



GMR WIRES & CABLES INDUSTRY



IS : 7098 (P-1)
IS : 1554 (P-1)
IS : 694 / 1990



PRODUCT RANGE

POWER & CONTROL CABLE

Description	Annealed Copper / Aluminium Conductor, PVC/XLPE Insulated, Cores Color Coded/numbered, Laidup, PVC Inner Sheathed, G.I. Wire/strips Armoured And Overall PVC/FR-PVC FRLS Sheathed 1. I Kv Grade.
Specification	IS: 1554/1988, IS: 7098/1/1988, IS: 5831, IS: 8130/1994, IS:3975, IS: 10418, IS: 10810, IS:6746, IEC332/1/2/3, ASTM D2843/2863/1977, IEC-754, NEMA-WC5, BS-5308 (P) I/ii Is-694

INSTRUMENTATION CABLE

Description	Annealed Solid Or Stranded Copper Conductor, PVC/XLPE Insulated, Multicore/ Pair/ Triad/ Quads, Individually/ Overall Screened With Aluminium Mylar Tape With Drain Wire/ Copper Wire Braided, Inner PVC Sheathed Armoured/ Unarmoured, Over All PVC Sheathed, 1.1 Kv Grade/600v
Specification	IS: 1554/1988, BS: 5308/I & II/86, IS: 5608/1991, IS: 694/1990, IEC332/1/2/3, ASTM D 2843/2863/1977, IEC-754.1/82, IEEE-383/1947, NEMA-WA-5

COMPENSATING & EXTENSION CABLE

Description	1.29/0.8mm Homogenous wire Materials, PVC Insulated Core Twisted To Form A Pairs, Individual Pairs/overall Shielded With Aluminium Back Mylar Tape With Drain Wire, PVC Sheathed, G.I Wire Armoured And Overall PVC Sheathed Of Type Kx Tx, Sx, Kx (A), Wx.
specification	ANSI-C96. 1/1964, IS:8784/1987, BS:1843 & BS:4973, DIN-4371 & 43710

TELEPHONE CABLE

Description	Annealed Tinned Copper Conductor, PVC Insulated, Color Coded Twisted Into Two Pairs, Laidup Minllex Taped PVC Sheathed, G.I Wire Armoured And Overall PVC Sheathed Telephone Cable In Size Of 0.5, 0.6, 0.71 And 0.91mm.
Specification	ITD/SWS/113C, OTD/S/WS/1148. OTD- D3003, CB:-7000, ARMOURING AND OTHER SHEATH AS PER IS: 1554/11988 ALSO WT -

HOUSE WIRING CABLE

Description Annealed Electronics Copper Conductor, Single/multicore PVC Sheathed Cable 1.1 Kv.

Specification IS-694/1990, BS: 2004.

ELASTOMER CABLE

Description Annealed Bare/tinned Copper Conductor, VIR/EPR/Silicone Insulated, Cores Coded/ Number Printed, Overall TRS / PCP / CSP/ Silicone Sheathed Cable 1.1 Kv Grade.

Specification IS: 9968/1& 11/1988, IS: 691, IS:4289/ 1984, VDE/282/1985

HIGH TEMPRATURE CABLE

Description A. Copper Conductor, Teflon Insulated, Teflon Sheathed, Overall ATC, ABC, S.S.Wire Braided, Control, Instrumentation & Thermocouple/compensating Cable Upto 250°c .

B. Copper Conductor, Teflon Insulated, Teflon Sheathed, Fiber Glass & Asbestos Braiding, Control, Instrumentation & Thermocouple / Compensating Cable Upto 400°c .

C. Copper Conductor, Fiber Glass Insulated, Fiber Glass Sheathed, Overall SS Wire Braiding, Control, Instrumentation & Thermocouple/compensating Cable Upto 800°c.

