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LT PVC CABLES

LOW TENSION POLYVINYL
CHLORIDE CABLE



Since 1958

POWERING INNOVATION

Fort Gloster Industries Limited
From the house of Bangurs





Construction of Cables as per IS 1554 (Part 1): PVC Insulated Heavy Duty Cables for Working Voltage up to and Including 1100 V

Conductor

FGIL cables are made with both aluminium and copper conductors. The conductors are made from electrolytic-grade, high-purity aluminium and copper, conforming to IS 8130, and are available in Solid circular, Compacted circular, non-compacted circular and compacted shaped.

Insulation

Material:

PVC Type A as per IS 5831 which is suitable for 70 deg C continuous operation.

PVC Type C as per IS 5831 which is suitable for 85 deg C continuous operation.

Application:

Extruded over the conductor.

Properties:

Excellent dielectric strength | High insulation resistance | Heat resistance up to 70°C/85°C continuous operation.

Core Identifications

The cores are identified by different colours :	
Single core	Red, Yellow, Blue, Black or Natural
Two core	Red & Black
Three core	Red, Yellow & Blue
Four core	Red, Yellow, Blue & Black
Three and half core	Red, Yellow, Blue for Phase Core and Black for Reduced Neutral Core
Five Core	Red, Yellow, Blue, Black & Grey
Six Core & Above	All core Grey with Black numbering

Assembly of Cores

Material:

PVC Type ST1 as per IS 5831 for 70 deg C continuous operation.

PVC Type ST2 as per IS 5831 for 85 deg C continuous operation.

Application:

Applied by extrusion or by tightly wrapped tape to form a continuous layer over laid-up cores to provide

Assembly of Cores

Material:

PVC Type ST1 as per IS 5831 for 70 deg C continuous operation.

PVC Type ST2 as per IS 5831 for 85 deg C continuous operation.

Application:

Applied by extrusion or by tightly wrapped tape to form a continuous layer over laid-up cores to provide bedding for the armouring

Armour

Material:

Outer Sheath

Material:

PVC Type ST1 as per IS 5831 for 70 deg C continuous operation.

PVC Type ST2 as per IS 5831 for 85 deg C continuous operation.

Fire Performance – Critical Applications

For enhanced fire safety, the following special PVC sheath compounds may be used:

FR (Flame Retardant): Designed to resist the spread of fire.

FR-LSH (Flame Retardant Low Smoke & Halogen): Limits smoke density and halogen gas emissions during combustion – ideal for indoor/public environments like hospitals, metros, and high-rise buildings.

Additional Protective Properties

For harsh or exposed installations, sheath compounds may also be enhanced with:

UV Radiation Resistant Compounds: Protect against degradation due to prolonged sunlight exposure.

Anti-Rodent and Anti-Termite Additives: Prevent damage from pests, suitable for underground and outdoor cabling.

Product Code

As per IS 1554 (Part I) 1988, the codes are :

Constituent	Code
Aluminium conductor	A
PVC insulation	Y
Steel round wire armour	W
Non-magnetic round wire armour	Wa
Steel strip armour	F
Non-magnetic strip armour	Fa
Double steel strip armour	FF
Double steel round wire armour	WW
PVC Outer sheath	Y

Applications

Power Distribution:

For LT power supply up to 1100 volts.
Used in urban and rural electrification, substations, switchboards.

Industrial Installations:

Suitable for industrial wiring, cable trays, and raceways.
Used in factories, refineries, petro-chemical plants, etc.

Commercial and Residential Wiring:

For fixed wiring in buildings, commercial complexes, housing projects, etc.

Underground or Duct Installation:

Applicable for direct burial, in conduits or underground ducts.

Control and Instrumentation:

Used for control circuits, motor connections, and instrumentation wiring in LT systems.

Outdoor and Indoor Use:

Can be installed in air, indoors, or outdoor (with suitable protection).

Advantages of PVC Cables

Reliable Insulation PVC provides good dielectric strength, ensuring safe power transmission.

Suitable for LT Applications Designed for voltages up to 1100 V, ideal for domestic, industrial, and commercial use.

Flame Retardant Properties Available in FR and FR-LSH versions to reduce the spread of fire and toxic smoke.

Moisture & Chemical Resistance Resists water, acids, alkalis, oils, and other industrial chemicals.

UV and Sunlight Resistant With UV-stabilized sheath, can be used outdoors and in sunlight-prone areas.

Rodent and Termite Protection (optional) Special sheath compounds resist rodents and termites, suitable for underground and exposed installations.

Good Mechanical Strength With armouring, it can withstand mechanical stress and external impacts.

Easy to Install PVC is flexible, lightweight, and easy to strip and terminate.

Cost-Effective More economical compared to other insulation types like XLPE or rubber.

