



Cables that  
are built for  
every task,  
for every  
environment,  
anywhere in  
the world.

**COMPANY  
PROFILE**

# ABOUT US

Special Cables was incorporated in 1983 and began its business operations in 1985. The company was founded by Mr. S. K. Khanna with a single mission—to develop and manufacture specialised cables of the highest quality, ensuring the utmost safety and reliability. Since then, these two attributes have remained the cornerstone of every product, considering the critical nature of the applications of our cables.

Starting with the manufacturing of special-purpose cables, including screened, co-axial, and telephone cables, the company has developed a vast range within a short span. We present an all-encompassing range—from power cables to control cables, instrumentation cables to solar cables, fire alarm cables to mining cables, and many more.

We are proud that industry leaders from several sectors are among our regular customers and we continue to build new relationships every year. With over 35 years of experience in the industry, Special Cables has gained momentum and has been growing at a substantial pace over the last few years.

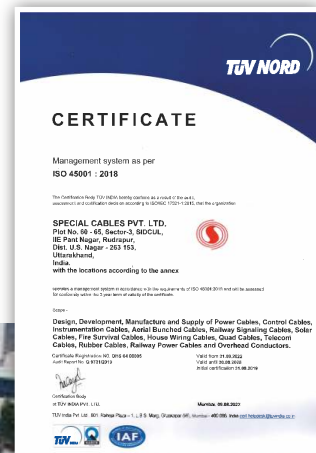
Our unwavering commitment to quality has won us the trust and confidence of thousands of customers across the world. Over the last few years, we have made strategic efforts to expand our range of cables, venture into new markets and enhance our manufacturing capacity by integrating world-class technology. These efforts have been positively received by our large customer base across the world and we are confident of achieving new milestones in the coming years!





## Approvals and certifications

- ⦿ ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 by TUV Nord.
- ⦿ Approvals from various national and international organisations and consultants.
- ⦿ Type tests carried out on different types of cables at CPRI, ERDA, NABL and various other government laboratories.
- ⦿ Designed and manufactured as per IEC, British Standards, Australian Standards, UL, VDE, and SABS.





# CABLES THAT ARE BUILT TO LAST

Proudly serving the industry for over three decades as one of the most reputed and reliable cable manufacturers.



## Best-in-class infrastructure

Our Rudrapur plant is one of the most sophisticated cable manufacturing plants in India and is spread over 20,000 sq. m. The plant is equipped with machinery for wire drawing, stranding, bunching, taping, extruding, laying, twisting, armouring, braiding and rewinding. This plant is unique and certified with ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 by TUV Nord. Manufactured using fully automated machinery from high-quality machine manufacturers, our cables ensure the highest levels of quality, reliability and safety—factors that are of utmost importance in applications for which we supply our cables.

Our large manufacturing capacity also enables us to provide time-bound deliveries, consistently. Furthermore, we are expanding our manufacturing base in Rajasthan with state-of-the-art facilities that incorporate the latest manufacturing technologies.

## Quality for safety and longevity

The use of high-quality raw materials and advanced machinery ensures consistent, uniform quality and greater accuracy. Stringent process controls are implemented at every stage, and a well laid-out Quality Assurance system guarantees thorough testing from the raw material to the finished goods stage, ensuring the highest possible quality of the final product. The plant is also equipped with a complete in-house R&D laboratory and NABL/ISO 17025 accredited testing facilities with computerised equipment for routine tests, type tests and acceptance tests.





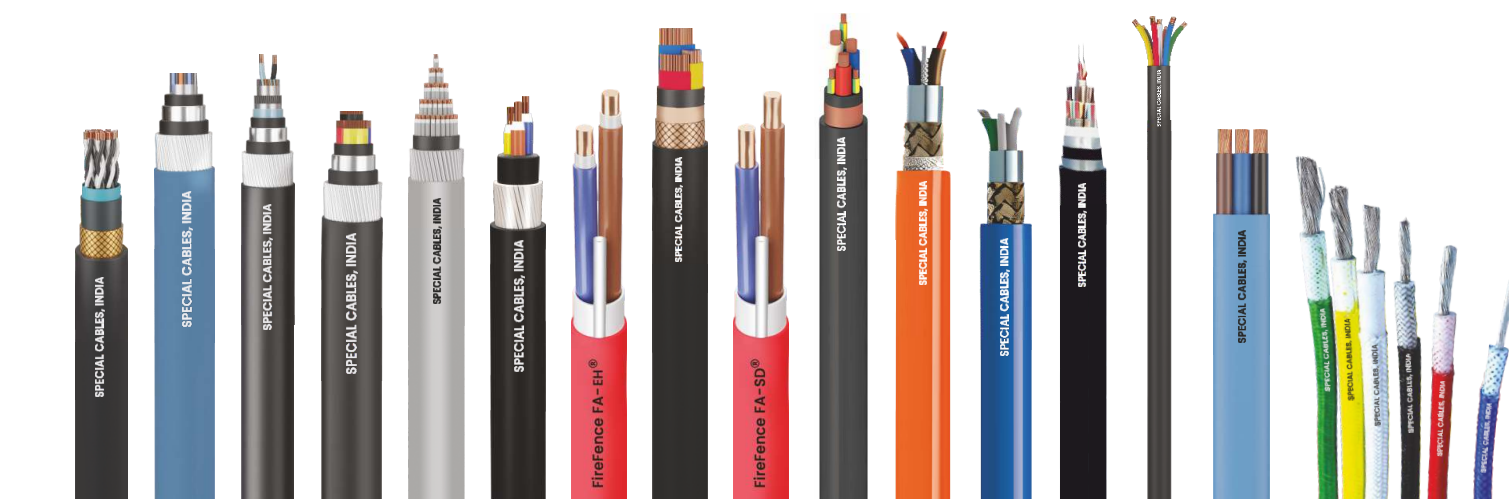


## Beyond boundaries

Almost one-third of our production is regularly exported to various countries in Europe, the Middle East, Southeast Asia, South America, and Australia. In these countries, our cables are trusted by a wide range of industrial customers such as process plants, oil & gas, renewable energy, power, infrastructure, and manufacturing, for use in the most critical applications. We have an excellent track record of repeat orders from these customers. This is not only a reaffirmation of our quality but also of our reliable customer support even in remote corners of the world.

## Innovation

Innovation has been the driving force at Special Cables. We have been constantly developing specialised cables for the most demanding applications as well as for newly evolving fields, such as renewable energy, nuclear plants, data centres, etc. There is also an emphasis on process and system innovation to improve quality, efficiency, and productivity, ensuring higher value for our customers. Our spirit of innovation always keeps us at the forefront of technology and empowers us to meet ever-changing customer requirements.





