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MK 5002
REVISION 3
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ISO 9001

Certificate of Approval

This is to certify that

MCI-Draka Cable Company Limited

*Address of premise : 2/7 Moo 2, Ban-Bueng Bankhai Road km 57,
Nongbua, Bangkok District,
Rayong 21120, Thailand*

has been assessed and found to be conforming to the requirements of TIS 9001-2544 (ISO 9001 : 2000)

for the scope :

- 1. Design and development and manufacture of polyvinyl chloride, polyethylene or crosslinked polyethylene insulated copper cables and low voltage control cables*
- 2. Manufacture of round copper wires*

by Management System Certification Institute (Thailand)

Date of issue : 9th June 2006

Valid until : 8th June 2009

(Dr. Santhi Kanoktanaporn)

Executive Director

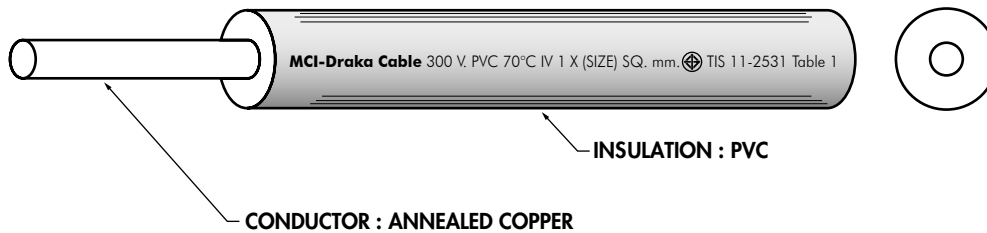
Management System Certification Institute (Thailand)

First issued date : 9th June 2003



IV

300 V 70°C PVC INSULATED, SINGLE CORE.



Application : Building wiring, for installation on insulator or in raceway, dry and wet location.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 1

Construction : Conductor : Solid and stranded annealed copper, sizes 0.5mm² up to 150 mm²

Insulation : Polyvinyl chloride, Normally : Black
(Any colour as requested)

Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
0.5	1/0.80	0.6	2.6	0.0146	8	8.5	100/C
1	1/1.13	0.6	2.9	0.0115	12	14	100/C
1	7/0.40	0.6	3.1	0.0110	12	14	100/C
1.5	1/1.38	0.6	3.2	0.0100	16	19	100/C
1.5	7/0.50	0.6	3.4	0.0094	16	19	100/C
2.5	1/1.78	0.7	3.8	0.0092	23	31	100/C
2.5	7/0.67	0.7	4.1	0.0084	23	31	100/C
4	1/2.25	0.8	4.5	0.0086	31	48	100/C
4	7/0.85	0.8	4.9	0.0078	31	48	100/C
6	7/1.04	0.8	5.6	0.0066	42	70	100/C
10	7/1.35	1.0	7.0	0.0064	61	120	100/C
16	7/1.70	1.0	8.2	0.0053	83	180	100/C
25	7/2.14	1.2	10.0	0.0051	113	280	100/C
35	19/1.53	1.2	11.5	0.0043	141	380	100/C
50	19/1.78	1.4	13.0	0.0044	175	530	500/D
70	19/2.14	1.4	15.0	0.0037	221	720	500/D
95	19/2.52	1.6	17.5	0.0036	275	990	500/D
120	37/2.03	1.6	19.0	0.0032	321	1230	500/D
150	37/2.25	1.8	21.5	0.0033	368	1510	500/D

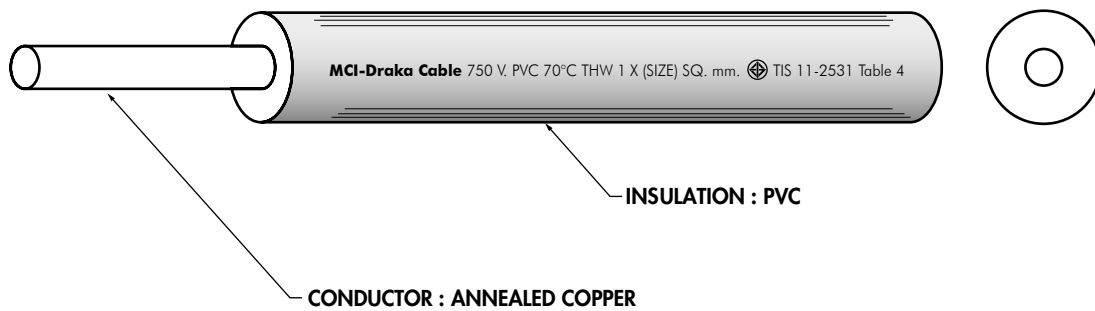
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

THW (MEA TYPE A)

750 V 70°C PVC INSULATED, SINGLE CORE.



Application : Building wiring, for installation on insulator or in raceway, dry and wet location.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 4

Construction : Conductor : Solid or stranded annealed copper, sizes 0.5mm² up to 500 mm²

Insulation : Polyvinyl chloride, Normally : Black
(Any colour as requested)

Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
0.5	1/0.80	0.8	3.0	0.0175	9 -	11 -	100/C
1	1/1.13	0.8	3.3	0.0141	13 -	17 -	100/C
1	7/0.40	0.8	3.5	0.0135	13 -	17 -	100/C
1.5	1/1.38	0.8	3.6	0.0123	17 -	22 -	100/C
1.5	7/0.50	0.8	3.8	0.0116	17 -	22 -	100/C
2.5	1/1.78	0.8	4.0	0.0102	23 -	31 -	100/C
2.5	7/0.67	0.8	4.3	0.0093	23 -	31 -	100/C
4	1/2.25	0.9	4.8	0.0094	32 -	50 -	100/C
4	7/0.85	0.9	5.2	0.0085	32 -	50 -	100/C
6	7/1.04	0.9	5.8	0.0073	43 -	75 -	100/C
10	7/1.35	1.1	7.2	0.0069	60 -	120 -	100/C
16	7/1.70	1.1	8.4	0.0057	83 -	180 -	100/C
25	7/2.14	1.3	10.5	0.0054	114 -	290 -	100/C
35	19/1.53	1.3	11.5	0.0047	141 -	380 -	100/C
50	19/1.78	1.5	13.5	0.0046	175 -	540 -	500/D
70	19/2.14	1.5	15.5	0.0039	221 -	720 -	500/D
95	19/2.52	1.7	18.0	0.0038	275 -	1000 -	500/D
120	37/2.03	1.7	19.5	0.0034	321 -	1240 -	500/D
150	37/2.25	1.9	21.5	0.0034	367 -	1520 -	500/D
185	37/2.52	2.1	24.0	0.0034	424 -	1900 -	500/D
240	61/2.25	2.3	27.0	0.0033	505 -	2480 -	500/D
300	61/2.52	2.5	30.0	0.0032	581 -	3100 -	500/D
400	61/2.85	2.7	33.5	0.0030	675 -	3950 -	500/D
500	61/3.20	3.1	38.0	0.0031	781 -	5150 -	500/D

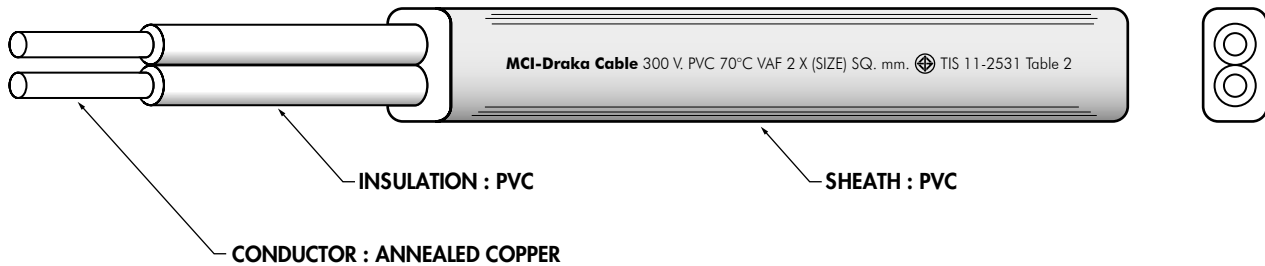
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VAF (MEA TYPE B)

300 V 70°C PVC INSULATED AND SHEATHED, FLAT TYPE.



- Application** : For surface or above ceiling wiring or direct embedded in plaster. **Construction** : Number of core : 2-3 cores
 Conductor : Solid or stranded annealed copper, sizes 0.5 mm² up to 16 mm² for 3 cores.
- Classification** : Maximum conductor temperature 70°C
 Circuit voltage does not exceed 300 volts. Insulation : Polyvinyl chloride
 (Light Grey and Black colour for 2 cores;
 Light Grey, Black and Red for 3 cores)
- Standard** : TIS 11-2531 TABLE 2 Sheath : Polyvinyl Chloride (White colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ-km)	Minimum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
					Lower limit	Upper limit				
2	0.5	1/0.80	0.6	0.9	3.6 X 5.6	4.4 x 6.8	0.0146	7 -	37 -	100/C
	1	1/1.13	0.6	0.9	4.0 x 6.2	4.8 x 7.4	0.0115	11 -	50 -	100/C
	1	7/0.40	0.6	0.9	4.0 x 6.4	5.0 x 7.8	0.0110	11 -	50 -	100/C
	1.5	1/1.38	0.6	1.2	4.8 x 7.2	5.8 x 8.6	0.0100	15 -	70 -	100/C
	1.5	7/0.50	0.6	1.2	4.9 x 7.4	6.0 x 9.2	0.0094	15 -	70 -	100/C
	2.5	1/1.78	0.7	1.2	5.4 x 8.4	6.4 x 10.0	0.0092	20 -	100 -	100/C
	2.5	7/0.67	0.7	1.2	5.6 x 8.8	6.8 x 10.5	0.0084	20 -	100 -	100/C
	4	1/2.25	0.8	1.2	6.0 x 9.8	7.2 x 11.5	0.0086	27 -	140 -	100/C
	4	7/0.85	0.8	1.2	6.2 x 10.0	7.6 x 12.0	0.0078	27 -	140 -	100/C
	6	7/1.04	0.8	1.2	6.8 x 11.0	8.2 x 13.5	0.0066	35 -	200 -	100/C
	10	7/1.35	0.9	1.2	8.0 x 13.5	9.4 x 16.0	0.0059	49 -	300 -	100/C
	16	7/1.70	1.0	1.2	9.2 x 16.0	11.0 x 18.5	0.0053	65 -	440 -	100/C
	25	7/2.14	1.2	1.4	11.0 x 19.5	13.0 x 22.5	0.0051	88 -	690 -	500/D
35	19/1.53	1.2	1.4	12.0 x 22.0	14.5 x 25.0	0.0043	109 -	900 -	500/D	
3	0.5	1/0.80	0.6	0.9	3.6 x 7.4	4.4 x 9.0	0.0146	6 -	50 -	100/C
	1	1/1.13	0.6	0.9	4.0 x 8.4	4.8 x 10.0	0.0115	9 -	70 -	100/C
	1	7/0.40	0.6	0.9	4.0 x 8.6	5.0 x 10.5	0.0110	9 -	70 -	100/C
	1.5	1/1.38	0.6	1.2	4.8 x 9.8	5.8 x 11.5	0.0100	12 -	100 -	100/C
	1.5	7/0.50	0.6	1.2	4.9 x 10.0	6.0 x 12.5	0.0094	12 -	100 -	100/C
	2.5	1/1.78	0.7	1.2	5.4 x 11.5	6.4 x 13.5	0.0092	16 -	150 -	100/C
	2.5	7/0.67	0.7	1.2	5.6 x 12.0	6.8 x 14.5	0.0084	16 -	150 -	100/C
	4	1/2.25	0.8	1.2	6.0 x 13.5	7.2 x 16.0	0.0086	22 -	210 -	100/C
	4	7/0.85	0.8	1.2	6.2 x 14.0	7.6 x 16.5	0.0078	22 -	210 -	100/C
	6	7/1.04	0.8	1.2	6.8 x 16.0	8.2 x 18.5	0.0066	29 -	300 -	100/C
	10	7/1.35	0.9	1.2	8.0 x 19.0	9.4 x 22.0	0.0059	40 -	450 -	500/D
	16	7/1.70	1.0	1.4	9.6 x 23.0	11.5 x 26.5	0.0053	53 -	680 -	500/D

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

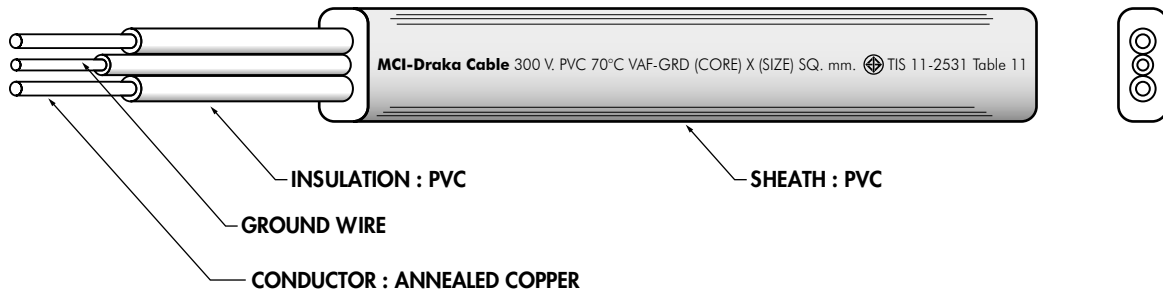
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VAF-GRD (MEA TYPE B - GRD)

300 V 70°C PVC INSULATED AND SHEATHED, FLAT TYPE WITH GROUND.



Application : Surfaced wiring

Concealed wiring in wooden partition, or above ceiling. Embed in plaster.

Classification : Maximum conductor temperature 70°C

Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 11

Construction : Number of core : 2-3 cores with safety-ground.

Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 35 mm²

Insulation : Polyvinyl chloride (Light Grey and Black colour for 2 cores;

Light Grey, Black and Red for 3 cores; Green / Yellow for ground core)

Sheath : Polyvinyl Chloride (White colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Sheath thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
							Lower limit	Upper limit				
2	1	1/1.3	0.6	1	0.6	0.9	4.0 x 8.4	4.8 x 10.0	0.0115	11 -	70 -	500/D
	1	7/0.40	0.6	1	0.6	0.9	4.0 x 8.6	5.0 x 10.5	0.0110	11 -	70 -	500/D
	1.5	1/1.38	0.6	1	0.6	1.2	4.8 x 9.4	5.8 x 11.5	0.0100	15 -	95 -	500/D
	1.5	7/0.50	0.6	1	0.6	1.2	4.9 x 9.8	6.0 x 12.0	0.0094	15 -	95 -	500/D
	2.5	1/1.78	0.7	1.5	0.6	1.2	5.4 x 10.5	6.4 x 13.0	0.0092	20 -	130 -	500/D
	2.5	7/0.67	0.7	1.5	0.6	1.2	5.6 x 11.5	6.8 x 14.0	0.0084	20 -	130 -	500/D
	4	1/2.25	0.8	2.5	0.6	1.2	6.0 x 12.5	7.2 x 15.0	0.0086	27 -	190 -	500/D
	4	7/0.85	0.8	2.5	0.6	1.2	6.2 x 13.0	7.6 x 16.0	0.0078	27 -	190 -	500/D
	6	7/1.04	0.8	4	0.6	1.2	6.8 x 15.0	8.2 x 17.5	0.0066	35 -	270 -	500/D
	10	7/1.35	0.9	4	0.6	1.2	8.0 x 17.0	9.4 x 20.0	0.0059	49 -	380 -	500/D
	16	7/1.70	1.0	6	0.6	1.2	9.2 x 20.0	11.0 x 23.0	0.0053	65 -	550 -	500/D
3	1	1/1.13	0.6	1	0.6	0.9	4.0 x 10.5	4.8 x 12.5	0.0115	9 -	95 -	500/D
	1	7/0.40	0.6	1	0.6	0.9	4.0 x 11.0	5.0 x 13.5	0.0110	9 -	95 -	500/D
	1.5	1/1.38	0.6	1	0.6	1.2	4.8 x 12.0	5.8 x 14.0	0.0100	12 -	130 -	500/D
	1.5	7/0.50	0.6	1	0.6	1.2	4.9 x 12.5	6.0 x 15.0	0.0094	12 -	130 -	500/D
	2.5	1/1.78	0.7	1.5	0.6	1.2	5.4 x 14.0	6.4 x 16.5	0.0092	16 -	180 -	500/D
	2.5	7/0.67	0.7	1.5	0.6	1.2	5.6 x 14.5	6.8 x 17.5	0.0084	16 -	180 -	500/D
	4	1/2.25	0.8	2.5	0.6	1.2	6.0 x 16.0	7.2 x 19.0	0.0086	22 -	260 -	500/D
	4	7/0.85	0.8	2.5	0.6	1.2	6.2 x 17.5	7.6 x 20.5	0.0078	22 -	260 -	500/D
	6	7/1.04	0.8	4	0.6	1.2	6.8 x 19.5	8.2 x 22.5	0.0066	29 -	370 -	500/D
	10	7/1.35	0.9	4	0.6	1.2	8.0 x 22.5	9.4 x 26.0	0.0059	40 -	520 -	500/D
	16	7/1.70	1.0	6	0.6	1.4	9.6 x 27.5	11.0 x 31.5	0.0053	53 -	860 -	500/D

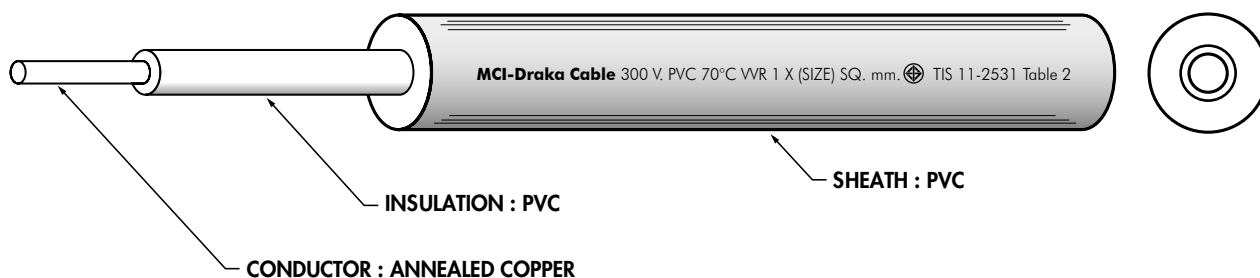
TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVR

300 V 70°C PVC INSULATED AND SHEATHED, ROUND TYPE.



Application : Exposed wiring in air or use raceway wet or dry location, direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 2

Construction : Conductor : Solid or stranded annealed copper, sizes 0.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride
(Light Grey colour for 1 cores)

Sheath : Polyvinyl Chloride (Black colour)

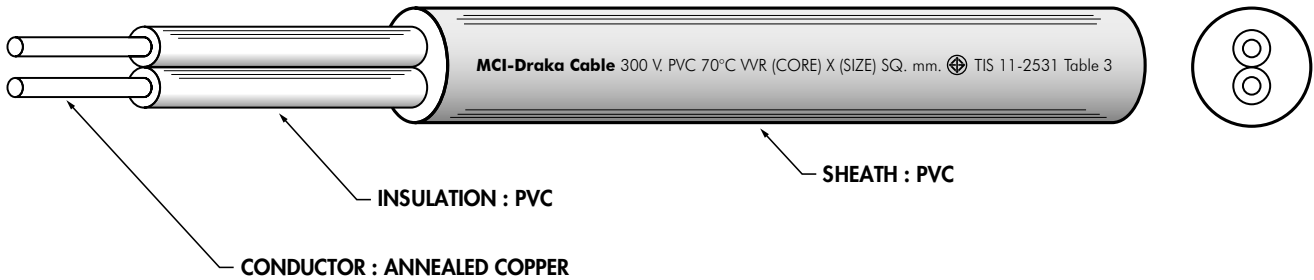
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating infree air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
1	0.5	1/0.80	0.6	0.9	4.4	0.0146	10-	21 -	500/D
	1	1/1.13	0.6	0.9	4.8	0.0115	15-	28 -	500/D
	1	7/0.40	0.6	0.9	5.0	0.0110	15 -	28 -	500/D
	1.5	1/1.38	0.6	0.9	5.2	0.0100	19 -	35 -	500/D
	1.5	7/0.50	0.6	0.9	5.4	0.0094	19 -	35 -	500/D
	2.5	1/1.78	0.7	0.9	5.8	0.0092	26 -	49 -	500/D
	2.5	7/0.67	0.7	0.9	6.2	0.0084	26 -	49 -	500/D
	4	1/2.25	0.8	0.9	6.6	0.0086	35 -	70 -	500/D
	4	7/0.85	0.8	0.9	7.0	0.0078	35 -	70 -	500/D
	6	7/1.04	0.8	0.9	7.6	0.0066	46 -	95 -	500/D
	10	7/1.35	0.9	0.9	8.6	0.0059	64 -	150 -	500/D
	16	7/1.70	1.0	1.2	11.0	0.0053	87 -	220 -	500/D
	25	7/2.14	1.2	1.2	12.5	0.0051	117 -	340 -	500/D
35	19/1.53	1.2	1.2	14.0	0.0043	144 -	440 -	500/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVR

300 V 70°C PVC INSULATED AND SHEATHED, ROUND TYPE.



Application : Exposed wiring in air or use in raceway wet or dry location, direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 3

Construction : Conductor : Solid or stranded annealed copper, sizes 0.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride
(Light Grey and Black colour for 2 cores; Light Grey, Black and Red colour for 3 cores; Light Grey, Black, Red and Blue color for 4 cores)

Sheath : Polyvinyl Chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ-km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
2	0.5	1/0.80	0.6	0.9	6.8	0.0146	9 -	48 -	500/D
	1	1/1.13	0.6	0.9	7.6	0.0115	14 -	65 -	500/D
	1	7/0.40	0.6	0.9	8.0	0.0110	14 -	65 -	500/D
	1.5	1/1.38	0.6	1.2	8.8	0.0100	18 -	90 -	500/D
	1.5	7/0.50	0.6	1.2	9.2	0.0094	18 -	90 -	500/D
	2.5	1/1.78	0.7	1.2	10.0	0.0092	24 -	130 -	500/D
	2.5	7/0.67	0.7	1.2	11.0	0.0084	24 -	130 -	500/D
	4	1/2.25	0.8	1.2	11.5	0.0086	32 -	180 -	500/D
	4	7/0.85	0.8	1.2	12.5	0.0078	32 -	180 -	500/D
	6	7/1.04	0.8	1.2	13.5	0.0066	43 -	260 -	500/D
	10	7/1.35	0.9	1.2	16.0	0.0059	60 -	390 -	500/D
	16	7/1.70	1.0	1.4	19.0	0.0053	80 -	580 -	500/D
	25	7/2.14	1.2	1.4	22.5	0.0051	107 -	870 -	500/D
35	19/1.53	1.2	1.4	25.5	0.0043	132 -	1130 -	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

Number of core	Nominal cross sectional area	Number and diameter of wire	Insulation thickness	Sheath thickness	Overall diameter	Minimum insulation resistance at 70°C	Maximum continuous current rating in free air	Cable weight (approx.)	Standard length
	(mm ²)								
3	0.5	1/0.80	0.6	0.9	7.2	0.0146	7 -	55 -	500/D
	1	1/1.13	0.6	0.9	8.0	0.0115	11 -	80 -	500/D
	1	7/0.40	0.6	0.9	8.4	0.0110	11 -	80 -	500/D
	1.5	1/1.38	0.6	1.2	9.2	0.0100	15 -	110 -	500/D
	1.5	7/0.50	0.6	1.2	9.6	0.0094	15 -	110 -	500/D
	2.5	1/1.78	0.7	1.2	10.5	0.0092	20 -	160 -	500/D
	2.5	7/0.67	0.7	1.2	11.5	0.0084	20 -	160 -	500/D
	4	1/2.25	0.8	1.2	12.5	0.0086	27 -	230 -	500/D
	4	7/0.85	0.8	1.2	13.0	0.0078	27 -	230 -	500/D
	6	7/1.04	0.8	1.2	14.5	0.0066	36 -	330 -	500/D
	10	7/1.35	0.9	1.2	17.0	0.0059	50 -	490 -	500/D
	16	7/1.70	1.0	1.4	20.0	0.0053	67 -	740 -	500/D
	25	7/2.14	1.2	1.8	25.0	0.0051	90 -	1180 -	500/D
35	19/1.53	1.2	1.8	28.0	0.0043	110 -	1530 -	500/D	
4	0.5	1/0.80	0.6	0.9	7.8	0.0146	7 -	65 -	500/D
	1	1/1.13	0.6	0.9	8.6	0.0115	10 -	100 -	500/D
	1	7/0.40	0.6	0.9	9.0	0.0110	10 -	100 -	500/D
	1.5	1/1.38	0.6	1.2	10.0	0.0100	13 -	130 -	500/D
	1.5	7/0.50	0.6	1.2	10.5	0.0094	13 -	130 -	500/D
	2.5	1/1.78	0.7	1.2	11.5	0.0092	18 -	190 -	500/D
	2.5	7/0.67	0.7	1.2	12.5	0.0084	18 -	190 -	500/D
	4	1/2.25	0.8	1.2	13.5	0.0086	25 -	290 -	500/D
	4	7/0.85	0.8	1.2	14.0	0.0078	25 -	290 -	500/D
	6	7/1.04	0.8	1.2	15.5	0.0066	33 -	410 -	500/D
	10	7/1.35	0.9	1.4	19.0	0.0059	45 -	640 -	500/D
	16	7/1.70	1.0	1.4	22.0	0.0053	60 -	940 -	500/D
	25	7/2.14	1.2	1.8	27.5	0.0051	81 -	1490 -	500/D
35	19/1.53	1.2	1.8	30.5	0.0043	99 -	1950 -	500/D	

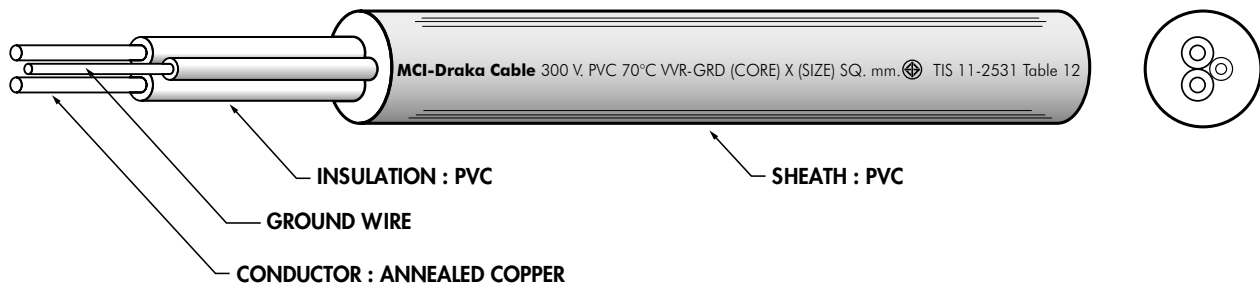
TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVR-GRD

300 V 70°C PVC INSULATED AND SHEATHED, ROUND TYPE WITH GROUND.



Application : Exposed wiring in air or use raceway wet or dry location, direct bury in ground.
Classification : Maximum conductor temperature 70°C
 Circuit voltage does not exceed 300 volts.
Standard : TIS 11-2531 TABLE 12

Construction : Conductor : Solid and stranded annealed copper, sizes 1 mm² up to 35 mm²
 Ground conductor size 1 mm² up to 10 mm²
 Insulation : Polyvinyl chloride
 (Light Grey, Black and Red colour for 3 cores; Light Grey, Black, Red and Blue colour for 4 cores; Green / Yellow for Ground core)
 Sheath : Polyvinyl Chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
2	1	1/1.13	0.6	1	0.6	0.9	8.0	0.0115	14	80	500/D
	1	7/0.40	0.6	1	0.6	0.9	8.4	0.0110	14	80	500/D
	1.5	1/1.38	0.6	1	0.6	1.2	9.2	0.0100	18	100	500/D
	1.5	7/0.50	0.6	1	0.6	1.2	9.6	0.0094	18	100	500/D
	2.5	1/1.78	0.7	1.5	0.6	1.2	10.5	0.0092	24	140	500/D
	2.5	7/0.67	0.7	1.5	0.6	1.2	11.5	0.0084	24	140	500/D
	4	1/2.25	0.8	2.5	0.6	1.2	12.5	0.0086	32	200	500/D
	4	7/0.85	0.8	2.5	0.6	1.2	13.0	0.0078	32	200	500/D
	6	7/1.04	0.8	4	0.6	1.2	14.5	0.0066	43	290	500/D
	10	7/1.35	0.9	4	0.6	1.2	16.0	0.0059	60	410	500/D
	16	7/1.70	1.0	6	0.6	1.4	19.0	0.0053	80	610	500/D
	25	7/2.14	1.2	6	0.6	1.4	22.5	0.0051	107	880	500/D
35	19/1.53	1.2	10	0.6	1.4	25.5	0.0043	132	1160	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVR-GRD

