Caledonian

Caledonian Highway Cables

- British Standard
- International Municipal Signal Association
- National Motorway Communications System Specifications

www.caledonian-cables.co.uk
www.caledonian-cables.com

Addison

Company Profile

Caledonian. established in 1978.offers one of the most complete lines of fiber and copper cabling system solutions with over hundreds of different cabling system products. . Our superior products provide leading edge within every cable series and for every application.

Among the national and international standards with which our cables could comply are: BS - British Standard; LPCB Fire Performance Standard. ISO Standard etc. Caledonian Cables offers a comprehensive stock of cables and cabling products through its nationwide network of resellers and distributors. Caledonian Cables has continually expanded its global presence in Europe and Asia.

Caledonian & Addison. produces a wide range of cables for communication. power and electronics in its primary plants in UK. Italy and Spain. To stay in front. we continually keep expanding our manufacturing capabilities in more low cost region such as Romania. Taiwan. Malaysia etc. This low-cost manufacturing facilities enable us provide a flexible. scalable global system that delivers superior operational performance and optimal results for our customers.

Our extensive global network of manufacturing facilities gives us significant scale and the flexibility to fulfill our customer requirements. This global presence provides design and consultancy solutions that are combined with core cable manufacturing. logistic services. and vertically integrated with our E commerce technologies. to optimize customer operations by lowering costs and reducing time to market.

Caledonian & Addison has been respected for its high standards of quality. excellent service level. competitive pricing and a unique and innovative spirit. With our latest technologies. we are both inspired and well-positioned to meet the changing needs of our customers. We have the resources to diversify and to enhance our product lines and services. We understand the need for change and with our accurate planning. we are ready for the future and the promise of new marketing opportunities. Our tradition of growth through excellence is assured.

Our Design Centers work closely with customers to constantly improve its standard range of products and technologies and to develop customized. country and industry-specific solutions. Caledonian & Addison has established an extensive network of design. manufacturing. and logistics facilities in the world’s major markets to serve the growing outsourcing needs of both multinational and regional customers.

Our Certificate

INTERNATIONAL FIRST CERTIFICATION

INTERNATIONAL FIRST CERTIFICATION

CERTIFICATE

Caledonian Cables Limited

20-22 Wenlock Road London N1 7GU England
Novus Seahami Spectrum 7 Spectrum Business Park Seaham SR7 7tt, England

IFC Global Certification confirms that the above-named organization's management system has been assessed and complies with the requirements of the following standard.

Standard:

ISO 9001:2015

Scope:

Manufacture, desing, supply, installation, assembly, commissioning, testing and maintenance of LV/MV/HV energy cables, data cables, instrumentation cables, telecommunication cables, fibre optic cables, railway cables, rolling stock cables, photovoltaic cables, marine cables, cabling system, cable accessories, ABC, AAC, ACSR, AAAC, power and distribution transformers, switchgears, communication systems, IT systems

Initial Date	: 1.02.2024
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Expiry Date	: 31.01.2027
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AB-0138-YS

Approval

IFC GLOBAL SERTİFİKASYON MUAYENE VE EĞİTİM HİZMETLETİ ANONİM ŞİRKETİ
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IMSA Series

BS Standard

British Standard

International Municipal Signal Association

National Motorway Communications System Specifications

TR Series

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TR2161-Armoured Energy Cable

TR2029-Inductive Loop Detector Cable

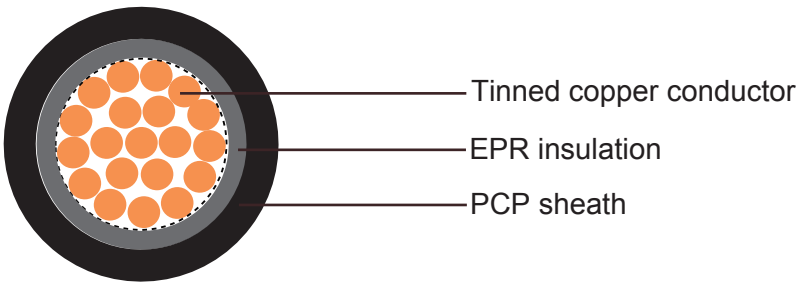
Application and Description:

TR2029 inductive loop detector cable is a single core multistranded flexible cable sheathed with polychloroprene designed for installation in a slot cut into the carriageway. It is used to measure and control traffic flow. The cables are buried beneath the road in 'loops' and an electrical current is passed through them creating a magnetic inductive field. the vehicle passing through this field that creates a disturbance and a means by which to measure traffic flow and vehicle type. Typical applications are for traffic control signals, safety cameras, variable speed control systems, flow monitoring and access control. The cables have to be of a robust design to withstand a hostile working environment and accommodate back filling with hot bitumen during cable pulling.

Standard:

TR2029, IEC 60811 and BS 6500, BS EN 60332-1-2

Cable Construction:



- **Conductor:** Tin coated plain annealed copper, comply with IEC 60228 for Class 5
- **Insulation:** Ethylene propylene rubber (EPR), GP1, 85 ° C, comply with BS 7655
- **Insulation Color:** Black

- **Sheath:** Polychloroprene(PCP), RS3, 85 ° C, comply with BS 7655,heavy-duty, oil-resisting and flame retardant
- **Sheath Color:** Black

Technical Characteristics:

- **Rated voltage:** 450/750 volts
- **Minimum bending radius:** 5 x Ø
- **Rated temperature:** +90° C
- **Conductor resistance at 20°C:** 1.5mm^2---- 13.7ohms/km
  2.5mm^2---- 8.21ohms/km
- **Insulation resistance:** >665 MΩ x km
- **Flame retardant:** BS EN 60332-1-2

Cable Parameter:

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	Kg/km
EPR insulation only						
1	1.5	30/0.25	1.1	-	3.8-4.0	30
1	2.5	50/0.25	2.1	-	6.1-6.4	48
EPR insulation with PCP sheath						
1	1.5	30/0.25	0.8	1.4	5.8-7.2	65

TR2031- Loop Detector Feeder Cable

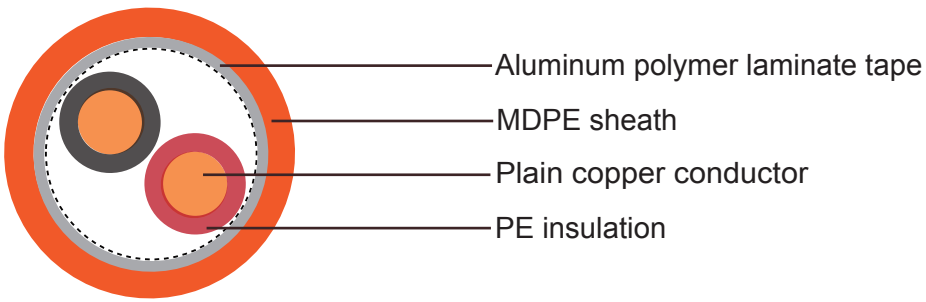
Application and Description:

TR2031 loop detector feeder cable is a copper communications cable sheathed with medium density polyethyylene (MDPE) designed for installation in a ducted network. Armoured feeder cables are used to feed electrical current to inductive cable loops and designed for direct burial underground.

Standard and Approval:

BS 6500

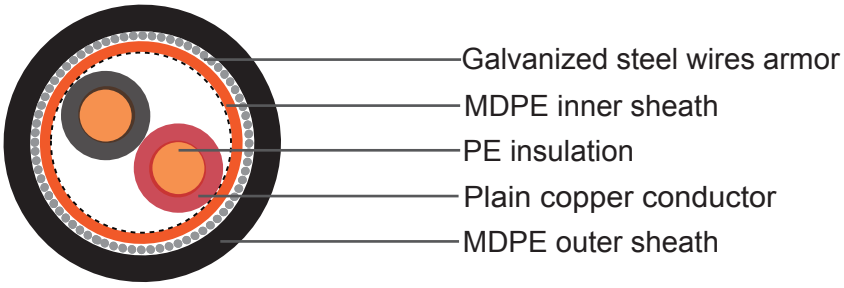
Cable Construction:



Non Armored TR2031

- **Conductor:** Solid plain annealed copper, comply with IEC 60228 for Class 1
- **Insulation:** Polythene (PE), comply with IEC 60708
- **Core Identification:** 1 pair – red, black
  2 pair – red, yellow, blue, black laid up in quad formation in order of rotation
- **Screen (for Non Armoured Cable Only)):** Aluminum polymer laminate tape comply with IEC 60708
- **Inner Sheath (for Armoured Cable Only):** Medium density polyethylene (MDPE), comply with IEC 60708

- **Armor (for Armoured Cable Only):** Galvanized steel wires to BS EN 10257-1
- **Outer Sheath:** Medium density polyethylene (MDPE), comply with IEC 60708.
- **Outer Sheath Color:** Orange/Black



Armored TR2031

Technical Characteristics:

- **Rated voltage:** 600/Kft volts
- **Minimum bending radius:** 8 x Ø
- **Rated temperature:** +70º C
- **Conductor resistance at 20°C:** 1.5mm^2---- 12.1ohms/km
  2.5mm^2---- 7.41ohms/km
- **Insulation resistance:** >1500 MΩ x km
- **Loop inductance:** 630µH/km(1P) 720µH/km(2P)
- **Capacitance:**

unarmored		armored	
1.5 mm^2	2.5 mm^2	1.5 mm^2	2.5 mm^2
<75 pF/m	39 pF/m (1P)	<75 pF/m	64 pF/m (1P)
	52 pF/m (2P)		53.5 pF/m (2P)

-**Current rating:**

Unarmored in air (30°C)		armored in ground (15ºC, 1.2ºC m/W)	
1.5 mm^2	2.5 mm^2	1.5 mm^2	2.5 mm^2
24*	33*	32*	41*

*These ratings are based on only two cores loaded simultaneously. In two pair cables where all four cores could be loaded simultaneously, the above values should be multiplied by 0.78.