# POWER CABLES

## Application:

Power transmission and distribution systems (underground & overhead) for industrial, commercial, institutional, and residential purposes. These cables are used in indoor or outdoor applications in a wide variety of industries, including thermal and nuclear power stations, renewable energy, steel, cement, defence, railways, metros, and various manufacturing industries.

## Types & Sizes:

Single-core ranging from 4 sq.mm up to 1000 sq.mm and Multi-core ranging from 4 sq.mm to 500 sq.mm with voltage grade up to 3.3 kV

## Conductor:

Aluminium – Solid, Stranded (Sector/Circular) or Copper – Solid, Stranded (Sector/Circular) or Flexible

## Insulation:

PVC, PE, XLPE, HEPR, LSZH, PP, EPR

## Armour:

Galvanized Steel or Aluminium Round Wire / Flat Strip / Tape or GI / Tinned Copper Braid

## Inner & Outer Sheath:

PVC, HDPE, LSZH, Rubber

## Specifications:

Generally conforming to IS 1554 (Pt 1 & 2), IS 7098 (Pt 1 & 2), HD 603S1, IEC 60502-1, BS 5467, BS 6346, AS/NZS 5000.1 and designed to meet the customer's requirements



## Note

- ⦿ The technical data provided is for reference only and may be revised without notice. Other details can be provided on request.
- ⦿ The current ratings are given for Air Temperature @ 40°C Ground / Duct Temperature @ 30°C, Thermal Resistivity of soil 1.5 km/W, depth of laying 900 mm and may vary if the site conditions are different.

## Technical Data for XLPE Power Cables

### Aluminium Conductor, XLPE Insulated, PVC Sheathed, Unarmoured (A2XY)/ Armoured (A2XWαY, A2XFαY) Cable-650/1100 Volts as per IS: 7098 (Pt-I)

Cross sectional area	Unarmoured		Armoured		Max. D.C conductor resistance at 20°C	Short circuit rating for 1 Sec duration	A.C current rating			Unarmoured		Armoured	
	Thickness of XLPE insulation	Overall dia.	Thickness of XLPE insulation	Overall dia.			In air	Direct in ground	In duct	Reactance of cable at 50 Hz	Capacitance of cable	Reactance of cable at 50 Hz	Capacitance of cable
Nom.	Nom.	Approx.	Nom.	Approx.			For information only			Approx.		Approx.	
sq.mm	mm	mm	mm	mm	Ω/km	kA	Amps.			Ω/km	µf/km	Ω/km	µf/km
SINGLE CORE													
4	0.7	7.0	1.0	10	7.41	0.376	38	43	36	0.136	0.29	0.152	0.22
6	0.7	8.0	1.0	11	4.61	0.564	50	55	47	0.128	0.34	0.144	0.26
10	0.7	9.0	1.0	12	3.08	0.940	64	69	58	0.118	0.42	0.133	0.31
16	0.7	10.0	1.0	12.5	1.91	1.50	84	89	75	0.108	0.50	0.122	0.40
25	0.9	11.5	1.2	14	1.20	2.40	112	115	96	0.102	0.52	0.116	0.40
35	0.9	12.5	1.2	15	0.868	3.30	137	137	115	0.097	0.60	0.110	0.47
50	1.0	14.5	1.3	17	0.641	4.70	165	161	135	0.092	0.63	0.103	0.50
70	1.1	16.0	1.4	18.5	0.443	6.60	209	198	165	0.088	0.68	0.099	0.55
95	1.1	18.0	1.4	21	0.320	9.00	264	243	199	0.085	0.79	0.097	0.64
120	1.2	19.5	1.5	22.5	0.253	11.30	308	276	226	0.082	0.79	0.093	0.67
150	1.4	21.5	1.7	24.5	0.206	14.20	350	308	252	0.082	0.79	0.091	0.67
185	1.6	24.0	1.9	27	0.164	17.50	406	349	285	0.082	0.79	0.090	0.67
240	1.7	26.0	2.0	29	0.125	22.60	480	404	329	0.079	0.84	0.086	0.72
300	1.8	29.0	2.1	32	0.100	28.30	551	454	369	0.078	0.86	0.085	0.75
400	2.0	32.5	2.4	36.5	0.0778	37.70	647	518	421	0.077	0.88	0.085	0.75
500	2.2	36.0	2.6	39.5	0.0605	47.00	751	588	476	0.076	0.90	0.083	0.77
630	2.4	39.5	2.8	43.5	0.0469	59.22	868	663	536	0.075	0.94	0.082	0.81
800	2.6	44.5	3.1	49	0.0367	75.20	992	740	596	0.075	0.97	0.081	0.88
1000	2.8	49.5	3.3	55	0.0291	94.00	1117	812	652	0.068	1.01	0.081	0.88



**Aluminium Conductor, XLPE Insulated, PVC Sheathed, Unarmoured (A2XY)/  
Armoured (A2XWY, A2XFY) Cable-650/1100 Volts as per IS: 7098 (Pt-I)**