300 V 70°C PVC INSULATED AND SHEATHED, ROUND TYPE WITH GROUND.

Number of core	Nominal cross sectional area	Number and diameter of wire	Insulation thickness	Nominal cross sectional area of ground conductor	Thickness of ground insulation	Sheath thickness	Overall diameter	Minimum insulation resistance at 70°C	Maximum continuous current rating in free air	Cable weight (approx.)	Standard length
	(mm ²)	(No./mm)	(mm)	(mm ²)	(mm)	(mm)	(mm)	(MΩ-km)	(Ampere)	(kg/km)	(m)
3	1	1/1.13	0.6	1	0.6	0.9	8.6	0.0115	11	95	500/D
	1	7/0.40	0.6	1	0.6	0.9	9.0	0.0110	11	95	500/D
	1.5	1/1.38	0.6	1	0.6	1.2	10.0	0.0100	15	130	500/D
	1.5	7/0.50	0.6	1	0.6	1.2	10.5	0.0094	15	130	500/D
	2.5	1/1.78	0.7	1.5	0.6	1.2	11.5	0.0092	20	180	500/D
	2.5	7/0.67	0.7	1.5	0.6	1.2	12.5	0.0084	20	180	500/D
	4	1/2.25	0.8	2.5	0.6	1.2	13.5	0.0086	27	260	500/D
	4	7/0.85	0.8	2.5	0.6	1.2	14.0	0.0078	27	260	500/D
	6	7/1.04	0.8	4	0.6	1.2	15.5	0.0066	36	370	500/D
	10	7/1.35	0.9	4	0.6	1.2	18.5	0.0059	50	530	500/D
	16	7/1.70	1.0	6	0.6	1.4	22.0	0.0053	67	800	500/D
	25	7/2.14	1.2	6	0.6	1.8	27.5	0.0051	90	1220	500/D
35	19/1.53	1.2	10	0.6	1.8	30.5	0.0043	110	1610	500/D	
4	1	1/1.13	0.6	1	0.6	0.9	9.2	0.0115	10	110	500/D
	1	7/0.40	0.6	1	0.6	0.9	9.8	0.0110	10	110	500/D
	1.5	1/1.38	0.6	1	0.6	1.2	11.0	0.0100	13	150	500/D
	1.5	7/0.50	0.6	1	0.6	1.2	11.5	0.0094	13	150	500/D
	2.5	1/1.78	0.7	1.5	0.6	1.2	12.5	0.0092	18	220	500/D
	2.5	7/0.50	0.7	1.5	0.6	1.2	13.5	0.0084	18	220	500/D
	4	1/2.25	0.8	2.5	0.6	1.2	14.5	0.0086	25	330	500/D
	4	7/0.85	0.8	2.5	0.6	1.2	15.5	0.0078	25	330	500/D
	6	7/1.04	0.8	4	0.6	1.2	17.0	0.0066	33	470	500/D
	10	7/1.35	0.9	4	0.6	1.4	20.5	0.0059	45	700	500/D
	16	7/1.70	1.0	6	0.6	1.4	24.5	0.0053	60	1030	500/D
	25	7/2.14	1.2	6	0.6	1.8	30.0	0.0051	81	1570	500/D
35	19/1.53	1.2	10	0.6	1.8	33.5	0.0043	99	2060	500/D	

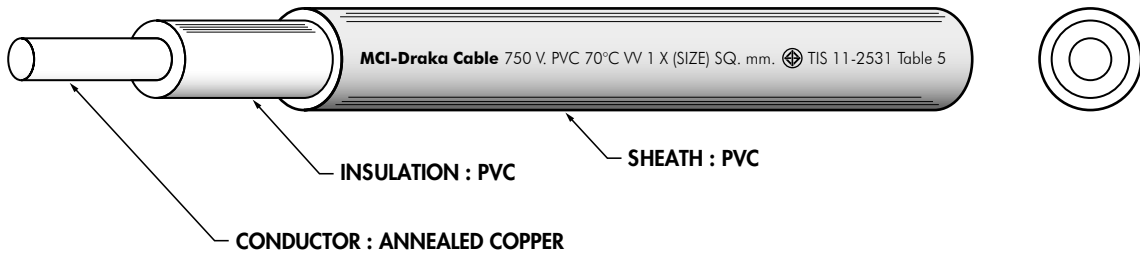
TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VV (MEA TYPE B)

750 V 70°C PVC INSULATED AND SHEATHED, SINGLE CORE.



Application : For fixed installation in wet or dry location.
The cable is suitable for surface wiring or concealed wiring in wooden partition.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 5

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 35 mm²
Insulation : Polyvinyl chloride (Light Grey colour)
Sheath : Polyvinyl Chloride (White colour)

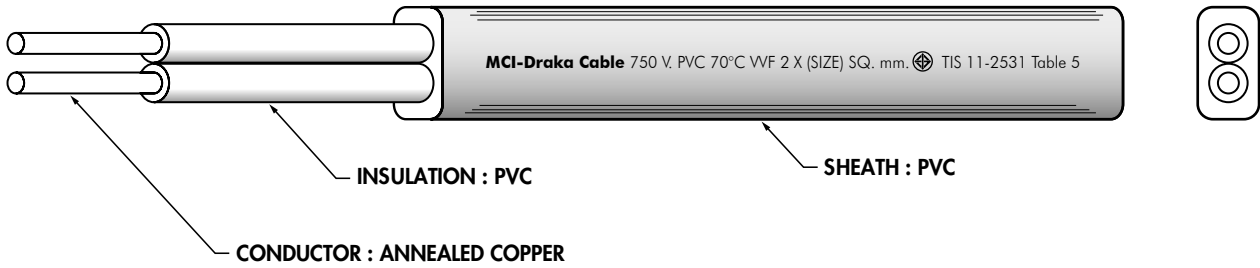
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
1	1	1/1.13	0.8	1.0	5.4	0.0141	15 -	35 -	500/D
	1	7/0.40	0.8	1.0	5.6	0.0135	15 -	35 -	500/D
	1.5	1/1.38	0.8	1.0	5.8	0.0123	20 -	41 -	500/D
	1.5	7/0.50	0.8	1.0	6.0	0.0116	20 -	41 -	500/D
	2.5	1/1.78	0.8	1.2	6.6	0.0102	27 -	60 -	500/D
	2.5	7/0.67	0.8	1.2	7.0	0.0093	27 -	60 -	500/D
	4	1/2.25	0.9	1.2	7.4	0.0094	36 -	80 -	500/D
	4	7/0.85	0.9	1.2	7.8	0.0085	36 -	80 -	500/D
	6	7/1.04	0.9	1.4	8.8	0.0073	47 -	120 -	500/D
	10	7/1.35	1.1	1.4	10.5	0.0069	66 -	170 -	500/D
	16	7/1.70	1.1	1.5	11.5	0.0057	88 -	250 -	500/D
	25	7/2.14	1.3	1.5	13.5	0.0054	118 -	360 -	500/D
35	19/1.53	1.3	1.6	15.0	0.0047	145 -	407 -	500/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVF (MEA TYPE B)

750 V 70°C PVC INSULATED AND SHEATHED FLAT, TWO CORES.



Application : For fixed installation in wet or dry location.
The cable is suitable for surface wiring or concealed wiring in wooden partition.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 5

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 35 mm²
Insulation : Polyvinyl chloride (Light Grey and Black colour)
Sheath : Polyvinyl Chloride (White colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
					Lower limit	Upper limit				
2	1	1/1.13	0.8	1.4	5.2 x 8.0	6.4 x 9.4	0.0141	12 -	75 -	100/C
	1	7/0.40	0.8	1.4	5.4 x 8.0	6.6 x 9.8	0.0135	12 -	75 -	100/C
	1.5	1/1.38	0.8	1.4	5.6 x 8.4	6.6 x 10.0	0.0123	15 -	90 -	100/C
	1.5	7/0.50	0.8	1.4	5.6 x 8.6	7.0 x 10.5	0.0116	15 -	90 -	100/C
	2.5	1/1.78	0.8	1.4	5.8 x 9.2	7.2 x 11.0	0.0102	20 -	110 -	100/C
	2.5	7/0.67	0.8	1.4	6.2 x 9.6	7.4 x 11.5	0.0093	20 -	110 -	100/C
	4	1/2.25	0.9	1.4	6.6 x 10.5	7.8 x 12.5	0.0094	27 -	160 -	100/C
	4	7/0.85	0.9	1.4	6.8 x 11.0	8.2 x 13.0	0.0085	27 -	160 -	100/C
	6	7/1.04	0.9	1.4	7.4 x 12.0	8.8 x 14.5	0.0073	36 -	220 -	100/C
	10	7/1.35	1.1	1.5	8.8 x 15.0	10.5 x 17.0	0.0069	50 -	340 -	100/C
	16	7/1.70	1.1	1.5	9.8 x 17.0	11.5 x 19.5	0.0057	66 -	480 -	500/D
	25	7/2.14	1.3	1.6	11.5 x 20.5	13.5 x 23.5	0.0054	89 -	720 -	500/D
35	19/1.53	1.3	1.7	13.0 x 23.0	15.0 x 26.5	0.0047	109 -	904 -	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

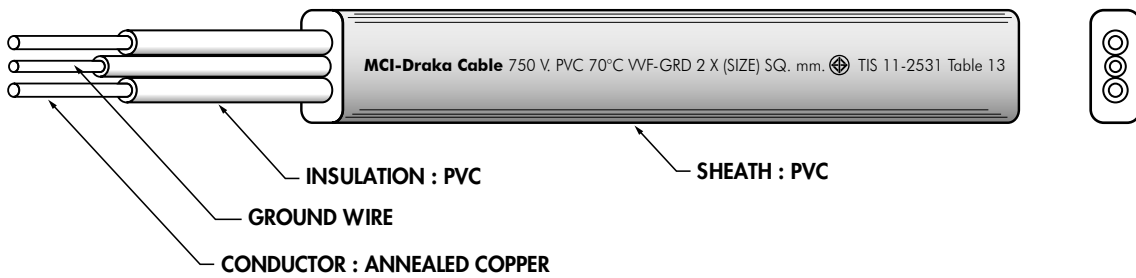
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VVF-GRD (MEA TYPE B-GRD)

750 V 70°C PVC INSULATED AND SHEATHED FLAT TYPE WITH GROUND.



Application : For fixed installation in wet or dry location. with safety ground. The cable is suitable for surface wiring or concealed 2 wiring in wooden partition.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 13

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 35 mm²
Ground conductor size 1 mm² up to 10 mm²

Insulation : Polyvinyl chloride
(Light Grey and Black colour, Green/Yellow for Ground core)

Sheath : Polyvinyl Chloride (White colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Sheath thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
							Lower limit	Upper limit				
2	1	1/1.13	0.8	1	0.6	1.4	5.2 x 10.0	6.4 x 12.0	0.0141	12 -	100 -	500/D
	1	7/0.40	0.8	1	0.6	1.4	5.4 x 10.0	6.6 x 12.5	0.0135	12 -	100 -	500/D
	1.5	1/1.38	0.8	1	0.6	1.4	5.6 x 10.5	6.6 x 12.5	0.0123	15 -	120 -	500/D
	1.5	7/0.50	0.8	1	0.6	1.4	5.6 x 11.0	7.0 x 13.0	0.0116	15 -	120 -	500/D
	2.5	1/1.78	0.8	1.5	0.6	1.4	5.8 x 11.5	7.2 x 14.0	0.0102	20 -	150 -	500/D
	2.5	7/0.67	0.8	1.5	0.6	1.4	6.2 x 12.0	7.4 x 14.5	0.0093	20 -	150 -	500/D
	4	1/2.25	0.9	2.5	0.6	1.4	6.6 x 13.0	7.8 x 15.5	0.0094	27 -	210 -	500/D
	4	7/0.85	0.9	2.5	0.6	1.4	6.8 x 14.0	8.2 x 16.5	0.0085	27 -	210 -	500/D
	6	7/1.04	0.9	4	0.6	1.4	7.4 x 15.5	8.8 x 18.5	0.0073	36 -	290 -	500/D
	10	7/1.35	1.1	4	0.6	1.5	8.8 x 18.5	10.5 x 21.5	0.0069	50 -	420 -	500/D
	16	7/1.70	1.1	6	0.6	1.5	9.8 x 21.0	11.5 x 24.5	0.0057	66 -	590 -	500/D
	25	7/2.14	1.3	6	0.6	1.6	11.5 x 24.5	13.5 x 28.0	0.0054	89 -	840 -	500/D
35	19/1.53	1.3	10	0.6	1.7	13.0 x 28.0	15.0 x 32.0	0.0047	109 -	1120 -	500/D	

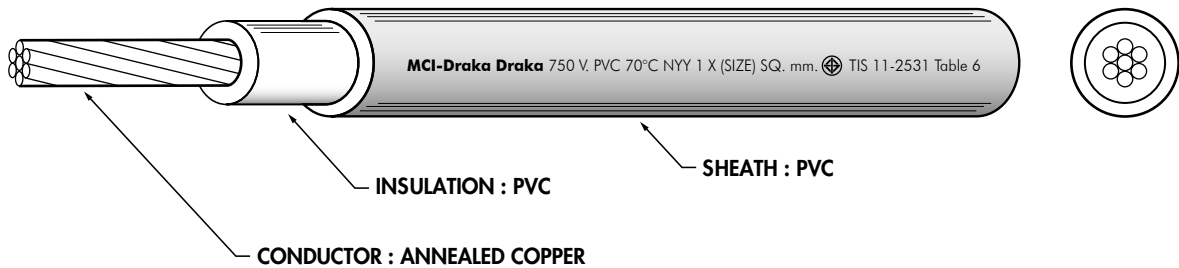
TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY (MEA TYPE C)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE, SINGLE CORE.