Specification ANSI-C96. 1/1964, IS:8784/1987, BS:1843 & BS:4973, DIN-4371 & 43710

CO-AXIAL CABLE

Specification RG-6, RG-11, RG-58, RG-59, RG-211, RG-213, RG-213U

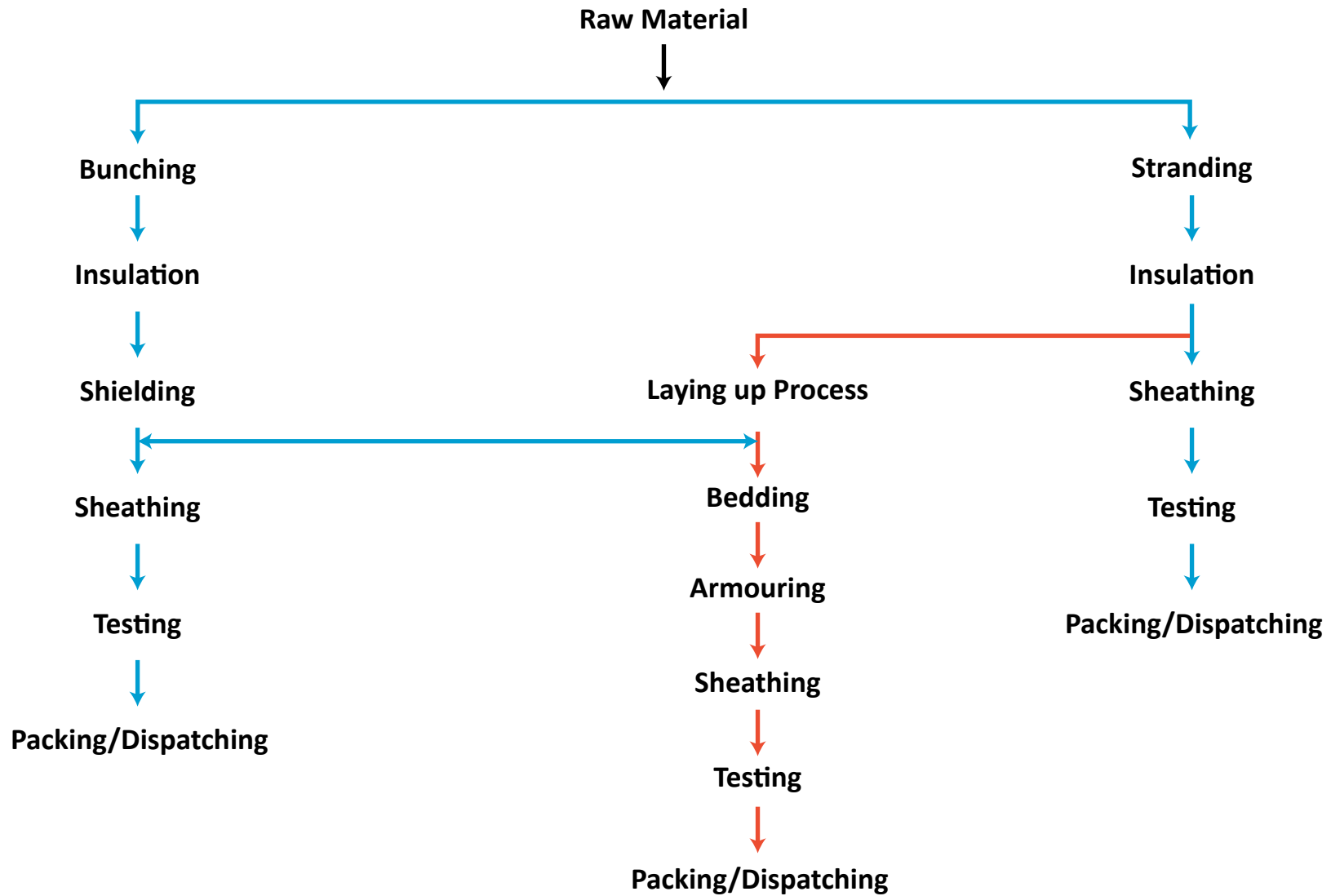
Solar CABLE

Description ABC/ATC Copar Conductor, PVC Insulated, UV Protected PVC Sheathed, Suitable for 1.1Kv

Specification IS-694

FLOW CHART OF MANUFACTURING PROCESS

(Power, Control Cable Armoured/Unarmoured)