Cross sectional area	Thickness of XLPE insulation	Unarmoured	Armoured	Max. D.C conductor resistance at 20°C	Short circuit rating for 1 Sec duration	A.C current rating			Reactance of cable at 50 Hz	Capacitance of cable
		Overall dia.	Overall dia.			In air	Direct in ground	In duct		
Nom.	Nom.	Approx.	Approx.			For information only			Approx.	Approx.
sq.mm	mm	mm	mm	Ω/km	kA	Amps.			Ω/km	µf/km
THREE CORE										
4	0.7	13.5	15.5	7.41	0.376	32	35	30	0.098	0.11
6	0.7	14.5	17.0	4.61	0.564	42	46	38	0.090	0.13
10	0.7	17.0	19.0	3.08	0.940	54	57	48	0.084	0.16
16	0.7	17.5	18.0	1.91	1.50	69	74	61	0.080	0.18
25	0.9	21.0	21.5	1.20	2.40	93	95	79	0.080	0.20
35	0.9	23.0	24.0	0.868	3.30	114	114	94	0.080	0.23
50	1.0	26.5	27.0	0.641	4.70	138	134	112	0.078	0.24
70	1.1	30.0	30.5	0.443	6.60	175	164	137	0.077	0.26
95	1.1	33.5	34.5	0.320	9.00	216	197	164	0.074	0.29
120	1.2	37.0	37.5	0.253	11.30	249	223	187	0.072	0.29
150	1.4	41.0	41.5	0.206	14.20	284	249	209	0.072	0.29
185	1.6	46.0	46.5	0.164	17.50	329	282	238	0.072	0.29
240	1.7	50.5	51.5	0.125	22.60	392	327	276	0.072	0.31
300	1.8	56.0	56.5	0.100	28.30	452	369	213	0.071	0.33
400	2.0	63.5	64.0	0.0778	37.70	526	420	356	0.070	0.33
500	2.2	65.0	65.5	0.0605	47.00	612	478	412	0.070	0.34
THREE AND HALF CORE										
25/16	0.9/0.7	21.5	22.5	1.20	2.40	93	95	79	0.080	0.20
35/16	0.9/0.7	23.5	24.0	0.868	3.30	114	114	94	0.080	0.23
50/25	1.0/0.9	27.0	27.5	0.641	4.70	138	134	112	0.078	0.24
70/35	1.1/0.9	31.0	31.5	0.443	6.60	175	164	137	0.077	0.26
95/50	1.1/1.0	35.0	35.5	0.320	9.00	216	197	164	0.074	0.29
120/70	1.2/1.1	38.5	39.5	0.253	11.30	249	223	187	0.072	0.29
150/70	1.4/1.1	42.0	42.5	0.206	14.20	284	249	209	0.072	0.29
185/95	1.6/1.1	47.0	47.5	0.164	17.50	329	282	238	0.072	0.29
240/120	1.7/1.2	52.0	52.5	0.125	22.60	392	327	276	0.072	0.31
300/150	1.8/1.4	58.0	58.5	0.100	28.30	452	369	312	0.071	0.33
400/185	2.0/1.6	65.5	66.0	0.0778	37.70	526	420	356	0.070	0.33
500/240	2.2/1.7	72.0	72.5	0.0605	47.00	612	478	412	0.070	0.34
FOUR CORE										
4	0.7	15.0	16.5	7.41	0.376	32	35	30	0.098	0.11
6	0.7	16.5	18.0	4.61	0.564	42	46	38	0.090	0.13
10	0.7	18.5	20.0	3.08	0.940	54	57	48	0.084	0.16
16	0.7	19.0	20.5	1.91	1.50	69	74	61	0.080	0.18
25	0.9	23.0	23.5	1.20	2.40	93	95	79	0.080	0.20
35	0.9	25.5	26.0	0.868	3.30	114	114	94	0.080	0.23
50	1.0	29.0	30.0	0.641	4.70	138	134	112	0.078	0.24
70	1.1	33.0	33.5	0.443	6.60	175	164	137	0.077	0.26
95	1.1	37.0	37.5	0.320	9.00	216	197	164	0.074	0.29
120	1.2	41.0	41.5	0.253	11.30	249	223	187	0.072	0.29
150	1.4	45.5	46.0	0.206	14.20	284	249	209	0.072	0.29
185	1.6	51.0	51.5	0.164	17.50	329	282	238	0.072	0.29
240	1.7	56.5	57.0	0.125	22.60	392	327	276	0.072	0.31
300	1.8	62.5	62.5	0.100	28.30	452	369	312	0.071	0.33
400	2.0	70.5	70.5	0.0778	37.70	526	420	356	0.070	0.33



# CONTROL CABLES



## Application:

Mainly used for interconnections for control circuits, communication systems, electrical panels, machine tools as well as lighting at lower loads.

## Types & Sizes:

Typically up to 61 cores from 1.0 sq.mm to 2.5 sq.mm with voltage grade up to 1.1 kV

## Conductor:

Copper – Solid, Stranded (Circular) or Flexible – Bare or Tinned

## Insulation:

PVC, PE, XLPE, LSZH, EPR

## Screening:

Aluminium Mylar Tape with Copper Drain Wire, Copper Tape / Tinned Copper Braid

## Armour:

Galvanized Steel or Aluminium Round Wire / Flat Strip / Tape or GI / Tinned Copper Braid

## Inner & Outer Sheath:

PVC, PE, Thermoplastic or Thermoset LSZH, Rubber, EVA

## Specifications:

Generally conforming to IS: 694, IS: 1554 (Pt-I), IS: 7098 (Pt-I), IEC: 60502-1, BS: 5467, BS: 6346, AS/NZS 5000.1 and designed to meet the customer's requirements

## Note

- ⦿ The technical data provided is for stranded (Class 2) conductor and PVC. Details given are for reference only and may be revised without notice. Other details can be provided on request.
- ⦿ Max. Conductor D.C. Resistance at 20°C - Conductor Size: 1.5 sq.mm - 121 Ω/km (Bare), 12.2 Ω/km (Tinned) and 2.5 sq.mm - 7.41 Ω/km (Bare), 7.56 Ω/km (Tinned)
- ⦿ The current ratings are given for Air Temperature @ 40°C, Ground/Duct Temperature @ 30°C, Thermal Resistivity of soil 1.5 km/W, Depth of laying 900 mm and may vary if the site conditions are different.