Application : For installation exposed, or in raceway, wet or dry location, or direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 6

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 500 mm²
Insulation : Polyvinyl chloride (Black colour)
Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ-km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
							Free air	Under ground		
1	1	1/1.13	1.5	1.8	8.6	0.0207	17 -	22 -	80 -	100/C
	1	7/0.40	1.5	1.8	8.8	0.0200	17 -	22 -	80 -	100/C
	1.5	1/1.38	1.5	1.8	9.0	0.0184	21 -	27 -	90 -	100/C
	1.5	7/0.50	1.5	1.8	9.2	0.0175	21 -	27 -	90 -	100/C
	2.5	1/1.78	1.5	1.8	9.4	0.0157	28 -	36 -	100 -	100/C
	2.5	7/0.67	1.5	1.8	9.8	0.0146	28 -	36 -	100 -	100/C
	4	1/2.25	1.5	1.8	10.0	0.0135	38 -	47 -	130 -	100/C
	4	7/0.85	1.5	1.8	10.5	0.0124	38 -	47 -	130 -	100/C
	6	7/1.04	1.5	1.8	11.0	0.0107	49 -	60 -	160 -	100/C
	10	7/1.35	1.5	1.8	12.0	0.0088	67 -	81 -	210 -	500/D
	16	7/1.70	1.5	1.8	13.0	0.0074	89 -	105 -	280 -	500/D
	25	7/2.14	1.5	1.8	14.5	0.0061	118 -	136 -	390 -	500/D
	35	19/1.53	1.5	1.8	16.0	0.0053	146 -	165 -	500 -	500/D
	50	19/1.78	1.5	1.8	17.0	0.0046	177 -	196 -	660 -	500/D
	70	19/2.14	1.5	1.8	19.0	0.0039	222 -	241 -	850 -	500/D
	95	19/2.52	1.7	1.8	21.5	0.0038	274 -	289 -	1150 -	500/D
	120	37/2.03	1.7	1.8	23.0	0.0034	318 -	330 -	1400 -	500/D
	150	37/2.25	1.9	2.0	26.0	0.0034	362 -	370 -	1720 -	500/D
	185	37/2.52	2.1	2.0	28.0	0.0034	416 -	419 -	2130 -	500/D
240	61/2.25	2.3	2.2	31.5	0.0033	492 -	486 -	2760 -	500/D	
300	61/2.52	2.5	2.2	35.0	0.0032	565 -	551 -	3400 -	500/D	
400	61/2.85	2.7	2.2	38.5	0.0030	655 -	629 -	4290 -	500/D	
500	61/3.20	3.1	2.4	43.0	0.0031	757 -	717 -	5570 -	500/D	

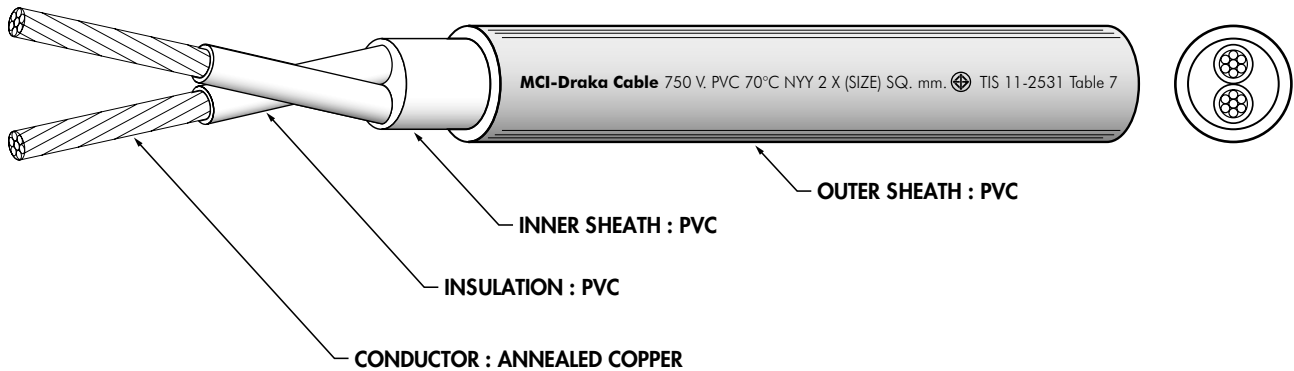
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY (MEA TYPE C)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE, TWO CORES.



Application : For installation exposed, or in raceway, wet or dry location, or direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 7

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 300 mm²

Insulation : Polyvinyl chloride
(Light Grey and Black colour)

Inner Sheath : Polyvinyl chloride (Black colour)

Outer Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Thickness of the inner sheath (mm)	Thickness of outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ-km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
								Free air	Under ground		
2	1	1/1.13	0.8	0.8	1.8	12.0	0.0141	15 -	21 -	160 -	100/C
	1	7/0.40	0.8	0.8	1.8	12.5	0.0135	15 -	21 -	160 -	100/C
	1.5	1/1.38	0.8	0.8	1.8	12.5	0.0123	19 -	27 -	180 -	100/C
	1.5	7/0.50	0.8	0.8	1.8	13.0	0.0116	19 -	27 -	180 -	100/C
	2.5	1/1.78	0.8	0.8	1.8	13.5	0.0102	25 -	35 -	210 -	100/C
	2.5	7/0.67	0.8	0.8	1.8	14.0	0.0093	25 -	35 -	210 -	100/C
	4	1/2.25	0.9	0.8	1.8	15.0	0.0094	33 -	47 -	280 -	100/C
	4	7/0.85	0.9	0.8	1.8	15.5	0.0085	33 -	47 -	280 -	100/C
	6	7/1.04	0.9	0.8	1.8	17.0	0.0073	43 -	60 -	370 -	100/C
	10	7/1.35	1.1	0.8	1.8	19.5	0.0069	60 -	81 -	530 -	500/D
	16	7/1.70	1.1	0.8	2.0	22.5	0.0057	80 -	105 -	720 -	500/D
	25	7/2.14	1.3	1.2	2.0	27.0	0.0054	106 -	136 -	1090 -	500/D
	35	19/1.53	1.3	1.2	2.0	29.5	0.0047	130 -	165 -	1360 -	500/D
	50	19/1.78	1.5	1.2	2.2	33.5	0.0046	157 -	196 -	1880 -	500/D
	70	19/2.14	1.5	1.5	2.2	38.0	0.0039	195 -	240 -	2430 -	500/D
	95	19/2.52	1.7	1.5	2.2	42.5	0.0038	239 -	290 -	3220 -	500/D
	120	37/2.03	1.7	1.5	2.4	46.5	0.0034	280 -	332 -	3940 -	500/D
	150	37/2.25	1.9	1.8	2.6	52.0	0.0034	320 -	370 -	4840 -	500/D
185	37/2.52	2.1	1.8	2.8	57.0	0.0034	370 -	419 -	5970 -	500/D	
240	61/2.25	2.3	2.0	3.0	64.0	0.0033	440 -	484 -	7700 -	300/D	
300	61/2.52	2.5	2.0	3.2	70.5	0.0032	507 -	547 -	9450 -	300/D	

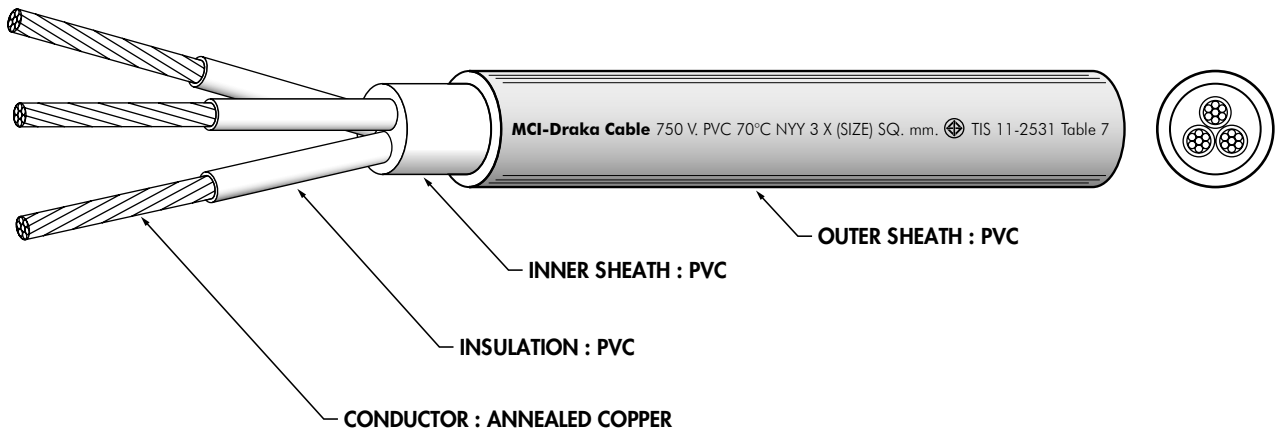
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY (MEA TYPE C)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE, THREE CORES.



Application : For installation exposed, or in raceway, wet or dry location, or direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 7

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 300 mm²

Insulation : Polyvinyl chloride
(Light Grey Black and Red colour)

Inner Sheath : Polyvinyl chloride (Black colour)

Outer Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Thickness of the inner sheath (mm)	Thickness of outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
								Free air	Under ground		
3	1	1/1.13	0.8	0.8	1.8	12.5	0.0141	12 -	18 -	180 -	100/C
	1	7/0.40	0.8	0.8	1.8	13.0	0.0135	12 -	18 -	180 -	100/C
	1.5	1/1.38	0.8	0.8	1.8	13.0	0.0123	16 -	22 -	200 -	100/C
	1.5	7/0.50	0.8	0.8	1.8	13.5	0.0116	16 -	22 -	200 -	100/C
	2.5	1/1.78	0.8	0.8	1.8	14.0	0.0102	21 -	30 -	250 -	100/C
	2.5	7/0.67	0.8	0.8	1.8	15.0	0.0093	21 -	30 -	250 -	100/C
	4	1/2.25	0.9	0.8	1.8	15.5	0.0094	28 -	39 -	330 -	100/C
	4	7/0.85	0.9	0.8	1.8	16.5	0.0085	28 -	39 -	330 -	100/C
	6	7/1.04	0.9	0.8	1.8	18.0	0.0073	37 -	50 -	440 -	100/C
	10	7/1.35	1.1	0.8	1.8	20.5	0.0069	50 -	68 -	640 -	500/D
	16	7/1.70	1.1	1.2	2.0	24.5	0.0057	67 -	87 -	930 -	500/D
	25	7/2.14	1.3	1.2	2.0	28.5	0.0054	89 -	113 -	1360 -	500/D
	35	19/1.53	1.3	1.2	2.0	31.5	0.0047	109 -	137 -	1720 -	500/D
	50	19/1.78	1.5	1.5	2.2	36.0	0.0046	131 -	162 -	2440 -	500/D
	70	19/2.14	1.5	1.5	2.2	40.5	0.0039	163 -	200 -	3110 -	500/D
	95	19/2.52	1.7	1.5	2.4	46.0	0.0038	202 -	240 -	4180 -	500/D
	120	37/2.03	1.7	1.8	2.6	50.5	0.0034	235 -	273 -	5190 -	500/D
150	37/2.25	1.9	1.8	2.8	56.0	0.0034	269 -	306 -	6300 -	500/D	
185	37/2.52	2.1	2.0	3.0	61.5	0.0034	311 -	346 -	7840 -	300/D	
240	61/2.25	2.3	2.0	3.2	69.0	0.0033	371 -	402 -	10060 -	300/D	
300	61/2.52	2.5	2.2	3.4	76.0	0.0032	427 -	453 -	12450 -	200/D	

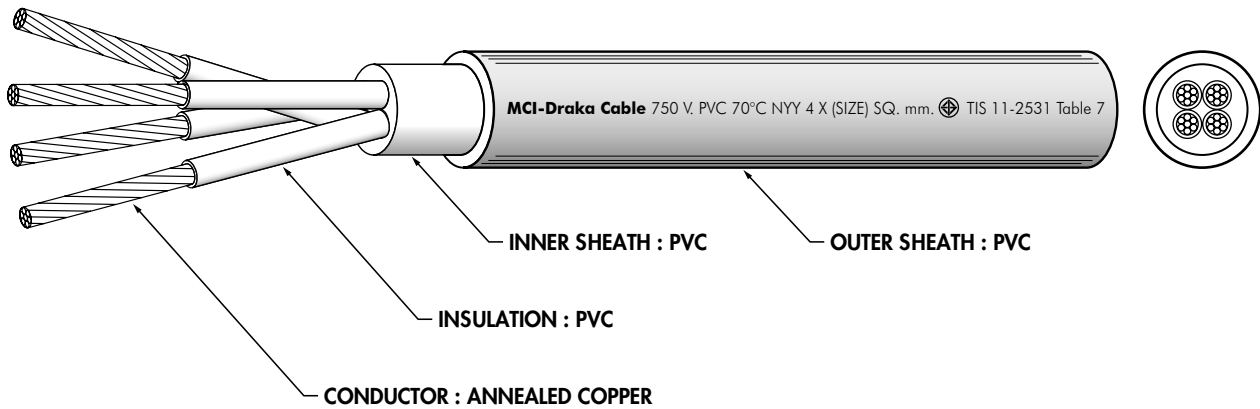
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY (MEA TYPE C)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE, FOUR CORES.



Application : For installation exposed, or in raceway, wet or dry location, or direct bury in ground.
Classification : Maximum conductor temperature 70°C
 Circuit voltage does not exceed 750 volts.
Standard : TIS 11-2531 TABLE 7

Construction : Conductor : Solid or stranded annealed copper, sizes 1 mm² up to 300 mm²
 Insulation : Polyvinyl chloride (Light Grey, Black, Red and Blue colour)
 Inner Sheath : Polyvinyl chloride (Black colour)
 Outer Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Thickness of the inner sheath (mm ²)	Thickness of outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ·km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
								Free air	Under ground		
4	1	1/1.13	0.8	0.8	1.8	13.5	0.0141	11 -	16 -	200 -	100/C
	1	7/0.40	0.8	0.8	1.8	14.0	0.0135	11 -	16 -	200 -	100/C
	1.5	1/1.38	0.8	0.8	1.8	14.0	0.0123	14 -	20 -	230 -	100/C
	1.5	7/0.50	0.8	0.8	1.8	14.5	0.0116	14 -	20 -	230 -	100/C
	2.5	1/1.78	0.8	0.8	1.8	15.0	0.0102	19 -	27 -	290 -	100/C
	2.5	7/0.67	0.8	0.8	1.8	16.0	0.0093	19 -	27 -	290 -	100/C
	4	1/2.25	0.9	0.8	1.8	17.0	0.0094	25 -	35 -	390 -	100/C
	4	7/0.85	0.9	0.8	1.8	17.5	0.0085	25 -	35 -	390 -	100/C
	6	7/1.04	0.9	0.8	1.8	19.0	0.0073	33 -	45 -	530 -	500/D
	10	7/1.35	1.1	0.8	2.0	23.0	0.0069	45 -	60 -	810 -	500/D
	16	7/1.70	1.1	1.2	2.0	26.5	0.0057	60 -	77 -	1160 -	500/D
	25	7/2.14	1.3	1.2	2.0	31.0	0.0054	79 -	100 -	1700 -	500/D
	35	19/1.53	1.3	1.5	2.2	35.0	0.0047	97 -	120 -	2240 -	500/D
	50	19/1.78	1.5	1.5	2.2	39.5	0.0046	117 -	144 -	3070 -	500/D
	70	19/2.14	1.5	1.5	2.4	44.5	0.0039	147 -	176 -	3970 -	500/D
	95	19/2.52	1.7	1.5	2.6	51.5	0.0038	182 -	211 -	5410 -	500/D
	120	37/2.03	1.7	1.8	2.8	56.0	0.0034	213 -	241 -	6640 -	500/D
150	37/2.25	1.9	1.8	3.0	62.0	0.0034	243 -	270 -	8130 -	300/D	
185	37/2.52	2.1	2.0	3.2	68.0	0.0034	282 -	306 -	10050 -	300/D	
240	61/2.25	2.3	2.0	3.4	76.5	0.0033	335 -	354 -	12960 -	200/D	
300	61/2.52	2.5	2.2	3.8	85.0	0.0032	385 -	399 -	16040 -	200/D	

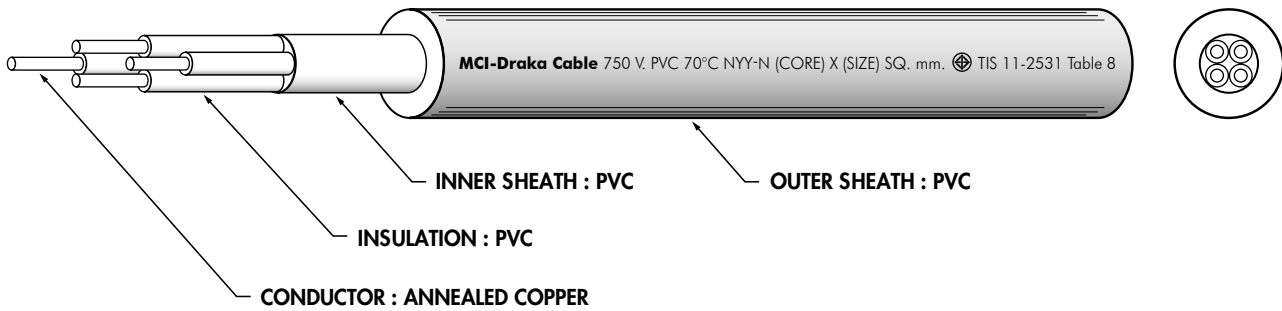
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY-N (MEA TYPE C-N)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE WITH NEUTRAL.



