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TECHNICAL
CATALOGUE

INTRODUCTION



RICHA Group of Industries is situated at F-172-173, **RIICO** Industrial Area, Phase II, Bindaayaka, Jaipur – 302021 at a distance of 20 KM from Jaipur Station. The Group has its Industrial Units at Delhi & Uttar Pradesh also. The Group started its manufacturing activities in 1993 and there was no looking back thereafter. The Group is presently engaged in the manufacturing of PVC Insulated Wires and Cables, PVC Pipes & Fittings, Cable Trunking & Ducting Systems (PVC Casing 'n' Capings) and its fittings, LED Lamps, Tubes, Panels , Indoor and Outdoor fittings & fixtures, Kwh Static Energy Meters. The Group has two ISO : 2000 Certifications as a feather in its cap. Almost all the products manufactured by the **RICHA** Group are certified by Bureau of Indian Standard & ISI Marked.

RICHA has an exclusive range of electrical products as a standing testimony to our commitment to innovation, quality, durability and proven performance. **RICHA** has the expertise to manufacture 'custom built' electrical products. **RICHA** is fully equipped with 'In-house' testing facilities and the products are tested for performance to relevant standards. Our laboratories are fully equipped to international standards. Technology, design, high quality raw materials and thorough testing help ensure continual improvement in the standards of every product manufactured under the Brand name of **RICHA**. The trademark **RICHA** guarantees performance, better quality & better customer services. We take enough care to maintain the quality not because we have to but we choose to. **RICHA** range of products are recommended by architects, interior decorators, builders and electrical contractors who seek quality products.

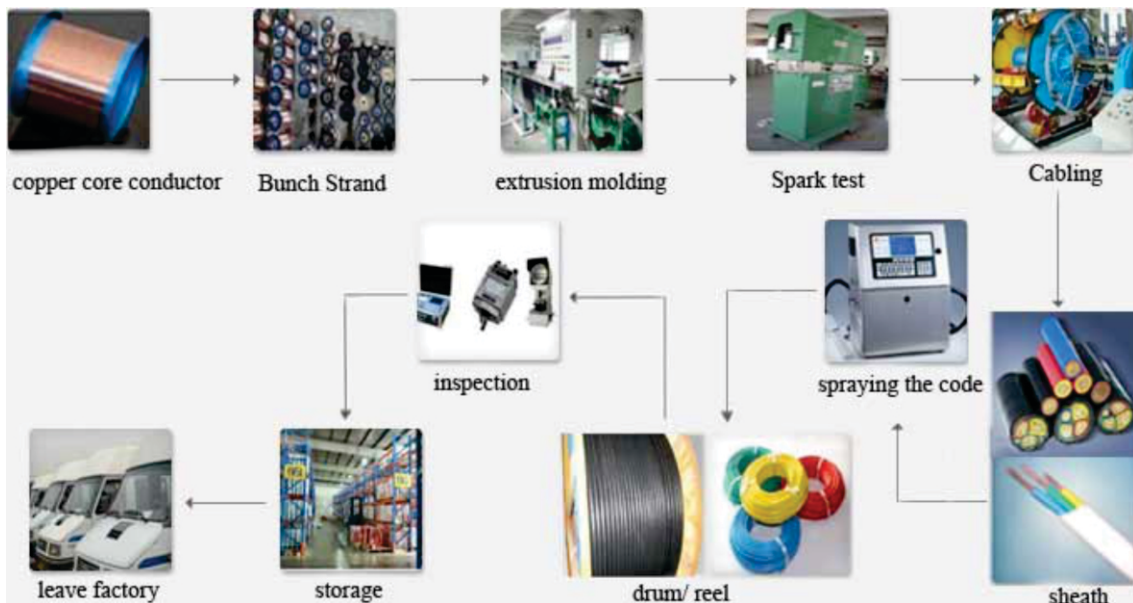
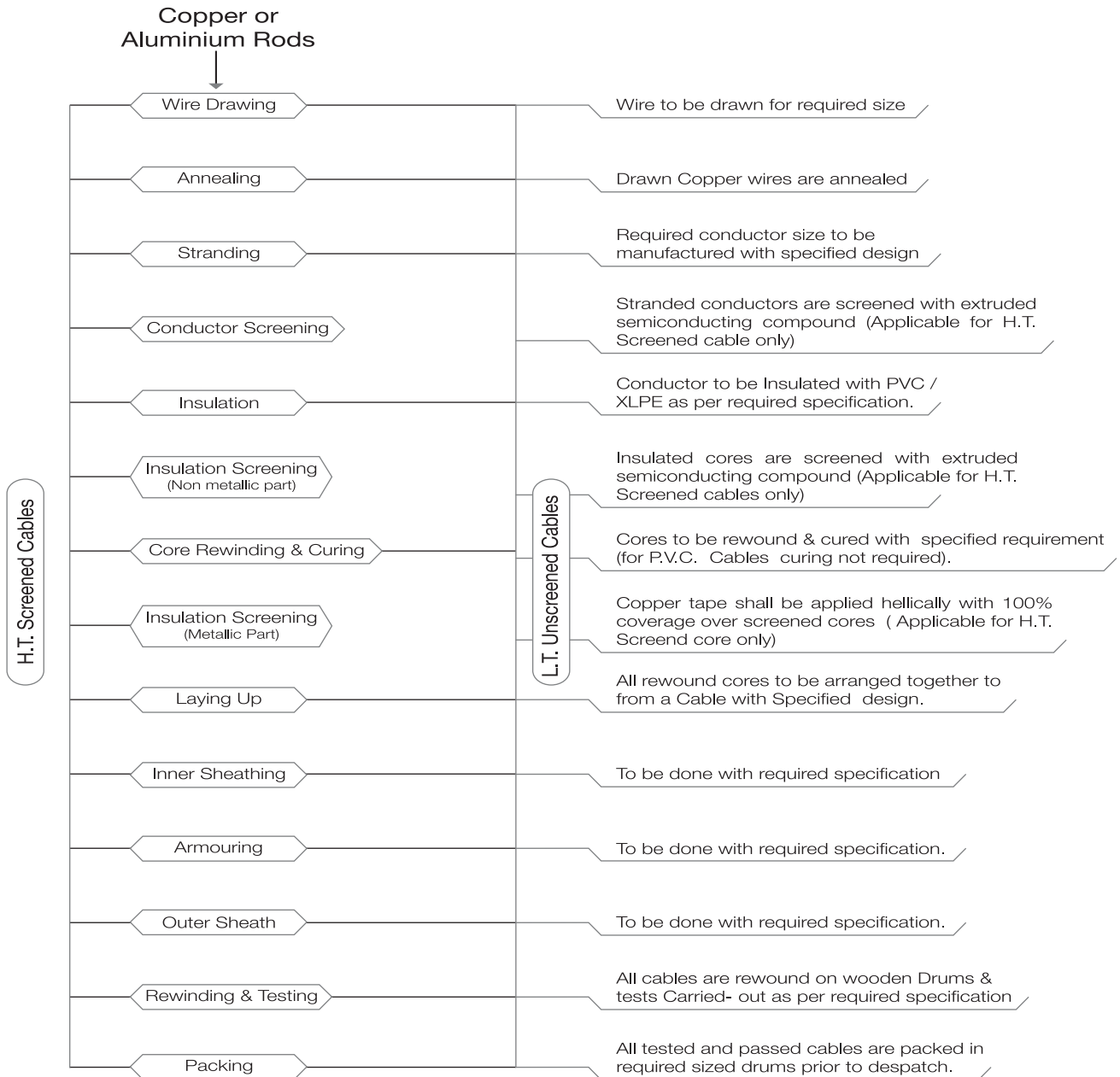
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Details for BIS Licences

For PVC Cables	For XLPE Cables	For PVC Wires
IS:1554 (Part-1), 1988 CM/L-8603575	IS:7098 (Part-1), 1988 CM/L-8969015	IS:694 : 1990 CM/L-8603676

MANUFACTURING PROCESS



PROCESS DESCRIPTION

WIRE DRAWING	Wires to be drawn of required size on Wire Drawing Machine.
INNER SHEATHING	To be done with required specification on Sheathing Line.
ARMOURIGN	To be done with required specification on Sun & Planetary Armouring Machine.
OUTER SHEATH	To be done with required specification on Sheathing Line.
REWINDING & TESTING	All Cables are rewound on steel/wooden Drums as per customer's requirement & test are carried out as per required specification.
PACKING	All tested and passes cables are packed and marked in required sized drums prior to dispatch.

MANUFACTURING OF CABLES

Cables with Aluminium & Copper Conductor and Polymer Insulation are manufactured at **RICHA** Cables in the brand name of RICHA comprise of conductor, insulation, screening (Wherever applicable), armour and outer sheath.

The brief description of the process is mentioned as under:

CONDUCTOR

RICHA Cables are available with both aluminium and copper conductors.

RICHA Cables are manufactured with solid/stranded Circular/shaped aluminium/copper conductors.

Standing makes Cables flexible and easy to handle while shaping makes them compact.

Compaction is provided to all stranded conductor constructions as under:

1. Circular Conductors : With one wire in the centre conductor contains 6,12,18,24,30 wire layers in the either unilay or opposite helical directions. The conductor is sized to approx. 90% compaction.
2. Shaped Conductor : In all multi core cables from 16 sq. mm size, conductors are "Shaped". Compaction Degree in multi core power cables is approx. 84% to 90%.
3. Segmental Conductor : As a special case **RICHA** Cables of 1600 sq. mm are made to segmental conductoras. The Conductors is manufactured in equal segments and compacted, then laid together. This reduces A.C. losses in the large sized conductor, which are due to skin and proximity effects.
4. Solidal Conductor : Looking to customer's specific requirements, three core solidal cables also manufactured with Solidal sector shaped conductors.

RICHA has special construction of conductor to suggest to its customers for meeting their specific need. We have special facility to manufacture the conductors with cablock compound for watertight cables.

RICHA Copper conductor cables are of the same construction that of cables with Aluminium conductor except for high tensile strength, superior conductivity, better flexibility and ease of jointing, copper cables are used in control instrumentation, winding , submarine, mining, signalling, airport lighting and ship wiring applications.

All conductors for **RICHA** Cables are manufactured strictly in accordance with National and International Specification.

National Specifications	IS:8130
International Specifications	IEC:60228/BS:6360

DIELECTRIC INSULATION

Insulation for **RICHA** Cables is Strictly as per National & International Specifications:

RICHA Cables are designed and manufactured with polymer dielectric to bear thermal and thermo mechanical stresses safety at continuous normal and short circuit temperature conditions.

RICHA Cables are available with thermoplastic and thermo setting insulation.

-PVC Cables	Thermoplastic Die Electric
-XLPE Cables	Thermosetting Die Electric

RICHA cables are long life & user friendly continuous emergency and short circuit conditions.

At **RICHA**, we are designing the cables based on established international practices but yet the latest state of the plant and manufacturing process given improved reliability and compactness to cables. The relative thermal expansion during short circuit between dielectric and conductor is therefore limited to minimum both in **PVC & XLPE**, thus limiting displacement of cores in cables during short circuit.

Insulation for **RICHA** Cables are strictly manufactured and applied over conductor in accordance with National and International Specification:

National Specifications : IS: 5831/IS:7098/IS:14255
International Specifications : BS6746/BS:5467/IEC:60502

LAYING UP

Cores are tested on line during producing both for physical and electric characteristic. Control is observed within light tolerance limits for dimensions in case of **PVC/XLPE** insulation. For multi core cables, cores are laid up on our latest **Sun & Planetary** type laying up machine equipped with automatic sector correction equipment.

In case of **XLPE** insulated cores the same are dry cured so as to impart the requisite characteristic both electrical and mechanical and then are laid up.

INNERSHEATH

Laid up cables are provide with inner sheath with superior quality of **PVC** which acts as bedding for steel wire/strip armouring. Wherever required filter cords are provide to maintain the circularity to laid up cables.

In **RICHA** Cables-Polymers used for inner sheath are softer than insulation or outer sheath & are compatible with temperature ratings of cables & do not have deleterious effect on any other component of cable.

Inner sheath is applied either with extrusion or by wrapping. In **RICHA** Cables through the inner sheath is closely applied on the laid up cores, some can be stripped with ease without damaging insulation.

The inner sheath dimensions are maintained strictly in accordance with laid down specification.