## Technical Data for PVC Control Cables

### 1.1 kV Control Cables with PVC Insulation & Sheathing as per IS: 1554 (Pt-1)

No. of cores & cross sectional area	Thickness of PVC insulation	Thickness of inner sheath (Extruded)	Unarmoured		Flat strip armoured		Round wire armoured		Current rating		Reactance of cable at 50 Hz	Capacitance of cable
			Thickness of outer sheath	Outer dia.	Thickness of outer sheath	Outer dia.	Thickness of outer sheath	Outer dia.	Direct in ground	In air/ duct		
No. X	Nom.	Min.	Nom.	Approx.	Min.	Approx.	Min.	Approx.			Approx.	Approx.
sq.mm	mm	mm	mm	mm	mm	mm	mm	mm	Amps.		Ω/km	µf/km
2 x 1.5	0.8	0.3	1.8	11.5	—	—	1.24	13.0	23	20	0.112	0.20
3 x 1.5	0.8	0.3	1.8	12.0	—	—	1.24	13.5	21	17	0.112	0.20
4 x 1.5	0.8	0.3	1.8	12.5	—	—	1.24	14.5	21	17	0.112	0.20
5 x 1.5	0.8	0.3	1.8	13.5	—	—	1.24	15.5	21	17	0.112	0.20
6 x 1.5	0.8	0.3	1.8	14.6	—	—	1.24	16.5	15	13	0.112	0.20
7 x 1.5	0.8	0.3	1.8	14.5	—	—	1.24	16.5	14	13	0.112	0.20
10 x 1.5	0.8	0.3	1.8	18.0	—	—	1.40	20.0	13	11	0.112	0.20
12 x 1.5	0.8	0.3	1.8	18.5	1.24	19.5	1.40	21.0	12	10	0.112	0.20
14 x 1.5	0.8	0.3	1.8	19.0	1.40	20.5	1.40	22.0	11	10	0.112	0.20
16 x 1.5	0.8	0.3	1.8	20.0	1.40	21.0	1.40	22.5	11	9	0.112	0.20
19 x 1.5	0.8	0.3	2.0	21.5	1.40	22.0	1.40	23.5	10	9	0.112	0.20
24 x 1.5	0.8	0.3	2.0	24.5	1.40	25.5	1.40	27.0	9	8	0.112	0.20
27 x 1.5	0.8	0.3	2.0	25.0	1.40	26.0	1.40	27.5	9	8	0.112	0.20
30 x 1.5	0.8	0.3	2.0	26.0	1.40	26.5	1.40	28.0	9	7	0.112	0.20
37 x 1.5	0.8	0.3	2.0	28.0	1.40	28.5	1.40	30.0	8	7	0.112	0.20
61 x 1.5	0.8	0.4	2.2	35.0	1.56	35.0	1.56	38.0	6	6	0.112	0.20
2 x 2.5	0.9	0.3	1.8	12.5	—	—	1.24	14.5	32	27	0.107	0.22
3 x 2.5	0.9	0.3	1.8	13.0	—	—	1.24	15.0	27	24	0.107	0.22
4 x 2.5	0.9	0.3	1.8	14.0	—	—	1.24	16.0	27	24	0.107	0.22
5 x 2.5	0.9	0.3	1.8	15.0	—	—	1.24	17.0	23	19	0.107	0.22
6 x 2.5	0.9	0.3	1.8	16.5	—	—	1.24	18.5	21	18	0.107	0.22
7 x 2.5	0.9	0.3	1.8	16.5	—	—	1.24	18.5	20	17	0.107	0.22
10 x 2.5	0.9	0.3	1.8	20.5	1.40	21.5	1.40	23.0	18	15	0.107	0.22
12 x 2.5	0.9	0.3	2.0	21.5	1.40	22.0	1.40	23.5	17	14	0.107	0.22
14 x 2.5	0.9	0.3	2.0	22.5	1.40	23.0	1.40	24.5	16	13	0.107	0.22
16 x 2.5	0.9	0.3	2.0	23.5	1.40	24.0	1.40	25.5	15	13	0.107	0.22
19 x 2.5	0.9	0.3	2.0	24.5	1.40	25.0	1.40	26.5	14	12	0.107	0.22
24 x 2.5	0.9	0.3	2.0	28.5	1.40	29.0	1.56	31.0	13	11	0.107	0.22
27 x 2.5	0.9	0.3	2.0	29.0	1.40	29.5	1.56	31.5	12	10	0.107	0.22
30 x 2.5	0.9	0.3	2.0	30.0	1.56	30.5	1.56	32.5	12	10	0.107	0.22
37 x 2.5	0.9	0.4	2.2	32.5	1.56	33.5	1.56	36.0	11	9	0.107	0.22
61 x 2.5	0.9	0.4	2.2	41.0	1.56	41.0	1.72	44.0	8	8	0.107	0.22





# INSTRUMENTATION & SIGNAL CABLES

## Application:

These cables are designed to transmit signal without interference and find wide application in measurement, control and supervision in process instruments, communication, data systems, etc.

## Types & Sizes:

Pair/triad formation (up to 25 pairs, triads) from 0.50 sq.mm to 2.50 sq.mm for voltage grade up to 1.1 kV

## Conductor:

Copper - Solid, Stranded (Circular) or Flexible - Bare or Tinned

## Insulation:

PVC, PE, XLPE, Thermoplastic or Thermoset LSZH

## Screening:

Individual & Overall or Overall screening  
- Polyester Tape, Aluminium Mylar Tape, with Copper Drain Wire, Copper Tape or Tinned Copper Braiding

## Armour:

Galvanized Steel Round Wire / Flat Strip / Tape or GI / Tinned Copper Braid

## Inner & Outer Sheath:

PVC, PE, Thermoplastic or Thermoset LSZH, Rubber, EVA

## Specifications:

Generally conforming to IS:1554 (Pt-1), BS: 5308 (Pt-1 & 2), IEC: 60189 (Pt 1 & 2), IEC: 60227, VDE: 0815 & 0816, BS EN: 50288-7

## Note

- ⦿ The technical data provided is for Solid (Class 1) conductor and PVC-GP (General purpose). Details given are for reference only and may be revised without notice.
- ⦿ Other details can be provided on request.



## Technical Data for XLPE/PE Instrumentation Cables

### 500 Volts, XLPE/PE Insulated, Instrumentation Cables Conforming to EN: 50288-7 Individual Pair Screened & Overall Screened

		1.0 Sq.mm							
No. of pair		2		4		8		12	
Cable type		Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.
Conductor diameter	(mm)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Insulation thickness	(min.)(mm)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Thickness of sheath / bedding	(Nom.)(mm)	—	1.0	—	1.1	—	1.3	—	1.4
Thickness of outer sheath	(Nom.)(mm)	1.0	1.4	1.0	1.5	1.3	1.6	1.4	1.7
Overall diameter	(For reference only)(mm)	10.5	15.0	12.0	17.0	16.5	22.0	19.5	25.5

		1.5 Sq.mm							
No. of pair		2		4		8		12	
Cable type		Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.
Conductor diameter	(mm)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Insulation thickness	(min.)(mm)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Thickness of sheath / bedding	(Nom.)(mm)	—	1.1	—	1.1	—	1.3	—	1.5
Thickness of outer sheath	(Nom.)(mm)	1.1	1.5	1.1	1.5	1.3	1.7	1.5	1.8
Overall diameter	(For reference only)(mm)	11.5	16.0	13.5	18.5	18.5	24.0	22.0	28.0

### 500 Volts, XLPE/PE Insulated, Instrumentation Cables Conforming to EN: 50288-7 Overall Screened

		1.0 Sq.mm							
No. of pair		2		4		8		12	
Cable Type		Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.
Conductor diameter	(mm)	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Insulation thickness	(min.)(mm)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Thickness of sheath / bedding	(Nom.)(mm)	—	1.0	—	1.0	—	1.2	—	1.3
Thickness of outer sheath	(Nom.)(mm)	1.0	1.4	1.0	1.4	1.2	1.5	1.3	1.6
Overall diameter	(For reference only)(mm)	9.0	13.5	10.5	15.0	14.0	19.0	16.5	22.5

		1.5 Sq.mm							
No. of pair		2		4		8		12	
Cable Type		Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.	Unarmd.	Armd.
Conductor diameter	(mm)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Insulation thickness	(min.)(mm)	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Thickness of sheath / bedding	(Nom.)(mm)	—	1.0	—	1.1	1.1	1.2	—	1.3
Thickness of outer sheath	(Nom.)(mm)	1.0	1.4	1.1	1.5	1.5	1.6	1.3	1.7
Overall diameter	(For reference only)(mm)	10.0	14.5	11.5	16.5	16.5	21.5	18.5	24.5

## General Electrical Characteristics

Particular	Units	0.5 Sq.mm	1.0 Sq.mm	1.5 Sq.mm
Maximum D.C. resistance of bare copper conductor at 20 Deg C	Ω/km	36.5	18.1	12.1
Maximum D.C. resistance of tinned copper conductor at 20 Deg C	Ω/km	37.2	18.2	12.2
Min. insulation resistance (PVC insulated cables)	MΩ/km	10	10	10
Maximum mutual capacitance (PVC insulated cables)	nF/km	250	250	250
XLPE/PE insulated cables	nF/km	1000	1000	1000
L/R ratio maximum	μH/ohm	25	25	40



# THERMOCOUPLE EXTENSION/ COMPENSATING CABLES

## Application:

Designed for interconnection between Thermocouple probes and reference units and used for process temperature measurement and connected to pyrometers for indication and control.