Cable Parameter:

Number of Pairs	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Inner Sheath Thickness	Nominal diameter of armour wire	Outer Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	mm	mm	Kg/km
Unarmored cables								
1	1.5	1/1.38	0.60	-	-	1.4	9.0	67
2 (Q)	1.5	1/1.38	0.60	-	-	1.4	10.2	118
1	2.5	1/1.78	0.70	-	-	1.4	10.4	99
2 (Q)	2.5	1/1.78	0.70	-	-	1.4	11.8	166
Armored cables								
1	1.5	1/1.38	0.60	0.7	0.9	1.4	11.9	265
2 (Q)	1.5	1/1.38	0.60	0.7	0.9	1.4	13.2	335
1	2.5	1/1.78	0.70	0.7	0.9	1.4	12.7	336
2 (Q)	2.5	1/1.78	0.70	0.7	0.9	1.4	14.1	375

TR2153-Non Armoured Energy Cable

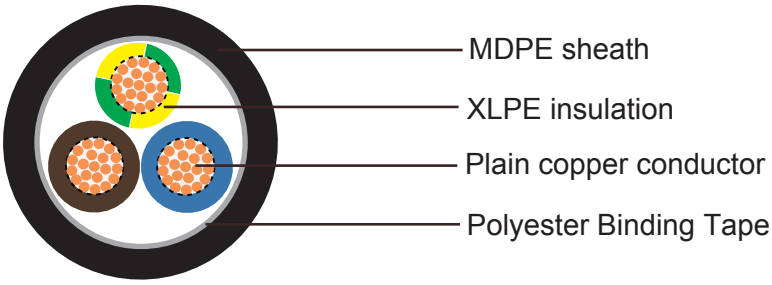
Application and Description:

TR2031 Non-armoured Energy Cable is a motorway cable sheathed with medium density polyethylene (MDPE) designed for street lighting.

Standard and Approval:

IEC 60502

Cable Construction:



- **Conductor:** Plain annealed stranded copper conductor, comply with IEC 60228 for Class 2
- **Insulation:** Cross linked polyethylene (XLPE)
- **Core Identification:** Brown, Blue, Green/Yellow
- **Tape:** Polyester Binding Tape
- **Sheath:** Medium density polyethylene (MDPE), comply with IEC 60708
- **Sheath Color:** Black

Technical Characteristics:

- **Rated voltage:** 600/Kft volts
- **Minimum bending radius:** 12 x Ø

- **Rated temperature:** +90° C

- **Conductor resistance:**

Conductor size	mm^2	10	25	35	50	70	95	120	150	185	240
Resistance	ohms/ km	1.83	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754

- **Current rating in duct:**

Conductor size	mm^2	10	25	35	50	70	95	120	150	185	240
Current rating	A	75	124	-	161	196	234	269	307	-	-

- **Volt drop :**

Conductor size	mm^2	10	25	35	50	70	95	120	150	185	240
Volt drop	mv/m	4.1	1.65	-	0.87	0.6	0.45	0.37	0.3	-	-

Cable Parameter

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Outer Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	Kg/km
3	10	7/1.35	0.7	0.8	13	455
3	25	7/2.14	1.2	1.8	23	1192
3	35	7/2.52	1.4	1.8	26	1623
3	50	19/1.78	1.4	1.8	29	2180
3	70	19/2.14	1.4	1.9	33	3072
3	95	19/2.52	1.6	2.0	38	4220
3	120	37/2.03	1.6	2.1	42	5302
3	150	37/2.25	1.8	2.3	46	6515
3	185	37/2.52	2.0	2.6	52	8173
3	240	61/2.25	2.2	2.8	59	10705

TR2161-Armoured Energy Cable

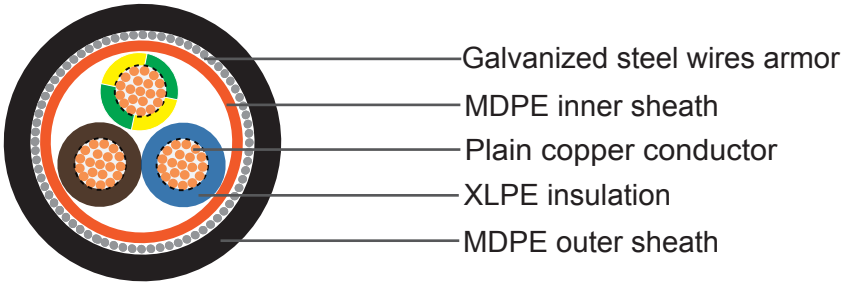
Application and Description:

TR2161 Non-armoured Energy Cable is a motorway cable sheathed with medium density polyethyylene (MDPE) designed for street lighting.

Standard and Approval:

IEC 60502, BS 5467

Cable Construction:



- **Conductor:** Plain annealed stranded copper conductor, comply with IEC 60228 for Class 2
- **Insulation:** Cross linked polyethylene (XLPE)
- **Core Identification:** Brown, Blue, Green/Yellow
- **Inner Sheath:** Medium density polyethylene (MDPE), comply with IEC 60708.
- **Armor (for Armoured Cable Only):** Galvanized steel wires
- **Outer Sheath:** Medium density polyethylene (MDPE), comply with IEC 60708.
- **Sheath Color:** Black

Technical Characteristics:

- **Rated voltage:** 600/Kft volts
- **Minimum bending radius:** 12 x Ø
- **Rated temperature:** +90° C
- **Conductor resistance:**

Conductor size	mm^2	10	25	50	70	95	120	150
Resistance	ohms/km	1.83	0.727	0.387	0.268	0.193	0.153	0.124

- **Current rating in duct:**

Conductor size	mm^2	10	25	50	70	95	120	150
Current rating	A	92	152	217	266	319	33	406

- **Volt drop:**

Conductor size	mm^2	10	25	50	70	95	120	150
Volt drop	mv/m	4.1	1.65	0.87	0.6	0.45	0.37	0.3

Cable Parameter

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Inner Sheath Thickness	Armour thickness	Outer Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	mm	Kg/km
3	10	7/1.35	1.0	1.25	1.8	19.1	881
3	25	7/2.14	1.0	1.60	1.8	24.9	1703
3	50	19/1.78	1.0	1.60	2.0	30.7	2660
3	70	19/2.14	1.0	1.60	2.0	34.6	3489
3	95	19/2.52	1.2	2.0	2.2	40.7	4903
3	120	37/2.03	1.2	2.0	2.3	44.4	5891
3	150	37/2.25	1.4	2.5	2.5	50.0	7521

British Standard

International Municipal Signal Association

National Motorway Communications System Specifications

IMSA Series

IMSA 19-1
IMSA 20-1
IMSA 19-5/20-5
IMSA 50-2
IMSA 51-1
IMSA 51-3
IMSA 51-5
IMSA 51-7
IMSA 19-2/20-2
IMSA 19-6/20-6
IMSA 39-2/40-2
IMSA 39-6/40-6

About the IMSA:

Since 1896, the International Municipal Signal Association (IMSA) has been concerned with many aspects of governmental public safety, communications and signaling. The majority of its members are municipal, county, state/provincial and federal officials and employees located throughout the United States and Canada.

The development of a series of electrical cable and wire specifications is one of the many services provided by IMSA. These specifications assure specifying engineers, purchasers and users that they are receiving quality cable and wire that will perform reliably within the application scope of each specifications.