For **PVC** Cables IS: 1554 (I & II)
For **XLPE** Cables IS: 7098 (Part-I & II)

ARMOURING

Mechanical protection to the cable is provided with armouring.

RICHA single core cables are armoured with special Aluminum or Aluminum alloy wire strip, thus avoiding magnetic hysteresis losses on A.C. system.

Multi core cables are provided with galvanized steel wire/strips/tapes.

RICHA Cables are provided with galvanized wire armouring, where cables are to run vertically and are subjected to stresses.

RICHA mining cables are armoured with steel wire and tinned copper wires, so as to provide conductivity of armour more than 75% of main conductor of cable.

RICHA Cables armour wires/strips are of low resistivity material and meet the requirements of IS:3975.

OUTER SHEATH

All **RICHA** Cables are provide with PVC polymer outer sheath.

RICHA Cables are manufactured with various characteristics of sheathing compound.

General purpose of sheathing compound	ST1
Heat Resistance of compound for sheath(H.R.)	ST2
Fire Retardant Compound(FR)	IEC-754 (Part-I)]
(FRLS/Low Halogen Compound	EC-60332 (Part-I & II)
	IEEE-383
	ASTM-2843
	ASTM-2863

Advantages

In order to be identified, **RICHA** Cables have their name embossed/printed/indented on outersheath at regular intervals on the outer sheath of **RICHA** Cables, Voltage Grade, cable size, trade name & year of manufacture are embossed, as desired.

Cables are sequentially marked for length at every metre throughout its length.

FINAL TESTING

Each **RICHA** Cable is tested for all applicable Routine Tests.

From a lot of Cable one cable of each type is tested for Type tests, as per relevant specifications.

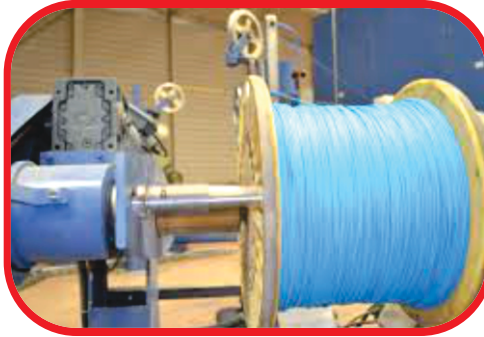
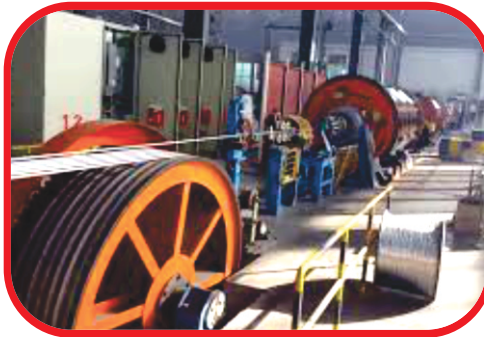
RICHA conduct its testing at **RICHA** Cables Pvt. Ltd. plant at Jaipur for acceptance test as per specification.

ADVANTAGES OF PVC CABLES

1. A non-hygroscopic insulation almost unaffected by moisture.
2. Non-migration of compound permitting vertical installation.
3. Complete protection against most forms of electrolytic and chemical corrosion.
4. A tough and resilient sheath with excellent fire - resisting qualities.
5. Good ageing characteristics.

ADVANTAGES OF XLPE CABLES

1. Higher Current Rating.
2. Higher Short Circuit Rating.
3. Longer Service Life.
4. For a short time it can withstand maximum 130°C and is favourable to endure short circuit stresses.
5. It is less sensitive to the setting of the network protection.
6. Because of the thermosetting process taking place due the effect of cross linking, the crack resistance is increased.
7. Due to the chemical cross-linking internal stresses are reduced. Consequently the material is less sensitive during manufacturing process to the setting of the cooling gradient.
8. The thermal resistivity of cross-linked material is favourably low, compared to thermoplastic material.
9. The low dielectric loss is a significant advantage.
10. The excellent mechanical features of the insulation improves the protection against external effects.
11. The resistance of the XLPE to acids, alkalies is outstanding and is often compensating the adverse environmental influences.



COMPARISON BETWEEN XLPE & PVC CABLES

S.NO.	PROPERTIES	UNIT	XLPE	PVC
1.	Chemical Properties	-	Thermoset Cross Linked	Thermoplastic Liner Bonded
2.	Polymer Structure	-	Partial Crystalline	Amorphous
3.	Temperature Rating			
a)	Operating			
b)	Emergency Overload			
c)	Short-Circuit	0C	900	700
		0C	1300	1200
		0C	250	1600
4.	Power Factor	-	0.0003	0.08
5.	Cable Carrying Capacity	-	Approx 30% higher than PVC	-
6.	Cable Installation Work	-	Easy due to less weight less dia	-
7.	Tensile Strength	n/mm ²	13-18	15-120
8.	Elongation	%	250-450	200-325
9.	Ageing Resistance			
a)		0 to 100 0C	Excellent	Moderate
b)		0 to 120 0C	Good	Poor
c)		0 to 150 0C	Moderate	Very Poor
10.	Dielectric Break Down	Kv/mm	35-55	15-25
11.	Volume Resistivity	Ohm-cm	More than 10 ¹⁵	1*10 ¹³ -5*10 ¹⁴
12.	Thermal Resistivity	0C cm/w	350	650
13.	Di-Electric Constant at 200C	-	2.3	7.4
14.	Specific Gravity	-	0.90-0.92	1.35-1.55
15.	Minimum Working Temperature	0C	-40	-15
16.	De-Formation Resistance at 1500C	-	Good	Poor
17.	Fungus Resistance	-	Good	Poor
18.	Moisture Penetration Resistance	-	Excellent	Good
19.	Solvent Resistance	-	Excellent	Poor
20.	Oil Resistance	-	Excellent	Fair
21.	Alkali Resistance	-	Excellent	Good
22.	Acid Resistance	-	Excellent	Fair
23.	Ultra Violet Light Resistance	-	Excellent	Good
24.	Health	-	Neutral	Toxic
25.	Cost Saving	C	Economical than PVC Cables	-

Table-1

TECHNICAL DETAILS FOR RICHA 1.1 KV

SINGLE CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, UN-ARMOURED CABLES

Cable Code : AYYYY

Physical Parameters

Ref Specification : IS 1554 Part-1

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Over- all Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper				With Al'm Cond.	With Al'm Cond.
						AYY	YY
Sqmm	No's	No's	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	1.80	8	80	100
6	1/3	1/3	1.00	1.80	9	90	120
10	1/7	6	1.00	1.80	10	110	170
16	6	6	1.00	1.80	10	150	250
25	6	6	1.20	1.80	12	200	350
35	6	6	1.20	1.80	13	250	450
50	6	6	1.40	1.80	15	300	600
70	12	12	1.40	1.80	16	400	800
95	15	15	1.60	1.80	18	500	1050
120	15	18	1.60	2.00	20	600	1300
150	15	18	1.80	2.00	22	700	1600
185	30	30	2.00	2.00	24	850	1950
240	30	34	2.20	2.00	27	1100	2500
300	30	34	2.40	2.00	30	1300	3100
400	53	53	2.60	2.20	34	1700	3950
500	53	53	3.00	2.20	37	2100	5000
630	53	53	3.40	2.40	42	2700	6450
800	53	53	3.40	2.40	46	3250	8050
1000	53	53	3.40	2.60	50	3950	9950

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.140	0.58	—	—	—	39	38	35	0.304	0.460
6	4.61	3.08	5.53	3.70	0.127	0.68	39	37	35	49	48	44	0.456	0.690
10	3.08	1.83	3.70	2.20	0.118	0.83	51	51	47	65	64	60	0.760	1.15
16	1.91	1.15	2.29	1.38	0.110	1.01	66	65	64	85	83	82	1.22	1.84
25	1.20	0.727	1.44	0.87	0.105	1.05	86	84	84	110	110	110	1.90	2.88
35	0.868	0.524	1.04	0.63	0.100	1.22	100	100	105	130	125	130	2.66	4.03
50	0.641	0.387	0.769	0.464	0.098	1.22	120	115	130	155	150	165	3.80	5.75
70	0.443	0.268	0.532	0.322	0.091	1.43	140	135	155	190	175	205	5.32	8.05
95	0.320	0.193	0.384	0.232	0.088	1.47	175	155	190	220	200	245	7.22	10.90
120	0.253	0.153	0.304	0.184	0.086	1.62	195	170	220	250	220	280	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.085	1.62	220	190	250	280	245	320	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.084	1.62	240	210	290	305	260	370	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.082	1.72	270	225	335	345	285	425	18.20	27.30
300	0.100	0.0601	0.122	0.0733	0.080	1.74	295	245	380	375	310	475	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.080	1.81	325	275	435	400	335	550	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.079	1.86	345	295	480	425	355	590	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.077	1.87	390	320	550	470	375	660	47.90	72.50
800	0.0367	0.0221	0.0503	0.0303	0.077	1.98	450	380	610	530	425	725	60.80	92.00
1000	0.0291	0.0176	0.0422	0.0255	0.076	2.20	500	415	680	590	740	870	76.00	115.00

Table-2

TECHNICAL DETAILS FOR RICHA 1.1 KV

TWO CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, UN-ARMOURED CABLES

Cable Code : AYY/YY

Physical Parameters

Ref Specification : IS 1554 Part-1

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
							AYY	YY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	0.30	1.80	13	230	280
6	1/3	1/3	1.00	0.30	1.80	15	270	350
10	1/7	6	1.00	0.30	1.80	16	330	480
16	6	6	1.00	0.30	1.80	16	350	500
25	6	6	1.20	0.30	2.00	19	450	750
35	6	6	1.20	0.30	2.00	20	550	950
50	6	6	1.40	0.30	2.00	23	700	1250
70	12	12	1.40	0.30	2.00	25	850	1650
95	15	15	1.60	0.40	2.20	29	1150	2250
120	15	18	1.60	0.40	2.20	31	1300	2700
150	15	18	1.80	0.40	2.40	33	1600	3300
185	30	30	2.00	0.50	2.40	36	1900	4100
240	30	34	2.20	0.50	2.60	42	2450	5250
300	30	34	2.40	0.60	2.80	45	2950	6500
400	53	53	2.60	0.70	3.20	51	3800	8300
500	53	53	3.00	0.70	3.40	57	4750	10550
630	53	53	3.40	0.70	3.80	64	6000	13500

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.098	0.23	32	27	27	41	35	35	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	40	34	35	50	44	45	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	55	45	47	70	58	60	0.760	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	70	58	59	90	75	78	1.22	1.84
25	1.20	0.727	1.44	0.87	0.083	0.42	90	76	78	115	97	105	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	110	92	99	140	120	125	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	135	115	125	165	145	155	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	160	140	150	205	180	195	5.32	8.05
95	0.320	0.193	0.384	0.232	0.076	0.58	190	170	185	240	215	230	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	210	190	210	275	235	265	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	240	210	240	310	270	305	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	275	240	275	350	300	350	14.10	21.28
240	0.125	0.0754	0.151	0.0912	0.073	0.67	320	275	325	405	345	410	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	355	305	365	450	385	465	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	385	345	420	490	485	530	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	425	380	475	540	460	605	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	465	415	540	640	550	785	47.90	72.55

Table-3

TECHNICAL DETAILS FOR RICHA 1.1 KV

THREE CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, UN-ARMOURED CABLES

Cable Code : AYY/YY

Physical Parameters

Ref Specification : IS 1554 Part-1

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
							With Al'm Cond.	With Cu Cond.
	Aluminium	Copper					AYY	YY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	0.30	1.80	14	250	330
6	1/3	1/3	1.00	0.30	1.80	15	310	420
10	1/7	6	1.00	0.30	1.80	17	370	580
16	6	6	1.00	0.30	1.80	18	450	700
25	6	6	1.20	0.30	2.00	21	600	1050
35	6	6	1.20	0.30	2.00	23	700	1350
50	6	6	1.40	0.30	2.00	26	900	1750
70	12	12	1.40	0.40	2.20	29	1200	2400
95	15	15	1.60	0.40	2.20	33	1500	3200
120	15	18	1.60	0.40	2.20	36	1800	3900
150	15	18	1.80	0.50	2.40	40	2200	4800
185	30	30	2.00	0.50	2.60	43	2700	5950
240	30	34	2.20	0.60	2.80	49	3550	7750
300	30	34	2.40	0.60	3.00	54	4200	9600
400	53	53	2.60	0.70	3.40	61	5350	12200
500	53	53	3.00	0.70	3.60	69	6750	15500
630	53	53	3.40	0.70	4.00	77	8550	19900