## Types & Sizes:

KX, JX, TX, EX, SX/RX typically 16, 18 & 20 AWG

## Conductor:

Chromal Alumel/Iron/Copper Nickel Alloy / Copper Constantan Alloy - Solid/Stranded

## Insulation:

PVC, PE, XLPE, LSZH, EPR

## Screening:

Individual & Overall or Overall screening - Polyester Tape, Aluminium Mylar Tape with Copper Drain Wire, Copper Tape, Copper Braiding

## Armour:

Galvanized Steel Round Wire / Flat Strip/ or GI / Tinned Copper Braid

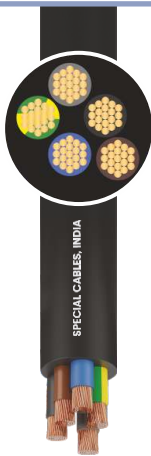
## Inner & Outer Sheath:

PVC, PE, Thermoplastic or Thermoset LSZH, Rubber, EVA



## Specifications:

Generally confirming to ANSI: MC 96.1, IS: 8784, BS: 4937, IEC: 584, DIN, JIS



# RUBBER & SILICON CABLES

## Types & Sizes:

Single & Multi-core from 0.50 sq.mm to 630 sq.mm for voltage grade up to 3.3 kV (Unscreened)

## Conductor:

Copper - Solid, Stranded (Circular) or Flexible - Bare or Tinned

## Separator:

Polyester Tape, Fibre Glass Tape or Rubberised Cotton Proof Tape, or any other tape of suitable material is applied over the conductor

## Insulation:

Type IE1, IE2, IE3, IE4, IE5. For identification of cores, coloured insulation / numbered printing / numbered polyester tape / colour proofed RC tape is used

## Armour:

Galvanized Steel Wire / Flat Strip or GI/SS/ Tinned Copper Braid

## Inner & Outer Sheath:

Type SE1, SE2, SE3, SE4, SE5, SE6

## Specifications:

IS: 9968 (Pt-1), BS: 6500, BS: 7919, IEC: 60502-1

## Application:

Used in a variety of industries, ranging from nuclear power stations, defence, windmills, mining, marine & offshore applications, railways, cranes and other heavy-duty equipment.



# MINING CABLES

## Application:

Used across various mining operations in tunnelling, drilling, loading machines, pumps, etc. Subject to extremely harsh working conditions with extensive vibrations, impact and tension.

## Types & Sizes:

Single and Multi-cores starting from 1.5 sq.mm up to 630 sq.mm for voltage grade up to 3.3 kV

## Conductor:

Aluminium - Stranded (Sector/Circular) or Copper - Stranded (Sector/Circular) or Flexible

## Insulation:

PVC, XLPE, HEPR, LSZH, EPR

## Armour:

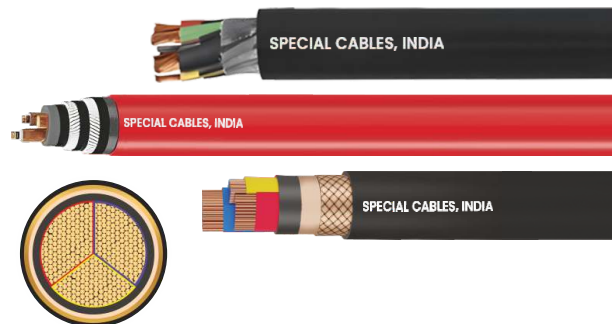
Single/Double Wire/Strip Armour along with Tinned Copper to meet conductivity requirements of at least 50% of phase conductor. Tinned Copper Braiding can also be provided.

## Inner & Outer Sheath:

PVC, XLPE, LSZH, HDPE, Rubber-HR/HOFR

## Specifications:

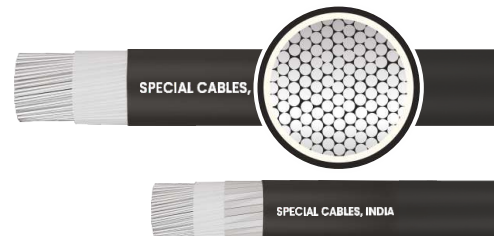
Generally confirming to IS: 1554 (Pt-1 & 2), IS: 7098 (Pt-1 & 2), IS -14994, IEC: 60502-1, BS: 5467, BS: 6346







# SOLAR CABLES



## Application:

Solar cables are used for inter-connections between solar panels and other electrical components of the D.C. system.

## Types & Sizes:

Typically Single core cables up to 630 sq.mm for voltage grade up to 3.3 kV

## Conductor:

Aluminium – Stranded (Circular) or Copper – Stranded or Flexible (Circular, Compacted)

## Insulation:

XLPE, XLPO, HEPR, LSZH

## Armour:

Aluminium Wire (Optional)

## Separators & Additional Layers:

Water swellable tapes, Polyamide layer (Optional)

## Outer Sheath:

PVC, HDPE, FR PE, LSZH

## Specifications:

Generally confirming to EN 50618, IS 7098 (Pt 1 & 2), HD 603S1, IEC 60502-1, AS/NZS 5000-1

## Key Features:

- (a) UV resistant, water resistant.
- (b) Weather and ozone resistant.
- (c) Long life expectancy under tough conditions.

## Note

⊕ The technical data given is for reference only and may be revised without notice. The current ratings are given for Air Temperature @ 40°C, Ground/Duct Temperature @ 30°C, Thermal Resistivity of soil 1.5 km/W, Depth of laying 900 mm and may vary if the site conditions are different. The de-rating factors can be provided on request.

