



SPECIAL CABLES PVT. LTD.

POWER CABLES

Application: Typically used in Power transmission and distribution systems (underground / overhead) for industrial, commercial, institutional and residential purposes. They are used in a wide variety of industries including thermal and nuclear power stations, renewable energy, steel, cement, defence, railways, windmills, various manufacturing industries etc.

Types and Sizes: Single core ranging from 4 sq. mm. up to 1000 sq mm. and Multi core ranging from 4 sq. mm to 630 sq. mm. with voltage grade 1.1 KV to 3.3 KV.

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

Insulation: PVC- GP/HR/FR/FRLS, PE, XLPE, Zero Halogen

Inner Sheath: PVC- GP/HR/FR/FRLS, PE, Zero Halogen

Armour: Galvanized Steel or Aluminium Round Wire / Flat Strip / Tape

Outer Sheath: PVC- GP/HR/FR/FRLS, PE, Zero Halogen

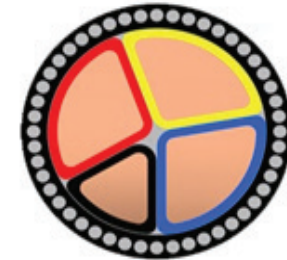
Specification: Generally conforming to IS: 1554 (Pt-1 & 2), IS: 7098 (Pt-1 & 2), IEC: 60502-1, BS: 5467, BS: 6346 and designed to meet customer's requirements.

Key Features:

1. Excellent electrical resistance and high mechanical strength
2. Wide range of operating temperature ranging from -15°C to 90°C. Can be designed upto -40°C also.
3. Better compaction of conductor resulting in low air gaps and avoiding unwanted power loss which increases ampacity of cables as well as reduces overall diameter of cable
4. Various features and configurations available as per customer's requirements.

Note:

- Technical Data provided is for reference only and maybe revised without notice.
- Current ratings are given for standard conditions (Ambient Air Temperature @ 40°C, Ambient Ground /Duct Temperature @ 30°C) and may vary if site conditions are different.
- Other details can be provided on request.



Technical Data for XLPE Power Cables: Single Core, Two Core, Three Core, Three & Half Core and Four Core

ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED, UNARMoured (A2XY)/ARMoured (A2XWaY, A2XFaY) CABLE-650/1100 VOLTS AS PER IS: 7098 (Pt-I)- 1988

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			UNARMoured		ARMoured	
		Overall Dia	Weight	Thickness of XLPE Insulation	Dia. of Alum. Wire	Overall Dia	Weight			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.)	(Nom.)	(Approx.)				(For information only)			(Approx.)		(Approx.)	
(sq. mm.)	(mm)	(mm)	(kg/km)	(mm)	(mm)	(mm)	(kg/km)	(Ω/km)	(kA)	(Amps.)			(Ω/km)	(μf/km)	(Ω/km)	(μf/km)
SINGLE CORE																
4	0.7	7.0	75	1.0	1.4	10	120	7.41	0.376	38	43	36	0.1320	0.29	0.142	0.23
6	0.7	8.0	90	1.0	1.4	11	130	4.61	0.564	50	55	47	0.1230	0.34	0.134	0.27
10	0.7	9.0	100	1.0	1.4	12	150	3.08	0.940	64	69	58	0.1140	0.43	0.0889	0.35
16	0.7	10.0	130	1.0	1.4	12.5	200	1.91	1.50	84	89	75	0.1080	0.51	0.0845	0.42
25	0.9	11.5	170	1.2	1.4	14	260	1.20	2.40	112	115	96	0.1030	0.49	0.0849	0.41
35	0.9	12.5	210	1.2	1.4	15	310	0.868	3.30	137	137	115	0.0986	0.57	0.0822	0.47
50	1.0	14.5	270	1.3	1.4	17	380	0.641	4.70	165	161	135	0.0937	0.58	0.0873	0.50
70	1.1	16.0	350	1.4	1.4	18.5	470	0.443	6.60	209	198	165	0.0900	0.63	0.0783	0.55
95	1.1	18.0	440	1.4	1.6	21	610	0.320	9.00	264	243	199	0.0865	0.73	0.0767	0.64
120	1.2	19.5	530	1.5	1.6	22.5	720	0.253	11.30	308	276	226	0.0841	0.74	0.0746	0.67
150	1.4	21.5	650	1.7	1.6	24.5	840	0.206	14.20	350	308	252	0.0839	0.73	0.0731	0.65
185	1.6	24.0	790	1.9	1.6	27	1010	0.164	17.50	406	349	285	0.0836	0.69	0.0735	0.66
240	1.7	26.0	980	2.0	1.6	29	1210	0.125	22.60	480	404	329	0.0813	0.74	0.0735	0.70
300	1.8	29.0	1190	2.1	1.6	32	1460	0.100	28.30	551	454	369	0.0795	0.80	0.0722	0.74
400	2.0	32.5	1510	2.4	2.0	36.5	1880	0.0778	37.70	647	518	421	0.0787	0.83	0.0714	0.75
500	2.2	36.0	1870	2.6	2.0	39.5	2280	0.0605	47.00	751	588	476	0.0779	0.83	0.0709	0.78
630	2.4	39.5	2330	2.8	2.0	43.5	2830	0.0469	59.22	868	663	536	0.0785	0.87	0.0705	0.81
800	2.6	44.5	2960	3.1	2.0	49	3500	0.0367	75.20	992	740	596	0.0755	0.92	0.0702	0.83
1000	2.8	49.5	3680	3.3	2.5	55	4450	0.0291	94.00	1117	812	652	0.0752	0.94	0.0692	0.87

**ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED, UNARMOURED (A2XY)/ARMOURED (A2XWY & A2XFY)
CABLE- 650/1100 VOLTS AS PER IS: 7098(Pt-I)/1988**

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	Weight	GI Round Wire Dia	GI Flat Strip Size	Overall Dia	Weight			In Air	Direct In Ground	In Duct		
(Nom.)	(Nom.)	(Approx.)	(Approx.)	(Nom.)	(Nom.)	(Approx.)	(Approx.)			(For reference only)			(Approx.)	(Approx.)
(sq. mm.)	(mm)	(mm)	(kg/km)	(mm)	(mm)	(mm)	(kg/km)	(Ω/km)	(kA)	(Amps.)			(Ω/km)	(μf/km)
TWO CORE														
4	0.7	13.0	210	1.4	-	15.0	460	7.41	0.376	38	42	36	0.0927	0.22
6	0.7	15.0	240	1.4	-	16.5	530	4.61	0.564	50	55	46	0.0884	0.25
10	0.7	16.0	310	1.4	-	18.0	610	3.08	0.94	64	68	57	0.0837	0.31
16	0.7	15.5	325	1.4	-	17.5	615	1.91	1.5	83	89	74	0.0798	0.48
25	0.9	18.5	430	-	4X0.8	19.0	620	1.2	2.4	109	114	95	0.0808	0.46
35	0.9	20.0	520	-	4 X0.8	20.5	750	0.868	3.3	133	136	113	0.0787	0.52
50	1	22.5	660	-	4 X0.8	23.5	910	0.641	4.7	162	161	134	0.0752	0.55
70	1.1	25.5	850	-	4 X0.8	26.5	1160	0.443	6.6	204	197	164	0.0742	0.59
95	1.1	29.0	1120	-	4 X0.8	29.5	1460	0.32	9.0	251	235	196	0.0725	0.69
120	1.2	31.5	1340	-	4 X0.8	32.0	1700	0.253	11.3	287	266	222	0.0713	0.71
150	1.4	34.5	1560	-	4 X0.8	35.5	2040	0.206	14.2	328	296	248	0.0718	0.68
185	1.6	38.5	2010	-	4 X0.8	39.5	2500	0.164	17.5	379	335	281	0.072	0.67
240	1.7	42.5	2510	-	4 X0.8	43.0	3010	0.125	22.6	448	385	324	0.0708	0.71
300	1.8	47.0	3100	-	4 X0.8	47.5	3640	0.1	28.3	513	432	364	0.0703	0.75
400	2	53.0	3900	-	4 X0.8	53.5	4530	0.0778	37.7	593	487	412	0.0702	0.76
500	2.2	54.0	4210	-	4 X0.8	54.5	4650	0.0605	47.0	683	548	463	0.07	0.78
630	2.4	59.0	5200	-	4 X0.8	60.0	5700	0.0469	59.22	784	612	518	0.0697	0.81
THREE CORE														
4	0.7	13.5	240	1.4	-	15.5	520	7.41	0.376	32	35	30	0.0927	0.22
6	0.7	14.5	280	1.4	-	17.0	560	4.61	0.564	42	46	38	0.0884	0.25
10	0.7	17.0	350	1.4	-	19.0	680	3.08	0.940	54	57	48	0.0837	0.31
16	0.7	17.5	355	-	4 X0.8	18.0	550	1.91	1.50	69	74	61	0.0798	0.48
25	0.9	21.0	520	-	4X0.8	21.5	720	1.20	2.40	93	95	79	0.0808	0.46
35	0.9	23.0	630	-	4 X0.8	24.0	880	0.868	3.30	114	114	94	0.0787	0.52
50	1.0	26.5	800	-	4 X0.8	27.0	1050	0.641	4.70	138	134	112	0.0752	0.55
70	1.1	30.0	1080	-	4 X0.8	30.5	1380	0.443	6.60	175	164	137	0.0742	0.59
95	1.1	33.5	1360	-	4 X0.8	34.5	1720	0.320	9.00	216	197	164	0.0725	0.69
120	1.2	37.0	1630	-	4 X0.8	37.5	2050	0.253	11.30	249	223	187	0.0713	0.71
150	1.4	41.0	2020	-	4 X0.8	41.5	2450	0.206	14.20	284	249	209	0.0718	0.68
185	1.6	46.0	2510	-	4 X0.8	46.5	2960	0.164	17.50	329	282	238	0.0720	0.67
240	1.7	50.5	3150	-	4 X0.8	51.5	3660	0.125	22.60	392	327	276	0.0708	0.71
300	1.8	56.0	3830	-	4 X0.8	56.5	4440	0.100	28.30	452	369	213	0.0703	0.75
400	2.0	63.5	4850	-	4 X0.8	64.0	5550	0.0778	37.70	526	420	356	0.0702	0.76
500	2.2	65.0	5980	-	4 X0.8	65.5	6550	0.0605	47.00	612	478	412	0.0700	0.78
630	2.4	73.0	7520	-	4 X0.8	74.0	8150	0.0469	59.22	712	542	468	0.0697	0.81