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
	Sqmm	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps
4	7.41	4.61	8.89	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	35	30	30	45	38	39	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	46	39	40	60	50	52	0.760	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
500	0.0605	0.0366	0.759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-4

TECHNICAL DETAILS FOR RICHA 1.1 KV THREE AND HALF CORE ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, UN-ARMOURED CABLES

Cable Code : AYY/YY

Ref Specification : IS 1554 Part-1

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
							With Al'm Cond.	With Cu Cond.
	Aluminium	Copper					AYY	YY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
3X 25+16	6/6	6/6	1.20/1.00	0.30	2.00	23	700	1250
3X35+16	6/6	6/6	1.20/1.00	0.30	2.00	25	800	1550
3X 50+25	6/6	6/6	1.40/1.20	0.30	2.20	28	1050	2050
3X70+35	12/6	12/6	1.40/1.20	0.40	2.20	32	1400	2800
3X95 +50	15/6	15/6	1.60/1.40	0.40	2.20	36	1800	3700
3X120+70	15/12	18/12	1.60/1.40	0.50	2.40	39	2200	4700
3X150+70	15/12	18/12	1.80/1.40	0.50	2.40	43	2550	5550
3X 185+95	30/15	30/15	2.00/1.60	0.50	2.40	47	3150	6900
3X240+120	30/15	34/18	2.20/1.60	0.60	3.00	53	4050	8950
3X300+150	30/15	34/18	2.40/1.80	0.60	3.20	58	4900	11100
3X400+185	53/30	53/30	2.60/2.00	0.70	3.40	64	6150	14000
3X500+240	53/30	53/34	3.00/2.20	0.70	3.80	76	7900	18050
3X630+300	53/30	53/34	3.40/2.40	0.70	4.00	84	9900	22950

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
3X25+16	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
3X35+16	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
3X50+25	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
3X70+35	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
3X95+50	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
3X120+70	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
3X150+70	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
3X185+95	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
3X240+120	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
3X300+150	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
3X400+185	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
3X500+240	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
3X630+300	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-5

TECHNICAL DETAILS FOR RICHA 1.1 KV

FOUR CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, UN-ARMOURED CABLES

Cable Code : AYYYY

Physical Parameters

Ref Specification : IS 1554 Part-1

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
	No's	No's					AYY	YY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	0.30	1.80	15	290	400
6	1/3	1/3	1.00	0.30	1.80	17	350	510
10	1/7	6	1.00	0.30	1.80	19	440	710
16	6	6	1.00	0.30	2.00	21	550	950
25	6	6	1.20	0.30	2.00	23	750	1350
35	6	6	1.20	0.30	2.00	26	900	1700
50	6	6	1.40	0.40	2.20	29	1200	2300
70	12	12	1.40	0.40	2.20	32	1500	3100
95	15	15	1.60	0.40	2.40	37	2000	4200
120	15	18	1.60	0.50	2.40	41	2400	5150
150	15	18	1.80	0.50	2.60	45	2900	6350
185	30	30	2.00	0.60	2.80	50	3600	7900
240	30	34	2.20	0.60	3.00	56	4550	10200
300	30	34	2.40	0.70	3.40	64	5650	12750
400	53	53	2.60	0.70	3.60	70	7000	16100
500	53	53	3.00	0.70	4.00	79	8950	20550
630	53	53	3.40	0.70	4.00	89	11200	26250

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	35	30	30	45	38	39	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	46	39	40	60	50	52	0.760	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-6

TECHNICAL DETAILS FOR RICHA 1.1 KV SINGLE CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, ARMoured CABLES

Ref Specification : IS 1554 Part-1
Cable Code : AYFaY/YFaY, AYWaY/YWaY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Flat Strip Armoured (AYFaY/YFaY)						Round Wire Armoured (AYWaY/YWaY)				
				Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		
	With Al'm Cond.	With Cu Cond.					With Al'm Cond.	With Cu Cond.						
	Aluminium	Copper		mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km	
4	1/3	1/3	1.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	11	130	160	
6	1/3	1/3	1.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	12	150	190	
10	1/7	6	1.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	170	240	
16	6	6	1.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	250	300	
25	6	6	1.50	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	300	450	
35	6	6	1.50	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	350	550	
50	6	6	1.70	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	400	700	
70	12	12	1.70	N/A	N/A	N/A	N/A	N/A	1.40	1.40	19	500	900	
95	15	15	1.90	4 X 0.80	1.40	20	600	1150	1.60	1.40	22	700	1250	
120	15	18	1.90	4 X 0.80	1.40	22	700	1400	1.60	1.40	23	800	1450	
150	15	18	2.10	4 X 0.80	1.40	23	800	1700	1.60	1.40	25	900	1750	
185	30	30	2.30	4 X 0.80	1.40	25	1000	2050	1.60	1.40	27	1050	2150	
240	30	34	2.50	4 X 0.80	1.40	28	1200	2600	1.60	1.56	30	1350	2750	
300	30	34	2.70	4 X 0.80	1.56	31	1500	3250	1.60	1.56	33	1600	3350	
400	53	53	3.00	4 X 0.80	1.56	35	1850	4100	2.00	1.56	38	2050	4300	
500	53	53	3.40	4 X 0.80	1.56	39	2300	5150	2.00	1.72	42	2550	5400	
630	53	53	3.90	4 X 0.80	1.72	44	2900	6650	2.00	1.88	46	3200	6950	
800	53	53	3.90	4 X 0.80	1.88	48	3550	8350	2.00	1.88	51	3800	8600	
1000	53	53	3.90	4 X 0.80	2.04	51	4250	10250	2.50	2.04	55	4700	10700	

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.157	0.48	31	30	27	39	38	35	0.304	0.460
6	4.61	3.08	5.53	3.70	0.148	0.56	39	37	35	49	48	44	0.456	0.690
10	3.08	1.83	3.70	2.20	0.138	0.67	51	51	47	65	64	60	0.760	1.15
16	1.91	1.15	2.29	1.38	0.128	0.81	66	65	64	85	83	82	1.22	1.84
25	1.20	0.727	1.44	0.87	0.120	0.87	86	84	84	110	110	110	1.90	2.88
35	0.868	0.524	1.04	0.63	0.114	1.00	100	100	105	130	125	130	2.66	4.03
50	0.641	0.387	0.769	0.464	0.110	1.03	120	115	130	155	150	165	3.80	5.75
70	0.443	0.268	0.532	0.322	0.103	1.21	140	135	155	190	175	205	5.32	8.05
95	0.320	0.193	0.384	0.232	0.101	1.27	175	155	190	220	200	245	7.22	10.90
120	0.253	0.153	0.304	0.184	0.096	1.42	195	170	220	250	220	280	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.094	1.42	220	190	250	280	245	320	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.092	1.44	240	210	290	305	260	370	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.090	1.53	270	225	335	345	285	425	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.088	1.56	295	245	380	375	310	475	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.088	1.59	325	275	435	400	335	550	30.40	46.00
500	0.0605	0.0366	0.076	0.0459	0.087	1.67	345	295	480	425	355	590	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.086	1.67	390	320	550	470	375	660	47.88	72.50
800	0.0367	0.0221	0.0503	0.0303	0.083	1.75	450	380	610	530	423	725	60.80	92.00
1000	0.0291	0.0176	0.0422	0.0255	0.082	1.94	500	414	680	590	471	870	76.00	115.00

Table-7

TECHNICAL DETAILS FOR RICHA 1.1 KV TWO CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, ARMoured CABLE

Ref Specification : IS 1554 Part-1

Cable Code : AYFY/YFY, AYWY/YWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (AYFY/YFY)					Round Wire Armoured (AYWY/YWY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	AYFY	YFY						AYWY	YWY					
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	460	520
6	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	530	620
10	1/7	6	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	18	620	780
16	6	6	1.00	0.30	4 X 0.80	1.40	17	500	700.0	1.60	1.40	18	700	850
25	6	6	1.20	0.30	4 X 0.80	1.40	19	600	950.0	1.60	1.40	21	850	1150
35	6	6	1.20	0.30	4 X 0.80	1.40	21	750	1150.0	1.60	1.40	22	950	1350
50	6	6	1.40	0.30	4 X 0.80	1.40	23	900	1450.0	1.60	1.56	25	1200	1750
70	12	12	1.40	0.30	4 X 0.80	1.56	26	1100	1900.0	1.60	1.56	27	1400	2200
95	15	15	1.60	0.40	4 X 0.80	1.56	29	1400	2500.0	2.00	1.56	32	1900	3000
120	15	18	1.60	0.40	4 X 0.80	1.56	31	1600	3000.0	2.00	1.72	34	2150	3550
150	15	18	1.80	0.40	4 X 0.80	1.72	34	1900	3650.0	2.00	1.72	36	2500	4200
185	30	30	2.00	0.50	4 X 0.80	1.88	37	2300	4450.0	2.00	1.88	40	2950	5100
240	30	34	2.20	0.50	4 X 0.80	2.04	42	2850	5700.0	2.50	2.04	46	3850	6700
300	30	34	2.40	0.60	4 X 0.80	2.20	46	3400	6950.0	2.50	2.20	49	4550	8100
400	53	53	2.60	0.70	4 X 0.80	2.36	51	4200	8750.0	3.15	2.52	56	6050	10600
500	53	53	3.00	0.70	4 X 0.80	2.68	57	5250	11050.0	3.15	2.84	62	7350	13150
630	53	53	3.40	0.70	4 X 0.80	2.84	64	6550	14050.0	4.00	3.00	70	9750	17250

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.098	0.23	32	27	27	41	35	35	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	40	34	35	50	44	45	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	55	45	47	70	58	60	0.760	1.150
16	1.91	1.15	2.29	1.38	0.085	0.40	70	58	59	90	75	78	1.22	1.840
25	1.20	0.727	1.44	0.870	0.083	0.42	90	76	78	115	97	105	1.90	2.880
35	0.868	0.524	1.04	0.630	0.082	0.48	110	92	99	140	120	125	2.66	4.030
50	0.641	0.387	0.769	0.464	0.082	0.49	135	115	125	165	145	155	3.80	5.750
70	0.443	0.268	0.532	0.322	0.076	0.56	160	140	150	205	180	195	5.32	8.050
95	0.320	0.193	0.384	0.232	0.076	0.58	190	170	185	240	215	230	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	210	190	210	275	235	265	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	240	210	240	310	270	305	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	275	240	275	350	300	350	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.073	0.67	320	275	325	405	345	410	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	355	305	365	450	385	465	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	385	345	420	490	485	530	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	425	380	475	540	460	605	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	465	415	540	640	550	785	47.90	72.50

rating factor as given in page no. 52 - 54

Table-8

TECHNICAL DETAILS FOR RICHA 1.1 KV

THREE CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, ARMoured CABLE

Ref Specification : IS 1554 Part-1

Physical Parameters

Cable Code : AYFY/YFY, AYWY/YWY

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (AYFY/YFY)					Round Wire Armoured (AYWY/YWY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armour Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	460	540
6	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	530	650
10	1/7	6	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.40	19	620	840
16	6	6	1.00	0.30	4 X 0.80	1.40	19	600	900.0	1.60	1.40	21	850	1100
25	6	6	1.20	0.30	4 X 0.80	1.40	22	800	1250.0	1.60	1.40	23	1050	1500
35	6	6	1.20	0.30	4 X 0.80	1.40	23	950	1550.0	1.60	1.40	25	1200	1800
50	6	6	1.40	0.30	4 X 0.80	1.56	27	1200	2050.0	1.60	1.56	28	1500	2300
70	12	12	1.40	0.40	4 X 0.80	1.56	30	1500	2700.0	2.00	1.56	32	2000	3200
95	15	15	1.60	0.40	4 X 0.80	1.56	33	1850	3550.0	2.00	1.72	36	2450	4150
120	15	18	1.60	0.40	4 X 0.80	1.72	36	2200	4300.0	2.00	1.72	39	2800	4900
150	15	18	1.80	0.50	4 X 0.80	1.88	40	2650	5250.0	2.00	1.88	43	3350	5900
185	30	30	2.00	0.50	4 X 0.80	1.88	44	3150	6400.0	2.50	2.04	48	4300	7500
240	30	34	2.20	0.60	4 X 0.80	2.20	50	4000	8250.0	2.50	2.20	53	5250	9450
300	30	34	2.40	0.60	4 X 0.80	2.36	55	4800	10150.0	2.50	2.36	58	6150	11450
400	53	53	2.60	0.70	4 X 0.80	2.52	61	5950	12750.0	3.15	2.68	66	8200	14950
500	53	53	3.00	0.70	4 X 0.80	2.84	69	7450	16200.0	3.15	3.00	74	10000	18700
630	53	53	3.40	0.70	4 X 0.80	3.00	77	9300	20600.0	4.00	3.00	84	13150	24400