Application : For installation exposed, or in raceway, wet or dry location, or direct bury in ground.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 8

Construction : Conductor : Solid or stranded annealed copper, size Phase Conductor 6 mm² up to 300 mm²

Insulation : Polyvinyl chloride (Black, Red and Blue colour for 3 phase core; Light Grey colour for 1 neutral core)

Inner Sheath : Polyvinyl chloride (Black colour)

Outer Sheath : Polyvinyl chloride (Black colour)

Nominal cross sectional area (mm ²)		Number and diameter of conductor (No./mm)		Thickness of Insulation (mm)		Thick-ness of the inner sheath (mm)	Thick-ness of the outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ-km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
Phase	Neutral	Phase	Neutral	Phase	Neutral					Free air	Under ground		
3 x 6	1 x 4	7/1.04	7/0.85	0.9	0.9	0.8	1.8	19.0	0.0073	37	51	420	500/D
3 x 10	1 x 6	7/1.35	7/1.04	1.1	0.9	0.8	2.0	23.0	0.0069	51	68	750	500/D
3 x 16	1 x 10	7/1.70	7/1.35	1.1	1.1	1.2	2.0	26.5	0.0057	68	88	1100	500/D
3 x 25	1 x 16	7/2.14	7/1.70	1.3	1.1	1.2	2.0	31.0	0.0054	90	114	1570	500/D
3 x 35	1 x 16	19/1.53	7/1.70	1.3	1.1	1.5	2.2	35.0	0.0047	109	137	2000	500/D
3 x 50	1 x 25	19/1.78	7/2.14	1.5	1.3	1.5	2.2	39.5	0.0046	133	163	2770	500/D
3 x 70	1 x 35	19/2.14	19/1.53	1.5	1.3	1.5	2.4	44.5	0.0039	166	201	3600	500/D
3 x 95	1 x 50	19/2.52	19/1.78	1.7	1.5	1.8	2.6	51.5	0.0038	205	204	4890	500/D
3 x 120	1 x 70	37/2.03	19/2.14	1.7	1.5	1.8	2.8	56.0	0.0034	240	275	6050	500/D
3 x 150	1 x 70	37/2.25	19/2.14	1.9	1.5	2.0	3.0	62.0	0.0034	272	306	7200	300/D
3 x 185	1 x 95	37/2.52	19/2.52	2.1	1.7	2.0	3.2	68.0	0.0034	316	347	9000	300/D
3 x 240	1 x 120	61/2.25	37/2.03	2.3	1.7	2.2	3.4	76.5	0.0033	375	402	11530	200/D
3 x 300	1 x 150	61/2.52	37/2.25	2.5	1.9	2.2	3.8	84.5	0.0032	430	453	14290	200/D

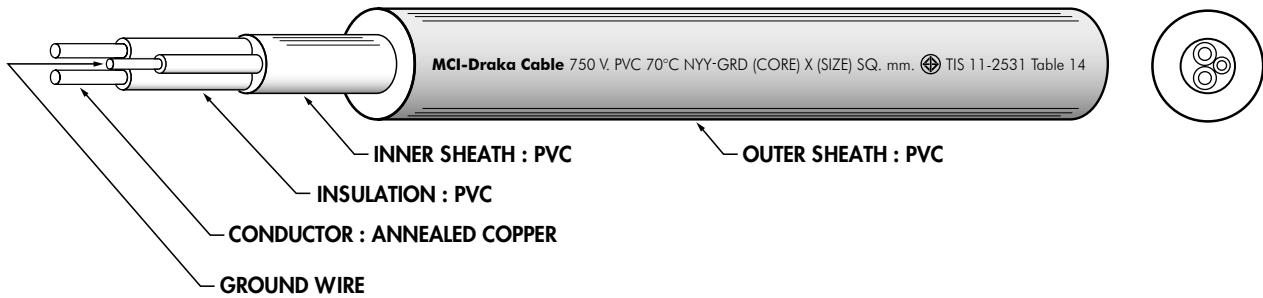
TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY-GRD (MEA TYPE C-GRD)

750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE WITH GROUND.



Application : For installation exposed, or in raceway, or dry wet location, or direct bury in ground.
Classification : Maximum conductor temperature 70°C
 Circuit voltage does not exceed 750 volts.
Standard : TIS 11-2531 TABLE 14

Construction : Conductor : Solid or stranded copper, sizes 1 mm² up to 300 mm²
 Ground conductor sizes 1 mm² up to 35 mm²
 Insulation : Polyvinyl chloride (Light Grey and Black colour for 2 cores, Light Grey, Black and Red colour for 3 cores, Light Grey, Black, Red and Blue colour for 4 cores : Green/Yellow colour for Ground core)
 Inner Sheath : Polyvinyl chloride (Black colour)
 Outer Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Thickness of the inner sheath (mm)	Thickness of the outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ.km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
										Free air	Under ground		
2	1	1/1.13	0.8	1	0.6	0.8	1.8	12.5	0.0141	15	21	170	500/D
	1	7/0.40	0.8	1	0.6	0.8	1.8	13.0	0.0135	15	21	170	500/D
	1.5	1/1.38	0.8	1	0.6	0.8	1.8	13.0	0.0123	19	27	190	500/D
	1.5	7/0.50	0.8	1	0.6	0.8	1.8	13.5	0.0116	19	27	190	500/D
	2.5	1/1.78	0.8	1.5	0.6	0.8	1.8	14.0	0.0102	25	35	230	500/D
	2.5	7/0.67	0.8	1.5	0.6	0.8	1.8	15.0	0.0093	25	35	230	500/D
	4	1/2.25	0.9	2.5	0.6	0.8	1.8	15.5	0.0094	33	47	300	500/D
	4	7/0.85	0.9	2.5	0.6	0.8	1.8	16.5	0.0085	33	47	300	500/D
	6	7/1.04	0.9	4	0.6	0.8	1.8	18.0	0.0073	43	60	400	500/D
	10	7/1.35	1.1	4	0.6	0.8	1.8	19.5	0.0069	60	81	550	500/D
	16	7/1.70	1.1	6	0.6	0.8	2.0	22.5	0.0057	80	105	760	500/D
	25	7/2.14	1.3	6	0.6	1.2	2.0	27.0	0.0054	106	136	1110	500/D
	35	19/1.53	1.3	10	0.6	1.2	2.0	29.5	0.0047	130	165	1410	500/D
	50	19/1.78	1.5	10	0.6	1.2	2.2	33.5	0.0046	157	196	1900	500/D
	70	19/2.14	1.5	10	0.6	1.5	2.2	38.0	0.0039	195	240	2430	500/D
	95	19/2.52	1.7	16	0.6	1.5	2.2	42.5	0.0038	239	290	3230	500/D
	120	37/2.03	1.7	16	0.6	1.5	2.4	46.5	0.0034	280	332	3920	500/D
	150	37/2.25	1.9	25	0.6	1.8	2.6	52.0	0.0034	320	370	4870	500/D
185	37/2.52	2.1	25	0.6	1.8	2.8	57.0	0.0034	370	419	5940	500/D	
240	61/2.25	2.3	35	0.6	2.0	3.0	64.0	0.0033	440	484	7680	300/D	
300	61/2.52	2.5	35	0.6	2.0	3.2	70.5	0.0032	507	547	9350	300/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYY-GRD (MEA TYPE C-GRD)

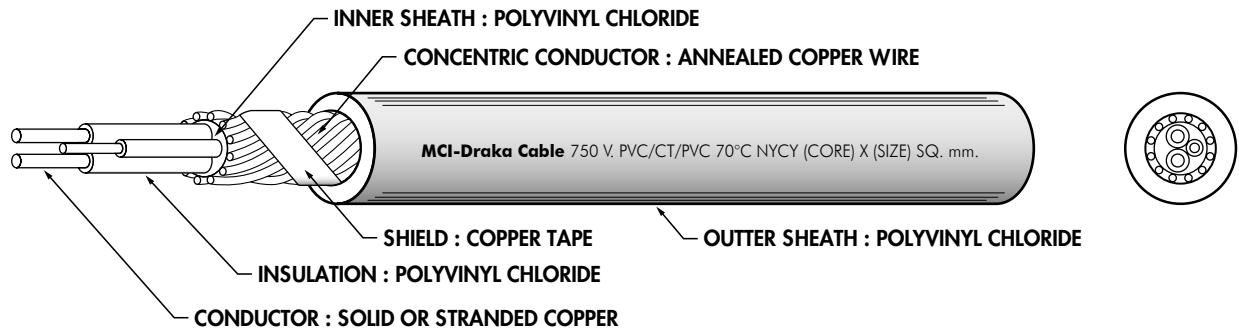
750 V 70°C PVC INSULATED AND DOUBLE SHEATHED ROUND TYPE WITH GROUND.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Thickness of the inner sheath (mm)	Thickness of the outer sheath (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ-km)	Maximum continuous current rating (Ampere)		Cable weight (approx.) (kg/km)	Standard length (m)
										Free air	Under ground		
3	1	1/1.13	0.8	1	0.6	0.8	1.8	13.5	0.0141	12	18	200	500/D
	1	7/0.40	0.8	1	0.6	0.8	1.8	14.0	0.0135	12	18	200	500/D
	1.5	1/1.38	0.8	1	0.6	0.8	1.8	14.0	0.0123	16	22	220	500/D
	1.5	7/0.50	0.8	1	0.6	0.8	1.8	14.5	0.0116	16	22	220	500/D
	2.5	1/1.78	0.8	1.5	0.6	0.8	1.8	15.0	0.0102	21	30	270	500/D
	2.5	7/0.67	0.8	1.5	0.6	0.8	1.8	16.0	0.0093	21	30	270	500/D
	4	1/2.25	0.9	2.5	0.6	0.8	1.8	17.0	0.0094	28	39	360	500/D
	4	7/0.85	0.9	2.5	0.6	0.8	1.8	17.5	0.0085	28	39	360	500/D
	6	7/1.04	0.9	4	0.6	0.8	1.8	19.0	0.0073	37	50	490	500/D
	10	7/1.35	1.1	4	0.6	0.8	1.8	22.5	0.0069	50	68	690	500/D
	16	7/1.70	1.1	6	0.6	1.2	2.0	26.5	0.0057	67	87	1010	500/D
	25	7/2.14	1.3	6	0.6	1.2	2.0	31.0	0.0054	89	113	1410	500/D
	35	19/1.53	1.3	10	0.6	1.2	2.0	34.0	0.0047	109	137	1820	500/D
	50	19/1.78	1.5	10	0.6	1.5	2.2	36.0	0.0046	131	162	2510	500/D
	70	19/2.14	1.5	10	0.6	1.5	2.2	40.5	0.0039	163	200	3170	500/D
	95	19/2.52	1.7	16	0.6	1.5	2.4	46.0	0.0038	202	240	4280	500/D
	120	37/2.03	1.7	16	0.6	1.8	2.6	50.5	0.0034	235	273	5280	500/D
	150	37/2.25	1.9	25	0.6	1.8	2.8	56.0	0.0034	269	306	6460	500/D
185	37/2.52	2.1	25	0.6	2.0	3.0	61.5	0.0034	311	346	7980	300/D	
240	61/2.25	2.3	35	0.6	2.0	3.2	69.0	0.0033	371	402	10250	300/D	
300	61/2.52	2.5	35	0.6	2.2	3.4	76.0	0.0032	427	453	12600	200/D	
4	1	1/1.13	0.8	1	0.6	0.8	1.8	14.0	0.0141	11	16	230	500/D
	1	7/0.40	0.8	1	0.6	0.8	1.8	14.5	0.0135	11	16	230	500/D
	1.5	1/1.38	0.8	1	0.6	0.8	1.8	15.0	0.0123	14	20	260	500/D
	1.5	7/0.50	0.8	1	0.6	0.8	1.8	15.5	0.0116	14	20	260	500/D
	2.5	1/1.78	0.8	1.5	0.6	0.8	1.8	16.0	0.0102	19	27	330	500/D
	2.5	7/0.67	0.8	1.5	0.6	0.8	1.8	17.0	0.0093	19	27	330	500/D
	4	1/2.25	0.9	2.5	0.6	0.8	1.8	18.0	0.0094	25	35	440	500/D
	4	7/0.85	0.9	2.5	0.6	0.8	1.8	19.0	0.0085	25	35	440	500/D
	6	7/1.04	0.9	4	0.6	0.8	1.8	20.5	0.0073	33	45	600	500/D
	10	7/1.35	1.1	4	0.6	0.8	2.0	25.0	0.0069	45	60	880	500/D
	16	7/1.70	1.1	6	0.6	1.2	2.0	28.5	0.0057	60	77	1260	500/D
	25	7/2.14	1.3	6	0.6	1.2	2.0	33.5	0.0054	79	100	1790	500/D
	35	19/1.53	1.3	10	0.6	1.5	2.2	38.5	0.0047	97	120	2390	500/D
	50	19/1.78	1.5	10	0.6	1.5	2.2	43.0	0.0046	117	144	3180	500/D
	70	19/2.14	1.5	10	0.6	1.5	2.4	44.5	0.0039	147	176	4060	500/D
	95	19/2.52	1.7	16	0.6	1.8	2.6	51.5	0.0038	182	211	5550	500/D
	120	37/2.03	1.7	16	0.6	1.8	2.8	56.0	0.0034	213	241	6770	500/D
	150	37/2.25	1.9	25	0.6	2.0	3.0	62.0	0.0034	243	270	8340	300/D
185	37/2.52	2.1	25	0.6	2.0	3.2	68.0	0.0034	282	306	10240	300/D	
240	61/2.25	2.3	35	0.6	2.2	3.4	76.0	0.0033	335	354	13230	200/D	
300	61/2.52	2.5	35	0.6	2.2	3.8	84.5	0.0032	385	399	16280	200/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.