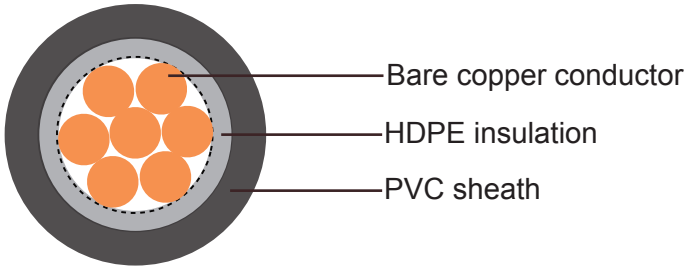
The cable constructions offer maximum resistance to moisture and weathering and are primarily designed for outside installations, including aerial, underground duct and direct earth burial. They are also excellent options for industrial and other users when selecting control and communications cables for outside installations

IMSA 19-1(Traffic Signal Cable)

Application

These cables are suitable for outdoor or indoor use in traffic signal, traffic control systems, fire alarm systems, underground conduit and aerial use with messenger. Rated for 600 Volts 75°C wet or dry locations.

Cable Construction



- **Conductor:** Solid bare copper per ASTM B-3 or stranded bare copper per ASTM B-8, & B-174
- **Insulation:** High density polyethylene (HDPE)
- **Sheath:** Black polyvinyl chloride (PVC)

Color Code

Conductor No.	Insulation Color	Stripe Color	Conductor No.	Insulation Color	Stripe Color
1	Black	–	14	Green	White
2	White	–	15	Blue	White
3	Red	–	16	Black	Red
4	Green	–	17	White	Red
5	Orange	–	18	Orange	Red
6	Blue	–	19	Blue	Red
7	White	Black	20	Red	Green
8	Red	Black	21	Orange	Green

Conductor No.	Insulation Color	Stripe Color	Conductor No.	Insulation Color	Stripe Color
9	Green	Black	22	Black	–
10	Orange	Black	23	White	–
11	Blue	Black	24	Red	–
12	Black	White	25	Green	–
13	Red	White			

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	2	solid	0.025	0.64	0.045	1.14	0.325	8.26	58	86
14	2	7strand	0.025	0.64	0.045	1.14	0.341	8.66	63	94
14	3	solid	0.025	0.64	0.045	1.14	0.342	8.69	75	112
14	3	7strand	0.025	0.64	0.045	1.14	0.357	9.07	81	121
14	4	solid	0.025	0.64	0.045	1.14	0.372	9.45	94	140
14	4	7strand	0.025	0.64	0.045	1.14	0.389	9.89	98	146
14	5	solid	0.025	0.64	0.045	1.14	0.406	10.31	113	168
14	5	7strand	0.025	0.64	0.045	1.14	0.42	10.67	113	168
14	7	solid	0.025	0.64	0.045	1.14	0.44	11.18	146	217
14	7	7strand	0.025	0.64	0.045	1.14	0.464	11.79	154	229
14	9	solid	0.025	0.64	0.045	1.14	0.511	12.98	186	277
14	9	7strand	0.025	0.64	0.06	1.52	0.571	14.50	212	315
14	10	solid	0.025	0.64	0.06	1.52	0.586	14.88	220	327

IMSA series

AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	10	7strand	0.025	0.64	0.06	1.52	0.586	14.88	227	338
14	11	7strand	0.025	0.64	0.06	1.52	0.618	15.70	250	372
14	12	solid	0.025	0.64	0.06	1.52	0.603	15.31	254	378
14	12	7strand	0.025	0.64	0.06	1.52	0.636	16.15	267	397
14	14	7strand	0.025	0.64	0.06	1.52	0.668	16.97	304	452
14	15	solid	0.025	0.64	0.06	1.52	0.667	16.94	311	463
14	15	7strand	0.025	0.64	0.06	1.52	0.704	17.88	328	488
14	16	solid	0.025	0.64	0.06	1.52	0.667	16.94	325	484
14	16	7strand	0.025	0.64	0.06	1.52	0.704	17.88	341	507
14	19	solid	0.025	0.64	0.06	1.52	0.701	17.81	375	558
14	19	7strand	0.025	0.64	0.06	1.52	0.741	18.82	393	585
14	20	solid	0.025	0.64	0.06	1.52	0.737	18.72	395	588
14	20	7strand	0.025	0.64	0.06	1.52	0.779	19.79	415	617
14	21	7strand	0.025	0.64	0.06	1.52	0.779	19.79	432	643
14	25	solid	0.025	0.64	0.06	1.52	0.796	20.22	478	711
14	25	7strand	0.025	0.64	0.08	1.52	0.918	23.32	544	809
12	2	solid	0.03	0.76	0.045	1.14	0.382	9.70	58	86
12	2	7strand	0.03	0.76	0.045	1.14	0.397	10.08	87	129
12	3	solid	0.03	0.76	0.045	1.14	0.398	10.11	108	161
12	3	7strand	0.03	0.76	0.045	1.14	0.42	10.67	113	168
12	4	solid	0.03	0.76	0.045	1.14	0.439	11.15	135	201
12	4	7strand	0.03	0.76	0.045	1.14	0.459	11.66	141	210
12	5	solid	0.03	0.76	0.045	1.14	0.48	12.19	163	243
12	5	7strand	0.03	0.76	0.045	1.14	0.503	12.78	172	256
12	7	solid	0.03	0.76	0.06	1.52	0.555	14.10	237	353
12	7	7strand	0.03	0.76	0.06	1.52	0.579	14.71	244	363
12	9	solid	0.03	0.76	0.06	1.52	0.64	16.26	281	418
12	9	7strand	0.03	0.76	0.06	1.52	0.673	17.09	310	461
12	10	7strand	0.03	0.76	0.06	1.52	0.726	18.44	338	503

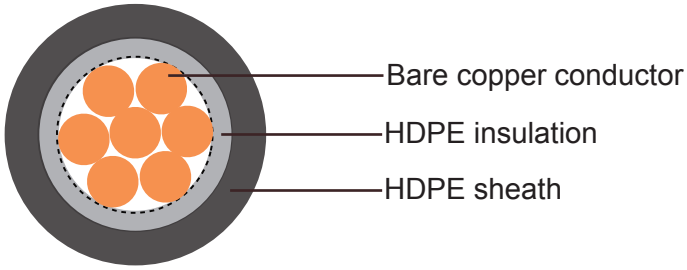
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
12	12	solid	0.03	0.76	0.06	1.52	0.711	18.06	372	553
12	12	7strand	0.03	0.76	0.06	1.52	0.753	19.13	393	585
12	16	solid	0.03	0.76	0.06	1.52	0.793	20.14	449	668
12	19	7strand	0.03	0.76	0.08	2.03	0.918	23.32	625	930
12	20	solid	0.03	0.76	0.08	2.03	0.922	23.42	631	939
10	2	solid	0.031	0.79	0.045	1.14	0.421	10.70	110	164
10	2	7strand	0.031	0.79	0.045	1.14	0.443	11.25	118	176
10	3	solid	0.031	0.79	0.045	1.14	0.445	11.30	150	223
10	3	7strand	0.031	0.79	0.045	1.14	0.469	11.91	155	231
10	4	7strand	0.031	0.79	0.06	1.52	0.542	13.77	216	321
10	5	7strand	0.031	0.79	0.06	1.52	0.596	15.14	263	391

IMSA 20-1(Traffic Signal Cable)

Application

These cables are suitable for outdoor or indoor use in traffic signal, traffic control systems, fire alarm systems, underground conduit and aerial use with messenger. Rated for 600 Volts 75°C wet or dry locations

Cable Construction



- **Conductor:** Solid bare copper per ASTM B-3 or stranded bare copper per ASTM B-8, & B-174
- **Insulation:** High density polyethylene (HDPE)
- **Sheath:** High density polyethylene (HDPE)

Color Code

Conductor No.	Insulation Color	Stripe Color	Conductor No.	Insulation Color	Stripe Color
1	Black	–	14	Green	White
2	White	–	15	Blue	White
3	Red	–	16	Black	Red
4	Green	–	17	White	Red
5	Orange	–	18	Orange	Red
6	Blue	–	19	Blue	Red
7	White	Black	20	Red	Green
8	Red	Black	21	Orange	Green

Conductor No.	Insulation Color	Stripe Color	Conductor No.	Insulation Color	Stripe Color
9	Green	Black	22	Black	–
10	Orange	Black	23	White	–
11	Blue	Black	24	Red	–
12	Black	White	25	Green	–
13	Red	White			

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
18	5	7strand	0.025	0.64	0.045	1.14	0.354	8.99	60	89
16	2	solid	0.025	0.64	0.045	1.14	0.299	7.59	39	58
16	7	7strand	0.025	0.64	0.045	1.14	0.419	10.64	102	152
16	20	7strand	0.025	0.64	0.06	1.52	0.696	17.68	278	414
14	2	solid	0.025	0.64	0.045	1.14	0.25	6.35	52	77
14	2	7strand	0.025	0.64	0.045	1.14	0.341	8.66	55	82
14	3	solid	0.025	0.64	0.045	1.14	0.342	8.69	66	98
14	3	7strand	0.025	0.64	0.045	1.14	0.359	9.12	71	106
14	4	solid	0.025	0.64	0.045	1.14	0.372	9.45	85	126
14	4	7strand	0.025	0.64	0.045	1.14	0.391	9.93	88	131
14	5	solid	0.025	0.64	0.045	1.14	0.406	10.31	103	153