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	35	30	30	45	38	39	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	46	39	40	60	50	52	0.760	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-9

TECHNICAL DETAILS FOR RICHA 1.1 KV, THREE & HALF CORE ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, ARMoured CABLE

Ref Specification : IS 1554 Part-1

Physical Parameters

Cable Code : AYFY/YFY, AYWY/YWY

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (AYFY/YFY)					Round Wire Armoured (AYWaY/YWaY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			mm	mm	mm	mm	mm	mm	mm	mm	mm	Kg/Km
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
3X 25 +16	6/6	6/6	1.20/1.00	0.30	4 X 0.80	1.40	23	900	1450	1.60	1.40	25	1150	1700
3X35 +16	6/6	6/6	1.20/1.00	0.30	4 X 0.80	1.40	25	1050	1800	1.60	1.40	27	1350	2050
3X 50+25	6/6	6/6	1.40/1.20	0.30	4 X 0.80	1.56	29	1350	2350	2.00	1.56	30	1650	2600
3X70+35	12/6	12/6	1.40/1.20	0.40	4 X 0.80	1.56	32	1700	3100	2.00	1.56	34	2200	3600
3X95 +50	15/6	15/6	1.60/1.40	0.40	4 X 0.80	1.56	36	2150	4050	2.00	1.72	39	2800	4750
3X120+70	15/12	18/12	1.60/1.40	0.50	4 X 0.80	1.72	40	2550	5050	2.00	1.88	42	3300	5750
3X150+70	15/12	18/12	1.80/1.40	0.50	4 X 0.80	1.88	44	3000	6000	2.00	1.88	46	3750	6700
3X 185+95	30/15	30/15	2.00/1.60	0.50	4 X 0.80	2.04	48	3650	7400	2.50	2.04	51	4850	8650
3X240+120	30/15	34/18	2.20/1.60	0.60	4 X 0.80	2.2	53	4500	9400	2.50	2.36	57	5850	10800
3X300+150	30/15	34/18	2.40/1.80	0.60	4 X 0.80	2.36	58	5450	11650	3.15	2.52	63	7600	13800
3X400+185	53/30	53/30	2.60/2.00	0.70	4 X 0.80	2.68	64	6750	14600	3.15	2.68	69	9000	16850
3X500+240	53/30	53/34	3.00/2.20	0.70	4 X 0.80	2.84	76	8550	18700	4	3.00	83	12400	22500
3X630+300	53/30	53/34	3.40/2.40	0.70	4 X 0.80	3.00	84	10600	23700	4	3.00	91	14750	27800

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
3X25+16	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
3X35+16	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
3X50+25	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
3X70+35	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
3X95+50	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
3X120+70	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
3X150+70	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
3X185+95	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
3X240+120	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
3X300+150	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
3X400+185	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
3X500+240	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
3X630+300	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-10

TECHNICAL DETAILS FOR RICHA 1.1 KV

FOUR CORE, ALUMINIUM/COPPER CONDUCTOR, PVC INSULATED, ARMoured CABLES

Ref Specification : IS 1554 Part-1

Cable Code : AYFY/YFY, AYWY/YWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (AYFY/YFY)					Round Wire Armoured (AYWaY/YWaY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm
4	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	520	620
6	1/3	1/3	1.00	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	19	610	770
10	1/7	6	1.00	0.30	4 X 0.80	1.40	19	600	850	1.60	1.40	21	790	1060
16	6	6	1.00	0.30	4 X 0.80	1.40	21	750	1100.0	1.60	1.40	23	950	1350
25	6	6	1.20	0.30	4 X 0.80	1.40	24	950	1550.0	1.60	1.40	25	1200	1800
35	6	6	1.20	0.30	4 X 0.80	1.40	26	1150	2000.0	1.60	1.56	28	1450	2300
50	6	6	1.40	0.40	4 X 0.80	1.56	30	1450	2550.0	2.00	1.56	32	2000	3100
70	12	12	1.40	0.40	4 X 0.80	1.56	33	1850	3450.0	2.00	1.56	35	2400	4000
95	15	15	1.60	0.40	4 X 0.80	1.72	38	2350	4600.0	2.00	1.72	40	3000	5250
120	15	18	1.60	0.50	4 X 0.80	1.88	41	2800	5650.0	2.00	1.88	44	3500	6350
150	15	18	1.80	0.50	4 X 0.80	1.88	45	3300	6800.0	2.50	2.04	49	4500	7950
185	30	30	2.00	0.60	4 X 0.80	2.04	50	4000	8350.0	2.50	2.20	54	5350	9700
240	30	34	2.20	0.60	4 X 0.80	2.36	57	5100	10800.0	2.50	2.36	60	6500	12250
300	30	34	2.40	0.70	4 X 0.80	2.52	64	6200	13300.0	3.15	2.68	69	8500	15700
400	53	53	2.60	0.70	4 X 0.80	2.84	71	7650	16750.0	3.15	2.84	75	10200	19350
500	53	53	3.00	0.70	4 X 0.80	3.00	79	9600	21300.0	4.00	3.00	85	13550	25300
630	53	53	3.40	0.70	4 X 0.80	3.00	89	11700	27050.0	4.00	3.00	95	16350	31450

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 70 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	8.89	5.53	0.098	0.23	28	23	23	36	30	30	0.304	0.460
6	4.61	3.08	5.53	3.70	0.096	0.28	35	30	30	45	38	39	0.456	0.690
10	3.08	1.83	3.70	2.20	0.091	0.34	46	39	40	60	50	52	0.760	1.15
16	1.91	1.15	2.29	1.38	0.085	0.40	60	50	51	77	64	66	1.22	1.84
25	1.20	0.727	1.44	0.87	0.083	0.42	76	63	70	99	81	90	1.90	2.88
35	0.868	0.524	1.04	0.63	0.082	0.48	92	77	86	120	99	110	2.66	4.03
50	0.641	0.387	0.769	0.464	0.082	0.49	110	95	105	145	125	135	3.80	5.75
70	0.443	0.268	0.532	0.322	0.076	0.56	135	115	130	175	150	165	5.32	8.05
95	0.320	0.193	0.384	0.232	0.076	0.58	165	140	155	210	175	200	7.22	10.90
120	0.253	0.153	0.304	0.184	0.075	0.63	185	155	180	240	195	230	9.12	13.80
150	0.206	0.1240	0.247	0.1488	0.074	0.63	210	175	205	270	225	265	11.40	17.30
185	0.164	0.0991	0.197	0.1189	0.074	0.64	235	200	240	300	255	305	14.10	21.30
240	0.125	0.0754	0.151	0.0912	0.073	0.67	275	235	280	345	295	355	18.20	27.60
300	0.100	0.0601	0.122	0.0733	0.073	0.68	305	260	315	385	335	400	22.80	34.50
400	0.0778	0.0470	0.0961	0.0580	0.072	0.70	335	290	375	425	360	435	30.40	46.00
500	0.0605	0.0366	0.0759	0.0459	0.072	0.70	370	320	425	470	390	520	38.00	57.50
630	0.0469	0.0283	0.0610	0.0368	0.072	0.70	405	350	480	555	470	675	47.90	72.50

Table-11

TECHNICAL DETAILS FOR RICHA 1.1 KV 1.5 SQMM COPPER CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured CONTROL CABLES

Ref Specification : IS 1554 Part-1

Cable Code : YY/YFY/YWY

Physical Parameters

No. of Cores	Minimum Inner Sheath Thickness	Unarmoured (YY)					Flat Strip Armoured (YFY)						Round Wire Armoured (YWY)					
		Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Dimension of Armour Strip	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Nominal Dia of Armour Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable	
			Solid Cond.	Std. cond.	Sold Cond	Std. cond.			Sold Cond	Std. cond.	Sold Cond	Std. cond.			Sold Cond	Std. cond.	Sold Cond	Std. cond.
No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km
2	0.30	1.80	11	11	160	170	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	13	340	360
3	0.30	1.80	11	12	190	200	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	14	360	380
4	0.30	1.80	12	13	220	230	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	14	400	420
5	0.30	1.80	13	14	260	270	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	15	460	480
6	0.30	1.80	14	15	300	310	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	16	510	530
7	0.30	1.80	14	15	280	300	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	16	530	550
10	0.30	1.80	17	18	380	400	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.40	19	20	700	740
12	0.30	1.80	18	18	430	450	4x0.8	1.24	18	19	620	640	1.60	1.40	20	21	810	850
14	0.30	1.80	18	19	490	500	4x0.8	1.40	19	20	680	730	1.60	1.40	21	22	880	940
16	0.30	1.80	19	20	540	560	4x0.8	1.40	20	21	760	780	1.60	1.40	22	23	970	1000
19	0.30	2.00	20	21	630	660	4x0.8	1.40	21	22	830	880	1.60	1.40	23	24	1060	1110
24	0.30	2.00	23	25	780	820	4x0.8	1.40	24	25	1020	1070	1.60	1.40	25	27	1220	1340
27	0.30	2.00	24	25	850	890	4x0.8	1.40	24	26	1110	1150	1.60	1.40	26	27	1360	1430
30	0.30	2.00	25	26	930	970	4x0.8	1.40	25	27	1180	1250	1.60	1.40	27	28	1450	1520
37	0.30	2.00	27	28	1100	1150	4x0.8	1.40	27	28	1380	1450	1.60	1.40	29	30	1690	1740
40	0.30	2.00	27	29	1170	1220	4x0.8	1.40	28	29	1460	1530	1.60	1.56	30	31	1780	1870
44	0.30	2.00	30	31	1290	1350	4x0.8	1.56	30	32	1630	1710	1.60	1.56	32	34	1950	2040
52	0.40	2.20	31	33	1520	1590	4x0.8	1.56	32	33	1850	1940	2.00	1.56	34	36	2390	2510
61	0.40	2.20	33	35	1740	1820	4x0.8	1.56	34	35	2090	2210	2.00	1.56	36	38	2660	2780

Electrical Parameters

No. of Cores	Max. Conductor D.C. Resistance at 20 °C	Approx. Conductor A.C. Resistance		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
		at 70 °C	at 85 °C			For General Purpose Insulation			For Heat Resisting Insulation			For General Purpose Insulation	For Heat Resisting Insulation
						Ground	Duct	Air	Ground	Duct	Air		
No's	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
2	12.10	14.52	15.20	0.112	0.20	23	20	20	26	24	24	0.173	0.156
3	12.10	14.52	15.20	0.112	0.20	21	17	17	24	21	21	0.173	0.156
4	12.10	14.52	15.20	0.112	0.20	21	17	17	24	21	21	0.173	0.156
5	12.10	14.52	15.20	0.112	0.20	21	17	17	24	21	21	0.173	0.156
6	12.10	14.52	15.20	0.112	0.20	15	13	13	17	16	16	0.173	0.156
7	12.10	14.52	15.20	0.112	0.20	14	13	13	16	15	15	0.173	0.156
10	12.10	14.52	15.20	0.112	0.20	13	11	11	15	13	13	0.173	0.156
12	12.10	14.52	15.20	0.112	0.20	12	10	10	14	12	12	0.173	0.156
14	12.10	14.52	15.20	0.112	0.20	11	10	10	13	12	12	0.173	0.156
16	12.10	14.52	15.20	0.112	0.20	11	9	9	13	11	11	0.173	0.156
19	12.10	14.52	15.20	0.112	0.20	10	9	9	11	11	11	0.173	0.156
24	12.10	14.52	15.20	0.112	0.20	9	8	8	10	10	10	0.173	0.156
27	12.10	14.52	15.20	0.112	0.20	9	8	8	10	10	10	0.173	0.156
30	12.10	14.52	15.20	0.112	0.20	9	7	7	10	8	8	0.173	0.156
37	12.10	14.52	15.20	0.112	0.20	8	7	7	9	8	8	0.173	0.156
40	12.10	14.52	15.20	0.112	0.20	8	7	7	9	8	8	0.173	0.156
44	12.10	14.52	15.20	0.112	0.20	7	7	7	8	7	7	0.173	0.156
52	12.10	14.52	15.20	0.112	0.20	6	6	6	7	7	7	0.173	0.156
61	12.10	14.52	15.20	0.112	0.20	6	6	6	7	7	7	0.173	0.156