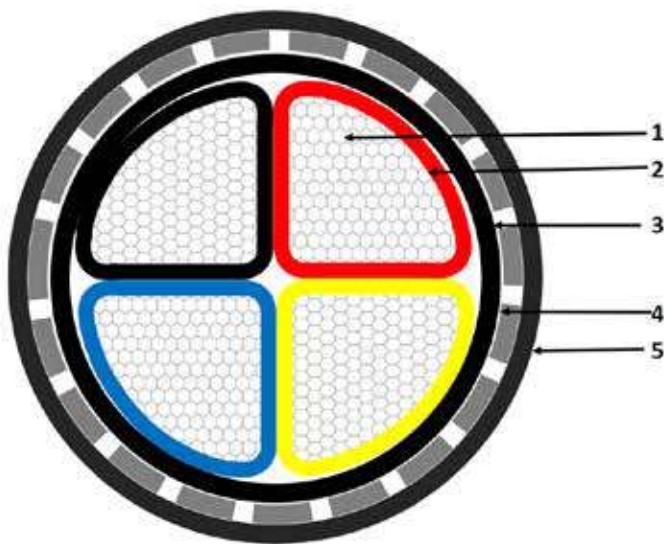
Wide Availability Readily available in various sizes, core configurations, and types (armoured/unarmoured).

Maintenance-Free Durable and requires minimal maintenance once installed.

Environment Suitability Can be installed in conduits, ducts, trenches, cable trays, and even overhead (with UV resistance).

Cross Sectional Drawing

For Multi Core Armoured Cable



1 - Stranded Compacted Shaped Aluminium/Copper as per Class-2 of IS 8130

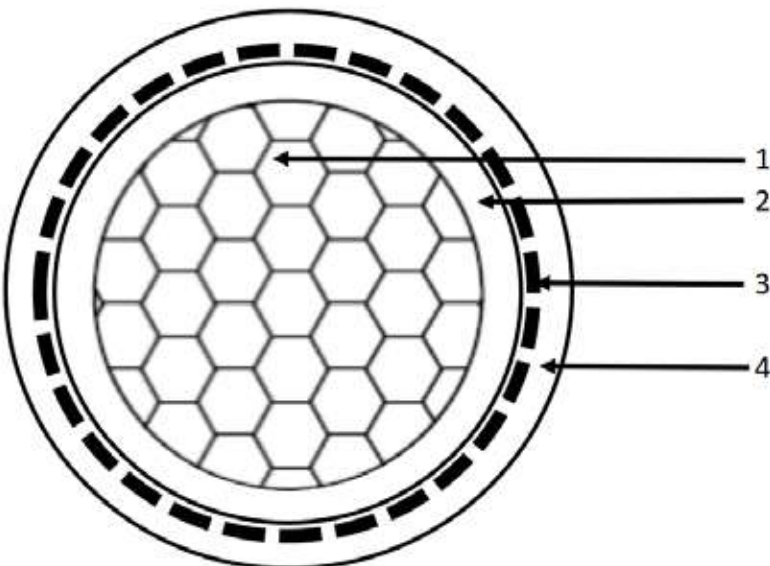
2 - PVC Type A / PVC Type C insulation as per IS 5831

3 - PVC Type ST1 / PVC Type ST2 as per IS 5831

4 - Single Layer of Galvanized Steel Flat strip / Round Wire armour as per IS 3975

5 - PVC Type ST1 / PVC type ST2 as per IS 5831

For Single Core Armoured Cable



1 - Stranded Aluminium / Copper as per Class-2 of IS 8130

2 - PVC Type A / PVC Type C insulation as per IS 5831

3 - Single Layer of Aluminium Flat strip / Round Wire armour

4 - PVC Type ST1 / PVC Type ST2 as per IS 5831



Conductor Short Circuit Current Ratings For PVC Insulated Cables

Short Circuit Rating for 1 second duration for Copper and Aluminium Conductor with PVC insulated cable (KAmps)

Nominal Size of Conductor (Sq.mm)	PVC Type A Insulation		PVC Type C Insulation	
	Copper	Aluminium	Copper	Aluminium
1.5	0.17	0.114	0.156	0.103
2.5	0.29	0.190	0.260	0.172
4	0.46	0.304	0.415	0.274
6	0.69	0.456	0.623	0.412
10	1.15	0.760	1.038	0.686
16	1.84	1.216	1.661	1.098
25	2.88	1.900	2.595	1.715
35	4.03	2.660	3.633	2.401
50	5.75	3.800	5.190	3.430
70	8.05	5.320	7.266	4.802
95	10.93	7.220	9.861	6.517
120	13.80	9.120	12.456	8.232
150	17.25	11.400	15.570	10.290
185	21.28	14.060	19.203	12.691
240	27.60	18.240	24.912	16.464
300	34.50	22.800	31.140	20.580
400	46.00	30.400	41.520	27.440
500	57.50	38.000	51.900	34.300
630	72.45	47.880	65.394	43.218
800	92.00	60.800	83.040	54.880
1000	115.00	76.000	103.800	68.600

For PVC Type A Insulation

Maximum conductor temperature during operation condition: 70°C.