IMSA series

AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	5	7strand	0.025	0.64	0.045	1.14	0.43	10.92	108	161
14	6	solid	0.025	0.64	0.045	1.14	0.44	11.18	118	176
14	6	7strand	0.025	0.64	0.045	1.14	0.464	11.79	127	189
14	7	solid	0.025	0.64	0.045	1.14	0.44	11.18	136	202
14	7	7strand	0.025	0.64	0.045	1.14	0.464	11.79	141	210
14	8	solid	0.025	0.64	0.045	1.14	0.476	12.09	155	231
14	8	7strand	0.025	0.64	0.045	1.14	0.507	12.88	160	238
14	9	solid	0.025	0.64	0.045	1.14	0.511	12.98	172	256
14	9	7strand	0.025	0.64	0.06	1.52	0.571	14.50	192	286
14	10	solid	0.025	0.64	0.06	1.52	0.586	14.88	197	293
14	10	7strand	0.025	0.64	0.06	1.52	0.592	15.04	205	305
14	12	solid	0.025	0.64	0.06	1.52	0.603	15.32	232	345
14	12	7strand	0.025	0.64	0.06	1.52	0.636	16.15	244	363
14	14	7strand	0.025	0.64	0.06	1.52	0.668	16.97	280	417
14	15	solid	0.025	0.64	0.06	1.52	0.667	16.94	284	423
14	15	7strand	0.025	0.64	0.06	1.52	0.704	17.88	302	449
14	16	solid	0.025	0.64	0.06	1.52	0.667	16.94	299	445
14	16	7strand	0.025	0.64	0.06	1.52	0.704	17.88	316	470
14	19	solid	0.025	0.64	0.06	1.52	0.701	17.81	348	518
14	19	7strand	0.025	0.64	0.06	1.52	0.741	18.82	366	545
14	20	solid	0.025	0.64	0.06	1.52	0.737	18.72	370	550
14	20	7strand	0.025	0.64	0.06	1.52	0.779	19.79	387	576
14	21	solid	0.025	0.64	0.06	1.52	0.737	18.72	384	571
14	21	7strand	0.025	0.64	0.06	1.52	0.779	19.79	405	603
14	25	solid	0.025	0.64	0.06	1.52	0.796	20.22	450	670
14	25	7strand	0.025	0.64	0.08	1.52	0.925	23.50	518	771
12	2	solid	0.03	0.76	0.045	1.14	0.384	9.75	74	110
12	2	7strand	0.03	0.76	0.045	1.14	0.397	10.08	74	110

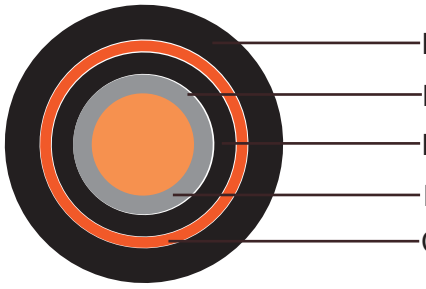
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
12	3	solid	0.03	0.76	0.045	1.14	0.402	10.21	99	147
12	3	7strand	0.03	0.76	0.045	1.14	0.42	10.67	103	153
12	4	solid	0.03	0.76	0.045	1.14	0.44	11.18	124	184
12	4	7strand	0.03	0.76	0.045	1.14	0.459	11.66	130	193
12	5	solid	0.03	0.76	0.045	1.14	0.48	12.19	152	226
12	5	7strand	0.03	0.76	0.045	1.14	0.503	12.78	159	237
12	7	solid	0.03	0.76	0.06	1.52	0.561	14.25	212	315
12	7	7strand	0.03	0.76	0.06	1.52	0.579	14.71	222	330
12	9	7strand	0.03	0.76	0.06	1.52	0.677	17.20	284	423
12	10	solid	0.03	0.76	0.06	1.52	0.69	17.52	296	440
12	10	7strand	0.03	0.76	0.06	1.52	0.686	17.42	309	460
12	12	solid	0.03	0.76	0.06	1.52	0.711	18.06	346	515
12	12	7strand	0.03	0.76	0.06	1.52	0.753	19.13	367	546
12	16	7strand	0.03	0.76	0.08	2.03	0.876	22.25	501	745
12	19	7strand	0.03	0.76	0.08	2.03	0.929	23.60	582	866
12	20	7strand	0.03	0.76	0.08	2.03	0.976	24.80	618	919
12	21	7strand	0.03	0.76	0.08	2.03	0.976	24.80	643	957
12	25	7strand	0.03	0.76	0.08	2.03	1.08	27.43	751	1117
10	2	7strand	0.03	0.76	0.045	1.14	0.443	11.25	107	159
10	3	solid	0.03	0.76	0.045	1.14	0.429	10.90	135	201
10	4	7strand	0.03	0.76	0.045	1.14	0.514	13.06	185	275
10	7	7strand	0.03	0.76	0.06	1.52	0.648	16.46	321	478
8	2	solid	0.03	0.76	0.045	1.14	0.475	12.07	146	217
8	2	19strand	0.03	0.76	0.045	1.14	0.505	12.83	150	223
8	3	19strand	0.03	0.76	0.045	1.14	0.508	12.90	195	290
8	7	solid	0.03	0.76	0.06	1.52	0.696	17.68	454	675

IMSA 19-5/20-5(Traffic Signal Cable)

Application

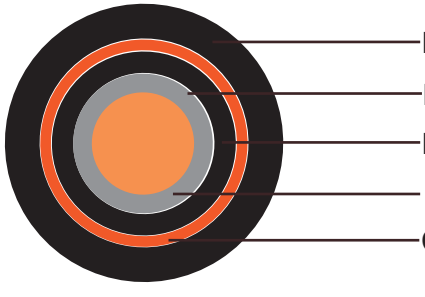
These cables are designed for use in severe service in underground conduit or as aerial cable supported by a messenger or for direct earth burial either as fire protective signaling cable or as a traffic signaling cable..

Cable Construction



IMSA 19-5

- **Conductor:** Solid bare copper per ASTM B-3(stranded copper is optional)
- **Insulation:** Polyethylene(PE)
- **Inner sheath:** Polyethylene(PE)
- **Shield:** Corrugated copper tape- 15% minimum overlap
-**Outer sheath:** IMSA 19-5-Black Polyvinyl chloride (PVC)/
  IMSA 20-5-Black Polyethylene(PE)



IMSA 20-5

Color Code

Conductor No.	Insulation Color	Stripe Color	Conductor No.	Insulation Color	Stripe Color
1	Black	–	14	Green	White
2	White	–	15	Blue	White
3	Red	–	16	Black	Red
4	Green	–	17	White	Red
5	Orange	–	18	Orange	Red
6	Blue	–	19	Blue	Red
7	White	Black	20	Red	Green
8	Red	Black	21	Orange	Green
9	Green	Black	22	Black	–
10	Orange	Black	23	White	–
11	Blue	Black	24	Red	–
12	Black	White	25	Green	–
13	Red	White			

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Inner Sheath thickness		Outer Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	4	Solid	0.030	0.76	0.045	1.14	0.06	1.52	0.57	14.48	168	250
14	7	Solid	0.030	0.76	0.045	1.14	0.06	1.52	0.63	16.00	205	305

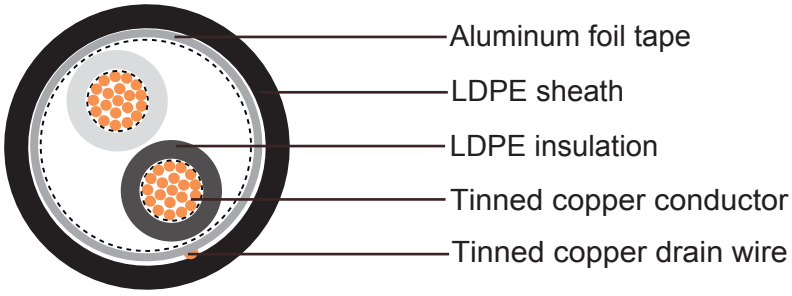
AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Inner Sheath thickness		Outer Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	12	Solid	0.030	0.76	0.045	1.14	0.06	1.52	0.78	19.81	345	513
12	4	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.63	16.00	194	289
12	7	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.75	19.05	289	430
12	12	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.94	23.88	468	696

IMSA 50-2 (Traffic Loop Detector Lead-In Feeder Cable)

Application

These cables are used in municipal signal systems as lead-in cable or for use in communication circuits where a low capacitance is needed, suitable for underground conduit, as aerial cable supported by messenger, or in raceways in buildings.