Table-12

TECHNICAL DETAILS FOR RICHA 1.1 KV 2.5 SQMM

COPPER CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured CONTROL CABLES

Ref. Spec. : IS :1554PART -1

Cable Code : YY/YFY/YWY

Physical Parameters

No. of Cores	Minimum Inner Sheath Thickness	Unarmoured (YY)						Flat Strip Armoured (YFY)						Round Wire Armoured (YWY)					
		Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Dimension of Armour Strip	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Nominal Dia of Armour Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		
			Solid Cond.	Std. cond.	Soild Cond	Std. cond.			mm	mm	mm	mm			Kg/Km	Kg/Km	mm	mm	mm
No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	
2	0.30	1.80	12	13	210	220	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	14	410	440	
3	0.30	1.80	13	13	250	260	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	15	430	450	
4	0.30	1.80	14	14	300	310	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	16	500	520	
5	0.30	1.80	15	15	360	360	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	17	570	590	
6	0.30	1.80	16	16	400	420	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	18	18	630	660	
7	0.30	1.80	16	16	390	400	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	18	18	670	700	
10	0.30	1.80	20	20	530	550	4x0.8	1.40	20	21	750	790	1.60	1.40	22	23	960	1010	
12	0.30	2.00	21	21	620	650	4x0.8	1.40	21	22	820	870	1.60	1.40	23	24	1040	1100	
14	0.30	2.00	21	22	700	730	4x0.8	1.40	22	23	920	970	1.60	1.40	24	24	1150	1190	
16	0.30	2.00	22	23	780	810	4x0.8	1.40	23	24	1020	1050	1.60	1.40	25	26	1240	1300	
19	0.30	2.00	24	25	890	930	4x0.8	1.40	24	25	1130	1190	1.60	1.40	26	27	1390	1450	
24	0.30	2.00	27	29	1110	1150	4x0.8	1.40	28	29	1400	1470	1.60	1.56	30	31	1720	1790	
27	0.30	2.00	28	29	1210	1260	4x0.8	1.40	28	30	1510	1580	1.60	1.56	30	32	1840	1920	
30	0.30	2.00	29	30	1320	1380	4x0.8	1.56	30	31	1670	1750	1.60	1.56	31	33	1980	2060	
37	0.40	2.20	32	33	1630	1700	4x0.8	1.56	32	34	1960	2050	2.00	1.56	34	36	2520	2620	
40	0.40	2.20	33	34	1730	1800	4x0.8	1.56	33	35	2080	2160	2.00	1.56	36	37	2620	2740	
44	0.40	2.20	35	37	1900	1980	4x0.8	1.56	36	37	2300	2380	2.00	1.56	38	40	2900	3020	
52	0.40	2.20	37	38	2190	2280	4x0.8	1.56	37	39	2600	2700	2.00	1.72	40	42	3260	3400	
61	0.40	2.20	39	41	2520	2620	4x0.8	1.56	40	41	2950	3050	2.00	1.72	42	44	3640	3810	

Electrical Parameters

No. of Cores	Max. Conductor D.C. Resistance at 20 °C	Approx. Conductor A.C. Resistance		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
		at 70 °C	at 85 °C			For General Purpose Insulation			For Heat Resisting Insulation			For General Purpose Insulation	For Heat Resisting Insulation
						Ground	Duct	Air	Ground	Duct	Air		
No's	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
2	7.41	8.89	9.34	0.107	0.22	32	27	27	38	32	32	0.288	0.260
3	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.288	0.260
4	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.288	0.260
5	7.41	8.89	9.34	0.107	0.22	27	24	24	30	28	28	0.288	0.260
6	7.41	8.89	9.34	0.107	0.22	21	18	18	24	21	21	0.288	0.260
7	7.41	8.89	9.34	0.107	0.22	20	17	17	22	20	20	0.288	0.260
10	7.41	8.89	9.34	0.107	0.22	18	15	15	20	16	16	0.288	0.260
12	7.41	8.89	9.34	0.107	0.22	17	14	14	19	16	16	0.288	0.260
14	7.41	8.89	9.34	0.107	0.22	16	13	13	18	15	15	0.288	0.260
16	7.41	8.89	9.34	0.107	0.22	15	13	13	17	15	15	0.288	0.260
19	7.41	8.89	9.34	0.107	0.22	14	12	12	16	14	14	0.288	0.260
24	7.41	8.89	9.34	0.107	0.22	13	11	11	14	13	13	0.288	0.260
27	7.41	8.89	9.34	0.107	0.220	12	10	10	13	12	12	0.288	0.260
30	7.41	8.89	9.34	0.107	0.22	12	10	10	13	12	12	0.288	0.260
37	7.41	8.89	9.34	0.107	0.22	11	9	9	12	10	10	0.288	0.260
40	7.41	8.89	9.34	0.107	0.22	11	9	9	12	10	10	0.288	0.260
44	7.41	8.89	9.34	0.107	0.22	10	9	9	11	10	10	0.288	0.260
52	7.41	8.89	9.34	0.107	0.22	9	8	8	10	10	10	0.288	0.260
61	7.41	8.89	9.34	0.107	0.22	8	8	8	9	9	9	0.288	0.260

Table-13

TECHNICAL DETAILS FOR RICHA 1.1 KV

SINGLE CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, UN-ARMOURED CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XY/2XY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper				With Al'm Cond.	With Cu Cond.
						A2XY	2XY
Sqmm	No's	No's	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	1.80	7	70	90
6	1/3	1/3	0.70	1.80	8	80	110
10	1/7	6	0.70	1.80	9	90	160
16	6	6	0.70	1.80	10	130	250
25	6	6	0.90	1.80	11	150	350
35	6	6	0.90	1.80	12	200	400
50	6	6	1.00	1.80	14	250	550
70	12	12	1.10	1.80	16	350	750
95	15	15	1.10	1.80	18	450	1000
120	15	18	1.20	1.80	19	500	1250
150	15	18	1.40	2.00	21	650	1500
185	30	30	1.60	2.00	24	800	1850
240	30	34	1.70	2.00	26	950	2400
300	30	34	1.80	2.00	29	1150	2950
400	53	53	2.00	2.20	33	1500	3750
500	53	53	2.20	2.20	36	1850	4750
630	53	53	2.40	2.20	40	2350	6100
800	53	53	2.60	2.40	44	2900	7750
1000	53	53	2.80	2.60	48	3600	9650

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	9.48	5.90	0.136	0.29	—	—	—	48	47	45	0.376	0.572
6	4.61	3.08	5.90	3.94	0.128	0.34	48	45	45	60	59	57	0.564	0.858
10	3.08	1.83	3.94	2.34	0.118	0.42	62	62	61	80	78	77	0.940	1.43
16	1.91	1.15	2.44	1.47	0.108	0.50	81	80	83	104	102	106	1.50	2.28
25	1.20	0.727	1.54	0.931	0.102	0.52	99	90	115	130	115	145	2.35	3.57
35	0.868	0.524	1.11	0.671	0.097	0.60	117	110	135	155	140	175	3.29	5.00
50	0.641	0.387	0.820	0.495	0.092	0.63	138	125	170	185	165	215	4.70	7.15
70	0.443	0.268	0.567	0.343	0.088	0.68	168	155	210	225	200	270	6.58	10.01
95	0.320	0.193	0.411	0.248	0.085	0.79	204	185	255	265	235	330	8.93	13.59
120	0.253	0.153	0.325	0.197	0.082	0.79	230	210	300	300	265	380	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.082	0.79	265	230	342	335	300	430	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.082	0.79	295	260	385	380	335	495	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.079	0.84	340	300	450	435	385	590	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.078	0.86	390	335	519	490	430	670	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.077	0.88	450	380	605	550	480	780	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.076	0.90	500	430	700	610	530	900	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.075	0.94	555	485	809	680	590	1020	59.22	90.09
800	0.0367	0.0221	0.0530	0.0319	0.075	0.97	625	530	935	740	630	1140	75.20	114.40
1000	0.0291	0.0176	0.0444	0.0268	0.068	1.01	690	570	1065	780	660	1250	94.00	143.00

Table-14

TECHNICAL DETAILS FOR RICHA 1.1 KV

TWO CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, UN-ARMOURED CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XY/2XY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
	No's	No's					A2XY	2XY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	1.80	12	180	240
6	1/3	1/3	0.70	0.30	1.80	13	220	300
10	1/7	6	0.70	0.30	1.80	15	280	420
16	6	6	0.70	0.30	1.80	14	250	450
25	6	6	0.90	0.30	2.00	18	400	700
35	6	6	0.90	0.30	2.00	19	450	900
50	6	6	1.00	0.30	2.00	21	600	1150
70	12	12	1.10	0.30	2.00	24	750	1550
95	15	15	1.10	0.40	2.20	27	950	2100
120	15	18	1.20	0.40	2.20	29	1150	2550
150	15	18	1.40	0.40	2.20	31	1350	3100
185	30	30	1.60	0.50	2.40	35	1700	3850
240	30	34	1.70	0.50	2.60	40	2150	5000
300	30	34	1.80	0.60	2.80	43	2650	6200
400	53	53	2.00	0.60	3.00	48	3300	7850
500	53	53	2.20	0.70	3.40	54	4200	10000
630	53	53	2.40	0.70	3.80	59	5200	12750

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-15

TECHNICAL DETAILS FOR RICHA 1.1 KV

THREE CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, UN-ARMOURED CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XY/2XY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
	No's	No's					A2XY	2XY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	1.80	13	200	280
6	1/3	1/3	0.70	0.30	1.80	14	250	360
10	1/7	6	0.70	0.30	1.80	16	310	510
16	6	6	0.70	0.30	1.80	17	350	650
25	6	6	0.90	0.30	2.00	20	500	950
35	6	6	0.90	0.30	2.00	22	600	1250
50	6	6	1.00	0.30	2.00	24	800	1600
70	12	12	1.10	0.40	2.20	28	1050	2250
95	15	15	1.10	0.40	2.20	31	1300	3000
120	15	18	1.20	0.40	2.20	34	1600	3700
150	15	18	1.40	0.50	2.40	38	1950	4550.70
185	30	30	1.60	0.50	2.60	42	2450	5650
240	30	34	1.70	0.60	2.80	47	3100	7350
300	30	34	1.80	0.60	3.00	52	3800	9100
400	53	53	2.00	0.70	3.20	58	4750	11550
500	53	53	2.20	0.70	3.60	65	6000	14750
630	53	53	2.40	0.70	3.80	73	7500	18800

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-16

TECHNICAL DETAILS FOR RICHA 1.1 KV, THREE & HALF CORE ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, UN-ARMOURED CABLES

Ref Specification : IS 7098 Part-1
Cable Code : A2XY/2XY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
	No's	No's					A2XY	2XY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
3X25+16	6/6	6/6	0.90/0.70	0.30	2.00	21	600	1150
3X35+16	6/6	6/6	0.90/0.70	0.30	2.00	24	700	1400
3X 50+25	6/6	6/6	1.00/0.90	0.30	2.00	26	900	1850
3X70+35	12/6	12/6	1.10/0.90	0.40	2.20	30	1200	2600
3X95+50	15/6	15/6	1.10/1.00	0.40	2.20	34	1500	3450
3X120+70	15/12	18/12	1.20/1.10	0.40	2.20	37	1800	4350
3X150+70	15/12	18/12	1.40/1.10	0.50	2.40	41	2250	5250
3X 185+95	30/15	30/15	1.60/1.10	0.50	2.60	46	2800	6600
3X240+120	30/15	34/18	1.70/1.20	0.60	2.80	50	3550	8500
3X300+150	30/15	34/18	1.80/1.40	0.60	3.00	55	4300	10500
3X400+185	53/30	53/30	2.00/1.60	0.70	3.40	62	5450	13350
3X500+240	53/30	53/34	2.20/1.70	0.70	3.60	72	6900	17050
3X630+300	53/30	53/34	2.40/1.80	0.70	4.00	80	8700	21750

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	µF/Km	Ground	Duct	Air	Ground	Duct	Air
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
3X25+16	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
3X35+16	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
3X50+25	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
3X70+35	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
3X95+50	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
3X120+70	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
3X150+70	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
3X185+95	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
3X240+120	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
3X300+150	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
3X400+185	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
3X500+240	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
3X630+300	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-17