<p>Application : For installation exposed, or in raceway, or in dry and damp areas indoors and outdoors for laying underground and in water. Enhanced strength against mechanical stress, The concentric conductor can be used as neutral or each conductor</p> <p>Classification : Maximum conductor temperature 70°C Circuit voltage does not exceed 750 volts.</p> <p>Testing voltage : 2,500 volts.</p> <p>Standard : Generally to TIS 11-2531 Optional Standard to IEC 60502</p>	<p>Construction : Conductor : Solid or stranded copper, sizes 1.5 mm² up to 300 mm²</p> <p>Construction Conductor : Annealed copper wire</p> <p>Insulation : Polyvinyl chloride Single core - Black Colour, 2 core - Light Grey and Black Colour, 3 core - Light Grey, Black, and Red Colour 4 core - Light Grey, Black, Red and Blue Color Ground Core - Green/Yellow Colour</p> <p>Inner Sheath : Polyvinyl chloride Black Colour</p> <p>Shield : Copper Tape</p> <p>Outer Sheath : Polyvinyl chloride Black Colour</p>
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NYCY 1 Core

MCI-Draka base on TIS 11-2531

Nominal cross Sectional area (mm ²)		Number and diameter of wire (No./mm.)		Insulation thickness (mm)	Inner sheath thickness (mm)	Copper tape thickness (mm)	Sheath thickness (mm)	Approx. overall diameter (mm)	Maximum conductor resistance (Ω/km)	Minimum insulation resistance at 20°C (MΩ.km)	Cable weight (approx.) at 70°C (kg/km.)	Standard length (m)
Phase	Concentric	Phase	Concentric									
1.5	1.5	1/1.38	7/0.53	1.5	0.8	0.1	1.8	11	12.1	0.0184	154	500/D
1.5	1.5	7/0.53	7/0.53	1.5	0.8	0.1	1.8	11	12.1	0.0175	159	500/D
2.5	2.5	1/1.78	7/0.67	1.5	0.8	0.1	1.8	12	7.41	0.0157	208	500/D
2.5	2.5	7/0.67	7/0.67	1.5	0.8	0.1	1.8	12	7.41	0.0146	214	500/D
4	4	1/2.25	7/0.85	1.5	0.8	0.1	1.8	13	4.61	0.0135	250	500/D
4	4	7/0.85	7/0.85	1.5	0.8	0.1	1.8	13	4.61	0.0124	259	500/D
6	6	7/1.04	12/0.80	1.5	0.8	0.1	1.8	14	3.08	0.0107	310	500/D
10	10	7/1.35	20/0.80	1.5	0.8	0.1	1.8	15	1.83	0.0088	407	500/D
16	16	7/1.70	11/1.38	1.5	0.8	0.1	1.8	17	1.15	0.0074	560	500/D
25	25	7/2.14	17/1.38	1.5	1.2	0.1	1.8	19	0.727	0.0061	792	500/D
35	25	19/1.53	17/1.38	1.5	1.2	0.1	1.8	20	0.524	0.0053	914	500/D
50	35	19/1.78	23/1.38	1.5	1.2	0.1	1.8	21	0.387	0.0046	1142	500/D
70	50	19/2.14	33/1.38	1.5	1.5	0.1	1.8	24	0.268	0.0039	1550	500/D
95	70	19/2.52	28/1.78	1.7	1.5	0.1	1.8	27	0.193	0.0038	2008	500/D
120	95	37/2.03	29/2.03	1.7	1.5	0.1	1.8	29	0.153	0.0034	2548	500/D
150	95	37/2.25	29/2.03	1.9	1.8	0.1	2.0	32	0.124	0.0034	2937	500/D
185	120	37/2.52	30/2.25	2.1	1.8	0.1	2.0	35	0.0991	0.0034	3606	500/D
240	120	61/2.25	30/2.25	2.3	2.0	0.1	2.2	39	0.0754	0.0033	4315	500/D
300	150	61/2.25	30/2.25	2.5	2.0	0.1	2.2	42	0.0601	0.0032	5284	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYCY 2 Core

MCI-Draka base on TIS 11-2531

Nominal cross Sectional area (mm ²)		Number and diameter of wire (No./mm.)		Insulation thickness (mm)	Inner sheath thickness (mm)	Copper tape thickness (mm)	Sheath thickness (mm)	Approx. overall diameter (mm)	Maximum conductor resistance at 20°C (Ω/km)	Minimum insulation resistance at 70°C (MΩ-km)	Cable weight (approx.) (kg/km.)	Standard length (m)
Phase	Concentric	Phase	Concentric									
1.5	1.5	1/1.38	7/0.53	0.8	0.8	0.1	1.8	13	12.1	0.0123	239	500/D
1.5	1.5	7/0.53	7/0.53	0.8	0.8	0.1	1.8	13	12.1	0.0118	253	500/D
2.5	2.5	1/1.78	7/0.57	0.8	0.8	0.1	1.8	14	7.41	0.0102	290	500/D
2.5	2.5	7/0.67	7/0.67	0.8	0.8	0.1	1.8	14	7.41	0.0093	305	500/D
4	4	1/2.25	7/0.85	0.9	0.8	0.1	1.8	15	4.61	0.0094	377	500/D
4	4	7/0.85	7/0.85	0.9	0.8	0.1	1.8	16	4.61	0.0085	400	500/D
6	6	7/1.04	12/0.80	0.9	0.8	0.1	1.8	17	3.08	0.0073	494	500/D
10	10	7/1.35	20/0.80	1.1	0.8	0.1	1.8	20	1.83	0.0069	709	500/D
16	16	7/1.70	11/1.38	1.1	0.8	0.1	2.0	24	1.15	0.0057	1000	500/D
25	25	7/2.14	17/1.38	1.3	1.2	0.1	2.0	28	0.727	0.0054	1470	500/D
35	25	19/1.53	17/1.38	1.3	1.2	0.1	2.0	31	0.524	0.0047	1774	500/D
50	35	19/1.78	23/1.38	1.5	1.2	0.1	2.2	34	0.387	0.0046	2314	500/D
70	50	19/2.14	33/1.38	1.5	1.5	0.1	2.2	38	0.268	0.0039	3115	500/D
95	70	19/2.52	28/1.78	1.7	1.5	0.1	2.2	44	0.193	0.0038	4078	500/D
120	95	37/2.03	29/2.03	1.7	1.5	0.1	2.4	48	0.153	0.0034	5031	500/D
150	95	37/2.25	29/2.03	1.9	1.8	0.1	2.6	53	0.124	0.0034	5978	500/D
185	120	37/2.52	30/2.25	2.1	1.8	0.1	2.8	58	0.0991	0.0034	7386	500/D
240	120	61/2.25	30/2.25	2.3	2.0	0.1	3.0	65	0.0754	0.0033	9159	500/D
300	150	61/2.52	30/2.52	2.5	2.0	0.1	3.2	72	0.0601	0.0032	11279	500/D

NYCY 3 Core

MCI-Draka base on TIS 11-2531

Nominal cross Sectional area (mm ²)		Number and diameter of wire (No./mm.)		Insulation thickness (mm)	Inner sheath thickness (mm)	Copper tape thickness (mm)	Sheath thickness (mm)	Approx. overall diameter (mm)	Maximum conductor resistance at 20°C (Ω/km)	Minimum insulation resistance at 70°C (MΩ-km)	Cable weight (approx.) (kg/km.)	Standard length (m)
Phase	Concentric	Phase	Concentric									
1.5	1.5	1/1.38	7/0.53	0.8	0.8	0.1	1.8	13	12.1	0.0123	261	500/D
1.5	1.5	7/0.53	7/0.53	0.8	0.8	0.1	1.8	14	12.1	0.0116	276	500/D
2.5	2.5	1/1.78	7/0.67	0.8	0.8	0.1	1.8	14	7.41	0.0102	324	500/D
2.5	2.5	7/0.67	7/0.67	0.8	0.8	0.1	1.8	15	7.41	0.0093	340	500/D
4	4	1/2.25	7/0.85	0.9	0.8	0.1	1.8	16	4.61	0.0094	428	500/D
4	4	7/0.85	7/0.85	0.9	0.8	0.1	1.8	17	4.61	0.0085	451	500/D
6	6	7/1.04	12/0.80	0.9	0.8	0.1	1.8	18	3.08	0.0073	566	500/D
10	10	7/1.35	20/0.80	1.1	0.8	0.1	1.8	21	1.83	0.0069	826	500/D
16	16	7/1.70	11/1.28	1.1	1.2	0.1	2.0	26	1.15	0.0057	1222	500/D
25	25	7/2.14	17/1.38	1.3	1.2	0.1	2.0	29	0.727	0.0054	1747	500/D
35	25	19/1.53	17/1.38	1.3	1.2	0.1	2.0	32	0.524	0.0047	2140	500/D
50	35	19/1.78	23/1.38	1.5	1.5	0.1	2.2	37	0.387	0.0048	2856	500/D
70	50	19/2.14	33/1.38	1.5	1.5	0.1	2.2	40	0.268	0.0039	3809	500/D
95	70	19/2.52	28/1.78	1.7	1.5	0.1	2.4	47	0.193	0.0038	5128	500/D
120	95	37/2.03	29/2.03	1.7	1.8	0.1	2.5	51	0.153	0.0034	5386	500/D
150	95	37/2.25	29/2.03	1.9	1.8	0.1	2.8	56	0.124	0.0034	7559	500/D
185	120	37/2.52	30/2.25	2.1	2.0	0.1	3.0	62	0.0991	0.0034	9403	500/D
240	120	61/2.25	30/2.25	2.3	2.0	0.1	3.2	69	0.0754	0.0033	11697	500/D
300	150	61/2.52	30/2.52	2.5	2.2	0.1	3.4	77	0.0601	0.0032	14498	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

NYCY

750 V 70°C PVC INSULATED AND SHEATHED, ROUND TYPE.

NYCY 4 Core

MCI-Draka base on TIS 11-2531

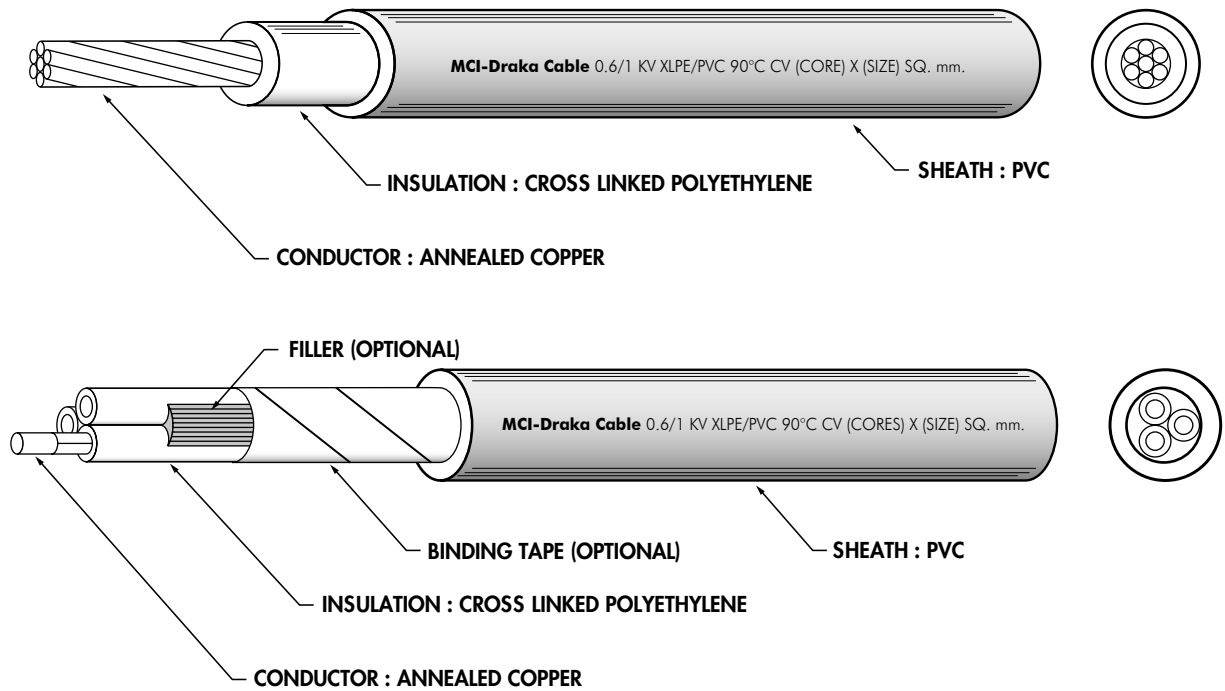
Nominal cross sectional area (mm ²)		Number and diameter of wire (No./mm.)		Insulation thickness (mm)	Inner sheath thickness (mm)	Copper tape thickness (mm)	Sheath thickness (mm)	Approx. overall diameter (mm)	Maximum conductor resistance at 20°C (Ω/km)	Minimum insulation resistance at 70°C (MΩ-km)	Cable weight (approx.) (kg/km.)	Standard length (m)
Phase	Concentric	Phase	Concentric									
1.5	1.5	1/1.38	7/0.53	0.8	0.8	0.1	1.8	14	12.1	0.0123	300	500/D
1.5	1.5	7/0.53	7/0.53	0.8	0.8	0.1	1.8	15	12.1	0.0116	315	500/D
2.5	2.5	1/1.78	7/0.67	0.8	0.8	0.1	1.8	15	7.41	0.0102	370	500/D
2.5	2.5	7/0.67	7/0.67	0.8	0.8	0.1	1.8	16	7.41	0.0093	390	500/D
4	4	1/2.25	7/0.85	0.9	0.8	0.1	1.8	17	4.61	0.0094	495	500/D
4	4	7/0.85	7/0.85	0.9	0.8	0.1	1.8	18	4.61	0.0085	525	500/D
6	6	7/1.04	12/0.80	0.9	0.8	0.1	1.8	19	3.08	0.0073	665	500/D
10	10	7/1.35	20/0.80	1.1	0.8	0.1	2.0	23	1.83	0.0069	999	500/D
16	16	7/1.70	11/1.28	1.1	1.2	0.1	2.0	28	1.15	0.0057	1445	500/D
25	25	7/2.14	17/1.38	1.3	1.2	0.1	2.0	32	0.727	0.0054	2080	500/D
35	25	19/1.53	17/1.38	1.3	1.5	0.1	2.2	36	0.524	0.0047	2660	500/D
50	35	19/1.78	23/1.38	1.5	1.5	0.1	2.2	40	0.387	0.0046	3440	500/D
70	50	19/2.14	33/1.38	1.5	1.5	0.1	2.4	45	0.268	0.0039	4660	500/D
95	70	19/2.52	28/1.78	1.7	1.8	0.1	2.6	52	0.193	0.0038	6370	500/D
120	95	37/2.03	29/2.03	1.7	1.8	0.1	2.8	57	0.153	0.0034	7830	500/D
150	95	37/2.25	29/2.03	1.9	2.0	0.1	3.0	63	0.124	0.0034	9395	500/D
185	120	37/2.52	30/2.52	2.1	2.0	0.1	3.2	69	0.0991	0.0034	11610	500/D
240	120	61/2.25	30/2.25	2.3	2.2	0.1	3.4	77	0.0754	0.0033	14600	500/D
300	150	61/2.52	30/2.52	2.5	2.2	0.1	3.8	85	0.0601	0.0032	17920	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CV

600/1000 V 90°C CROSS - LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE.