Cable Construction



- **Conductor:** Stranded tinned copper per ASTM B-8 & B-33,18 – 12 AWG (19 Strand)
- **Insulation:** Low density polyethylene (LDPE)
- **Color code:** Black & clear
- **Pairing:** Two insulated conductors twisted together
- **Shield:** Aluminum foil shield with tinned copper drain wire
- **Sheath:** Black low density polyethylene (LDPE)

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

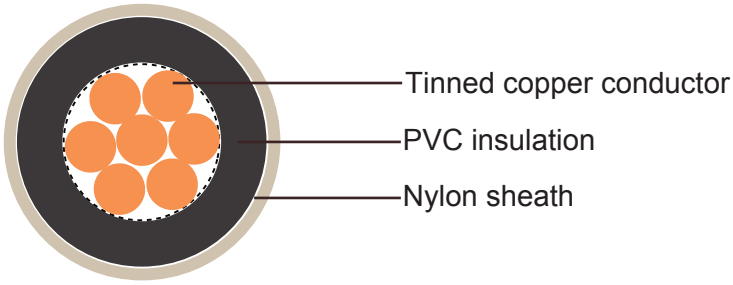
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
18	2	19strand	0.030	0.76	0.030	0.76	0.27	6.86	31	46
16	2	19strand	0.030	0.76	0.030	0.76	0.29	7.37	40	60
14	2	19strand	0.030	0.76	0.030	0.76	0.32	8.13	56	83
12	2	19strand	0.030	0.76	0.030	0.76	0.364	9.25	80	119

IMSA 51-1(Loop Detector Cable)

Application

These cables are designed for use in municipal signal systems as “Loop Detector Wire”. These wires are installed in pavement saw cuts at traffic intersections to detect the presence of motor vehicles. The signal is sent to a traffic signal controller to activate the light changes.

Cable Construction



- **Conductor:** Stranded tinned copper per ASTM B-8
- **Insulation:** Black Polyvinyl chloride (PVC)
- **Sheath:** Clear nylon

Temperature Rating

105°C

Voltage Rating

600 V

Cable Parameter

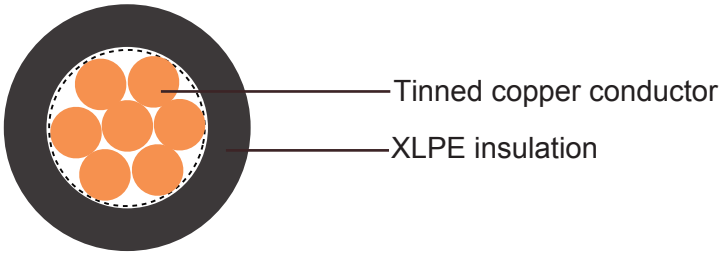
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
18	1	7strand	0.015	0.38	0.004	0.10	0.085	2.16	7	10
16	1	7strand	0.015	0.38	0.004	0.10	0.097	2.46	11	16
14	1	7strand	0.015	0.38	0.004	0.10	0.112	2.84	16	24
12	1	7strand	0.015	0.38	0.004	0.10	0.131	3.33	24	36
10	1	7strand	0.020	0.51	0.004	0.10	0.165	4.19	38	57

IMSA 51-3(Loop Detector Cable)

Application

These cables are designed for use in municipal signal systems as “Loop Detector Wire”. These wires are installed in pavement saw cuts at traffic intersections to detect the presence of motor vehicles. The signal is sent to a traffic signal controller to activate the light changes.

Cable Construction



- **Conductor:** Solid or stranded tinned copper per ASTM B-3 or ASTM B-8
- **Insulation:** Black cross-linked polyethylene (XLPE)

Temperature Rating

90°C

Voltage Rating

600 V

Cable Parameter

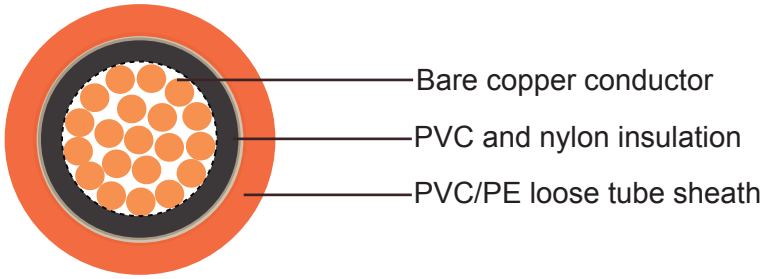
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	Lbs./Kft	Kg/Km
14	1	Solid	0.030	0.76	0.125	3.18	17	25
14	1	7	0.030	0.76	0.135	3.43	18	27
14	1	19	0.030	0.76	0.135	3.43	18	27
12	1	Solid	0.030	0.76	0.145	3.68	25	37
12	1	7	0.030	0.76	0.155	3.94	26	39
10	1	Solid	0.030	0.76	0.165	4.19	38	57
10	1	7	0.030	0.76	0.18	4.57	39	58
8	1	7	0.045	1.14	0.24	6.10	66	98
6	1	7	0.045	1.14	0.275	6.99	99	147
4	1	7	0.045	1.14	0.325	8.26	151	225
2	1	7	0.045	1.14	0.38	9.65	232	345

IMSA 51-5(Loop Detector Cable)

Application and Description

These cables are used in road pavements to detect vehicles for the purpose of changing signals or determining amount of traffic flow.

Cable Construction



- **Conductor:** Stranded bare copper per ASTM B-8
- **Insulation:** PVC(15Mils)/Nylon(5Mils)
- **Sheath:** PE or PVC loose Tube, black or orange

Temperature Rating

60°C

Voltage Rating

600 V

Cable Parameter

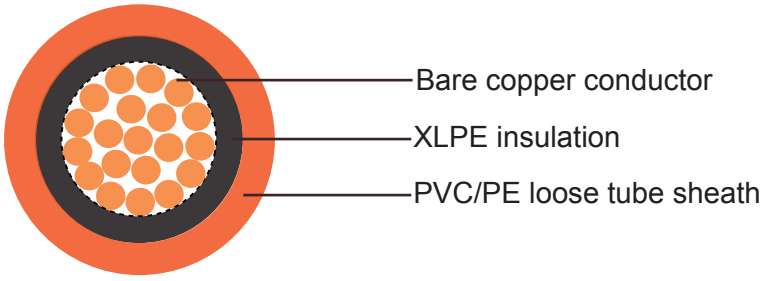
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
PE tube										
14	1	19strand	0.02	0.51	0.030	0.76	0.18	4.57	22	33
12	1	19strand	0.02	0.51	0.030	0.76	0.2	5.08	29	43
PVC tube										
14	1	19strand	0.02	0.51	0.030	0.76	0.18	4.57	30	45
12	1	19strand	0.02	0.51	0.030	0.76	0.2	5.08	36	54

IMSA 51-7(Loop Detector Cable)

Application and Description

These cables are used in road pavements to detect vehicles for the purpose of changing signals or determining amount of traffic flow.

Cable Construction



- **Conductor:** Stranded bare copper per ASTM B-8
- **Insulation:** Cross-linked polyethylene (XLPE)
- **Sheatht:** PE or PVC loose tube, black or orange

Temperature Rating

60°C

Voltage Rating

600 V

Cable Parameter

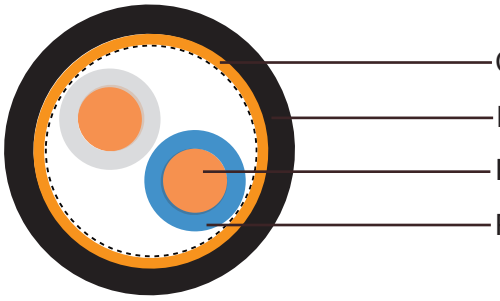
AWG	No. of Conductor	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
PE tube										
14	1	19strand	0.030	0.76	0.030	0.76	0.19	4.83	26	39
12	1	19strand	0.030	0.76	0.030	0.76	0.22	5.59	31	46
PVC tube										
14	1	19strand	0.030	0.76	0.030	0.76	0.19	4.83	31	46
12	1	19strand	0.030	0.76	0.030	0.76	0.22	5.59	37	55

IMSA 19-2/20-2
(Signal & Communications Cable)

Application

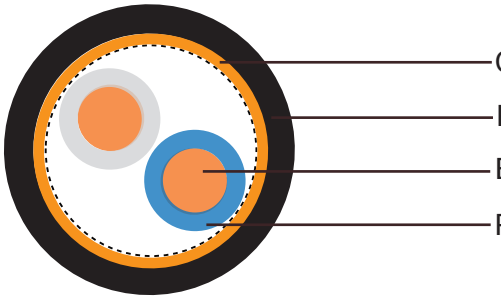
These cables are designed for use in underground conduit or as aerial cable supported by a messenger or for installation in raceway in building, not including trays, or used in traffic signal, traffic control systems, fire alarm systems.