TECHNICAL DETAILS FOR RICHA 1.1 KV

FOUR CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, UN-ARMOURED CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XY/2XY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	Aluminium	Copper					With Al'm Cond.	With Cu Cond.
	No's	No's					A2XY	2XY
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	1.80	14	230	340
6	1/3	1/3	0.70	0.30	1.80	15	290	430
10	1/7	6	0.70	0.30	1.80	17	360	630
16	6	6	0.70	0.30	1.80	19	450	800
25	6	6	0.90	0.30	2.00	22	600	1200
35	6	6	0.90	0.30	2.00	24	750	1600
50	6	6	1.00	0.30	2.00	27	950	2000
70	12	12	1.10	0.40	2.20	31	1300	2900
95	15	15	1.10	0.40	2.20	35	1700	3900
120	15	18	1.20	0.50	2.40	39	2100	4900
150	15	18	1.40	0.50	2.60	43	2550	6000
185	30	30	1.60	0.50	2.80	48	3150	7450
240	30	34	1.70	0.60	3.00	54	4000	9700
300	30	34	1.80	0.70	3.20	61	4950	12050
400	53	53	2.00	0.70	3.60	68	6250	15350
500	53	53	2.20	0.70	3.80	75	7800	19450
630	53	53	2.40	0.70	4.00	84	9800	24850

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-18

TECHNICAL DETAILS FOR RICHA 1.1 KV

SINGLE CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, ARMoured CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XFaY/2XFaY, A2XWaY/2XWaY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Flat Strip Armoured (A2XFaY/2XFaY)					Round Wire Armoured (A2XWaY/2XWaY)				
				Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.					With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper		A2XFaY	2XFaY	A2XWaY	2XWaY						
Sqmm	No's	No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	1.00	N/A	N/A	N/A	N/A	N/A	1.40	1.24	10	120	150
6	1/3	1/3	1.00	N/A	N/A	N/A	N/A	N/A	1.40	1.24	11	130	170
10	1/7	6	1.00	N/A	N/A	N/A	N/A	N/A	1.40	1.24	12	150	220
16	6	6	1.00	N/A	N/A	N/A	N/A	N/A	1.40	1.24	12	200	300
25	6	6	1.20	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	250	400
35	6	6	1.20	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	300	500
50	6	6	1.3	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	360	650
70	12	12	1.40	N/A	N/A	N/A	N/A	N/A	1.40	1.24	18	450	850
95	15	15	1.40	4 X 0.80	1.40	19	500	1100	1.60	1.40	21	600	1150
120	15	18	1.50	4 X 0.80	1.40	21	600	1300	1.60	1.40	22	700	1400
150	15	18	1.70	4 X 0.80	1.40	23	700	1600	1.60	1.40	24	800	1650
185	30	30	1.90	4 X 0.80	1.40	25	900	1950	1.60	1.40	26	950	2050
240	30	34	2.00	4 X 0.80	1.40	27	1050	2500	1.60	1.40	29	1150	2600
300	30	34	2.10	4 X 0.80	1.56	30	1300	3100	1.60	1.56	32	1400	3200
400	53	53	2.40	4 X 0.80	1.56	34	1650	3900	2.00	1.56	36	1850	4100
500	53	53	2.60	4 X 0.80	1.56	37	2000	4900	2.00	1.56	40	2200	5100
630	53	53	2.80	4 X 0.80	1.72	42	2520	6300	2.00	1.72	44	2750	6500
800	53	53	3.10	4 X 0.80	1.72	46	3150	7950	2.00	1.88	49	3450	8250
1000	53	53	3.30	4 X 0.80	1.88	50	3850	9850	2.50	2.04	54	4300	10300

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
	Sqmm	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps
4	7.41	4.61	9.48	5.90	0.152	0.22	—	—	—	48	47	45	0.376	0.572
6	4.61	3.08	5.90	3.94	0.144	0.26	45	45	40	60	59	57	0.56	0.858
10	3.08	1.83	3.94	2.34	0.133	0.31	59	62	53	80	78	77	0.94	1.43
16	1.91	1.15	2.44	1.47	0.122	0.40	76	80	73	104	102	106	1.50	2.29
25	1.20	0.727	1.54	0.931	0.116	0.40	99	90	115	130	115	145	2.35	3.58
35	0.868	0.524	1.11	0.671	0.110	0.47	117	110	140	155	140	175	3.29	5.01
50	0.641	0.387	0.820	0.495	0.103	0.50	138	125	170	185	165	215	4.70	7.15
70	0.443	0.268	0.567	0.343	0.099	0.55	168	155	210	225	200	270	6.58	10.01
95	0.320	0.193	0.411	0.248	0.097	0.64	204	185	255	265	235	330	8.93	13.59
120	0.253	0.153	0.325	0.197	0.093	0.67	230	210	300	300	265	380	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.091	0.67	265	230	342	335	300	430	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.090	0.67	295	260	385	380	335	495	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.086	0.72	340	300	450	435	385	590	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.085	0.75	390	335	519	490	430	670	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.085	0.75	450	380	605	550	480	780	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.083	0.77	500	430	700	610	530	900	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.082	0.81	555	485	809	680	590	1020	59.22	90.09
800	0.0367	0.0221	0.0530	0.0319	0.081	0.88	625	530	935	740	630	1140	75.20	114.40
1000	0.0291	0.0176	0.0444	0.0268	0.081	0.88	690	570	1065	780	660	1250	94.00	143.00

Table-19

TECHNICAL DETAILS FOR RICHA 1.1 KV

TWO CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, ARMoured CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XFY/2XFY, A2XWY/2XWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (A2XFY/2XFY)					Round Wire Armoured (A2XWY/2XWY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	370	470
6	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	460	550
10	1/7	6	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	530	700
16	6	6	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.40	17	550	750
25	6	6	0.90	0.30	4 X 0.80	1.40	18	550	850.0	1.60	1.40	20	750	1050
35	6	6	0.90	0.30	4 X 0.80	1.40	20	650	1050.0	1.60	1.40	21	850	1250
50	6	6	1.00	0.30	4 X 0.80	1.40	22	750	1350.0	1.60	1.40	23	1000	1550
70	12	12	1.10	0.30	4 X 0.80	1.56	25	1000	1800.0	1.60	1.56	26	1250	2050
95	15	15	1.10	0.40	4 X 0.80	1.56	27	1250	2350.0	2.00	1.56	30	1700	2800
120	15	18	1.20	0.40	4 X 0.80	1.56	30	1450	2850.0	2.00	1.56	32	1950	3350
150	15	18	1.40	0.40	4 X 0.80	1.72	32	1700	3450.0	2.00	1.72	35	2250	4000
185	30	30	1.60	0.50	4 X 0.80	1.72	35	2050	4200.0	2.00	1.88	38	2700	4850
240	30	34	1.70	0.50	4 X 0.80	1.88	40	2550	5400.0	2.50	2.04	44	3550	6350
300	30	34	1.80	0.60	4 X 0.80	2.04	43	3000	6550.0	2.50	2.20	47	4100	7650
400	53	53	2.00	0.60	4 X 0.80	2.36	49	4000	8300.0	2.50	2.36	52	4950	9500
500	53	53	2.20	0.70	4 X 0.80	2.52	54	4650	10450.0	3.15	2.68	59	6500	12300
630	53	53	2.40	0.70	4 X 0.80	2.68	60	5700	13200.0	3.15	2.84	64	7800	15350

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
	Sqmm	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.1
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-20

TECHNICAL DETAILS FOR RICHA 1.1 KV

THREE CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, ARMOURED CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XFY/2XFY, A2XWY/2XWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (A2XFY/2XFY)					Round Wire Armoured (A2XWY/2XWY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			A2XFY	2XFY	A2XWY	2XWY						
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	400	490
6	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	460	580
10	1/7	6	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	540	750
16	6	6	0.70	0.30	4 X 0.80	1.24	18	550	850.0	1.60	1.40	20	700	1000
25	6	6	0.90	0.30	4 X 0.80	1.40	20	700	1150.0	1.60	1.40	22	900	1350
35	6	6	0.90	0.30	4 X 0.80	1.40	22	850	1450.0	1.60	1.40	24	1050	1700
50	6	6	1.00	0.30	4 X 0.80	1.40	25	1000	1850.0	1.60	1.56	27	1300	2100
70	12	12	1.10	0.40	4 X 0.80	1.56	29	1350	2550.0	2.00	1.56	31	1800	3000
95	15	15	1.10	0.40	4 X 0.80	1.56	31	1600	3300.0	2.00	1.56	34	2150	3800
120	15	18	1.20	0.40	4 X 0.80	1.56	34	1900	4000.0	2.00	1.72	37	2550	4650
150	15	18	1.40	0.50	4 X 0.80	1.72	38	2350	4950.0	2.00	1.88	41	3000	5600
185	30	30	1.60	0.50	4 X 0.80	1.88	42	2850	6050.0	2.50	2.04	46	3950	7150
240	30	34	1.70	0.60	4 X 0.80	2.04	47	3500	7750.0	2.50	2.20	51	4800	9000
300	30	34	1.80	0.60	4 X 0.80	2.20	52	4250	9550.0	2.50	2.36	56	5600	10900
400	53	53	2.00	0.70	4 X 0.80	2.52	59	5350	12250.0	3.15	2.68	64	7450	14200
500	53	53	2.20	0.70	4 X 0.80	2.68	65	6550	15300.0	3.15	2.84	70	8900	17600
630	53	53	2.40	0.70	4 X 0.80	2.84	73	8150	19450.0	4.00	3.00	79	11800	23100

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
	Sqmm	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	460	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-21

TECHNICAL DETAILS FOR RICHA 1.1 KV, THREE & HALF CORE ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, ARMoured CABLES

Ref Specification : IS 7098 Part-1
Cable Code : A2XFY/2XFY, A2XWY/2XWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thick- ness	Flat Strip Armoured (A2XFY/2XFY)					Round Wire Armoured (A2XWY/2XWY)				
					Nominal Armour Strip Dimen- sion	Minimum Outer Sheath Thick- ness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	A2XFY	2XFY						A2XWY	2XWY					
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
3X25 +16	6/6	6/6	0.90/0.70	0.30	4 X 0.80	1.40	22	800	1350	1.60	1.40	23	1000	1550
3X35 +16	6/6	6/6	0.90/0.70	0.30	4 X 0.80	1.40	24	950	1650	1.60	1.40	26	1200	1900
3X 50+25	6/6	6/6	1.00/0.90	0.30	4 X 0.80	1.40	27	1150	2150	1.60	1.56	28	1450	2400
3X70+35	12/6	12/6	1.10/0.90	0.40	4 X 0.80	1.56	31	1500	2850	2.00	1.56	33	2000	3400
3X95 +50	15/6	15/6	1.10/1.00	0.40	4 X 0.80	1.56	34	1850	3800	2.00	1.56	36	2400	4350
3X120+70	15/12	18/12	1.20/1.10	0.40	4 X 0.80	1.72	38	2250	4750	2.00	1.72	40	2900	5400
3X150+70	15/12	18/12	1.40/1.10	0.50	4 X 0.80	1.72	41	2650	5600	2.00	1.88	44	3400	6400
3X 185+95	30/15	30/15	1.60/1.10	0.50	4 X 0.80	1.88	46	3200	7000	2.50	2.04	50	4450	8200
3X240+120	30/15	34/18	1.70/1.20	0.60	4 X 0.80	2.04	50	4000	8900	2.50	2.2	54	5250	10200
3X300+150	30/15	34/18	1.80/1.40	0.60	4 X 0.80	2.2	55	4800	11000	2.50	2.36	59	6200	12400
3X400+185	53/30	53/30	2.00/1.60	0.70	4 X 0.80	2.52	62	5950	13850	3.15	2.68	66	8200	16050
3X500+240	53/30	53/34	2.20/1.70	0.70	4 X 0.80	2.68	72	7500	17650	3.15	2.84	77	10150	20250
3X630+300	53/30	53/34	2.40/1.80	0.70	4 X 0.80	3.00	80	9300	22400	4.00	3.00	86	13250	26300