Maximum conductor temperature during short circuit condition: 160°C.

For PVC Type C Insulation

Maximum conductor temperature during operation condition: 85°C.

Maximum conductor temperature during short circuit condition: 160°C

Formula relating short Circuit Rating with duration

$$I_{sh} = \frac{K \times A}{\sqrt{t}}$$

Where,

A = Cross sectional area of the current carrying component in sq.mm.

I_{sh} = Short circuit current in KA for t second.

t = Duration of short circuit in second.

K = Short circuit current rating factor depending on conductor & Insulation material.

K = 0.076 for Aluminium conductor & PVC Type A insulation.

K = 0.0686 for Aluminium conductor & PVC Type C insulation.

K = 0.115 for Copper conductor & PVC Type A insulation.

K = 0.1038 for Copper conductor & PVC Type C insulation.

Maximum DC & AC resistance of conductor as per IS : 8130

Nominal Size of Conductor Sq.mm	Maximum DC resistance of conductor at 20 °C		Approx. AC resistance of conductor at 70°C		Approx. AC resistance of conductor at 85°C	
	COPPER	ALUMINIUM	COPPER	ALUMINIUM	COPPER	ALUMINIUM
1.5	12.10	18.1	14.478	-	15.191	-
2.5	7.41	12.1	8.866	-	9.303	-
4	4.61	7.41	5.516	8.903	5.788	9.351
6	3.08	4.61	3.685	5.539	3.867	5.818
10	1.83	3.08	2.19	3.701	2.298	3.887
16	1.15	1.91	1.376	2.295	1.444	2.41
25	0.727	1.20	0.87	1.442	0.913	1.514
35	0.524	0.868	0.627	1.043	0.658	1.096
50	0.387	0.641	0.463	0.77	0.486	0.809
70	0.268	0.443	0.321	0.533	0.337	0.559
95	0.193	0.320	0.232	0.385	0.243	0.404
120	0.153	0.253	0.184	0.305	0.193	0.32
150	0.124	0.206	0.15	0.248	0.157	0.261
185	0.0991	0.164	0.121	0.198	0.126	0.208
240	0.0754	0.125	0.093	0.151	0.097	0.159
300	0.0601	0.100	0.075	0.122	0.079	0.128
400	0.0470	0.0778	0.061	0.096	0.063	0.1
500	0.0366	0.0605	0.049	0.075	0.051	0.079
630	0.0283	0.0469	0.04	0.06	0.042	0.062
800	0.0221	0.0367	0.034	0.049	0.035	0.051
1000	0.0176	0.0291	0.03	0.04	0.031	0.042