IS : 694/1990
IS : 1554 PART-I



GMR WIRES & CABLES

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Power & Control Cables

LT PVC & INSTRUMENTS BS-5308(P)II

IS: 1554/PART - 1/1988

Dimensions, Weights and Electronics Characteristics

GMR WIRES & CABLES

TABLE - 1

Dimensions, Weights and Electrical Characteristics

1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFaY & AYWaY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Unarmoured			Armoured				Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating							
		Nominal Thickness of PVC Ins. mm	Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal Thickness of PVC Ins. mm	Nominal Armour Size mm	Approx. Overall Diameter Kg/Km	Approx. Weight Kg/Km		In Air at 40° C				In Gound at 30° C			
										PVC Insulation amps		HRPVC Insulation amps		PVC Insulation amps		HRPVC Insulation amps	
2C	3C	2C	3C	2C	3C	2C	3C										
1 CORE	10	1.0	10	105	1.3	1.4	12	185	3.080	56	47	67	56	59	51	67	58
	16	1.0	12	155	1.3	1.4	14	245	1.910	72	64	86	77	75	66	86	75
	25	1.2	13	190	1.5	1.4	15	290	1.200	99	84	119	101	97	86	111	98
	35	1.2	14	230	1.5	1.4	16	340	0.868	120	105	144	126	120	100	137	114
	50	1.4	16	290	1.7	1.4	18	415	0.641	150	130	180	156	145	120	165	137
	70	1.4	17	370	1.7	1.4	20	520	0.443	185	155	222	186	170	140	194	160
	95	1.6	20	480	1.9	4 X 0.8	21	585	0.320	215	190	258	228	205	175	234	200
	120	1.6	21	590	1.9	4 X 0.8	23	680	0.253	240	220	288	264	230	195	262	222
	150	1.8	23	700	2.1	4 X 0.8	24	810	0.206	270	250	324	300	265	220	302	251
	185	2.0	25	850	2.3	4 X 0.8	27	965	0.164	305	290	366	348	300	240	342	274
	240	2.2	28	1060	2.5	4 X 0.8	29	1190	0.125	350	335	420	402	335	270	382	308
	300	2.4	30	1280	2.7	4 X 0.8	32	1455	0.100	395	380	474	456	370	295	422	336
	400	2.6	34	1640	3.0	4 X 0.8	36	1810	0.0778	455	435	546	522	410	325	467	371
	500	3.0	38	2060	3.4	4 X 0.8	40	2260	0.0605	490	480	588	576	435	345	496	393
	630	3.4	43	2625	3.9	4 X 0.8	45	2860	0.0469	560	550	672	660	485	390	553	445
	800	3.4	47	3180	3.9	4 X 0.8	49	3480	0.0367	640	630	768	756	530	440	504	502
1000	3.4	51	3910	3.9	4 X 0.8	54	4225	0.0291	740	720	888	864	580	490	551	559	

The diomensions indicated above are considering following construction :

- 1) As per IS 1554 Pt-I/1988, 1 Core Cable will not have innersheath.
- 2) innersheath for 2Core Cable - Upto including 16 sq. mm and above - stranded sector shaped cond.
- 3) A.C current ratings gives for 2 core cables are for single cable only.

GMR WIRES & CABLES

TABLE - 2

Dimensions, Weights and Electrical Characteristics
1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFY & AYWY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Nominal Thickness of PVC Ins. mm	Nominal Thickness of PVC Ins. mm	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating			
				Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
										PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
2 CORE	4	1.0	1.0	14	190	1.4	16	460	7.410	27	32	32	36
	6	1.0	1.0	15	230	1.4	17	535	4.610	35	42	40	46
	10	1.0	1.0	16	270	1.4	19	605	1.080	47	56	55	63
	16	1.0	1.0	20	385	4 X 0.8	21	630	1.910	59	71	70	80
	25	1.2	1.0	20	420	4 X 0.8	21	600	1.200	78	94	90	103
	35	1.2	1.2	22	500	4 X 0.8	23	700	0.868	99	119	110	125
	50	1.4	1.4	25	640	4 X 0.8	25	875	0.641	125	150	135	154
	70	1.4	1.4	27	800	4 X 0.8	28	1100	0.443	150	180	160	182
	95	1.6	1.6	32	1080	4 X 0.8	32	1410	0.320	185	222	190	207
	120	1.6	1.6	33	1245	4 X 0.8	34	1595	0.253	210	252	210	239
	150	1.8	1.8	36	1515	4 X 0.8	37	1900	0.206	240	288	240	274
	185	2.0	2.0	40	1845	4 X 0.8	41	2270	0.164	275	330	275	314
	240	2.2	2.2	45	2345	4 X 0.8	46	2810	0.125	325	390	320	365
	300	2.4	2.4	50	2890	4 X 0.8	51	3455	0.100	365	438	355	405
400	2.6	2.6	56	3670	4 X 0.8	56	4230	0.0778	420	504	385	439	

The dimensions indicated above are considering following construction :

- 1) As per IS 1554 Pt-I/1988, 1 Core Cable will not have innersheath.
- 2) innersheath for 2 Core Cable - Upto including 16 sq. mm and above - stranded sector shaped cond.
- 3) A.C current ratings gives for 2 core cables are for single cable only.