## Technical Data

### Single Core, Aluminium Conductor, XLPE Insulated, HDPE / PVC / LSZH Sheathed, Unarmoured Cable as per IS: 7098 (Pt-1 & 2)

Cross sectional area	1.1 kV		3.3 kV		Max. D.C conductor resistance at 20°C	Short circuit rating for 1 sec. duration	A.C Current Rating						1.1 kV		3.3 kV	
	Thickness of XLPE insulation	Overall dia.	Thickness of XLPE insulation	Overall dia.			1.1 kV			3.3 kV			Rea-ctance of cable at 50 Hz	Capac- itance of cable	Rea-ctance of cable at 50 Hz	Capac- itance of cable
							In air	Direct in ground	In duct	In air	Direct in ground	In duct				
	Nom.	Approx.	Nom.	Approx.			For reference only			For reference only			Approx.	Approx.	Approx.	Approx.
sq.mm	mm	mm	mm	mm	Ω/km	kA	Amps.			Amps.			Ω/km	µf/km	Ω/km	µf/km
10	0.7	9.0	—	—	3.08	0.940	64	69	58	—	—	—	0.118	0.42	—	—
16	0.7	10.0	—	—	1.91	1.50	84	89	75	—	—	—	0.108	0.50	—	—
25	0.9	11.5	2.2	14.0	1.20	2.40	112	115	96	110	100	91	0.102	0.52	0.117	0.23
35	0.9	12.5	2.2	15.5	0.868	3.30	137	137	115	135	120	110	0.097	0.60	0.111	0.27
50	1.0	14.5	2.2	17.0	0.641	4.70	165	161	135	165	140	125	0.092	0.63	0.1040	0.300
70	1.1	16.0	2.2	18.5	0.443	6.60	209	198	165	210	175	155	0.088	0.68	0.0988	0.34
95	1.1	18.0	2.2	20.0	0.320	9.00	264	243	199	255	205	185	0.085	0.79	0.0957	0.39
120	1.2	19.5	2.2	21.5	0.253	11.30	308	276	226	295	235	210	0.082	0.79	0.0920	0.43
150	1.4	21.5	2.2	23.5	0.206	14.20	350	308	252	335	260	230	0.082	0.79	0.0887	0.49
185	1.6	24.0	2.2	25.0	0.164	17.50	406	349	285	390	295	260	0.082	0.79	0.0871	0.52
240	1.7	26.0	2.2	27.0	0.125	22.60	480	404	329	460	340	300	0.079	0.84	0.0840	0.59
300	1.8	29.0	2.2	29.5	0.100	28.30	551	454	369	530	385	335	0.078	0.86	0.0815	0.67
400	2	32.5	2.2	33.0	0.0778	37.70	647	518	421	620	440	380	0.077	0.88	0.0797	0.76
500	2.2	36.0	2.4	36.5	0.0605	47.00	751	588	476	730	495	430	0.076	0.90	0.0788	0.77
630	2.4	39.5	2.6	39.5	0.0469	59.22	868	663	536	840	560	485	0.075	0.94	0.0744	0.81

### Single Core, Aluminium Conductor, XLPE Insulated, LSZH / PVC Sheathed, Armoured Cable 1100 V (AC) / 1500 V (DC) as per IS: 7098 (Pt-I), 1900 V (AC) / 3300 V (DC) as per IS: 7098 (Pt-2)

Cross sectional area	1.1 kV		3.3 kV		Max. D.C conductor resistance at 20°C	Short circuit rating @ 250 deg for 1 Sec duration	A.C Current Rating						1.1 kV		3.3 kV	
	Thickness of XLPE insulation	Overall dia.	Thickness of XLPE insulation	Overall dia.			1.1 kV			3.3 kV			Rea-ctance of cable at 50 Hz	Capac- itance of cable	Rea-ctance of cable at 50 Hz	Capac- itance of cable
							In air	Direct in ground	In duct	In air	Direct in ground	In duct				
	Nom.	Approx.	Nom.	Approx.			For reference only			For reference only			Approx.	Approx.	Approx.	Approx.
sq.mm	mm	mm	mm	mm	Ω/km	kA	Amps.			Amps.			Ω/km	µf/km	Ω/km	µf/km
10	1	11.5	—	—	3.08	0.940	64	69	58	—	—	—	0.133	0.31	—	—
16	1	12.5	—	—	1.91	1.50	84	89	75	—	—	—	0.122	0.40	—	—
25	1.2	14.0	2.5	16.5	1.20	2.40	112	115	96	110	100	91	0.116	0.40	0.133	0.25
35	1.2	15.0	2.5	17.5	0.868	3.30	137	137	115	135	120	110	0.110	0.47	0.126	0.29
50	1.3	16.5	2.5	19.0	0.641	4.70	165	161	135	165	140	125	0.103	0.50	0.122	0.33
70	1.4	18.0	2.5	19.5	0.443	6.60	209	198	165	210	175	155	0.099	0.55	0.116	0.38
95	1.4	19.0	2.5	21.0	0.320	9.00	264	243	199	255	205	185	0.097	0.64	0.111	0.44
120	1.5	20.0	2.5	22.0	0.253	11.30	308	276	226	295	235	210	0.093	0.67	0.106	0.49
150	1.7	22.5	2.5	24.0	0.206	14.20	350	308	252	335	260	230	0.091	0.67	0.103	0.53
185	1.9	24.5	2.5	26.0	0.164	17.50	406	349	285	390	295	260	0.090	0.67	0.100	0.58
240	2	27.0	2.5	28.0	0.125	22.60	480	404	329	460	340	300	0.086	0.72	0.097	0.67
300	2.1	29.5	2.5	30.5	0.100	28.30	551	454	369	530	385	335	0.085	0.75	0.095	0.73
400	2.4	33.0	2.6	33.5	0.0778	37.70	647	518	421	620	440	380	0.085	0.75	0.093	0.84
500	2.6	36.5	2.8	37.0	0.0605	47.00	751	588	476	730	495	430	0.083	0.77	0.091	0.86
630	2.8	41.5	3.0	42.0	0.0469	59.22	868	663	536	840	560	485	0.082	0.81	0.090	0.88



# MARINE & OFFSHORE CABLES

**Application:**

Used in defence shipyards & private shipyards in varied applications.

**Types & Sizes:**

Complete range including power, control, instrumentation, thermocouple, fire resistant & high temperature cables. Single-cores up to 1000 sq.mm and Multi-cores up to 500 sq.mm for voltage grade up to 3.3 kV

**Conductor:**

Copper – Solid. Stranded or Flexible – Bare or Tinned. For Thermocouple – KX, JX, TX, EX, SX/RX

**Fire Barrier:**

Layer of Glass Mica Tape (if required)

**Insulation:**

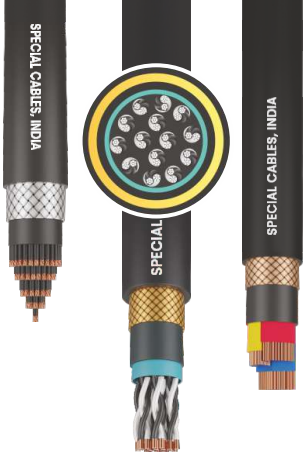
XLPE, EPR, LSZH, EVA

**Screening:**

Individual & Overall or Overall screening  
- Polyester Tape, Aluminium Mylar Tape, Copper Tape, Braiding with Copper Drain Wire (if required)

**Armour/Braid:**

Copper wire – Bare or tinned, GI, SS or Bronze Wire



**Inner & Outer Sheath:**

SHF1, SHF2 or other polymeric compounds

**Specifications:**

IEC 60092, NEK 606 standards & meet the customer’s requirements



# MULTI-LAYER CABLE (AL-HDPE-PA)

Eco-friendly substitute for lead sheath

**Application:**

Historically, a lead sheath has been provided to protect cables against hydrocarbons, acids and alkaline compounds in the oil, petrochemical and gas industries.