Table 1 : 1100 V, Single Core Aluminium/Copper Conductor, PVC type A/PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Nominal size of conductor (sq. mm)	Unarmoured Cables				Aluminium Flat Strip Armoured Cable				Aluminium Round Wire Armoured Cable				Current Carrying Capacity																											
	Nominal Thickness of PVC Outer Sheath (mm)	Nominal Thickness of Insulation (mm)	Approx. Weight of cable (kg/km)	Approx. overall diameter of cable (mm)	Nominal Dimension of Strip (mm)	Minimum Thickness of cable Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)		Nominal Thickness of Insulation (mm)	Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	In Ground at 30°C (A)				In Air at 40°C (A)				In Duct at 30°C (A)																		
								Aluminium	Copper					Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper										
1.5	0.8	1.8	7.0	-	70	-	-	-	-	-	-	-	-	-	-	23	-	-	18	-	22	-	21	-	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.5	0.9	1.8	7.5	-	90	-	-	-	-	-	-	-	-	-	-	30	-	34	-	24	-	30	-	27	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	1	1.8	8.5	95	115	-	-	-	-	-	-	-	-	-	-	31	39	44	25	32	31	39	28	35	33	42	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	1	1.8	9.0	110	140	-	-	-	-	-	-	-	-	-	-	39	48	45	55	33	40	41	50	36	44	43	53	-	-	-	-	-	-	-	-	-	-	-	-	
10	1	1.8	9.5	125	185	-	-	-	-	-	-	-	-	-	-	49	64	56	73	42	55	52	68	45	58	54	70	-	-	-	-	-	-	-	-	-	-	-	-	
16	1	1.8	10.5	150	250	-	-	-	-	-	-	-	-	-	-	64	82	73	94	56	72	70	90	58	75	69	90	-	-	-	-	-	-	-	-	-	-	-	-	-
25	1.2	1.8	12.0	205	355	-	-	-	-	-	-	-	-	-	-	82	105	93	120	74	96	92	119	74	95	88	114	-	-	-	-	-	-	-	-	-	-	-	-	-
35	1.2	1.8	13.0	245	455	-	-	-	-	-	-	-	-	-	-	97	125	111	144	91	117	113	146	88	114	105	136	-	-	-	-	-	-	-	-	-	-	-	-	-
50	1.4	1.8	14.5	305	585	-	-	-	-	-	-	-	-	-	-	115	148	131	169	110	142	137	176	103	133	124	160	-	-	-	-	-	-	-	-	-	-	-	-	-
70	1.4	1.8	16.0	385	790	-	-	-	-	-	-	-	-	-	-	141	181	161	207	140	180	174	224	127	163	151	195	-	-	-	-	-	-	-	-	-	-	-	-	-
95	1.6	1.8	18.5	500	1060	1.9	4.0 X 0.8	1.4	19.5	605	1165	1.9	1.6	1.4	21.0	665	1225	169	217	193	249	177	228	221	284	151	194	181	233	-	-	-	-	-	-	-	-	-	-	
120	1.6	2	19.5	600	1310	1.9	4.0 X 0.8	1.4	20.5	695	1405	1.9	1.6	1.4	22.0	760	1465	192	246	220	282	207	265	258	331	172	220	205	263	-	-	-	-	-	-	-	-	-	-	
150	1.8	2	21.5	715	1600	2.1	4.0 X 0.8	1.4	22.5	815	1700	2.1	1.6	1.4	24.0	890	1780	214	275	245	315	235	302	293	376	191	245	228	293	-	-	-	-	-	-	-	-	-	-	
185	2	2	23.0	870	1960	2.3	4.0 X 0.8	1.4	24	975	2070	2.3	1.6	1.4	26.0	1055	2155	242	309	278	355	274	349	341	436	216	275	258	330	-	-	-	-	-	-	-	-	-	-	
240	2.2	2	26.0	1085	2515	2.5	4.0 X 0.8	1.4	27	1210	2640	2.5	1.6	1.56	29.0	1315	2745	280	355	321	408	324	412	404	515	248	315	297	378	-	-	-	-	-	-	-	-	-	-	
300	2.4	2	28.0	1295	3115	2.7	4.0 X 0.8	1.56	29.5	1445	3265	2.7	1.6	1.56	31.0	1545	3370	314	397	360	456	373	472	465	589	277	350	332	421	-	-	-	-	-	-	-	-	-	-	
400	2.6	2.2	32.0	1655	3985	3	4.0 X 0.8	1.56	33	1810	4135	3	2	1.56	35.5	2000	4325	358	446	410	513	438	547	546	684	314	392	377	471	-	-	-	-	-	-	-	-	-	-	
500	3	2.2	36.5	2100	5060	3.4	4.0 X 0.8	1.56	37.5	2275	5225	3.4	2	1.72	40.5	2520	5470	404	496	464	572	508	625	635	783	354	434	425	523	-	-	-	-	-	-	-	-	-	-	
630	3.4	2.4	41.0	2670	6490	3.9	4.0 X 0.8	1.72	42.5	2870	6690	3.9	2	1.88	45.0	3150	6970	454	547	523	633	587	708	733	890	395	477	476	576	-	-	-	-	-	-	-	-	-	-	
800	3.4	2.4	44.5	3240	8150	3.9	4.0 X 0.8	1.88	46	3500	8405	3.9	2	1.88	48.5	3760	8670	503	594	581	690	668	790	837	995	437	516	527	625	-	-	-	-	-	-	-	-	-	-	
1000	3.4	2.6	49.5	3945	10105	3.9	4.0 X 0.8	2.04	51	4210	10380	3.9	2.5	2.04	54.5	4650	10825	550	635	636	738	750	868	942	1096	474	548	574	665	-	-	-	-	-	-	-	-	-	-	