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TABLE - 3

Dimensions, Weights and Electrical Characteristics

1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFY & AYWY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Unarmoured Nominal Thickness of PVC Ins. mm	Armoured Nominal Thickness of PVC Ins. mm	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating			
				Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
										PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
3 CORE	4	1.0	1.0	15	220	1.4	17	520	7.410	23	28	28	32
	6	1.0	1.0	16	265	1.4	18	610	4.610	30	36	35	40
	10	1.0	1.0	17	320	1.4	20	720	3.080	40	48	46	52
	16	1.0	1.0	19	380	4 X 0.8	20	625	1.910	51	61	60	68
	25	1.2	1.0	22	550	4 X 0.8	23	770	1.200	70	84	76	87
	35	1.2	1.2	24	665	4 X 0.8	25	905	0.868	86	103	92	105
	50	1.4	1.4	27	865	4 X 0.8	29	1155	0.641	105	126	110	125
	70	1.4	1.4	31	1140	4 X 0.8	32	1470	0.443	130	156	135	154
	95	1.6	1.6	35	1485	4 X 0.8	36	1860	0.320	155	186	165	188
	120	1.6	1.6	37	1730	4 X 0.8	38	2160	0.253	180	216	185	211
	150	1.8	1.8	41	2115	4 X 0.8	42	2570	0.206	205	246	210	239
	185	2.0	2.0	45	2630	4 X 0.8	46	3070	0.164	240	288	235	268
	240	2.2	2.2	51	3360	4 X 0.8	52	3910	0.125	280	336	275	314
	300	2.4	2.4	56	4115	4 X 0.8	57	4770	0.100	315	378	305	348
400	2.6	2.6	63	5210	4 X 0.8	64	5850	0.0778	375	450	335	382	

The dimensions indicated above are considering following construction :

Innersheath - Upto and including 16 Sq. mm - Extruded Innersheath, 225 Sq. mm and above - Taped innersheath. Conductor - Upto and including 10Sq. mm- Solid Round Cond., for 16Sq. mm and above - Stranded Sector shaped Cond.

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TABLE - 4

Dimensions, Weights and Electrical Characteristics
1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFY & AYWY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Unarmoured Nominal Thickness of PVC Ins. mm	Armoured Nominal Thickness of PVC Ins. mm	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating			
				Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
										PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
3.5 CORE	25	1.2	1.2	25	660	4 X 0.8	26	890	0.1200	70	84	76	87
	35	1.2	1.2	26	780	4 X 0.8	28	1050	0.868	86	103	92	105
	50	1.4	1.4	29	1000	4 X 0.8	30	1300	0.641	105	126	110	125
	70	1.4	1.4	33	1310	4 X 0.8	34	1650	0.443	130	156	135	154
	95	1.6	1.6	38	1710	4 X 0.8	39	2095	0.320	155	186	165	188
	120	1.6	1.6	41	2100	4 X 0.8	42	2500	0.253	180	216	185	211
	150	1.6	1.6	45	2450	4 X 0.8	46	2945	0.206	205	246	210	239
	185	2.0	2.0	50	3060	4 X 0.8	51	3585	0.164	240	288	235	268
	240	2.2	2.2	57	3940	4 X 0.8	57	4480	0.125	280	336	275	314
	300	2.4	2.4	63	4695	4 X 0.8	63	5495	0.100	315	378	305	348
400	2.6	2.6	70	6020	4 X 0.8	71	6805	0.0778	375	450	335	382	

The dimensions indicated above are considering following construction :

The dimesions indicated above are considering following construction innersheath - Upto and including 16 Sq. mm Extruded innersheath, 25 Sq. mm and above - Taped innersheath. Conductor - Upto and including 10 Sq. mm - Solid Round Cond., for 16 Sq. mm and above - Standed - Sector Cond.