An alternate sustainable solution has been developed by providing a triple layer sheath by combining:

- Copolymer Aluminium Tape bonded with
- Extruded HDPE layer and
  - Extruded Polyamide layer

Each layer provides special properties. The Copolymer Aluminium Tape prevents ingress of water. HDPE sheath provides high resistance to inorganic salts, acids and bases, whereas the next layer of polyamide protects against hydrocarbons, petrol, oil and other organic materials.

**Voltage Rating:**

Up to 1.1 kV

**Minimum Bending Radius:**

16 x Overall Diameter

Salient Features (compared to Lead Sheath Cables)	
Reduced cable weight	Reduced cable diameter
Better bending radius & flexibility	Reduced space requirements for installation
Environmentally sustainable	Manpower costs reduction during installation
Easier splicing & installation effort	Lower transportation costs

## Power Cables

**Types and Sizes:**

Typically Single-core ranging from 4 sq.mm up to 1000 sq.mm and Multi-core ranging from 4 sq.mm to 300 sq.mm

**Specifications:**

Generally conforming to IS 1554 (Pt-1), IEC 60502-1, BSEN 50288-7, IEC 60811-404, VDE and designed to meet the customer’s requirements.

## Control Cables

**Types and Sizes:**

Typically up to 61 cores from 1.0 sq.mm to 2.5 sq.mm

## Instrumentation Cables

**Types and Sizes:**

Typically in pair/triad formation (up to 25 pairs, triads) from 0.50 sq.mm to 2.50 sq.mm





# FIRE SURVIVAL/ FIRE RESISTANT CABLES



## Application:

Designed to maintain circuit integrity during a fire and ensure maximum time for evacuation in case of an emergency. Typically used in fire alarm systems, emergency lighting and other safety equipment.

## Types & Sizes:

Single-core up to 1000 sq.mm and Multi-core up to 400 sq.mm for voltage up to 3.3 kV

## Conductor:

Aluminium – Solid, Stranded (Sector/Circular) or Copper – Solid, Stranded (Sector/Circular) or Flexible – Bare or Tinned

## Fire Barrier:

Glass Mica Tape over the Conductor

## Insulation:

PVC, XLPE, EPR with additional taping or screening (if required)

## Armour:

Galvanized Steel Wire / Flat Strip or GI / Tinned Copper Braid

## Inner & Outer Sheath:

PVC, PE, LSZH or Rubber—HR/HOFR

## Specifications:

IEC: 60502-1, BS: 7846 or equivalent, BS: 6387 Category (CWZ), IEC: 60331, BSEN 50200 (PH30, PH60, PH120 & Annex E)



## FIRE ALARM CABLES

### FireFence®: FA-SD (Standard) and FA-EH (Enhanced)

## Applications:

Fire Alarm cables are primarily used in buildings for fire alarm, fire detection, essential control circuits for life safety and fire-fighting systems, voice alarm and emergency voice communication systems.

## Types & Sizes:

Multi-core cable ranging from 1 sq.mm to 4 sq.mm

## General Construction

**Conductor:** Plain Annealed Copper – Solid (Class 1) for 1/1.5/2.5 sq.mm or Stranded (Class 2) for 1.5/ 2.5/ 4 sq.mm

**Fire Barrier:** For FA-SD (Standard) no Glass Mica Tape is provided. For FA-EH (Enhanced) Glass Mica Tape is provided over the conductor

**Insulation:** Special grade silicone rubber

**Overall Screen:** Aluminium/Polyester Tape with tinned copper drain wire

**Outer Sheath:** Special LSZH

### Standards FA-SD/ FA-EH

Construction / Design	BS 7629-1
Fire Resistant Test - Flame & Mechanical Shock 30 Min/60 Min/120 Min	BS EN 50200 - PH30/PH60/PH120 & Annex. E
Fire Resistance Test - Flame, Mechanical Shock & Water spray	BS 6387 Cat C: Fire @ 950°C:180 min Cat. W: Fire @ 650°C:15 min + Water spray 15 min. Cat. Z: Fire @ 950°C & shock : 15 min
Flame Propagation – Single Cables	BS EN 60332-1-2
Fire spread on bunched cables	BS EN 60332-3-24 (Cat. C)
Corrosive and acid gas	BS EN 60754-1
Smoke emission	BS EN 61034-2

### Additional Standards FA-EH

Fire Resistance Test - Flame, Mechanical Shock & Water Spray - 120 min	BS 8434-2 Fire @ 930°C: 60 min with shock then Fire @ 930°C: 60 min with shock & water spray
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### Technical Data

No. of Cores X Cross Section (sq. mm)	Conductor Construction	Overall Diameter (Approx.) (mm)		Net Weight (Approx.) (kg/km)	
		FA-SD	FA-EH	FA-SD	FA-EH
2 x 1.0	Class 1	7.5	8.4	74	90
3 x 1.0	Class 1	8.0	8.8	87	107
4 x 1.0	Class 1	8.7	9.9	109	130
2 x 1.5	Class 1 or 2	8.1	8.9	98	113
3 x 1.5	Class 1 or 2	8.7	9.6	112	128
4 x 1.5	Class 1 or 2	9.7	10.9	138	165
2 x 2.5	Class 1 or 2	9.5	10.3	128	152
3 x 2.5	Class 1 or 2	10.3	11.1	160	180
4 x 2.5	Class 1 or 2	11.5	12.5	205	230
2 x 4.0	Class 2	11.8	12.5	203	225
3 x 4.0	Class 2	12.3	13.1	245	267
4 x 4.0	Class 2	13.4	14.4	310	332



# HIGH TEMPERATURE CABLES



## Application:

Used for very high temperature applications in steel, chemical & metallurgical industry, nuclear power plants, oil exploration & oil rigs, military & defence equipments, aircraft & aerospace vehicle wiring, auto wiring, electrical appliances, etc.

## Types & Sizes:

Starting from single-core 0.50 sq.mm and up to higher sizes depending on customer requirements

## Conductor:

Bare / Tinned copper (up to 150°C), Silver plated copper (up to 200°C), Nickel plated conductor (up to 260°C) or Thermocouples (KX, JX, TX, EX, SX/RX)

## Insulation:

ETFE, FEP, PFA, Silicon

## Screening:

Individual & Overall or Overall screening – Aluminium Mylar Tape with copper drain wire

## Armour:

Braiding with Bare / Tinned / Nickel plated / Silver plated copper wire or fibre glass

## Outer Sheath:

PVC, HDPE, FEP, PFA, Silicon, LSZH

## Specifications:

JSS 51034, JSS 51037, JSS 51038, IS:8130



# VFD/ VSD CABLES

## Application:

Specially designed for connecting motors to the control drives where there is an Electromagnetic Compatibility (EMC) requirement.