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		Overall Dia	Weight	GI Round Wire Dia	GI Flat Strip Size	Overall Dia	Weight			In Air	Direct In Ground	In Duct		
(Nom.)	(Nom.)	(Approx.)	(Approx.)	(Nom.)	(Nom.)	(Approx.)	(Approx.)			(For reference only)			(Approx.)	(Approx.)
(sq. mm.)	(mm)	(mm)	(kg/km)	(mm)	(mm)	(mm)	(kg/km)	(Ω/km)	(kA)	(Amps.)			(Ω/km)	(μf/km)
THREE AND HALF CORE														
25/16	0.9/0.7	21.5	570	-	4 X0.8	22.5	800	1.20	2.40	93	95	79	0.0808	0.46
35/16	0.9/0.7	23.5	680	-	4X0.8	24.0	930	0.868	3.30	114	114	94	0.0787	0.52
50/25	1.0/0.9	27.0	880	-	4 X0.8	27.5	1180	0.641	4.70	138	134	112	0.0752	0.55
70/35	1.1/0.9	31.0	1200	-	4 X0.8	31.5	1520	0.443	6.60	175	164	137	0.0742	0.59
95/50	1.1/1.0	35.0	1520	-	4 X0.8	35.5	1880	0.320	9.00	216	197	164	0.0725	0.69
120/70	1.2/1.1	38.5	1860	-	4 X0.8	39.5	2330	0.253	11.30	249	223	187	0.0713	0.71
150/70	1.4/1.1	42.0	2230	-	4 X0.8	42.5	2720	0.206	14.20	284	249	209	0.0718	0.68
185/95	1.6/1.1	47.0	2790	-	4 X0.8	47.5	3310	0.164	17.50	329	282	238	0.0720	0.67
240/120	1.7/1.2	52.0	3520	-	4 X0.8	52.5	4060	0.125	22.60	392	327	276	0.0708	0.71
300/150	1.8/1.4	58.0	4310	-	4 X0.8	58.5	4910	0.100	28.30	452	369	312	0.0703	0.75
400/185	2.0/1.6	65.5	5510	-	4 X0.8	66.0	6210	0.0778	37.70	526	420	356	0.0702	0.76
500/240	2.2/1.7	72.0	6900	-	4 X0.8	72.5	7500	0.0605	47.00	612	478	412	0.0700	0.78
630/300	2.4/1.8	80.0	8710	-	4 X0.8	80.5	9300	0.0469	59.22	712	542	468	0.0697	0.81
FOUR CORE														
4	0.7	15.0	280	1.4	-	16.5	550	7.41	0.376	32	35	30	0.0927	0.22
6	0.7	16.5	330	1.4	-	18.0	610	4.61	0.564	42	46	38	0.0884	0.25
10	0.7	18.5	420	1.4	-	20.0	730	3.08	0.940	54	57	48	0.0837	0.31
16	0.7	19.0	430	-	4 X0.8	20.5	660	1.91	1.50	69	74	61	0.0798	0.48
25	0.9	23.0	630	-	4 X0.8	23.5	990	1.20	2.40	93	95	79	0.0808	0.46
35	0.9	25.5	780	-	4X0.8	26.0	1060	0.868	3.30	114	114	94	0.0787	0.52
50	1.0	29.0	980	-	4 X0.8	30.0	1350	0.641	4.70	138	134	112	0.0752	0.55
70	1.1	33.0	1340	-	4 X0.8	33.5	1730	0.443	6.60	175	164	137	0.0742	0.59
95	1.1	37.0	1700	-	4 X0.8	37.5	2120	0.320	9.00	216	197	164	0.0725	0.69
120	1.2	41.0	2110	-	4 X0.8	41.5	2600	0.253	11.30	249	223	187	0.0713	0.71
150	1.4	45.5	2580	-	4 X0.8	46.0	3100	0.206	14.20	284	249	209	0.0718	0.68
185	1.6	51.0	3200	-	4 X0.8	51.5	3760	0.164	17.50	329	282	238	0.0720	0.67
240	1.7	56.5	4040	-	4 X0.8	57.0	4600	0.125	22.60	392	327	276	0.0708	0.71
300	1.8	62.5	4960	-	4 X0.8	62.5	5550	0.100	28.30	452	369	312	0.0703	0.75
400	2.0	70.5	6280	-	4 X0.8	70.5	6980	0.0778	37.70	526	420	356	0.0702	0.76
500	2.2	75.0	7800	-	4 X0.8	75.5	8500	0.0605	47.00	612	478	412	0.0700	0.78
630	2.4	84.0	9800	-	4 X0.8	84.5	10550	0.0469	59.22	712	542	468	0.0697	0.81