GMR WIRES & CABLES

TABLE - 5

Dimensions, Weights and Electrical Characteristics

1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFY & AYWY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Unarmoured Nominal Thickness of PVC Ins. mm	Armoured Nominal Thickness of PVC Ins. mm	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating			
				Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
										PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
4 CORE	4	1.0	1.0	16	275	1.4	18	595	7.410	23	28	28	32
	6	1.0	1.0	17	340	1.4	19	700	4.610	30	36	35	40
	10	1.0	1.0	19	415	4 X 0.8	20	660	3.080	40	48	46	52
	16	1.0	1.0	21	470	4 X 0.8	22	740	1.910	51	61	60	68
	25	1.2	1.0	25	690	4 X 0.8	26	925	1.200	70	84	76	87
	35	1.2	1.2	27	840	4 X 0.8	28	1110	0.868	86	103	92	105
	50	1.4	1.4	32	1145	4 X 0.8	33	1465	0.641	105	126	110	125
	70	1.4	1.4	35	1455	4 X 0.8	36	1835	0.443	130	156	135	154
	95	1.6	1.6	41	1940	4 X 0.8	41	2360	0.320	155	186	165	188
	120	1.6	1.6	43	2290	4 X 0.8	44	2740	0.253	180	216	185	211
	150	1.8	1.8	47	2790	4 X 0.8	48	3250	0.206	205	246	210	239
	185	2.0	2.0	53	3460	4 X 0.8	53	3990	0.164	240	288	235	268
	240	2.2	2.2	59	4395	4 X 0.8	60	5020	0.125	280	336	275	314
	300	2.4	2.4	66	5475	4 X 0.8	66	6150	0.100	315	378	305	348
400	2.6	2.6	73	6830	4 X 0.8	74	7625	0.0778	375	450	335	382	

The dimensions indicated above are considering following construction :

Innersheath - Upto and including 16 Sq. mm - Extruded Innersheath, 25 Sq. mm and above - Taped innersheath. Conductor - Upto and including 10 Sq. mm- Solid Round Cond., for 16 Sq. mm and above - Stranded Sector shaped Cond.

GMR WIRES & CABLES

TABLE - 6

Dimensions, Weights and Electrical Characteristics

1100 V, Aluminium Conductor, PVC Insulated Shaethed, Unarmoured (AYY) and Armoured (AYFY & AYWY)

Number of Core	Nominal Area of Conduct (Sq. mm)	Unarmoured Nominal Thickness of PVC Ins. mm	Armoured Nominal Thickness of PVC Ins. mm	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C.Current Rating			
				Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
										PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
2 CORE	4	1.0	1.0	14	235	1.4	16	510	4.61	35	42	41	47
	6	1.0	1.0	15	290	1.4	17	600	3.08	45	54	50	57
	10	1.0	1.0	18	430	1.4	20	785	1.83	60	72	70	80
	16	1.0	1.0	20	580	4 X 0.8	21	800	1.15	78	94	90	103
3 CORE	4	1.0	1.0	15	290	1.4	17	580	4.61	30	36	36	41
	6	1.0	1.0	16	365	1.4	17	695	3.08	39	47	45	51
	10	1.0	1.0	18	545	1.4	21	980	1.83	52	62	60	68
	10	1.0	1.0	19	660	4 X 0.8	20	955	1.15	66	79	77	88
4 CORE	4	1.0	1.0	16	370	1.4	18	680	4.61	30	36	36	41
	6	1.0	1.0	17	470	1.4	19	870	3.08	39	47	45	51
	10	1.0	1.0	20	720	1.4	22	950	1.83	52	62	60	68
	16	1.0	1.0	21	850	4 X 0.8	22	1140	1.15	66	79	77	88

The dimensions indicated above are considering following construction :

For copper Cable Conductor - Upto and including 6 Sq. mm - Solid Round Cond., for 10Sq. mm - Stranded Round Cobd. and above - Stranded Sector shaped Cond. Upto and including 16 Sq. mm - Extuded Innersheath, 25 Sq. mm and above - Taped innersheath.