Cable Construction



IMSA 19-2

- **Conductor:** Solid bare copper per ASTM B-3
- **Insulation:** Polyethylene(PE)
- **Pairing:** Two insulated conductors twisted together
- **Shield:** Corrugated copper tape- 15% minimum overlap
- **Sheath:** IMSA 19-2- Black Polyvinyl chloride (PVC)/
  IMSA 20-2- Black Polyethylene(PE)



IMSA 20-2

Color Code

Conductor No.	Insulation Color		Conductor No.	Insulation Color	
	A wire	B wire		A wire	B wire
1	White	Blue	14	Black	Brown
2	White	Orange	15	Black	Slate
3	White	Green	16	Yellow	Blue
4	White	Brown	17	Yellow	Orange
5	White	Slate	18	Yellow	Green
6	Red	Blue	19	Yellow	Brown
7	Red	Orange	20	Yellow	Slate
8	Red	Green	21	Violet	Blue
9	Red	Brown	22	Violet	Orange
10	Red	Slate	23	Violet	Green
11	Black	Blue	24	Violet	Brown
12	Black	Orange	25	Violet	Slate
13	Black	Green			

Binding Tape Color Code: cables containing more than 25 pairs are assembled insub-sectors/ groups. These are identified by spirally applied color-coded nonhygroscopicbinding tapes. The binding tapes use the same 25 pair color code.

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

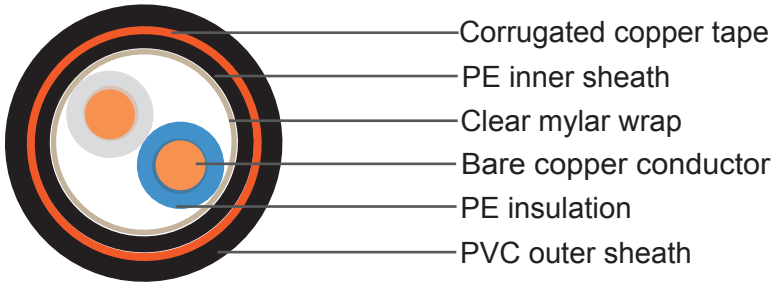
AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	1	Solid	0.025	0.64	0.045	1.14	0.41	10.41	87	129
14	2	Solid	0.025	0.64	0.06	1.52	0.63	16.00	141	210
14	4	Solid	0.025	0.64	0.06	1.52	0.69	17.53	214	318
14	6	Solid	0.025	0.64	0.08	2.03	0.87	22.10	320	476
14	8	Solid	0.025	0.64	0.08	2.03	0.92	23.37	398	592
16	3	Solid	0.025	0.64	0.08	2.03	0.58	14.73	135	201
16	6	Solid	0.025	0.64	0.08	2.03	0.76	19.30	343	510
16	12	Solid	0.025	0.64	0.08	2.03	0.97	24.64	406	604
16	18	Solid	0.025	0.64	0.08	2.03	1.15	29.21	560	833
16	25	Solid	0.025	0.64	0.08	2.03	1.31	33.27	740	1101
16	50	Solid	0.025	0.64	0.11	2.79	1.83	46.48	1526	2271

IMSA 19-6/20-6
(Signal & Communications Cable)

Application

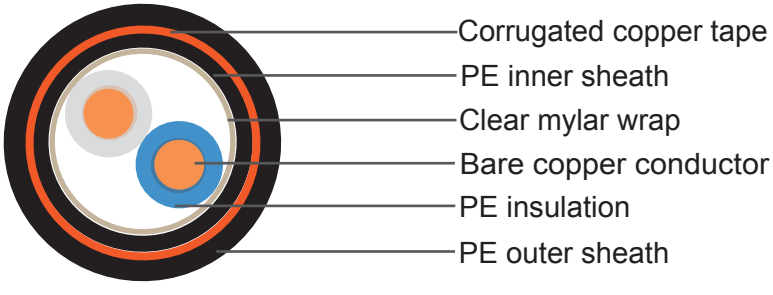
These cables are designed for use in underground conduit or as aerial cable supported by a messenger, or for direct earth burial either as fire protective signaling cable or as traffic signal cable.

Cable Construction



IMSA 19-6

- **Conductor:** Solid bare copper per ASTM B-3(stranded copper is optional)
- **Insulation:** Polyethylene(PE)
- **Pairing:** Two insulated conductors twisted together
- **Binder tape:** Clear mylar wrap – 100% coverage
- **Inner sheath:** Polyethylene(PE)
- **Shield:** Corrugated copper tape- 15% minimum overlap
- **Outer sheath:** IMSA 19-2-Black Polyvinyl chloride (PVC)/
  IMSA 20-2-Black Polyethylene(PE)



IMSA 20-6

Color Code

Conductor No.	Insulation Color		Conductor No.	Insulation Color	
	A wire	B wire		A wire	B wire
1	White	Blue	14	Black	Brown
2	White	Orange	15	Black	Slate
3	White	Green	16	Yellow	Blue
4	White	Brown	17	Yellow	Orange
5	White	Slate	18	Yellow	Green
6	Red	Blue	19	Yellow	Brown
7	Red	Orange	20	Yellow	Slate
8	Red	Green	21	Violet	Blue
9	Red	Brown	22	Violet	Orange
10	Red	Slate	23	Violet	Green
11	Black	Blue	24	Violet	Brown
12	Black	Orange	25	Violet	Slate
13	Black	Green			

Binding Tape Color Code: cables containing more than 25 pairs are assembled insub-sectors/ groups. These are identified by spirally applied color-coded nonhygroscopicbinding tapes. The binding tapes use the same 25 pair color code.

Temperature Rating

75°C

Voltage Rating

600 V

Cable Parameter

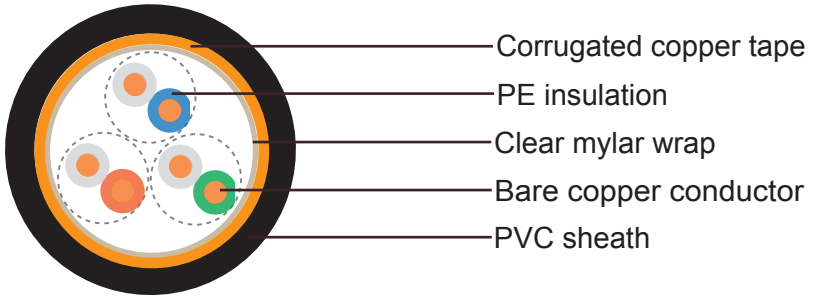
AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Inner Sheath thickness		Outer Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
14	2	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.685	17.40	196	292
14	4	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.77	19.56	254	378
14	6	Solid	0.025	0.64	0.045	1.14	0.08	2.03	0.96	24.38	367	546
14	8	Solid	0.025	0.64	0.045	1.14	0.08	2.03	1.015	25.78	440	655
16	3	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.66	16.76	166	247
16	6	Solid	0.025	0.64	0.045	1.14	0.06	1.52	0.83	21.08	261	388
16	12	Solid	0.025	0.64	0.045	1.14	0.06	1.52	1.09	27.69	459	683
16	18	Solid	0.025	0.64	0.06	1.52	0.08	2.03	1.25	31.75	646	961
16	25	Solid	0.025	0.64	0.06	1.52	0.08	2.03	1.41	35.81	836	1244
16	50	Solid	0.025	0.64	0.075	1.91	0.11	2.79	2.015	51.18	1618	2408

IMSA 39-2/40-2(Communication Cable)

Application

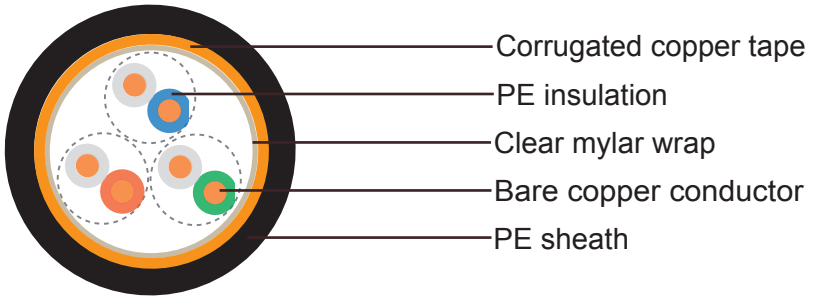
These cables are designed for use in underground conduit or as aerial cable supported by a messenger or for installation in raceway in buildings, not including trays either as fire protective signaling cable or traffic communications and data acquisition cable suitable for power limited use.