Table 2 : 1100 V, Two Core Aluminium/Copper Conductor, PVC type A/PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Nominal size of conductor (sq. mm)	Unarmoured Cables				Galvanised steel Flat Strip Armoured Cable						Galvanised steel Round Wire Armoured Cable						Current Carrying Capacity																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	Nominal Thickness of insulation (mm)	Minimum thickness of inner sheath (mm)	Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. weight of cable (kg/km)	Approx. Dimensions of Cable		Nominal Dimension of Strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)		Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)		In Ground at 30°C (A)				In Air at 40°C (A)				In Duct at 30°C (A)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
						Aluminium	Copper				Aluminium	Copper				Aluminium	Copper	Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Copper	PVC Type C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Table 3 : 1100 V, Three Core Aluminium/Copper Conductor, PVC type A/PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Nominal size of conductor (sq.mm)	Nominal Thickness of insulation (mm)	Unarmoured Cables				Galvanized steel Flat Strip Armoured Cable				Galvanized steel Round Wire Armoured Cable				Current Carrying Capacity														
		Minimum thickness of inner sheath (mm)	Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)		Nominal Dimension of Strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)		Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	In Ground at 30°C (A)				In Air at 40°C (A)									
					Aluminium	Copper				Aluminium	Copper				PVC Type A		PVC Type C		PVC Type A		PVC Type C							
															Aluminium	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium	Copper				
4	1	0.3	1.8	15.0	280	330	-	-	-	-	-	1.4	1.24	16.5	555	595	29	37	33	42	24	30	38	31	28	36		
6	1	0.3	1.8	16.5	335	410	-	-	-	-	-	1.4	1.24	18	645	700	38	46	43	52	32	39	39	38	36	44		
10	1	0.3	1.8	17.5	380	560	-	-	-	-	-	1.4	1.4	19.5	735	915	47	61	53	70	40	53	50	65	40	51	59	
16	1	0.3	1.8	17.5	405	695	4.0 X 0.8	1.4	18.0	620	915	1.6	1.4	20	800	1095	61	78	69	90	52	67	65	83	51	66	75	75
25	1.2	0.3	2	20.5	575	1025	4.0 X 0.8	1.4	21.0	815	1260	1.6	1.4	22.5	1030	1480	78	101	90	116	70	90	86	111	66	85	75	97
35	1.2	0.3	2	22.5	690	1320	4.0 X 0.8	1.4	23.0	950	1575	1.6	1.4	24.5	1195	1820	94	121	108	139	85	110	106	137	79	102	90	116
50	1.4	0.3	2	25.0	880	1720	4.0 X 0.8	1.56	26.0	1195	2040	1.6	1.56	27.5	1465	2305	111	143	127	164	104	134	129	166	93	120	107	138
70	1.4	0.4	2.2	29.0	1170	2385	4.0 X 0.8	1.56	29.0	1490	2705	2	1.56	31.5	1980	3195	136	175	156	201	131	169	163	209	115	147	131	169
95	1.6	0.4	2.2	33.0	1510	3205	4.0 X 0.8	1.56	33.5	1890	3585	2	1.72	36	2495	4190	163	210	187	241	162	209	201	259	138	177	157	203
120	1.6	0.4	2.2	35.0	1780	3910	4.0 X 0.8	1.72	35.5	2205	4335	2	1.72	38	2810	4940	185	237	212	272	186	238	230	296	156	200	178	229
150	1.8	0.5	2.4	39.0	2170	4815	4.0 X 0.8	1.88	39.5	2630	5270	2	1.88	42	3320	5965	206	265	236	304	212	272	262	337	175	224	200	257
185	2	0.5	2.6	43.5	2685	5970	4.0 X 0.8	1.88	43.5	3160	6445	2.5	2.04	47	4305	7590	234	300	268	343	245	314	304	389	198	254	227	291
240	2.2	0.6	2.8	49.0	3435	7760	4.0 X 0.8	2.2	49.0	4000	8330	2.5	2.2	52.5	5250	9580	271	345	310	396	291	371	360	459	230	293	264	336
300	2.4	0.6	3	55.0	4165	9645	4.0 X 0.8	2.36	55.0	4805	10280	2.5	2.36	58.5	6205	11680	305	387	350	445	335	425	415	527	260	330	298	379
400	2.6	0.7	3.4	60.5	5290	12305	4.0 X 0.8	2.52	60.5	5915	12930	3.15	2.68	65.5	8185	15200	348	436	399	502	390	490	483	608	297	372	340	428

Table 4 : 1100 V, Three core with reduced neutral core Aluminium/Copper Conductor, PVC type A/PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Nominal size of conductor (Phase/Neutral)	Nominal Thickness of insulation for inner sheath (mm)	Unarmoured Cables				Galvanized steel Flat Strip Armoured Cable				Galvanized steel Round Wire Armoured Cable				Current Carrying Capacity														
		Minimum Thickness of PVC outer sheath (mm)	Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)	Nominal Dimension of Strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)	Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	In Ground at 30°C (A)				In Air at 40°C (A)											
													PVC Type A		PVC Type C		PVC Type A		PVC Type C									
													Aluminium	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium	Copper				
25/16	1.2/1	0.3	2	22.0	670	1215	4.0 X 0.8	1.4	22.5	925	1470	1.6	1.4	24.0	1155	1695	78	101	90	116	70	90	86	111	66	85	75	97
35/16	1.2/1	0.3	2	24.0	785	1510	4.0 X 0.8	1.4	24.5	1060	1785	1.6	1.4	26.0	1330	2055	94	121	108	139	85	110	106	137	79	102	90	116
50/25	1.4/1.2	0.3	2	27.5	1020	2010	4.0 X 0.8	1.56	28.0	1355	2345	1.6	1.56	29.5	1665	2655	111	143	127	164	104	134	129	166	93	120	107	138
70/35	1.4/1.2	0.4	2.2	31.5	1350	2775	4.0 X 0.8	1.56	32.0	1715	3135	2	1.56	34.0	2260	3685	136	175	156	201	131	169	163	209	115	147	131	169
95/50	1.6/1.4	0.4	2.2	35.0	1730	3705	4.0 X 0.8	1.56	35.0	2130	4105	2	1.72	38.0	2765	4740	163	210	187	241	162	209	201	259	138	177	157	203
120/70	1.6/1.4	0.5	2.4	38.5	2135	4670	4.0 X 0.8	1.72	38.5	2565	5100	2	1.88	41.5	3260	5795	185	237	212	272	186	238	230	296	156	200	178	229
150/70	1.8/1.4	0.5	2.4	42.5	2490	5535	4.0 X 0.8	1.88	43.0	3005	6055	2	1.88	45.5	3760	6805	206	265	236	304	212	272	262	337	175	224	200	257
185/95	2.0/1.6	0.5	2.6	46.0	3085	6935	4.0 X 0.8	2.04	46.5	3635	7480	2.5	2.04	50.0	4820	8670	234	300	268	343	245	314	304	389	198	254	227	291
240/120	2.2/1.6	0.6	3	53.0	3990	9025	4.0 X 0.8	2.2	53.0	4570	9605	2.5	2.36	57.0	5955	10990	271	345	310	396	291	371	360	459	230	293	264	336
300/150	2.4/1.8	0.6	3.2	58.5	4825	11185	4.0 X 0.8	2.36	58.5	5445	11805	3.15	2.52	63.5	7675	14035	305	387	350	445	335	425	415	527	260	330	298	379
400/185	2.6/2.0	0.7	3.4	66.5	6085	14190	4.0 X 0.8	2.68	66.5	6830	14935	3.15	2.68	71.0	9290	17395	348	436	399	502	390	490	483	608	297	372	340	428