GMR WIRES & CABLES

TABLE - 7

SHORT CIRCUIT RATING

of conductor for one second duration (Kilio 9 amps)

Nominal Area of Conduct (Sq. mm)	PVC CABLES		HR-PVC CABLES	
	Copper	Aluminium	Copper	Aluminium
1.5	0.17	-	0.16	-
2.5	0.29	-	0.26	-
4	0.46	0.3	0.42	0.28
6	0.69	0.46	0.63	0.41
10	1.2	0.76	1.0	0.69
16	1.8	1.2	1.7	1.1
25	2.9	1.9	2.6	1.7
35	4.0	2.7	3.7	2.4
50	5.8	3.8	5.2	3.5
70	8.1	5.3	7.3	4.8
95	10.9	7.2	9.9	6.6
120	13.8	9.1	12.5	8.3
150	17.2	11.4	15.6	10.4
185	21.3	14.3	19.3	12.8
240	27.6	18.2	25.0	16.6
300	34.5	22.7	31.3	20.7
400	46.0	30.3	41.7	27.6
500	57.5	37.9	52.1	34.5
630	72.4	47.7	65.6	43.5
800	92.0	60.6	83.3	55.5
1000	114.9	75.8	104.2	69.0

TABLE - 8

CONDUCTOR CIRCUIT RATING

of conductor for one second duration (Kilio 9 amps)

Nominal Area of Conduct (Sq. mm)	Max D.C. Resistance		Approx. A.C. Resistance	
	Plain Copper	Aluminium	Plain Copper	Aluminium
Sq.mm	At 20° C	At 20° C	At 90° C	At 90° C
1.5	12.10	18.10	15.50	23.05
2.5	7.40	12.10	9.50	15.30
4	4.61	7.41	5.91	9.50
6	3.08	4.61	3.95	5.91
10	1.83	3.08	2.35	3.95
16	1.15	1.91	1.47	2.45
25	0.727	1.20	0.932	1.539
35	0.524	0.868	0.672	1.113
50	0.387	0.641	0.496	0.822
70	0.268	0.443	0.343	0.568
95	0.193	0.320	0.247	0.410
120	0.153	0.253	0.196	0.325
150	0.124	0.206	0.159	0.265
185	0.0991	0.164	0.128	0.212
240	0.0754	0.125	0.0977	0.162
300	0.0601	0.100	0.0781	0.130
400	0.0470	0.778	0.0616	0.102
500	0.0366	0.0605	0.0490	0.081
630	0.283	0.0469	0.0386	0.064
800	0.0221	0.0367	0.0317	0.0526
1000	0.0176	0.0291	0.0265	0.0438

GMR WIRES & CABLES

TABLE - 9

REACTANCE

Approx. Reactance at 50 Hz (Ohms/Km) 1.1 Kv PVC/HR-PVC Cables

Nominal Area	XLPE CABLE		
	Single Core		Multicore
	Sq. mm	Unarmoured	
1.5	0.157	-	0.110
2.5	0.145	-	0.1065
4	0.138	-	0.102
6	0.128	-	0.0962
10	0.118	0.137	0.0908
16	0.110	0.128	0.0859
25	0.107	0.122	0.0849
35	0.106	0.116	0.0823
50	0.0973	0.110	0.0765
70	0.0924	0.107	0.0769
95	0.0900	0.103	0.0766
120	0.880	0.0989	0.0741
150	0.0862	0.0960	0.0743
185	0.0857	0.0950	0.0742
240	0.0837	0.0929	0.0737
300	0.0828	0.0922	0.0733
400	0.0810	0.0890	0.0729
500	0.0807	0.0890	0.0732
630	0.0803	0.0876	0.0731
800	0.0782	0.0862	-
1000	0.0772	0.0849	-

TABLE - 10

CAPACITANCE

Approx. capacitance [Microfrads/Km] 101 Kv PVC/HR-PVC Cables

Nominal Area of Conductor	XLPE CABLE			
	Single Core		Two core	Three, Three & Half & Four Core Cable
	Sq. mm	Unarmoured		
1.5	0.43	-	0.12	0.35
2.5	0.52	-	0.13	0.41
4	0.57	-	0.14	0.46
6	0.67	-	0.16	0.52
10	0.83	0.67	0.18	0.63
16	0.97	0.80	0.19	0.82
25	1.00	0.83	0.22	0.86
35	1.15	0.95	0.24	0.98
50	1.26	0.95	0.24	1.00
70	1.32	1.12	0.26	1.16
95	1.36	1.17	0.26	1.18
120	1.49	1.28	0.28	1.31
150	1.52	1.32	0.28	1.28
185	1.47	1.30	0.28	1.30
240	1.54	1.37	0.28	1.34
300	1.60	1.40	0.29	1.37
400	1.70	1.50	0.29	1.43
500	1.63	1.46	0.29	1.41
630	1.64	1.45	0.29	1.42
800	1.87	1.65	-	-
1000	2.05	1.76	-	-

