000
264/62	161	30/7/3,35	10,05	23,69	264	61,7	326	729	485	1214	111400	18,43	53600	83400	0,111	650	2000
429/56	262	54/7/3,18	9,54	28,91	429	55,6	484	1185	436	1621	131900	19,91	47300	73200	0,0687	860	1500
662/84	404	54/3,95 +19/2,37	11,85	35,94	662	83,8	746	1826	663	2489	205500	19,96	46900	72300	0,0445	1123	1000

* As per British Standered also.

All Aluminium Conductor -AAC (As Per South African Standards)

Code Name	Equival Copper Area	Stranding and Wire Diameter	Overall Diameter	Aluminium Area	Mass	Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm^2	mm	mm	mm^2	kg/km	Newton	$/C°x10^{-6}$	MP_a	MP_a	Ω/km	A	M
25	15,6	7/2,12	6,42	24,7	68	4120	23	61000	1,182	144	3000	aa
39	24,3	7/2,65	8,03	38,6	106	6120	23	61000	0,756	190	2500	39
58	36,6	7/3,25	10,15	58,1	159	8820	23	61000	0,503	247	2500	58
100	62,9	7/4,26	12,91	99,8	273	14600	23	61000	0,293	343	1500	100
*158	99,4	19/3,25	16,92	157,6	434	23400	23	59650	0,196	457	2000	* 158
271	171,0	19/4,26	21,52	270,8	745	38800	23	59650	0,108	640	1500	271
*323	203,5	19/4,65	23,49	322,7	888	46200	23	59650	0,0909	713	1000	* 323
*415	262,0	37/3,78	26,73	415,2	1145	59900	23	58600	0,0708	833	1000	* 415
*527	332,6	37/4,26	30,12	527.4	1454	75600	23	58600	0,0558	967	1000	* 527
685	431,8	61/3,78	34,36	684,6	1891	96600	23	57570	0,0431	1130	1000	685
*869	548,3	61/4,26	38,73	869.4	2402	122000	23	57570	0,0339	1300	1000	* 869

* As Per British Standard

All Aluminium Alloy Conductor -AAAC (As Per South American Standards)

Code Name	Equival Copper Area	Stranding and Wire Diameter	Overall Diameter	Aluminium Area	Mass	Ultimate Tensile strength	Coefficient of Linear Expansion	Initial modulus of elasticity	Final modulus of elasticity	DC Resistance at 20°C	Current rating	Standard drum length
	mm^2	mm	mm	mm^2	kg/km	Newton	$/C°x10^{-6}$	MP_a	MP_a	Ω/km	A	M
ALTON	13,1	7/2,12	6,36	24,71	68	7850	23	52400	67000	1,14	147	3000
AMES	20,8	7/2,67	8,01	39,19	107	42550	23	52400	61000	0,714	196	2500
AZUZA	33,1	7/3,37	10,11	62,44	171	79900	23	52400	61000	0,448	262	2500
ANAHEIM	42	7/3,78	11,34	78,55	215	24020	23	52400	61000	0,356	302	2500
AMHERST	53	7/4,25	12,75	99,30	272	30290	23	52400	67000	0,283	349	1000
ALLIANCE	66	714,77	44,31	125,09	342	38140	23	52400	61000	0,224	403	1000
BUTTE	84	19/3,26	16,30	115,86	436	48800	23	49650	59650	0,177	468	2000
CANTON	106	19/3,66	18,30	200,0	549	59100	23	49650	59650	0,740	541	2000
CAIRO	125	19/3,98	19,90	236,4	650	69700	23	49650	59650	0,119	599	2000
DARIEN	150	19/4,36	21,80	283,7	780	83600	23	49650	59650	0,099	671	1000
ELGIN	176	19/4,71	23,55	331,0	910	97650	23	49650	99650	0,0848	739	1000
FLINT	199	37/3,59	25,13	374,5	1031	108500	23	48250	58600	0,0746	799	2000
GREELY	248	37/4,02	28,14	469,6	1293	136000	23	48250	58600	0,0595	918	1500

IMPORTANT TECHNICAL DATA

Tirupati Plastomatics Pvt. Ltd.