Table 5 : 1100 V, Four Core Aluminium/Copper Conductor, PVC type A /PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Nominal size of conductor (sq.mm)	Nominal Thickness of insulation (mm)	Minimum thickness of inner sheath (mm)	Unarmoured Cables			Galvanised steel Flat Strip Armoured Cable				Galvanised steel Round Wire Armoured Cable				Current Carrying Capacity											
			Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter (mm)	Approx. Weight of cable (kg/km)	Nominal Dimension of flat strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)		Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	In Ground at 30°C (A)		In Air at 40°C (A)				In Duct at 30°C (A)						
									Aluminium	Copper			PVC Type A	Aluminium	PVC Type C	Aluminium	Copper	PVC Type A	Aluminium	Copper	PVC Type C	Aluminium	Copper	PVC Type A	Aluminium
4	1	0.3	1.8	16.5	330	400	-	-	-	-	-	-	29	37	33	42	24	30	38	25	31	28	36		
6	1	0.3	1.8	18.0	400	505	-	-	-	-	-	-	38	46	43	52	32	39	48	32	39	36	44		
10	1	0.3	1.8	19.0	460	700	4.0 X 0.8	1.4	20.0	700	940	1145	47	61	53	70	40	53	65	40	51	45	59		
16	1	0.3	2	19.5	515	905	4.0 X 0.8	1.4	20.0	735	1125	1330	61	78	69	90	52	67	83	51	66	57	75		
25	1.2	0.3	2	23.0	720	1320	4.0 X 0.8	1.4	23.5	975	1575	1835	78	101	90	116	70	90	111	66	85	75	97		
35	1.2	0.3	2	25.0	865	1705	4.0 X 0.8	1.4	25.5	1165	2000	2290	94	121	108	139	85	110	106	79	102	90	116		
50	1.4	0.4	2.2	29.5	1170	2290	4.0 X 0.8	1.56	29.5	1490	2615	3130	111	143	127	164	104	134	129	93	120	107	138		
70	1.4	0.4	2.2	33.0	1490	3110	4.0 X 0.8	1.56	33.5	1870	3490	4065	136	175	156	201	131	169	163	115	147	131	169		
95	1.6	0.4	2.4	37.5	1960	4220	4.0 X 0.8	1.72	37.5	2365	4625	5285	163	210	187	241	162	209	201	138	177	157	203		
120	1.6	0.5	2.4	41.5	2360	5200	4.0 X 0.8	1.88	42.0	2855	5695	6415	185	237	212	272	186	238	230	156	200	178	229		
150	1.8	0.5	2.6	45.5	2840	6365	4.0 X 0.8	1.88	45.5	3330	6855	8060	206	265	236	304	212	272	262	175	224	200	257		
185	2	0.6	2.8	51.0	3540	7915	4.0 X 0.8	2.04	51.0	4075	8455	9815	234	300	268	343	245	314	304	198	254	227	291		
240	2.2	0.6	3	57.0	4495	10265	4.0 X 0.8	2.36	57.5	5150	10920	12380	271	345	310	396	291	371	360	230	293	264	336		
300	2.4	0.7	3.4	63.0	5530	12835	4.0 X 0.8	2.52	63.0	6185	13495	15850	305	387	350	445	335	425	415	260	330	298	379		
400	2.6	0.7	3.6	72.5	6960	16310	4.0 X 0.8	2.84	72.5	7765	17115	19740	348	436	399	502	390	490	483	297	372	340	428		