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TABLE - 11

INSTRUMENTATION CABLE

COPPER CONDUCTOR, PVC/PE/XLPE INSULATED CABLE, SCREENED, ARMoured/UNARMoured, PVC SHEATHED (ST-1,ST-2, FR & FRLS)
AS PER IS-1554 PART-I, BS-5308 PART-I & PART-II

Nominal Area of Conductor (Sqmm)	Number of pair	Nominal Thickness Of pvc Insulation (mm)	Nominal Steel Armoured Size (mm)	Max. D.C Conductor Resistance At 20°C (Ohm/km)		Insulation Resistance At 20°C (Mohm/km)		Capacitance (pf/mtrs)		Drain Wire Resistance At 20°C (ohm/km)
				ATC Conductor	ABC Conductor	PVC	XLPE	Core to Core	Core to Screen	
0.5	1 To 25	0.6	0.90, 1.1, 4 X 0.80MM	41.1	39	100	5000	250	400	30
0.75	1 To 25	0.6	0.90, 1.1, 4 X 0.80MM	26.7	26	100	5000	250	400	30
1	1 To 25	0.6	0.90, 1.1, 4 X 0.80MM	18.2	18.1	100	5000	250	400	30
1.5	1 To 25	0.6	0.90, 1.1, 4 X 0.80MM	12.2	12.1	100	5000	250	400	30

The dimensions indicated above are considering following construction:

- A. **Digital Cable:** Copper conductor, pvc insulated, overall shielding/ atc copper braiding, armoured/unarmoured
- B. **Analog Cable:** Copper conductor, pvc insulated, individual & overall shielding/ atc copper braiding, armoured/unarmoured
- C. **Compensation Cable:** Copper/constantan (t-type) conductor, pvc insulated, individual & overall shielding/ atc copper braiding, armoured/unarmoured
- D. **Thermocouple cable:** Chromal/almul (k-type) conductor, pvc insulated, individual & overall shielding/ atc copper braiding, armoured/unarmoured

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TABLE - 12

TELEPHONE CABLE

ABC/ATC COPPER CONDUCTOR, PVC/PE INSULATED, ARMOURE/UNARMOURED, PVC SHEATHED TELEPHONE CABLE AS PER ITD-S/WS-113-C

Nominal Area of Conductor (Sqmm)	Number of pair	Nominal Thickness Of pvc Insulation (mm)	Nominal Steel Armoured Size (mm)	Max. D.C Conductor Resistance At 20°c (ohm/km)		Insulation Resistance At 20°c (mohm/km)		Capacitance (pf/mtrs)
				ATC Conductor	ABC Conductor	PVC	XLPE	Core To Core
0.4	1 To 20	0.2	0.90, 1.1, 4 X 0.80MM	138.5	137.5	50	5000	110
0.5	1 To 20	0.2	0.90, 1.1, 4 X 0.80MM	89	87.85	50	5000	110