Cable Construction



IMSA 39-2

- **Conductor:** Solid bare copper per ASTM B-3
- **Insulation:** Polyethylene(PE)
- **Pairing:** Two insulated conductors twisted together
- **Binder tape:** Clear mylar wrap – 100% coverage
- **Shield:** Corrugated copper tape- 15% minimum overlap
- **Sheath:** IMSA 39-2-Black Polyvinyl chloride (PVC)/
  IMSA 40-2-Black Polyethylene(PE)



IMSA 40-2

Color Code

Conductor No.	Insulation Color		Conductor No.	Insulation Color	
	A wire	B wire		A wire	B wire
1	White	Blue	14	Black	Brown
2	White	Orange	15	Black	Slate
3	White	Green	16	Yellow	Blue
4	White	Brown	17	Yellow	Orange
5	White	Slate	18	Yellow	Green
6	Red	Blue	19	Yellow	Brown
7	Red	Orange	20	Yellow	Slate
8	Red	Green	21	Violet	Blue
9	Red	Brown	22	Violet	Orange
10	Red	Slate	23	Violet	Green
11	Black	Blue	24	Violet	Brown
12	Black	Orange	25	Violet	Slate
13	Black	Green			

Binding Tape Color Code: cables containing more than 25 pairs are assembled insub-sectors/ groups. These are identified by spirally applied color-coded nonhygroscopicbinding tapes. The binding tapes use the same 25 pair color code.

Temperature Rating

75°C

Voltage Rating

300 V

Cable Parameter

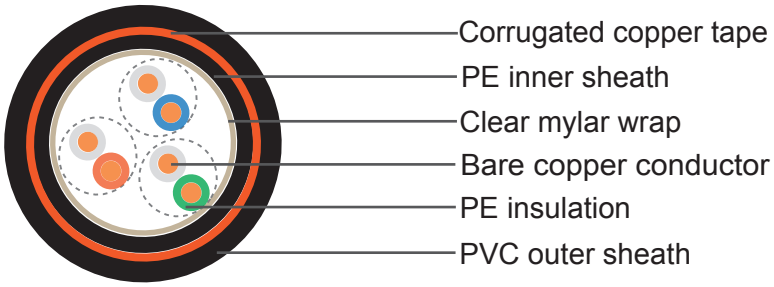
AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	Lbs./ Kft	Kg/Km
19	3	Solid	0.015	0.38	0.045	1.14	0.424	10.77	77	115
19	6	Solid	0.015	0.38	0.06	1.52	0.565	14.35	132	196
19	12	Solid	0.015	0.38	0.06	1.52	0.666	16.92	205	305
19	18	Solid	0.015	0.38	0.06	1.52	0.77	19.56	283	421
19	25	Solid	0.015	0.38	0.08	2.03	0.82	20.83	369	549
19	50	Solid	0.015	0.38	0.08	2.03	1.27	32.26	703	1046
16	3	Solid	0.02	0.51	0.06	1.52	0.57	14.48	130	193
16	6	Solid	0.02	0.51	0.06	1.52	0.67	17.02	203	302
16	12	Solid	0.02	0.51	0.08	2.03	0.89	22.61	415	618
16	18	Solid	0.02	0.51	0.08	2.03	1.09	27.69	528	786
16	25	Solid	0.02	0.51	0.08	2.03	1.14	28.96	744	1107
16	50	Solid	0.02	0.51	0.08	2.03	1.59	40.39	1267	1885

IMSA 39-6/40-6(Communication Cable)

Application

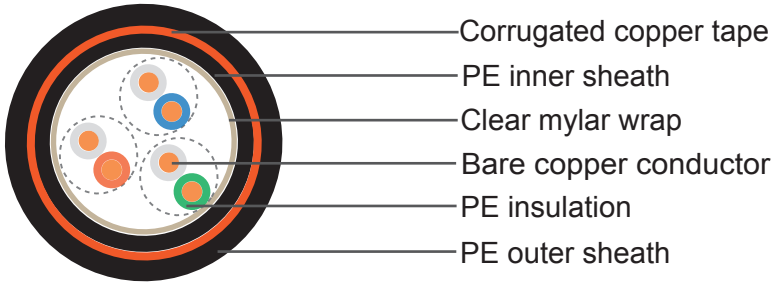
These cables are designed for use in underground conduit or as aerial cable supported by a messenger, or for direct earth burial or for installation in race way in buildings, not including trays, either as fire protective signaling cable or traffic communications and data acquisition cable suitable for power limited use, suitable for use in either wet or dry locations.

Cable Construction



IMSA 39-6

- **Conductor:** Solid bare copper per ASTM B-3(stranded copper is optional)
- **Insulation:** Polyethylene(PE)
- **Pairing:** Two insulated conductors twisted together
- **Binder tape:** Clear mylar wrap – 100% coverage
- **Inner sheath:** Polyethylene(PE)
- **Shield:** Corrugated copper tape- 15% minimum overlap
- **Outer sheath:** IMSA 39-6-Black Polyvinyl chloride (PVC)/
  IMSA 40-6-Black Polyethylene(PE)



IMSA 40-6

Color Code

Conductor No.	Insulation Color		Conductor No.	Insulation Color	
	A wire	B wire		A wire	B wire
1	White	Blue	14	Black	Brown
2	White	Orange	15	Black	Slate
3	White	Green	16	Yellow	Blue
4	White	Brown	17	Yellow	Orange
5	White	Slate	18	Yellow	Green
6	Red	Blue	19	Yellow	Brown
7	Red	Orange	20	Yellow	Slate
8	Red	Green	21	Violet	Blue
9	Red	Brown	22	Violet	Orange
10	Red	Slate	23	Violet	Green
11	Black	Blue	24	Violet	Brown
12	Black	Orange	25	Violet	Slate
13	Black	Green			

Binding Tape Color Code: cables containing more than 25 pairs are assembled insub-sectors/ groups. These are identified by spirally applied color-coded nonhygroscopicbinding tapes. The binding tapes use the same 25 pair color code.

Temperature Rating

75°C

Voltage Rating

300 V

Cable Parameter

AWG	No. of Pairs	Solid or Stranded	Insulation Thickness		Inner Sheath thickness		Outer Sheath thickness		Overall Diameter		Cable Weight	
			inches	mm	inches	mm	inches	mm	inches	mm	Lbs./Kft	Kg/Km
19	3	Solid	0.015	0.38	0.045	1.14	0.06	1.52	0.57	14.48	115	171
19	6	Solid	0.015	0.38	0.045	1.14	0.06	1.52	0.63	16.00	157	234
19	12	Solid	0.015	0.38	0.045	1.14	0.06	1.52	0.756	19.20	248	369
19	18	Solid	0.015	0.38	0.045	1.14	0.08	2.03	0.89	22.61	352	524
19	25	Solid	0.015	0.38	0.045	1.14	0.08	2.03	1.01	25.65	444	661
19	50	Solid	0.015	0.38	0.06	1.52	0.08	2.03	1.255	31.88	783	1165
16	3	Solid	0.02	0.51	0.045	1.14	0.06	1.52	0.66	16.76	161	240
16	6	Solid	0.02	0.51	0.045	1.14	0.06	1.52	0.78	19.81	247	368
16	12	Solid	0.02	0.51	0.06	1.52	0.08	2.03	0.97	24.64	421	626
16	18	Solid	0.02	0.51	0.06	1.52	0.08	2.03	1.22	30.99	607	903
16	25	Solid	0.02	0.51	0.075	1.91	0.11	2.79	1.31	33.27	772	1149
16	50	Solid	0.02	0.51	0.045	1.14	0.06	1.52	1.83	46.48	1493	2222

British Standard

International Municipal Signal Association

National Motorway Communications System Specifications

British Standard

Traffic Signal Cable to BS 6346
Loop Feeder Cable to BS6346
Loop Detector Cable to BS6500 and BS6195

Traffic Signal Cable to BS 6346

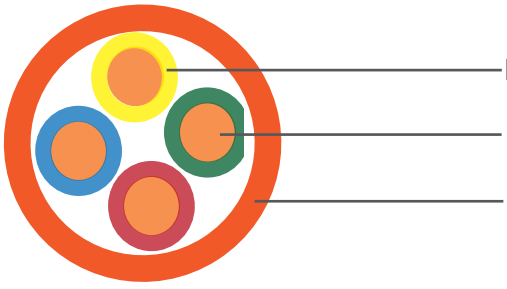
Application

Traffic signal cable is used for the interconnection of traffic signal equipment or other applications requiring high core configurations with mechanical robustness..