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C.Resistance at 20 °C		Approx. Conductor A.C.Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
Sqmm	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps	Amps	K.amps	K.amps
3X25+16	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
3X35+16	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
3X50+25	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
3X70+35	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
3X95+50	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
3X120+70	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
3X150+70	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
3X185+95	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
3X240+120	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
3X300+150	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	461	460	390	590	28.20	42.90
3X400+185	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
3X500+240	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
3X630+300	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-22

TECHNICAL DETAILS FOR RICHA 1.1 KV

FOUR CORE, ALUMINIUM/COPPER CONDUCTOR, XLPE INSULATED, ARMoured CABLES

Ref Specification : IS 7098 Part-1

Cable Code : A2XFY/2XFY, A2XWY/2XWY

Physical Parameters

Size (Cross Sectional Area)	Minimum No. of Strand in Conductor		Nominal Insulation Thickness	Minimum Inner Sheath Thickness	Flat Strip Armoured (A2XFY/2XFY)					Round Wire Armoured (A2XWY/2XWY)				
					Nominal Armour Strip Dimension	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable		Nominal Dia of Armor Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable	Approx. Weight of Cable	
	With Al'm Cond.	With Cu Cond.						With Al'm Cond.	With Cu Cond.					
	Aluminium	Copper			A2XFY	2XFY	A2XWY	2XWY						
Sqmm	No's	No's	mm	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	Kg/Km	Kg/Km
4	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	440	560
6	1/3	1/3	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.24	17	520	670
10	1/7	6	0.70	0.30	N/A	N/A	N/A	N/A	N/A	1.40	1.40	19	620	900
16	6	6	0.70	0.30	4 X 0.80	1.40	20	650	1000	1.60	1.40	21	850	1200
25	6	6	0.90	0.30	4 X 0.80	1.40	22	850	1450	1.60	1.40	24	1100	1700
35	6	6	0.90	0.30	4 X 0.80	1.40	25	1000	1850	1.60	1.40	26	1300	2100
50	6	6	1.00	0.30	4 X 0.80	1.56	28	1300	2400	1.60	1.56	29	1550	2700
70	12	12	1.10	0.40	4 X 0.80	1.56	32	1650	3250	2.00	1.56	34	2200	3800
95	15	15	1.10	0.40	4 X 0.80	1.56	35	2000	4250	2.00	1.72	38	2700	4900
120	15	18	1.20	0.50	4 X 0.80	1.72	39	2500	5300	2.00	1.88	42	3200	6000
150	15	18	1.40	0.50	4 X 0.80	1.88	43	2950	6400	2.50	2.04	47	4100	7550
185	30	30	1.60	0.50	4 X 0.80	2.04	48	3600	7950	2.50	2.20	52	4850	9150
240	30	34	1.70	0.60	4 X 0.80	2.20	54	4500	10200	2.50	2.36	58	5950	11600
300	30	34	1.80	0.70	4 X 0.80	2.36	61	5500	12600	3.15	2.52	66	7750	14850
400	53	53	2.00	0.70	4 X 0.80	2.68	68	6850	15900	3.15	2.84	73	9350	18400
500	53	53	2.20	0.70	4 X 0.80	2.84	75	8500	20100	4.00	3.00	82	12400	24000
630	53	53	2.40	0.70	4 X 0.80	3.00	84	10550	25650	4.00	3.00	91	14750	30000

Electrical Parameters

Size (Cross Sectional Area)	Max. Conductor D.C. Resistance at 20 °C		Approx. Conductor A.C. Resistance at 90 °C		Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating						Short Circuit Current Rating for 1 Second Duration	
	Aluminium	Copper	Aluminium	Copper			For Aluminium Conductor			For Copper Conductor			Aluminium	Copper
							Ground	Duct	Air	Ground	Duct	Air		
	Sqmm	Ohm/Km	Ohm/Km	Ohm/Km			Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	Amps	Amps
4	7.41	4.61	9.48	5.90	0.098	0.11	34	28	30	44	37	39	0.376	0.572
6	4.61	3.08	5.90	3.94	0.090	0.13	43	37	40	55	47	50	0.564	0.858
10	3.08	1.83	3.94	2.34	0.084	0.16	57	48	53	74	61	67	0.940	1.43
16	1.91	1.15	2.44	1.47	0.080	0.18	78	61	70	94	78	85	1.50	2.29
25	1.20	0.727	1.54	0.931	0.080	0.20	95	80	99	120	100	125	2.35	3.58
35	0.868	0.524	1.11	0.671	0.080	0.23	116	94	117	145	120	155	3.29	5.01
50	0.641	0.387	0.820	0.495	0.078	0.24	140	110	140	170	145	190	4.70	7.15
70	0.443	0.268	0.567	0.343	0.077	0.26	170	140	176	210	175	235	6.58	10.01
95	0.320	0.193	0.411	0.248	0.074	0.29	200	165	221	250	210	290	8.93	13.59
120	0.253	0.153	0.325	0.197	0.072	0.29	225	185	258	285	240	330	11.28	17.16
150	0.206	0.1240	0.265	0.159	0.072	0.29	255	210	294	315	270	375	14.10	21.45
185	0.164	0.0991	0.211	0.127	0.072	0.29	285	235	339	355	300	435	17.39	26.46
240	0.125	0.0754	0.162	0.0976	0.072	0.31	325	270	402	410	350	510	22.56	34.32
300	0.100	0.0601	0.130	0.0778	0.071	0.33	370	305	460	460	390	590	28.20	42.90
400	0.0778	0.0470	0.1023	0.0618	0.070	0.33	435	350	542	520	440	670	37.60	57.20
500	0.0605	0.0366	0.0808	0.0489	0.070	0.34	481	405	624	580	480	750	47.00	71.50
630	0.0469	0.0283	0.0648	0.0391	0.069	0.36	537	470	723	680	575	875	59.22	90.09

Table-23

TECHNICAL DETAILS FOR RICHA 1.1 KV 1.5 SQMM

COPPER CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured CONTROL CABLES

Ref Specification : IS 7098 Part-1

Cable Code : 2XY/2XFY/2XWY

Physical Parameters

No. of Cores	Unarmoured (2XY)							Flat Strip Armoured (2XFY)					Round Wire Armoured (2XWY)						
	Minimum Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Dimension of Armour Strip	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Nominal Dia of Armour Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		
			Solid Cond.	Std. cond.	Soild Cond	Std. cond.			Soild Cond	Std. cond.	Soild Cond	Std. cond.			Soild Cond	Std. cond.	Soild Cond	Std. cond.	Soild Cond
No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	
2	0.30	1.80	10	10	150	150	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	12	13	320	350	
3	0.30	1.80	11	11	170	200	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	13	330	350	
4	0.30	1.80	12	12	200	200	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	14	370	400	
5	0.30	1.80	12	13	230	250	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	15	420	450	
6	0.30	1.80	13	14	260	300	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	16	460	500	
7	0.30	1.80	13	14	250	250	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	16	470	500	
10	0.30	1.80	16	16	340	350	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	18	19	640	650	
12	0.30	1.80	17	17	380	400	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.40	19	20	750	800	
14	0.30	1.80	17	18	420	450	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.40	20	21	800	850	
16	0.30	1.80	18	19	470	500	4x0.8	1.40	19	20	660	700	1.60	1.40	21	22	860	900	
19	0.30	1.80	19	20	550	550	4x0.8	1.40	20	21	750	750	1.60	1.40	21	22	940	1000	
24	0.30	2.00	22	23	680	700	4x0.8	1.40	23	24	920	950	1.60	1.40	24	25	1140	1200	
27	0.30	2.00	23	24	730	750	4x0.8	1.40	23	24	970	1000	1.60	1.40	25	26	1210	1300	
30	0.30	2.00	23	25	800	850	4x0.8	1.40	24	25	1030	1100	1.60	1.40	25	27	1290	1350	
37	0.30	2.00	25	26	940	1000	4x0.8	1.40	25	27	1200	1250	1.60	1.40	27	29	1510	1600	
40	0.30	2.00	26	27	1030	1080	4x0.8	1.40	26	28	1310	1380	1.60	1.40	28	29	1590	1680	
44	0.30	2.00	28	30	1130	1170	4x0.8	1.40	28	30	1420	1490	1.60	1.56	31	32	1760	1850	
52	0.30	2.00	29	31	1290	1340	4x0.8	1.56	30	32	1640	1710	1.60	1.56	32	33	1950	2050	
61	0.40	2.20	31	33	1520	1580	4x0.8	1.56	32	34	1860	1940	2.00	1.56	34	36	2410	2520	

Electrical Parameters

Number of Cores	Max. Conductor D.C. Resistance at 20 °C	Approx. Conductor A.C. Resistance	Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating for XLPE Insulation			Short Circuit Current Rating for 1 Second Duration
					Ground	Duct	Air	
No's	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	K.amps
2	12.10	15.49	0.102	0.09	33	29	29	0.215
3	12.10	15.49	0.102	0.09	25	22	22	0.215
4	12.10	15.49	0.102	0.09	25	22	22	0.215
5	12.10	15.49	0.102	0.09	24	21	21	0.215
6	12.10	15.49	0.102	0.09	22	19	19	0.215
7	12.10	15.49	0.102	0.09	21	18	18	0.215
10	12.10	15.49	0.102	0.09	18	16	16	0.215
12	12.10	15.49	0.102	0.09	17	15	15	0.215
14	12.10	15.49	0.102	0.09	16	14	14	0.215
16	12.10	15.49	0.102	0.09	16	14	14	0.215
19	12.10	15.49	0.102	0.09	15	13	13	0.215
24	12.10	15.49	0.102	0.09	13	12	12	0.215
27	12.10	15.49	0.102	0.09	13	11	11	0.215
30	12.10	15.49	0.102	0.09	12	11	11	0.215
37	12.10	15.49	0.102	0.09	11	10	10	0.215
40	12.10	15.49	0.102	0.09	11	9	9	0.215
44	12.10	15.49	0.102	0.09	11	9	9	0.215
52	12.10	15.49	0.102	0.09	10	9	9	0.215
61	12.10	15.49	0.102	0.09	9	8	8	0.215

Table-24

TECHNICAL DETAILS FOR RICHA 1.1 KV 2.5 SQMM

COPPER CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured CONTROL CABLES

Ref Specification : IS 7098 Part-1

Cable Code : 2XY/2XFY/2XWY

Physical Parameters

No. of Cores	Minimum Inner Sheath Thickness	Unarmoured (2XY)						Flat Strip Armoured (2XFY)						Round Wire Armoured (2XWY)					
		Nominal Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Dimension of Armour Strip	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		Nominal Dia of Armour Wire	Minimum Outer Sheath Thickness	Approx. Overall Dia of Cable		Approx. Weight of Cable		
			Solid Cond.	Std. cond.	Soild Cond	Std. cond.			Soild Cond	Std. cond.	Soild Cond	Std. cond.			Soild Cond	Std. cond.	Soild Cond	Std. cond.	Soild Cond
No's	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	mm	mm	mm	mm	Kg/Km	Kg/Km	
2	0.30	1.80	11	12	180	200	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	13	13	370	400	
3	0.30	1.80	12	12	210	220	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	14	14	390	410	
4	0.30	1.80	13	13	250	270	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	15	440	460	
5	0.30	1.80	14	14	300	310	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	15	16	500	520	
6	0.30	1.80	15	15	350	360	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	17	560	580	
7	0.30	1.80	15	15	330	340	N/A	N/A	N/A	N/A	N/A	N/A	1.40	1.24	16	17	590	610	
10	0.30	1.80	18	19	450	470	4x0.8	1.24	19	20	650	690	1.60	1.40	20	21	850	880	
12	0.30	1.80	19	20	530	550	4x0.8	1.40	19	20	700	750	1.60	1.40	21	22	920	950	
14	0.30	1.80	20	21	590	610	4x0.8	1.40	20	21	790	830	1.60	1.40	22	23	1000	1030	
16	0.30	2.00	21	22	660	680	4x0.8	1.40	21	22	880	900	1.60	1.40	23	24	1080	1130	
19	0.30	2.00	22	23	750	780	4x0.8	1.40	22	23	970	1010	1.60	1.40	24	25	1200	1260	
24	0.30	2.00	25	26	930	960	4x0.8	1.40	25	27	1190	1240	1.60	1.40	27	29	1480	1540	
27	0.30	2.00	25	27	1020	1050	4x0.8	1.40	26	27	1300	1320	1.60	1.40	28	29	1580	1640	
30	0.30	2.00	26	28	1110	1150	4x0.8	1.40	27	28	1410	1470	1.60	1.40	29	30	1690	1770	
37	0.30	2.00	29	30	1370	1410	4x0.8	1.40	30	31	1690	1720	1.60	1.56	31	32	1980	2050	
40	0.30	2.00	29	31	1450	1500	4x0.8	1.56	31	32	1800	1870	1.60	1.56	32	33	2110	2210	
44	0.40	2.20	32	34	1630	1690	4x0.8	1.56	32	34	1990	2070	2.00	1.56	35	37	2520	2650	
52	0.40	2.20	33	35	1870	1940	4x0.8	1.56	34	36	2250	2340	2.00	1.56	36	38	2810	2920	
61	0.40	2.20	35	37	2150	2220	4x0.8	1.56	36	38	3160	2640	2.00	1.56	38	40	3160	3280	