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TABLE - 13

Dimensions, Weights and Electrical Characteristics

1100 V, Copper Conductor, PVC Insulated and Shaethed, Unarmoured (YY) and Armoured (YWY & YFY) AS PER-JS-1554 (P) I

Number of Core	Nominal Area of Conductor (Sq. mm)	Nominal Thickness of PVC Diameter (mm)	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C. Current Rating			
			Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
									PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
2	1.5	0.8	12	150	1.4	13	350	12.1	20	24	23	26
3	1.5	0.8	12	175	1.4	14	390	12.1	17	20	21	24
4	1.5	0.8	13	200	1.4	15	425	12.1	17	20	21	24
5	1.5	0.8	13	240	1.4	16	485	12.1	17	20	21	24
6	1.5	0.8	14	257	1.4	16	545	12.1	12	14	14	16
7	1.5	0.8	14	285	1.4	16	555	12.1	12	14	14	16
8	1.5	0.8	15	330	1.4	17	625	12.1	12	14	13	15
9	1.5	0.8	16	375	1.4	18	690	12.1	11	13	13	15
10	1.5	0.8	17	390	1.4	19	640	12.1	11	13	12	14
12	1.5	0.8	18	435	4 X 0.8	20	740	12.1	10	12	11	13
14	1.5	0.8	19	490	4 X 0.8	20	730	12.1	9	11	11	13
16	1.5	0.8	20	540	4 X 0.8	21	790	12.1	9	11	10	11
19	1.5	0.8	21	630	4 X 0.8	22	880	12.1	8	10	10	11
24	1.5	0.8	24	775	4 X 0.8	25	1070	12.1	8	10	9	10
27	1.5	0.8	24	845	4 X 0.8	26	1160	12.1	7	8	8	9
30	1.5	0.8	25	920	4 X 0.8	27	1235	12.1	7	8	8	9
33	1.5	0.8	26	990	4 X 0.8	27	1340	12.1	7	8	8	9
37	1.5	0.8	27	1090	4 X 0.8	28	1430	12.1	6	7	7	8
44	1.5	0.8	30	1275	4 X 0.8	32	1685	12.1	6	7	7	8
48	1.5	0.8	31	1390	4 X 0.8	32	1800	12.1	6	7	7	8
52	1.5	0.8	32	1500	4 X 0.8	33	1895	12.1	6	7	7	8
56	1.5	0.8	33	1600	4 X 0.8	34	2015	12.1	6	7	7	8
61	1.5	0.8	34	1710	4 X 0.8	35	2150	12.1	6	7	7	8

The technical detail specified above are considering extruded inner sheath (For control Cable only)

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TABLE - 14

Dimensions, Weights and Electrical Characteristics

1100 V, Copper Conductor, PVC Insulated and Shaethed, Unarmoured (YY) and Armoured (YWY & YFY) AS PER-JS-1554 (P) I

Number of Core	Nominal Area of Conductor (Sq. mm)	Nominal Thickness of PVC Diameter (mm)	Unarmoured		Armoured			Max. D.C. Conductor Resistance At 20° C ohm/Km	A.C. Current Rating			
			Approx Overall Diameter mm	Approx. Weight Kg/Km	Nominal steel Armour Size mm W F	Approx. Overall Diameter mm	Approx. Weight Kg/Km		In Air at 40° C		In Gound at 30° C	
									PVC Insulation amps	HRPVC Insulation amps	PVC Insulation amps	HRPVC Insulation amps
2	2.5	0.9	13	190	1.4	15	420	7.41	27	32	32	36
3	2.5	0.9	13	230	1.4	15	465	7.41	24	29	27	31
4	2.5	0.9	14	275	1.4	16	525	7.41	24	29	27	31
5	2.5	0.9	15	320	1.4	17	600	7.41	24	29	27	31
6	2.5	0.9	16	375	1.4	18	685	7.41	17	20	20	23
7	2.5	0.9	16	390	1.4	18	705	7.41	17	20	20	23
8	2.5	0.9	17	460	1.4	20	810	7.41	16	19	19	22
9	2.5	0.9	18	520	4 X 0.8	20	765	7.41	15	18	18	21
10	2.5	0.9	20	540	4 X 0.8	22	810	7.41	14	17	17	19
12	2.5	0.9	21	630	4 X 0.8	22	880	7.41	14	17	16	18
14	2.5	0.9	22	710	4 X 0.8	23	980	7.41	13	16	15	17
16	2.5	0.9	23	790	4 X 0.8	24	1060	7.41	12	14	15	17
19	2.5	0.9	24	895	4 X 0.8	25	1190	7.41	11	13	14	16
24	2.5	0.9	28	1110	4 X 0.8	29	1485	7.41	10	12	12	14
27	2.5	0.9	28	1210	4 X 0.8	29	1575	7.41	10	12	12	14
30	2.5	0.9	29	1325	4 X 0.8	31	1735	7.41	9	11	11	13
33	2.5	0.9	30	1440	4 X 0.8	32	1850	7.41	9	11	11	13
37	2.5	0.9	32	1620	4 X 0.8	33	2010	7.41	9	11	10	11
44	2.5	0.9	36	1900	4 X 0.8	37	2365	7.41	8	10	10	11
48	2.5	0.9	36	2040	4 X 0.8	37	2500	7.41	8	10	10	11
52	2.5	0.9	37	2190	4 X 0.8	38	2670	7.41	8	10	10	11
56	2.5	0.9	38	2335	4 X 0.8	39	2840	7.41	8	10	10	11
61	2.5	0.9	39	2500	4 X 0.8	40	3010	7.41	8	10	10	11

The technical detail specified above are considering extruded inner sheath (For control Cable only)



GMR WIRES & CABLES

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