Table 6 : 1100 V, 1.5 sq.mm Multi Core Control Cable with Copper Conductor, PVC type A/PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Number of Core	Nominal Thickness of Insulation (mm)	Minimum thickness of inner sheath (mm)	Unarmoured Cables				Galvanized steel Flat Strip Armoured Cable				Galvanized steel Round Wire Armoured Cable				Current Carrying Capacity				
			Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)	Nominal Dimension of Strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)	Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)	In Ground at 30°C (A)		In Air at 40°C (A)			
														PVC Type A	PVC Type C	PVC Type A	PVC Type C		
2	0.8	0.3	1.8	11.0	155	-	-	-	-	1.4	1.24	12.5	340	25	29	20	24	22	25
3	0.8	0.3	1.8	11.5	195	-	-	-	-	1.4	1.24	13.0	395	21	24	17	20	18	21
4	0.8	0.3	1.8	12.0	235	-	-	-	-	1.4	1.24	14.0	455	21	24	17	20	18	21
5	0.8	0.3	1.8	13.0	275	-	-	-	-	1.4	1.24	15.0	515	21	24	17	20	18	21
6	0.8	0.3	1.8	14.0	305	-	-	-	-	1.4	1.24	16.0	575	19	22	15	18	16	18
7	0.8	0.3	1.8	14.0	315	-	-	-	-	1.4	1.24	16.0	580	16	18	13	16	14	16
8	0.8	0.3	1.8	15.0	370	-	-	-	-	1.4	1.24	17.0	660	14	16	11	13	12	14
9	0.8	0.3	1.8	16.5	415	-	-	-	-	1.4	1.24	18.0	730	14	16	11	13	12	14
10	0.8	0.3	1.8	17.5	425	-	-	-	-	1.4	1.4	19.5	775	14	16	11	13	12	14
12	0.8	0.3	1.8	18.0	480	4.0 X 0.8	1.24	18.5	680	1.6	1.4	20.5	890	12	14	10	12	11	13
14	0.8	0.3	1.8	19.0	540	4.0 X 0.8	1.40	19.5	775	1.6	1.4	21.5	980	12	14	10	12	11	13
16	0.8	0.3	1.8	20.0	600	4.0 X 0.8	1.40	20.5	860	1.6	1.4	22.5	1060	11	13	9	11	10	11
19	0.8	0.3	2.0	21.5	695	4.0 X 0.8	1.40	22.0	935	1.6	1.4	23.5	1165	11	13	9	11	10	11
21	0.8	0.3	2.0	22.5	775	4.0 X 0.8	1.40	23.0	1035	1.6	1.4	24.5	1280	10	11	8	10	9	10
24	0.8	0.3	2.0	24.5	860	4.0 X 0.8	1.40	25.0	1155	1.6	1.4	26.5	1420	10	11	8	10	9	10
27	0.8	0.3	2.0	25.0	935	4.0 X 0.8	1.40	25.5	1230	1.6	1.4	27.0	1495	9	10	7	8	8	9
30	0.8	0.3	2.0	26.0	1020	4.0 X 0.8	1.40	26.5	1315	1.6	1.4	28.0	1610	9	10	7	8	8	9
32	0.8	0.3	2.0	27.0	1085	4.0 X 0.8	1.40	27.5	1400	1.6	1.4	29.0	1690	9	10	7	8	8	9
34	0.8	0.3	2.0	28.0	1145	4.0 X 0.8	1.40	28.5	1480	1.6	1.4	30.0	1780	9	10	7	8	8	9
37	0.8	0.3	2.0	28.0	1210	4.0 X 0.8	1.40	28.5	1545	1.6	1.4	30.0	1845	9	10	7	8	8	9

Table 7 : 1100 V, 2.5 sq.mm Multi Core Control Cable with Copper Conductor, PVC type A /PVC type C Insulated, Unarmoured & Armoured cables conforming to IS:1554 Part 1/Latest