Bare Copper Earth Wire (SABS 1411 Part-1)		
Conductor Size	Nominal Standing	Approx. Meters
mm²	No. x Diameter	m/kg
1,5	7/0,53	71,20
2,5	7/0,66	42,47
4	7/0,85	27,02
6	7/1,04	18,25
10	7/1,35	10,60
16	11,67	6,95
29	19/1,38*	4,37
35	19/1,62*	3,16
50	19/1,88*	2,22
70	19/2,28*	1,60
95	19/2,50	1,20
120	37/2,03	0,93
150	37/2,28	0,74
185	37/2,50	0,63
240	37/2,98	0,48

* Compacted Circular conductors

Packaging: 1,5mm² - 6mm² 100 mir coils
10mm² - 16mm² wooden drums or coils
25mm² - 240mm² wooden drums

$$I_{sc} \frac{k \times A}{\sqrt{t}} \text{ Amps}$$

where I_{sc} = Short circuit rating in amps
K = Aconstant combining temperature limits and properties of conductor materials
A = Area of conductor
t = Duration of short circuit in seconds

Values of conductor / temperature constant K

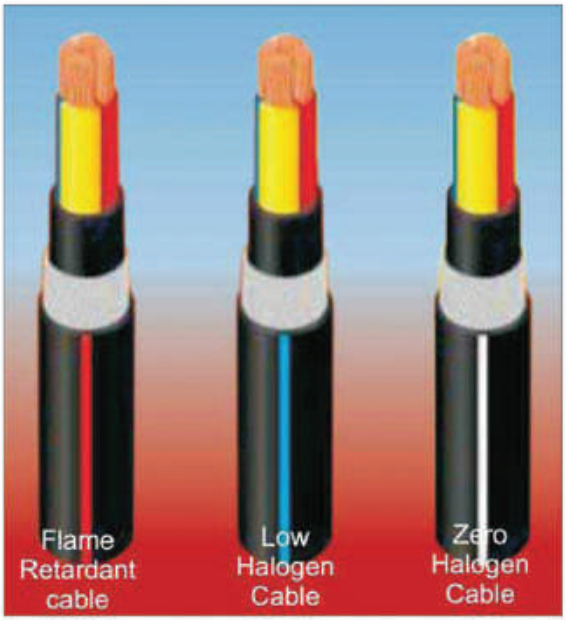
Instalation Material	Conductor Material	Operating Temp °C	Short Circuit Temp °C	K Factor
PVC	Copper	70	160	115
PVC	Aluminium	70	160	76
XLPV	Copper	90	250	143
XLPV	Aluminium	90	250	92

Bending Radii

PVC Insulated Cables 1000V

Multi and Sindle Core 16 - 50 mm²	10 x d
70 mm² and greater	12 x d

RANGE OF FIRE PERFORMANCE ELECTRIC CABLES



FR (Flame Retardant) Red Stripe cables are formulated to reduce the spread of fire along a cable tray or duct. However, when these cables burn, they give off large quantities of toxic gases and smoke.

LHFR (LowHalogen) Blue Stripe cables has specially formulated PVC that reduces the emission of hydrochloric acid during burning of the cables.

ZHER (Zero Halogen) White Stripe cables are designed to reduce flame propagation and smoke in those instances where a fire may develop. By replacing the standard PVC with XLPE insulation and PVC bedding and outer sheath, no HCl gases will be liberated during the burning of the cables.

Certificate of Registration

Intertek

Tirupati Plastomatics Pvt. Ltd.

ISO 14001: 2004

Certificate of Conformity

Intertek

Tirupati Plastomatics Pvt. Ltd.

OHSAS 18001:2007

Certificate of Registration

Intertek

Tirupati Plastomatics Pvt. Ltd.

ISO 9001:2008

PREMIUM CLIENTS

TESTING AGENCIES

SMEC
SMEC INTERNATIONAL PTY LTD

SABS

Intertek

Scott Wilson India Private Limited

ERDA

RITES

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India-Ministry of Railways
Research Designs & Standards organisation
Lucknow - 226 011

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(भारत सरकार का उपक्रम)
MECON LIMITED
(A Government of India Enterprise)