Standard and Approval

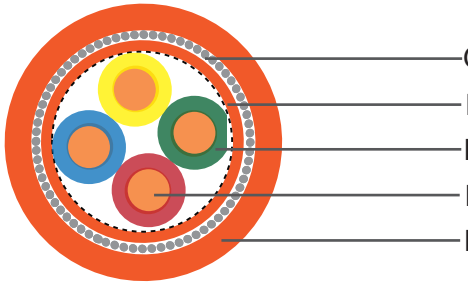
BS 6346, BS 6360, BS 7655

Cable Construction



Unarmor

- **Conductor:** Solid plain annealed copper, comply with BS 6360, Class 1
- **Insulation:** Polyvinyl chloride (PVC), TI1, comply with BS 7655
- **Bedding(for Armoured Cable Only):** Polyvinyl chloride (PVC) compound
- **Armor(for Armoured Cable Only):** Galvanized steel wire armor
- **Sheath:** Polyvinyl chloride (PVC), TM1, comply with BS7655
- **Sheath color:** Orange



Armor

Core Identification

4 core - Red, Blue, Yellow, Green

8 core - Brown, Yellow, Green, Red, White, Blue, Black, Orange

12 core - Brown, Yellow, Green, Red, White, Blue, Black, Orange, Red/White, Grey, Red/Blue, Violet

16 core - Brown, Yellow, Green, Red, White, Blue, Black, Orange, Red/White, Grey, Red/Blue, Violet, Brown/Red, Yellow/Red, Grey/Red, Black/Red

20 core - Brown, Yellow, Green, Red, White, Blue, Black, Orange, Red/White, Grey, Red/Blue, Violet, Brown/Red, Yellow/Red, Grey/Red, Black/Red, Violet/Red, Orange/Red, Green/Red, Blue/White

Technical Characteristics

- **Rated voltage:** 600/Kft volts
- **Conductor Resistance: at 20°C:** 18.1ohms/km(1.0mm^2)
  12.1 ohms/km(1.5mm^2)
- **Minimum bending radius:** 6 x Ø
- **Temperature range:** -15° C - +70° C
- **Short circuit temperature:** 160°C
- **Flame retardant:** BS EN 60332-1-2

Cable Parameter

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Bedding Thickness	Nominal diameter of armour wire	Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	mm	mm	Kg/km
Non armored cables								
8	1.0	1/1.13	0.63	-	-	1.4	12.6	218
12	1.0	1/1.13	0.63	-	-	1.5	13.5	305
8*	1.0	1/1.13	0.63	-	-	1.4	14.5	523
Armored cables								
4	1.0	1/1.13	0.63	0.8	0.9	1.4	13.3	325

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Bedding Thickness	Nominal diameter of armour wire	Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	mm	mm	Kg/km
8	1.0	1/1.13	0.63	0.8	0.9	1.4	15.6	413
12	1.0	1/1.13	0.63	0.8	1.25	1.5	17.9	567
16	1.0	1/1.13	0.63	0.8	1.25	1.5	19.9	774
20	1.0	1/1.13	0.63	0.8	1.25	1.6	22.0	905
4	1.5	1/1.38	0.63	0.8	0.9	1.4	12.5	363
8	1.5	1/1.38	0.63	0.8	0.9	1.4	15.8	534
12	1.5	1/1.38	0.63	0.8	1.25	1.5	18.5	704
16	1.5	1/1.38	0.63	0.8	1.25	1.6	20.0	836
20	1.5	1/1.38	0.63	0.8	1.25	1.6	21.5	1040
8*	1.0	1/1.13	0.63	0.8	0.9	1.4	16.3	533

* includes additional 6mm^2 integral earth conductor

Loop Feeder Cable to BS6346

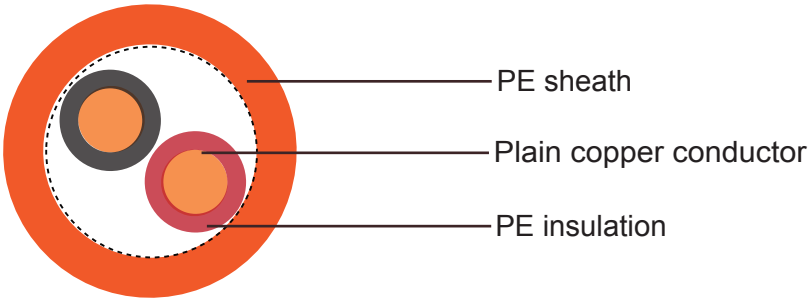
Application

Loop Feeder Cable is used to connect traffic lights to the central control management system. The cables come in armoured, for direct burial, or unarmoured for applications where additional mechanical protection has been afforded by other means such as ducting. The Loop feeder cables are supplied in a highly visible orange for easy location of buried services. These cables are also suitable for use in small power, lighting or control circuits.

Standard and Approval

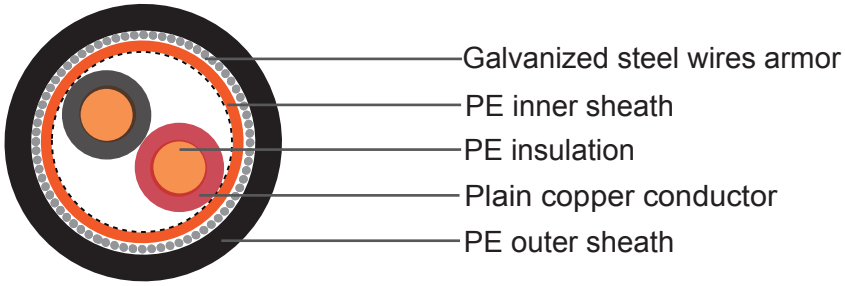
BS 6346, BS 6360, BS 6234

Cable Construction



Unarmor

- **Conductor:** Conductor: Solid plain annealed copper, comply with BS 6360, Class 1
- **Insulation:** Polythene (PE), comply with BS 6234, type 03
- **Pairing:** Two insulated conductors twisted together, four cores laid up as a quad
- **Bedding (for Armoured Cable Only):** Polythene (PE), comply with BS 6234, type 03
- **Armor (for Armoured Cable Only):** Galvanized steel wires
- **Sheath:** Polythene (PE), comply with BS 6234, type 03
- **Sheath Colour:** Orange



Armor

Core Identification

1 pair – red, black

2 pair –red, yellow, blue, black laid up in quad formation in order of rotation:

Technical Characteristics

- **Rated voltage:** 600/Kft volts
- **Conductor Resistance: at 20°C:** 12.1ohms/km(1.5mm^2)
  7.41 ohms/km(2.5mm^2)
- **Minimum bending radius:** 7.5 x Ø
- **Temperature range:** -20° C - +70° C
- **Loop inductance:** 630µH/km(1P) 720µH/km(2P)
- **Capacitance:**

unarmored		armored	
1.5 mm^2	2.5 mm^2	1.5 mm^2	2.5 mm^2
<75 pF/m	39 pF/m (1P)	<75 pF/m	64 pF/m (1P)
	52 pF/m (2P)		53.5 pF/m (2P)

Cable Parameter

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Bedding Thickness	Nominal diameter of armour wire	Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	mm	mm	Kg/km
Non armored cables								
2 (1pr)	1.5	1/1.38	0.64	-	-	1.3	9.0	80
4 (2pr)	1.5	1/1.38	0.64	-	-	1.3	9.1	123
2 (1pr)	2.5	1/1.78	0.74	-	-	1.4	9.3	110
4 (2pr)	2.5	1/1.78	0.74	-	-	1.4	10.7	180
Armored cables								
2 (1pr)	1.5	1/1.38	0.64	0.8	0.9	1.3	11.8	230
4 (2pr)	1.5	1/1.38	0.64	0.8	0.9	1.3	12.7	295
2 (1pr)	2.5	1/1.78	0.74	0.8	0.9	1.4	12.5	279
4 (2pr)	2.5	1/1.78	0.74	0.8	0.9	1.4	15.0	378

Loop Detector Cable to BS6500 and BS6195

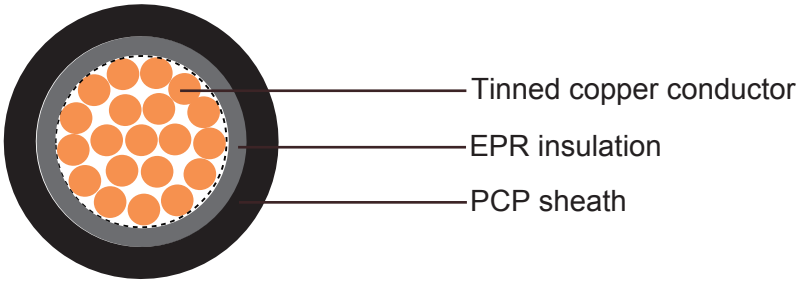
Application

Loop Detector Cable is used to measure and control traffic flow. Typical applications are for traffic control signals, safety cameras, variable speed control systems, flow monitoring and access control.

Standard and Approval

BS 6500, BS6195, BS 6360, BS 7655

Cable Construction



- **Conductor:** Stranded tinned copper, comply with BS 6360, Class 5
- **Insulation:** Black ethylene propylene rubber insulated (EPR), GP1, comply with BS 7655
- **Sheath:** Polychloroprene (PCP) sheath
- **Sheath Colour:** Black

Technical Characteristics

- **Rated voltage:** 450/750 volts
- **Conductor Resistance at 20°C:** 13.7ohms/km(1.5mm^2}
  8.21 ohms/km(2.5mm^2)

- **Minimum bending radius:** 6 x Ø
- **Temperature range:** -30° C - +85° C

Cable Parameter

Number of Cores	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Sheath Thickness	Nominal O/D	Approx Cable Weight
	mm^2	NO./mm	mm	mm	mm	Kg/km
1	1.5	30/0.25	0.8	1.4	7.2	53.8
1	2.5	50/0.25	2.1	-	6.4	62.8

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