Number of Core	Nominal Thickness of Insulation (mm)	Minimum thickness of inner sheath (mm)	Unarmoured Cables				Galvanized steel Flat Strip Armoured Cable				Galvanized steel Round Wire Armoured Cable				Current Carrying Capacity				
			Nominal Thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)	Nominal Dimension of Strip (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of Cable (mm)	Approx. Weight of cable (kg/km)	Nominal size of Armour (mm)	Minimum Thickness of PVC Outer Sheath (mm)	Approx. overall diameter of cable (mm)	Approx. Weight of cable (kg/km)	In Ground at 30°C (A)		In Air at 40°C (A)			
														PVC Type A	PVC Type C	PVC Type A	PVC Type C		
2	0.9	0.3	1.8	12.0	195	-	-	-	-	1.4	1.24	13.5	415	33	38	26	31	28	32
3	0.9	0.3	1.8	12.5	255	-	-	-	-	1.4	1.24	14.5	485	28	32	23	28	24	27
4	0.9	0.3	1.8	13.5	305	-	-	-	-	1.4	1.24	15.5	560	28	32	23	28	24	27
5	0.9	0.3	1.8	15.0	365	-	-	-	-	1.4	1.24	16.5	640	28	32	23	28	24	27
6	0.9	0.3	1.8	16.0	410	-	-	-	-	1.4	1.24	17.5	710	25	29	20	24	21	24
7	0.9	0.3	1.8	16.0	425	-	-	-	-	1.4	1.24	17.5	725	21	24	17	20	18	21
8	0.9	0.3	1.8	17.5	500	-	-	-	-	1.4	1.40	19.5	840	18	21	14	17	15	17
9	0.9	0.3	1.8	18.5	570	4.0 X 0.8	1.40	19.5	805	1.6	1.40	21.0	1000	18	21	14	17	15	17
10	0.9	0.3	1.8	20.0	580	4.0 X 0.8	1.40	21.0	840	1.6	1.40	22.5	1040	18	21	14	17	15	17
12	0.9	0.3	2.0	21.0	680	4.0 X 0.8	1.40	21.5	915	1.6	1.40	23.0	1150	16	18	13	16	14	16
14	0.9	0.3	2.0	22.0	770	4.0 X 0.8	1.40	22.5	1025	1.6	1.40	24.0	1255	16	18	13	16	14	16
16	0.9	0.3	2.0	23.0	860	4.0 X 0.8	1.40	23.5	1140	1.6	1.40	25.0	1380	15	17	12	14	13	15
19	0.9	0.3	2.0	24.5	975	4.0 X 0.8	1.40	25.0	1250	1.6	1.40	26.5	1520	15	17	12	14	13	15
21	0.9	0.3	2.0	25.5	1090	4.0 X 0.8	1.40	26.0	1385	1.6	1.40	27.5	1670	13	15	10	12	11	13
24	0.9	0.3	2.0	28.5	1205	4.0 X 0.8	1.40	29.0	1540	1.6	1.56	31.0	1885	13	15	10	12	11	13
27	0.9	0.3	2.0	29.0	1325	4.0 X 0.8	1.40	29.5	1655	1.6	1.56	31.5	2015	12	14	9	11	10	11
30	0.9	0.3	2.0	30.0	1450	4.0 X 0.8	1.56	31.0	1825	1.6	1.56	32.5	2155	12	14	9	11	10	11
32	0.9	0.3	2.0	31.5	1545	4.0 X 0.8	1.56	32.0	1945	1.6	1.56	33.5	2280	12	14	9	11	10	11
34	0.9	0.4	2.2	33.0	1685	4.0 X 0.8	1.56	33.5	2065	2.0	1.56	36.0	2640	12	14	9	11	10	11
37	0.9	0.4	2.2	33.0	1785	4.0 X 0.8	1.56	33.5	2165	2.0	1.56	36.0	2740	12	14	9	11	10	11

Basic Assumption For Current Ratings & Rating Factors

Maximum conductor Temperature : 70°C for PVC type A insulation & 85°C for PVC type C insulation.

Ground Temperature : 30°C.

Ambient Air Temperature : 40°C.

Thermal resistivity of soil : 1.5 K.m/W.

Depth of laying (Measured the cable axis or centre of the trefoil group) : 750 mm.

Table 1 : Rating Factors for Variation in Ambient Air Temperature for Cables in Free Air

Maximum Conductor Temperature (°C)	Ambient Air Temperature (°C)							
	25	30	35	40	45	50	55	60
70	1.22	1.15	1.08	1.00	0.91	0.82	0.71	0.58
85	1.15	1.11	1.05	1.00	0.94	0.88	0.82	0.75

Table 2 : Rating Factors for Variation in Ground Temperature for Direct Buried Cables

Maximum Conductor Temperature (°C)	Ground Temperature (°C)							
	15	20	25	30	35	40	45	50
70	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71
85	1.13	1.09	1.04	1.00	0.95	0.90	0.85	0.8

Table 3 : Rating Factors for Variation in Ground Temperature for Cables in Ducts

Maximum Conductor Temperature (°C)	Ground Temperature (°C)							
	15	20	25	30	35	40	45	50
70	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71
85	1.13	1.09	1.04	1.00	0.95	0.90	0.85	0.80

Note: Remaining Derating factors are as per IS : 3961 (P-5)

Quality Assurance

Fort Gloster always aim to achieve satisfaction of customer, For that Fort Gloster has up to date laboratory facilities. In the manufacture of cables, intelligent efforts are incorporated to achieve quality. For a quality end product, Control starts from proper design of the product. All raw materials are selected carefully and only materials of high quality are used in Fort gloster product.

Test

Fort Gloster is self sufficient to carry out all Routine, Acceptance & Type Tests in its own laboratory. It has world class Testing facilities for Routine, Acceptance & Type Tests.

Routine Test:

- (i) High Voltage Test.
- (ii) Conductor Resistance Test.

Type Tests:

The cable samples are type tested in-house to ensure conformance as to various standards.

- (i) Electrical Tests.
- (ii) Physical and mechanical Tests.
- (iii) Special Tests.
- (iv) Chemical & Fire Tests.





Fort Gloster Industries Limited

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