## Types & Sizes:

Power cables generally designed in 3+3 cores (3 main phase & 3 reduced size earth conductors) or 4 cores for voltage grade up to 1.1 kV

## Conductor:

Aluminium- Solid, Stranded or Copper – Solid, Stranded or Flexible

## Insulation:

XLPE, LSZH

## Screening:

Individual & Overall or Overall screening – Polyester Tape, Aluminium Mylar Tape, Copper Tape, Tinned Copper Braiding

## Inner & Outer Sheath:

PVC, LSZH

## Specifications:

Generally conforming to IS: 7098 (Pt-1), IEC: 60502-1, BS: 5467, BS: 6346, AS/NZS 5000.1 and designed to meet the customer's requirements



# FOUNDATION FIELDBUS/ PROFIBUS CABLES

## Application:

For Bi-directional communication protocol used for communication amongst field devices and control system.

## Types & Sizes:

Single and multiple pairs with sizes 20 AWG / 18 AWG / 16 AWG / 14 AWG for voltage grade 300/600 kV

## Conductor:

Bare / Tinned copper (up to 150°C), Silver plated copper (up to 200°C), Nickel plated copper (up to 260°C)

## Insulation:

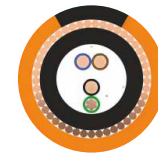
Polyethylene, XLPE, PFA, FEP (higher temperatures)

## Screening:

Individual & Overall or Overall screening – Aluminium Mylar Tape with Tinned Copper Drain Wire, Copper Tape or Braiding

## Armour:

Galvanized Steel Round Wire / Flat Strip / Steel Tape or GI / Tinned Copper Braid



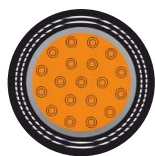
## Inner & Outer Sheath:

PVC, LSZH, PA

## Specifications:

Foundation Fieldbus FF-844H1, EN50288-7, BS: 5308 (Pt-1), IEC 60332, JIS





# RAILWAY POWER & SIGNALLING CABLES

## Types & Sizes:

Control cables up to 37 Cores for 1.5 sq.mm & 2.5 sq.mm and Multi-core power cables up to 50 sq.mm for voltage grade up to 1.1 kV

## Conductor:

Aluminium – Solid, Stranded- Shaped/Circular or Copper – Solid Circular Conductor

## Insulation:

PVC insulation material with high insulation resistance

## Inner & Outer Sheath:

PVC sheathing material with enhanced mechanical properties

## Armour:

Galvanised Round Wire / Flat Strip / Double Steel Tape

## Specifications:

Indian Railway Specifications: S-63/2014 & IS: 1554 (Pt-1)

## Application:

Used in various types of railway applications including distribution & transmission of energy, light switching, track changing and communication, etc.



# HOUSE/BUILDING WIRE

## Application:

Widely used in residential buildings, commercial buildings, multiplexes, institutions and wide variety of industries

## Types & Sizes:

Single-core double or triple insulated cables up to 240 sq.mm for voltage grade 1.1 kV

## Conductor:

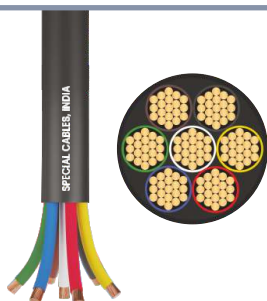
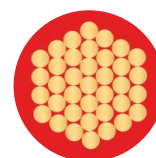
Copper – Solid, Stranded (Circular) or Flexible – Bare or Tinned

## Insulation:

Dual/triple extrusion – PVC, Zero Halogen

## Specifications:

IS: 694, BS: 6500, IEC 60227



# FLEXIBLE MULTICORE CABLES

## Types & Sizes:

Multi-core cables up to 6 sq.mm for voltage grade up to 1.1 kV

## Conductor:

Copper – Flexible or Extra Flexible – Bare or Tinned

## Insulation:

PVC, Zero Halogen, EPR

## Sheath:

PVC, Zero Halogen, Rubber

## Specifications:

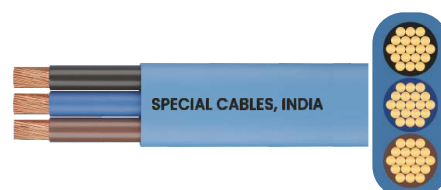
IS: 694, BS: 6500, IS:9968 (Pt 1) and meet the customer's requirements.

## Application:

Mostly used in residential buildings, commercial buildings, institutions and various industries.



# FLAT CABLE



## Application:

Mainly used in submersible pumps & for temporary connections

## Types & Sizes:

Multi-core cable conductor up to 70 sq.mm for voltage grade up to 1.1 kV

## Conductor:

Copper – Solid, Stranded, Flexible – Bare or Tinned

## Insulation:

PVC, EPR

## Sheath:

PVC, Rubber

## Specifications:

IS: 694, BS: 6500, IS:9968 (Pt 1)

## Our valued customers



### Business sectors

- Automation Industry
- Cement Plants
- Chemical & Fertilizer Sector
- Construction & Infrastructure
- Crane Manufacturers
- Data Centres
- EPC Contractors & Consultants
- Government & Public Sector Undertakings
- Material Handling & Utility Vehicles
- Mining Industry
- Non-Ferrous Metals
- Oil & Gas
- Power Generation
- Railway & Metro Industry
- Renewable Energy
- Steel Plants
- Water Treatment Plants

### Exporting to

Australia | Bangladesh | Chile | Colombia | DR Congo | Dominican Republic | Egypt | Estonia | Italy | Libya | Lithuania | Mozambique | Nigeria | Poland | Qatar | Saudi Arabia | Spain | Sweden | Turkey | UAE | Uganda | Uzbekistan



## SPECIAL CABLES

### Corporate Office

#### Special Cables Pvt. Ltd.

B-II/12, Mohan Co-Op. Industrial Estate,  
Badarpur, New Delhi 110 044 INDIA

T : +91-11-2989 1011 / 2989 3640

E : sales@specialcables.co.in

www.specialcables.co.in

### Manufacturing Unit

Plot 60-65, Sector 3,  
SIDCUL-IIE Pantnagar, Rudrapur  
263153 Uttarakhand, INDIA

T : +91-594-4250781

E : worksrdr@specialcables.co.in

### Branch Offices & Representatives

#### Domestic

- Gujarat
- Jharkhand
- Karnataka
- Maharashtra
- Tamil Nadu
- Telangana
- Uttar Pradesh
- Uttarakhand

#### International

- Estonia
- Italy
- Kuwait
- Oman
- UAE