Electrical Parameters

Number of Cores	Max. Conductor D.C. Resistance at 20 °C	Approx. Conductor A.C. Resistance	Reactance of Cable at 50 Hz (Approx.)	Capacitance of Cable (Approx.)	Normal Current Rating for XLPE Insulation			Short Circuit Current Rating for 1 Second Duration
					Ground	Duct	Air	
No's	Ohm/Km	Ohm/Km	Ohm/Km	µF/Km	Amps	Amps	Amps	K.amps
2	7.41	9.48	0.100	0.10	39	32	32	0.358
3	7.41	9.48	0.100	0.10	34	30	30	0.358
4	7.41	9.48	0.100	0.10	34	30	30	0.358
5	7.41	9.48	0.100	0.10	31	28	28	0.358
6	7.41	9.48	0.100	0.10	29	26	26	0.358
7	7.41	9.48	0.100	0.10	27	25	25	0.358
10	7.41	9.48	0.100	0.10	24	21	21	0.358
12	7.41	9.48	0.100	0.10	22	20	20	0.358
14	7.41	9.48	0.100	0.10	21	19	19	0.358
16	7.41	9.48	0.100	0.10	20	18	18	0.358
19	7.41	9.48	0.100	0.10	19	17	17	0.358
24	7.41	9.48	0.100	0.10	17	16	16	0.358
27	7.41	9.48	0.100	0.10	16	16	16	0.358
30	7.41	9.48	0.100	0.10	16	14	14	0.358
37	7.41	9.48	0.100	0.10	15	13	13	0.358
40	7.41	9.48	0.100	0.10	14	13	13	0.358
44	7.41	9.48	0.100	0.10	14	13	13	0.358
52	7.41	9.48	0.100	0.10	13	12	12	0.358
61	7.41	9.48	0.100	0.10	12	11	11	0.358

Standard Drum Lengths of Cables

STANDARD LENGTH (MTS) WITH \pm 5% TOLERANCE			
DESCRIPTION OF CABLE UN-ARMoured	STRIP ARMoured	ROUND WIRE ARMoured	
1.1KV PVC/XLPE CABLES WITH ALUMINIUM			
~ SINGLE CORE	UP TO 150SQMM-1000 185 TO 1000sqmm-500	UP TO 150SQMM-1000 185 TO 1000sqmm-500	UP TO 150SQMM-1000 185 TO 1000sqmm-500
~ TWO CORE	UP TO 50SQMM-1000 70 TO 630sqmm-500	UP TO 50SQMM-1000 70 TO 630sqmm-500	UP TO 50SQMM-1000, 70 TO 500sqmm 500, 630sqmm-250
~ THREE CORE	UP TO 50SQMM-1000 70 TO 630sqmm-500	UP TO 50SQMM-1000 70 TO 500sqmm-500 630sqmm-250	UP TO 50SQMM-1000, 70 TO 300sqmm 500, 500 TO 630sqmm-250
~ THREE & HALF CORE	UP TO 50SQMM-1000 70 TO 630sqmm-500	UP TO 50SQMM-1000 70 TO 400sqmm-500 500 TO 630sqmm-250	UP TO 50SQMM-1000, 70 TO 300sqmm 500, 400-630sqmm-250
'FOUR CORE	UP TO 50SQMM-1000 70 TO 500sqmm-500 630sqmm-250	UP TO 50SQMM-1000 70 TO 400sqmm-500 500 TO 630sqmm-250	UP TO 50SQMM-1000, 70 TO 240sqmm 500, 300 TO 630sqmm-250
1.1KV PVC/XLPE CABLES WITH COPPER CONDUCTOR			
~ SINGLE CORE	UP TO 150SQMM-1000 185 TO 630sqmm-500 800 TO 1000sqmm-250	UP TO 150SQMM-1000 185 TO 630sqmm-500 800 TO 1000sqmm-250	UP TO 150SQMM-1000 185 TO 630sqmm-500 800 TO 1000sqmm-250
~ TWO CORE	UP TO 10SQMM-1000 16 TO 300sqmm-500 400 TO 630sqmm-250	UP TO 10SQMM-1000 16 TO 300sqmm-500 400 TO 630sqmm-250	UP TO 10SQMM-1000, 70 TO 500sqmm 500, 500, 300 TO 630sqmm-250
~ THREE CORE	UP TO 10SQMM-1000 300 TO 400sqmm-250	UP TO 10SQMM-1000 16 TO 240sqmm-500 240sqmm-400sqmm-250	UP TO 10SQMM-1000, 16 TO 185sqmm 16 TO 185sqmm-500 500, 240 TO 400sqmm-250
~ THREE & HALF CORE	UP TO 10SQMM-1000 300 TO 400sqmm-250	UP TO 10SQMM-1000 16 TO 240sqmm-500 240 TO 400sqmm-250	UP TO 10SQMM-1000, 16 TO 150sqmm 16 TO 185sqmm-500 500, 185 TO 400sqmm-250
'FOUR CORE	UP TO 10SQMM-1000 16 TO 240sqmm-500 300 TO 400sqmm-250	UP TO 10SQMM-1000 16 TO 150sqmm-500 240 TO 400sqmm-250	UP TO 10SQMM-1000, 16 TO 150sqmm 500, 185 TO 400sqmm-250

- Control cables more than FOUR CORES shall be supplied in 500 mts length

DESCRIPITON OF CABLE	6.35/11KV GRADE	1/11KV GRADE	19/33KV GRADE
H.T. XLPE CABLES WITH ALUMINIUM CONDUCTOR			
~ SINGLE CORE-A2XW _a Y	UP TO 150SQMM-1000 185 TO 1000sqmm-500	UP TO 150SQMM-1000 185 TO 1000sqmm-500	UP TO 150SQMM-1000 185 TO 1000sqmm-500
~ THREE CORE-A2XFY	25 TO 300SQMM-500 400sqmm-250	25 TO 185SQMM-500 240 TO 400sqmm-250	25 TO 95SQMM-500 120 TO 400sqmm-250
~ THREE CORE-A2XWY	25 TO 150SQMM-500 185 TO 300sqmm-250 400sqmm-200	25 TO 95SQMM-500 120 TO 240sqmm-250 300 TO 400sqmm-200	25 TO 50SQMM-250 70 TO 120sqmm-250 185 TO 400sqmm-200

Quality Control

It has been rightly said that "Quality is never an accident, it is always the result of intelligent efforts".

In the manufacture of cables, intelligent efforts are incorporated to achieve quality. For a quality end products, control starts from proper design of the product. All raw materials are selected carefully and only materials of high quality are used in production. Having done this, stage wise inspection is done to ensure conformity with the requirements of relevant Indian Standards where these apply.

Stage - Wise Inspection

- i) Wire-Drawing : Wire diameter
Surface
Shape
Quality of joints in the wire
- ii) Stranding of Wires: : Quality of joints in the wires
Compaction of conductor
Shape of Conductor
Dimensions
Resistance of Conductor
- iii) Insulation : : Dimension over Insulation,
Thickness of Insulation,
- iv) Curing (for XLPE Insulation) : Hot set test, Tensile strength & elongation test.
- v) Screening (for H.T. Screened cables) : Dimension over screen, thick of screen visual examination of surface/defects.

- v) Laying Up : Sequence of Cores
Direction of lay
Diameter over laid up cores
Circularity
- vi) Inner Sheath : Thickness of Sheath
Diameter over Sheath
Surface Uniformity
Circularity
Porosity
- vii) Armouring : Diameter of Wires/
Dimensions of Strips
Direction of lay
Coverage
Quality of Joints of Wires
- viii) Outer Sheath : Thickness of Sheath Diameter
over Sheath Tightness of Sheath
Eccentricity Porosity, Embossing

Test

The tests on cables have been classified broadly in four categories as follows:

Routine Tests:

Tests carried out on each cable to check the requirements which are likely to vary during production.

Type Tests:

Tests carried out to prove conformity with the specification. These are intended to prove the general qualities and design of a given type of cable.

Acceptance Tests:

Tests carried out on samples taken from a lot for the purpose of acceptance of the lot.

Selection Guide

List of Tests as per IS:1554(Part - I): 1988, IS:1554 (Part- II):1988, IS:7098 (Part - I):1988 and IS:7098 (Part-II) : 1985

1. Routine Tests:

- a) Conductor Resistance Test
- b) High Voltage Test
- c) Armour Resistance Test for mining Type Cables
- d) Partial Discharge test (for H.T. Screened cable)

2. Type Tests:

- a) Tensile Test (for Aluminium Conductor)
- b) Wrapping Test (for Aluminium Conductor)
- c) Annealing Test (for Copper Conductor)
- d) Conductor Resistance Test
- e) Test for Armour Wires/Strips
- f) Test for thickness of Insulation & Sheath
- g) Physical Test for Insulation & Outer Sheath
- h) Insulation Resistance Test
- i) High Voltage Test
- j) Flammability Test
- k) Hot Set Test - (For XLPE Insulation only)
- l) Partial Discharge test (for H.T. Screened cable)
- m) Bending test (for H.T. Screened cable)
- n) Dielectric Power factor test (for H.T. Screened cable with rated voltage 6.35/11KV & above)
- o) Heating cycle test (for H.T. Screened cable)
- p) Impulse withstand test (for H.T. Screened cable)

3. Acceptance Tests:

- a) Tensile Test (For Aluminium Conductor)
- b) Wrapping Test (For Aluminium Conductor)
- c) Annealing Test (For Copper Conductor)
- d) Conductor Resistance Test
- e) Test for thickness of Insulation & Sheath
- f) High Voltage Test
- g) Insulation Resistance Test
- h) Tensile Strength & Elongation at break test for Insulation and Sheath
- l) Hot Set Test - (for XLPE Insulation only)
- j) Partial Discharge test (for H.T. Screened cable)

4. Optional Tests:

- a) Cold Bend Test
- b) Cold Impact Test
- c) Armour Resistance Test
(for other than Mining Type Cables)

Handling & Storage

A. CABLE INSPECTION



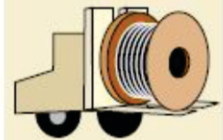


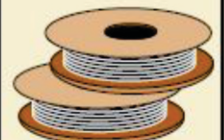


Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if :

1. A reel is lying flat on its side.
2. Several reels are stacked.
3. Other freight is stacked on a reel.
4. Nails have been driven into reel flanges.
5. A reel flange is damaged.
6. A cable covering is removed, started or damaged.
7. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

B. CABLE HANDLING & STORAGE

Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately expose to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Do's and Don's that should be followed while handling and storing the cables before it put to use.

Do's		Don'ts	
	When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck		Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.
	If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage during the time in storage		Do not allow the lift forks to contact the cable. Care must be taken by the fork lift operator not to make sudden turns or stops.
	Cable reels should be stored on hard surfaces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.		Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.
	When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.		This may lead to the bending of the reel flanges and mashing the cable



The RICHA Group is one of India's leading industrial groups and has interests spanning over several areas. Richa Cables Pvt. Ltd., an ISO : 9001:2008 certified company started its manufacturing activities in the year 1993 and there was no looking back thereafter. Our Manufacturing unit is spread over an area of 40000 sq. feet. The group is presently engaged in manufacturing of :

- PVC/XLPE Insulated Heavy Duty Power and Control Cables as per IS : 1554 : 1988 (Part 1) /IS : 7098 (Part 1).
- PVC Insulated Wires as per IS-694 : 2010.
- PVC Conduit Pipes as per IS : 9537 : 1983 (Part 3).
- Cable Trunking and Ductile System as per IS-14927 (Part 2)
- PVC Fittings.
- LED Products.



Wires & Cables - P.V.C. Conduit Pipes - Cable Trunking & Ductile System - P.V.C. Fittings - LED Products

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