CLIENTELE

Electricity Supply Corporation of Malawi (ESCOM) Limited

इरकॉन
IRCON

POWER GRID CORPORATION OF INDIA LIMITED

AnsaldoSTS

एनटीपीसी
NTPC

UHBVN

रेल विकास निगम लिमिटेड
(भारत सरकार का उपक्रम)
Rail Vikas Nigam Limited

NDPL

HVPN
HARYANA VIDYUT PRASARAN NIGAM

ओएनजीसी
ONGC

Larsen & Toubro

BTH

SIEMENS

PSEB

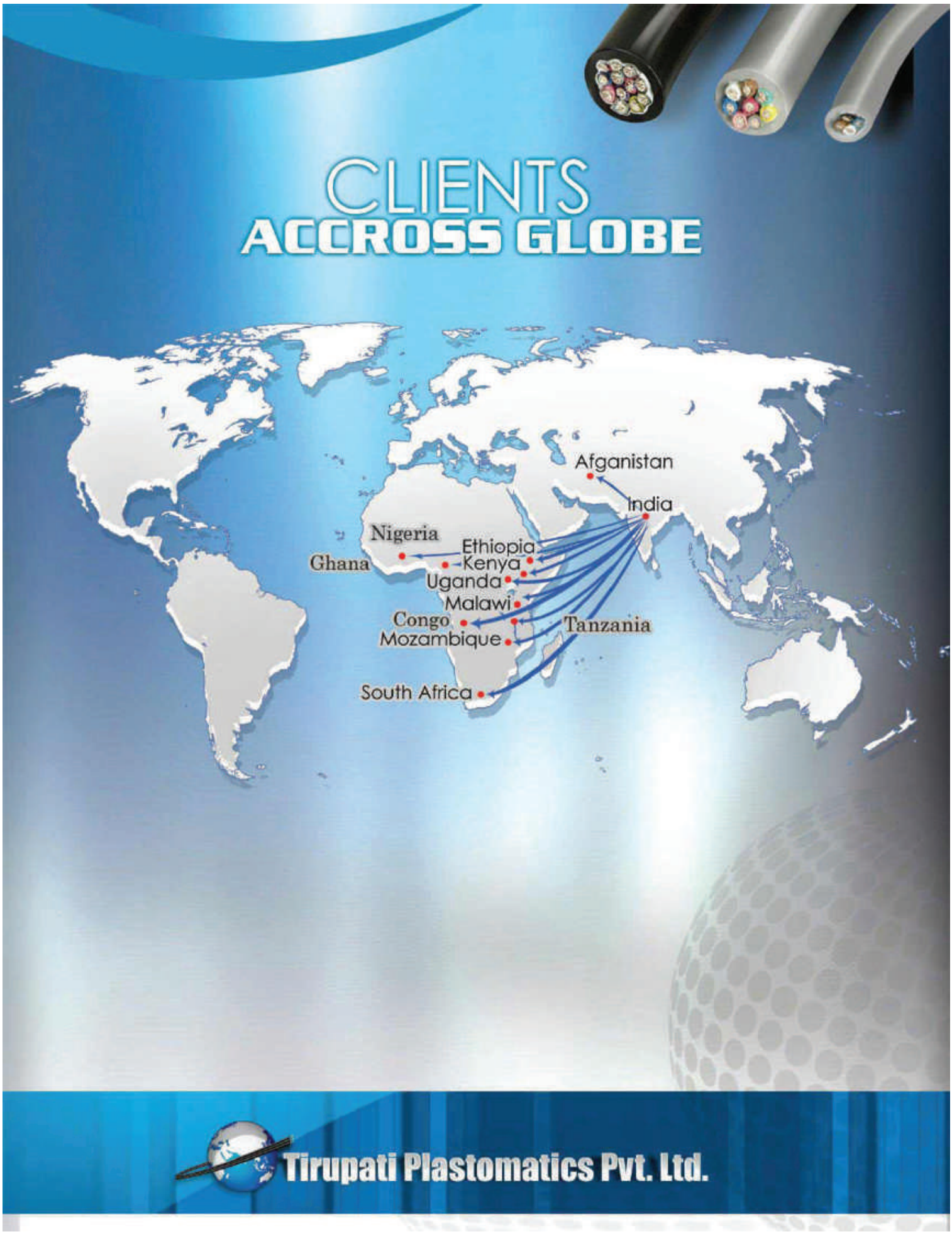
MAHAVITARAN

MAHATRANSCO

ALSTOM

Electricidade de Mozambique (EDM)

UMEME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Quality you can trust...

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Web : www.tirupatiplastomatics.com

Brand Name:
Gemini Cables

MOODY INTERNATIONAL

ISO 9001
ISO 14001
BS OHSAS 18001