Application : For use in fixed installation in industrial areas, buildings and other similar applications.

Classification : Maximum conductor temperature 90°C
Circuit voltage not exceeding 1,000 volts

Testing Voltage : 3,500 volts

Standard : IEC 60502

Option : Filler
Binding tape

Construction : Number of core : Up to 4 cores

Conductor : Concentric stranded annealed copper, sizes
Single core : size 2.5 mm² up to 1000 mm²
Multi core : size 2.5 mm² up to 400 mm²

Insulation : Cross-linked PE.
Color : Natural (Translucent)
Core identification : For natural cross-linked PE. will be marked with black core number.
For coloured insulation, the cores are identified as follows :

No. of Cores	Single	Two	Three	Four	Five & above
Colour	Natural	Red and Black	Red, Yellow and Blue	Red, Yellow, Blue and Black	Natural with Black numbering

Sheath : PVC
Colour : Black

Note: We reserve the right to alter this specification without notice.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No / mm)	Mean value of insulation thickness (mm)	Mean value of sheath thickness (mm)	Approximate overall diameter (mm)	Maximum conductor resistance at 20°C (Ω/km)	Minimum insulation resistance at 20°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km.)	Standard length (m)
1	2.5	7/0.67	0.7	1.4	6.5	7.41	2100	36	65	500/D
	4	7/0.85	0.7	1.4	7.0	4.61	1700	48	80	500/D
	6	7/1.04	0.7	1.4	7.5	3.08	1450	61	100	500/D
	10	7/1.35	0.7	1.4	8.1	1.83	1250	82	140	500/D
	16	7/1.70	0.7	1.4	9.5	1.15	1000	110	200	500/D
	25	7/2.14	0.9	1.4	11.5	0.727	1050	145	300	500/D
	35	19/1.53	0.9	1.4	12.6	0.524	900	180	400	500/D
	50	19/1.78	1.0	1.4	14.0	0.367	850	220	500	500/D
	70	19/2.14	1.1	1.4	16.0	0.268	800	280	750	500/D
	95	19/2.52	1.1	1.5	18.2	0.193	850	345	1000	500/D
	120	37/2.03	1.2	1.5	19.9	0.153	650	400	1200	500/D
	150	37/2.25	1.4	1.6	22.1	0.124	700	460	1500	500/D
	185	37/2.52	1.6	1.6	23	0.0991	700	530	1900	500/D
	240	61/2.25	1.7	1.7	29	0.0754	650	630	2500	500/D
	300	61/2.52	1.8	1.8	29	0.0601	600	725	3100	500/D
	400	61/2.85	2.0	1.9	32	0.0470	600	840	3900	500/D
	500	61/3.20	2.2	2.0	36	0.0366	600	975	5000	500/D
630	127/2.52	2.4	2.2	40	0.0283	550	1125	6500	500/D	
800	127/2.85	2.6	2.3	46	0.0221	550	1320	8500	300/D	
1000	127/3.20	2.8	2.4	51	0.0176	500	1510	10500	300/D	
2	2.5	7/0.67	0.7	1.8	11.5	7.41	2100	34	160	500/D
	4	7/0.85	0.7	1.8	12.5	4.61	1700	44	200	500/D
	6	7/1.04	0.7	1.8	14.0	3.08	1450	57	250	500/D
	10	7/1.35	0.7	1.8	15.0	1.83	1250	77	340	500/D
	16	7/1.70	0.7	1.8	17.0	1.15	1000	100	480	500/D
	25	7/2.14	0.9	1.8	21	0.727	1050	135	700	500/D
	35	19/1.53	0.9	1.8	23	0.524	900	165	900	500/D
	50	19/1.78	1.0	1.8	26	0.387	850	205	1200	500/D
	70	19/2.14	1.1	1.8	29	0.268	800	255	1700	500/D
	95	19/2.52	1.1	2.0	33	0.193	650	315	2300	500/D
	120	37/2.03	1.2	2.1	37	0.153	650	365	2800	500/D
	150	37/2.25	1.4	2.2	41	0.124	700	415	3500	500/D
	185	37/2.52	1.6	2.3	45	0.0991	700	485	4300	500/D
	240	61/2.52	1.7	2.5	51	0.0754	650	580	5500	500/D
	300	61/2.85	1.8	2.7	56	0.0601	600	675	7000	300/D
400	61/3.20	2.0	2.9	63	0.0470	600	790	9000	300/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

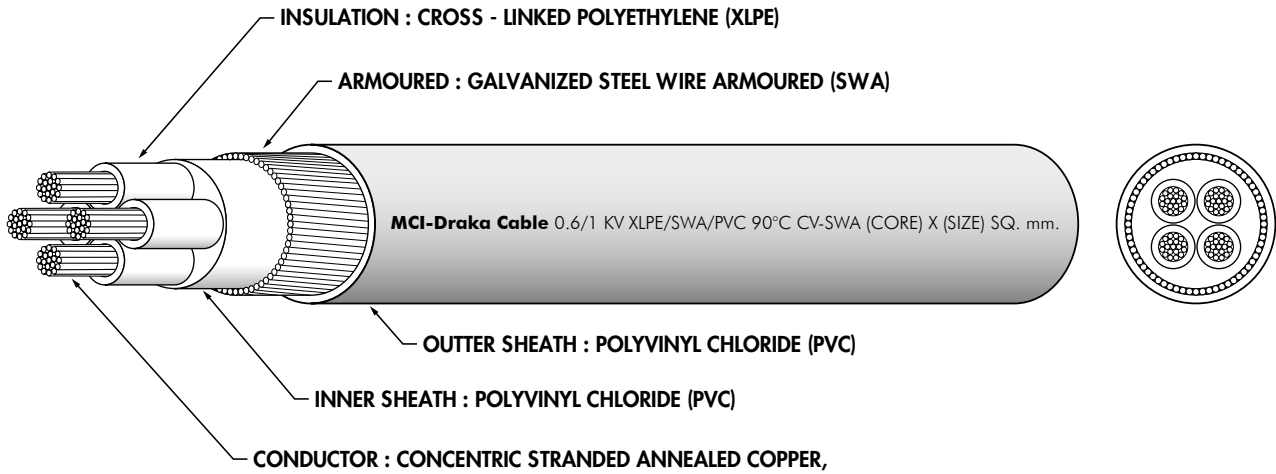
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No / mm)	Mean value of insulation thickness (mm)	Mean value of sheath thickness (mm)	Approximate overall diameter (mm)	Maximum conductor resistance at 20°C (Ω/km)	Minimum insulation resistance at 20°C (MΩ.km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km.)	Standard length (m)
3	2.5	7/0.67	0.7	1.8	12.5	7.41	2100	28	190	500/D
	4	7/0.85	0.7	1.8	13.5	4.61	1700	37	250	500/D
	6	7/1.04	0.7	1.8	14.5	3.08	1450	48	320	500/D
	10	7/1.35	0.7	1.8	16.0	1.83	1250	64	440	500/D
	16	7/1.70	0.7	1.8	18.0	1.15	1000	86	650	500/D
	25	7/2.14	0.9	1.8	22	0.727	1050	115	950	500/D
	35	19/1.53	0.9	1.8	24	0.524	900	140	1300	500/D
	50	19/1.78	1.0	1.8	27	0.387	850	170	1700	500/D
	70	19/2.14	1.1	1.9	31	0.268	800	215	2300	500/D
	95	19/2.52	1.1	2.0	36	0.193	650	260	3100	500/D
	120	37/2.03	1.2	2.1	39	0.153	650	305	3900	500/D
	150	37/2.25	1.5	2.3	44	0.124	700	350	4900	500/D
	185	37/2.52	1.6	2.4	49	0.0991	700	405	6000	500/D
	240	61/2.25	1.7	2.6	55	0.0754	850	490	8000	300/D
	300	61/2.52	1.8	2.8	61	0.0601	600	565	9500	300/D
400	61/2.85	2.0	3.1	68	0.0470	600	655	12500	200/D	
4	2.5	7/0.67	0.7	1.8	13.0	7.41	2100	28	230	500/D
	4	7/0.85	0.7	1.8	14.5	4.61	1700	37	300	500/D
	6	7/1.04	0.7	1.8	16.0	3.08	1450	48	390	500/D
	10	7/1.35	0.7	1.8	17.5	1.83	1250	64	550	500/D
	16	7/1.70	0.7	1.8	20	1.15	1000	86	800	500/D
	25	7/2.14	0.9	1.8	24	0.727	1050	115	1200	500/D
	35	19/1.53	0.9	1.8	27	0.524	900	140	1600	500/D
	50	19/1.78	1.0	1.9	30	0.387	850	170	2200	500/D
	70	19/2.14	1.1	2.0	35	0.268	800	215	3000	500/D
	95	19/2.52	1.1	2.1	39	0.193	650	260	4100	500/D
	120	37/2.03	1.2	2.3	44	0.153	650	305	5000	500/D
	150	37/2.25	1.4	2.4	49	0.124	700	350	6500	500/D
	185	37/2.52	1.6	2.6	54	0.0991	700	405	8000	300/D
	240	61/2.25	1.7	2.8	61	0.0754	650	490	10000	300/D
	300	61/2.52	1.8	3.0	68	0.0601	600	565	13000	200/D
400	61/2.85	2.0	3.3	76	0.0470	600	655	16000	200/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CV - SWA

600/1000 V 90°C CROSS - LINKED POLYETHYLENE INSULATED AND PVC SHEATHED, ARMoured TYPE.



Application : For installation exposed, or in raceway, or in dry and damp areas indoors and outdoors for laying underground.

Classification : Maximum conductor temperature 90°C
Circuit voltage not exceeding 1,000 volts

Testing Voltage : 3,500 volts

Standard : IEC 60502

Optional : Filler
Binder tape
Single Core Aluminium Wire Armoured (AWA) upon requested.

Construction : Number of core : Up to 4 cores
Conductor : Concentric stranded annealed copper, sizes 2.5 mm² up to 1000 mm²
Insulation : Cross-Linked Polyethylene (XLPE)
Core identification : For natural cross-linked PE. will be marked with black core number.
For coloured insulation, the cores are identified as follows :

No. of Cores	Two	Three	Four	Five & above
Colour	Red and Black	Red, Yellow and Blue	Red, Yellow, Blue and Black	Natural with Black numbering

Inner Sheath : Polyvinyl chloride (PVC)
Black Colour

Armoured : Galvanized Steel Wire Armoured (SWA)

Outer Sheath : Polyvinyl chloride (PVC)
Black Colour

Note: We reserve the right to alter this specification without notice.

CV - SWA

600/1000 V 90°C CROSS - LINKED POLYETHYLENE INSULATED AND PVC SHEATHED, ARMoured TYPE.

CV - SWA 2 Core

No of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & Dia armour wire No./mm. (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg/km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia of wires No/mm										
2	1.5	7/0.53	0.7	1.0	8	30/0.9	10	1.8	13	12.1	353	500
2	2.5	7/0.67	0.7	1.0	9	33/0.9	11	1.8	14	7.41	405	500
2	4	7/0.85	0.7	1.0	10	37/0.9	12	1.8	15	4.61	480	500
2	6	7/1.04	0.7	1.0	11	41//0.9	13	1.8	17	3.08	568	500
2	10	7/1.35	0.7	1.0	13	47/0.9	15	1.8	19	1.83	734	500
2	16	7/1.70	0.7	1.0	15	40/1.25	18	1.8	21	1.15	1070	500
2	25	7/2.14	0.9	1.0	19	49/1.25	21	1.8	25	0.727	1470	500
2	35	19/1.53	0.9	1.1	21	42/1.6	24	1.9	28	0.524	1968	500
2	50	19/1.78	1.0	1.1	24	48/1.6	27	2.0	32	0.387	2444	500
2	70	19/2.14	1.1	1.2	28	56/1.6	32	2.1	36	0.258	3219	300
2	95	19/2.52	1.1	1.2	32	51/2.0	37	2.2	41	0.193	4363	300
2	120	37/2.03	1.2	1.2	37	58/2.0	41	2.4	46	0.153	5313	200
2	150	37/2.25	1.4	1.4	45	70/2.0	49	2.6	54	0.124	6875	200
2	185	37/2.52	1.6	1.4	45	57/2.5	51	2.7	56	0.0991	8073	150
2	240	61/2.25	1.7	1.6	51	64/2.5	57	3.0	63	0.0754	10051	150
2	300	61/2.52	1.8	1.6	57	70/2.5	62	3.2	68	0.0601	12009	150

CV - SWA 3 Core

No of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & Dia armour wire No./mm. (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg/km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia of wires No/mm										
3	1.5	7/0.53	0.7	1.0	8	31/0.9	10	1.8	14	12.1	370	500
3	2.5	7/0.67	0.7	1.0	9	34/0.9	11	1.8	15	7.41	432	500
3	4	7/0.85	0.7	1.0	10	28/1.25	13	1.8	16	4.61	610	500
3	6	7/1.04	0.7	1.0	12	31/1.25	14	1.8	18	3.08	726	500
3	10	7/1.35	0.7	1.0	14	36/1.25	16	1.8	20	1.83	946	500
3	18	7/1.70	0.7	1.0	16	32/1.60	19	1.8	23	1.15	1348	500
3	25	7/2.14	0.9	1.0	20	39/1.80	23	1.8	26	0.727	1847	500
3	35	19/1.53	0.9	1.1	22	44/1.60	25	1.9	29	0.524	2294	500
3	50	19/1.78	1.0	1.1	25	41/2.00	29	2.1	34	0.387	3106	500
3	70	19/2.14	1.1	1.2	30	48/2.00	34	2.2	39	0.268	4120	300
3	95	19/2.52	1.1	1.2	34	54/2.00	36	2.4	43	0.193	5248	300
3	120	37/2.03	1.2	1.4	38	60/2.00	42	2.5	48	0.153	6380	200
3	150	37/2.25	1.4	1.4	42	66/2.00	47	2.7	52	0.124	7605	150
3	185	37/2.52	1.6	1.4	47	74/2.00	51	2.8	57	0.0991	9217	150
3	240	61/2.25	1.7	1.6	54	83/2.00	58	3.1	64	0.0754	11629	150
3	300	61/2.52	1.8	1.6	60	92/2.00	64	3.3	70	0.0801	14084	150

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CV - SWA

600/1000 V 90°C CROSS - LINKED POLYETHYLENE INSULATED AND PVC SHEATHED, ARMoured TYPE.

CV - SWA 4 Core

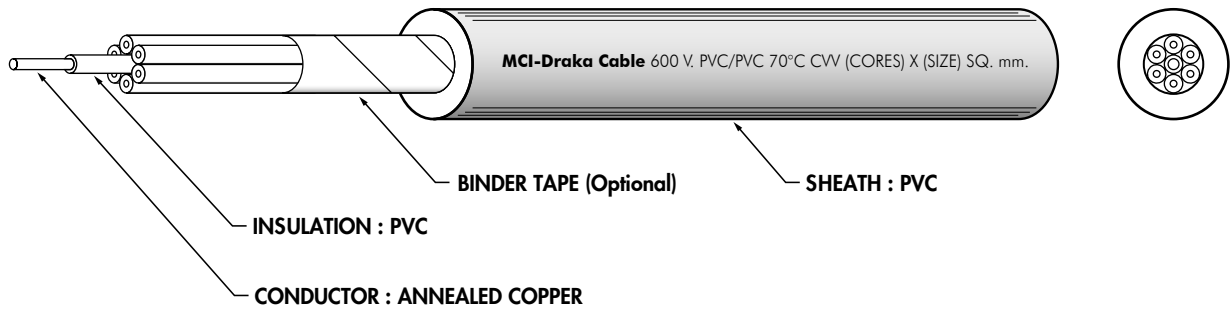
No of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & Dia armour wire No./mm. (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg/km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia of wires No/mm										
4	1.5	7/0.53	0.7	1.0	9	34/0.90	11	1.8	14	12.1	408	500
4	2.5	7/0.67	0.7	1.0	10	27/1.25	13	1.8	16	7.41	559	500
4	4	7/0.85	0.7	1.0	11	31/1.25	14	1.8	17	4.61	687	500
4	6	7/1.04	0.7	1.0	13	34/1.25	15	1.8	19	3.08	828	500
4	10	7/1.35	0.7	1.0	15	40/1.25	17	1.8	21	1.83	1094	500
4	16	7/1.70	0.7	1.0	17	36/1.60	21	1.8	24	1.15	1572	500
4	25	7/2.14	0.9	1.0	22	43/1.60	25	1.9	29	0.727	2197	500
4	35	19/1.53	0.9	1.0	25	49/1.60	28	2.0	32	0.524	2752	500
4	50	19/1.78	1.0	1.1	28	45/2.00	32	2.2	37	0.387	3685	300
4	70	19/2.14	1.1	1.2	33	53/2.00	37	2.3	42	0.268	4849	300
4	95	19/2.52	1.1	1.4	38	60/2.00	42	2.5	47	0.193	6278	200
4	120	37/2.03	1.2	1.4	43	67/2.00	47	2.7	52	0.153	7682	150
4	150	37/2.25	1.4	1.4	47	74/2.00	51	2.8	57	0.124	9058	150
4	185	37/2.52	1.6	1.6	53	82/2.00	57	3.0	63	0.0991	11092	150
4	240	61/2.25	1.7	1.6	60	92/2.00	70	3.3	70	0.0754	13948	150
4	300	61/2.52	1.8	1.8	67	102/2.00	71	3.5	78	0.0604	17047	150

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV

600 V 70°C PVC INSULATED AND SHEATHED CONTROL CABLE.



Application : Supervisory electrical equipment, station control circuits. Outdoor, suitable installation in the wet or dry cable trenches.

Classification : maximum conductor temperature 70°C
Rated circuit voltage 600 volts.

Testing voltage : 3,500 volts.

Applicable Standard : IEC 60502

Optional Standard : JIS C 3401

Optional : Filler
Binder tape

Construction : Number of core : 2-30 cores

Conductor : Annealed copper conductor (Optional : Solid & stranded or Flexible concentric stranded.)

Insulation : Polyvinyl chloride
colour 2-4 cores : Red, Yellow Blue, Black.
more than 4 cores : Black colour with marking core numbers.

Sheath : Polyvinyl chloride (Black colour).

Note: We reserve the right to alter this specification without notice.

CVV**600 V 70°C PVC INSULATED AND SHEATHED CONTROL CABLE.**

No of core	Conductor		Insulation thickness mm. (Nominal)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω /km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm.						
2	0.5	7/0.30	0.8	1.8	8.5	36	79	500
	0.75	7/0.37	0.8	1.8	8.8	24.5	88	500
	1	7/0.43	0.8	1.8	9.3	18.1	99	500
	1.5	7/0.53	0.8	1.8	9.8	12.1	115	500
	2.5	7/0.67	0.8	1.8	10.6	7.41	143	500
	4	7/0.85	1.0	1.8	12.5	4.61	200	500
3	0.5	7/0.30	0.8	1.8	8.9	36	94	500
	0.75	7/0.37	0.8	1.8	9.2	24.5	106	500
	1	7/0.43	0.8	1.8	9.7	18.1	121	500
	1.5	7/0.53	0.8	1.8	10.2	12.1	143	500
	2.5	7/0.67	0.8	1.8	11.2	7.41	182	500
	4	7/0.85	1.0	1.8	13.2	4.61	261	500
4	0.5	7/0.30	0.8	1.8	9.5	36	111	500
	0.75	7/0.37	0.8	1.8	9.9	24.5	126	500
	1	7/0.43	0.8	1.8	10.4	18.1	145	500
	1.5	7/0.53	0.8	1.8	11.1	12.1	173	500
	2.5	7/0.67	0.8	1.8	12.1	7.41	224	500
	4	7/0.85	1.0	1.8	14.4	4.61	325	500
5	0.5	7/0.30	0.8	1.8	10.3	36	133	500
	0.75	7/0.37	0.8	1.8	10.8	24.5	151	500
	1	7/0.43	0.8	1.8	11.3	18.1	176	500
	1.5	7/0.53	0.8	1.8	12.1	12.1	211	500
	2.5	7/0.67	0.8	1.8	13.2	7.41	274	500
	4	7/0.85	1.0	1.8	15.7	4.61	403	500
6	0.5	7/0.30	0.8	1.8	11.0	36	153	500
	0.75	7/0.37	0.8	1.8	11.6	24.5	175	500
	1	7/0.43	0.8	1.8	12.2	18.1	205	500
	1.5	7/0.53	0.8	1.8	13.0	12.1	247	500
	2.5	7/0.67	0.8	1.8	14.3	7.41	323	500
	4	7/0.85	1.0	1.8	17.1	4.61	533	500
7	0.5	7/0.30	0.8	1.8	11.0	36	78	500
	0.75	7/0.37	0.8	1.8	11.6	21.5	82	500
	1	7/0.43	0.8	1.8	12.2	18.1	87	500
	1.5	7/0.53	0.8	1.8	13.0	12.1	94	500
	2.5	7/0.67	0.8	1.8	14.4	7.41	106	500
	4	7/0.85	1.0	1.8	17.2	4.61	129	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

No of core	Conductor		Insulation thickness mm. (Nominal)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω /km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm.						
8	0.5	7/0.30	0.8	1.8	11.8	36	84	500
	0.75	7/0.37	0.8	1.8	12.4	24.5	89	500
	1	7/0.43	0.8	1.8	13.1	18.1	95	500
	1.5	7/0.53	0.8	1.8	14.1	12.1	103	500
	2.5	7/0.67	0.8	1.8	15.5	7.41	115	500
	4	7/0.85	1.0	1.8	18.6	4.61	141	500
9	0.5	7/0.30	0.8	1.8	12.5	36	90	500
	0.75	7/0.37	0.8	1.8	13.2	24.5	96	500
	1	7/0.43	0.8	1.8	14.1	18.1	100	500
	1.5	7/0.83	0.8	1.8	15.0	12.1	111	500
	2.5	7/0.57	0.8	1.8	18.6	7.41	124	500
	4	7/0.85	1.0	1.8	19.9	4.61	152	500
10	0.5	7/0.30	0.8	1.8	13.5	36	98	500
	0.75	7/0.37	0.8	1.8	14.3	24.5	105	500
	1	7/0.43	0.8	1.8	15.2	18.1	112	500
	1.5	7/0.53	0.8	1.8	16.2	12.1	121	500
	2.5	7/0.87	0.8	1.8	17.9	7.41	509	500
	4	7/0.85	1.0	1.8	21.7	4.61	765	500
11	0.5	7/0.30	0.8	1.8	13.5	36	238	500
	0.75	7/0.37	0.8	1.8	14.3	24.5	280	500
	1	7/0.43	0.8	1.8	15.2	18.1	331	500
	1.5	7/0.53	0.8	1.8	16.2	12.1	406	500
	2.5	7/0.67	0.8	1.8	17.9	7.41	541	500
	4	7/0.85	1.0	1.8	21.7	4.61	817	500
12	0.5	7/0.30	0.8	1.8	14.0	36	255	500
	0.75	7/0.37	0.8	1.8	14.7	24.5	298	500
	1	7/0.43	0.8	1.8	15.8	18.1	353	500
	1.5	7/0.53	0.8	1.8	16.7	12.1	434	500
	2.5	7/0.67	0.8	1.8	18.5	7.41	580	500
	4	7/0.85	1.0	1.8	22.4	4.61	878	500
13	0.5	7/0.30	0.8	1.8	14.5	38	260	500
	0.75	7/0.37	0.8	1.8	15.4	24.5	304	500
	1	7/.43	0.8	1.8	16.3	18.1	381	500
	1.5	7/0.53	0.8	1.8	17.5	12.1	445	500
	2.5	7/0.67	0.8	1.8	19.4	7.41	597	500
	4	7/0.85	1.0	1.8	25.5	4.61	902	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

No of core	Conductor		Insulation thickness mm. (Nominal)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω /km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm.						
14	0.5	7/0.30	0.8	1.8	14.5	36	271	500
	0.75	7/0.37	0.8	1.8	15.4	24.5	318	500
	1	7/0.43	0.8	1.8	16.4	18.1	379	500
	1.5	7/0.53	0.8	1.8	17.5	12.1	469	500
	2.5	7/0.67	0.8	1.8	19.4	7.41	632	500
	4	7/0.85	1.0	1.8	23.8	4.61	957	500
15	0.5	7/0.30	0.8	1.8	15.0	36	288	500
	0.75	7/0.37	0.8	1.8	15.9	24.5	339	500
	1	7/0.43	0.8	1.8	16.7	18.1	404	500
	1.5	7/0.53	0.8	1.8	18.8	12.1	501	500
	2.5	7/0.67	0.8	1.8	19.9	7.41	676	500
	4	7/0.85	1.0	1.8	24.1	4.61	1027	500
16	0.5	7/0.30	0.8	1.8	15.0	36	315	500
	0.75	7/0.37	0.8	1.8	16.2	24.5	370	600
	1	7/0.43	0.8	1.8	17.2	18.1	442	600
	1.5	7/0.53	0.8	1.8	18.4	12.1	547	600
	2.5	7/0.67	0.8	1.8	20.4	7.41	739	500
	4	7/0.85	1.0	1.8	24.8	4.61	1127	500
17	0.5	7/0.30	0.8	1.8	16.1	36	338	500
	0.75	7/0.37	0.8	1.8	17.0	24.5	397	500
	1	7/0.43	0.8	1.8	18.0	18.1	475	500
	1.5	7/0.53	0.8	1.8	19.4	12.1	588	800
	2.5	7/0.67	0.8	1.8	21.5	7.41	793	500
	4	7/0.85	1.0	1.8	26.2	4.61	1210	500
18	0.5	7/0.30	0.8	1.8	16.1	36	330	500
	0.75	7/0.37	0.8	1.8	17.0	24.5	368	500
	1	7/0.43	0.8	1.8	18.0	18.1	466	500
	1.5	7/0.53	0.8	1.8	19.4	12.1	579	500
	2.5	7/0.67	0.8	1.8	21.5	7.41	786	500
	4	7/0.85	1.0	1.8	26.2	4.61	1200	500
19	0.5	7/0.30	0.8	1.8	18.1	36	341	500
	0.75	7/0.37	0.8	1.8	17.0	24.5	403	500
	1	7/0.43	0.8	1.8	18.0	18.1	484	500
	1.5	7/0.53	0.8	1.8	19.4	12.1	803	500
	2.5	7/0.87	0.8	1.8	21.5	7.41	821	500
	4	7/0.85	1.0	1.8	26.2	4.61	1254	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

No of core	Conductor		Insulation thickness mm. (Nominal)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω /km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm.						
20	0.5	7/0.30	0.8	1.8	18.8	36	359	500
	0.75	7/0.37	0.8	1.8	17.8	24.5	424	500
	1	7/0.43	0.8	1.8	18.9	18.1	510	500
	1.5	7/0.53	0.8	1.8	20.3	12.1	653	500
	2.5	7/0.67	0.8	1.8	22.5	7.41	564	500
	4	7/0.85	1.0	1.9	27.6	4.81	1328	500
21	0.5	7/0.30	0.8	1.8	15.8	36	389	500
	0.75	7/0.37	0.8	1.8	17.8	24.5	459	500
	1	7/0.43	0.8	1.8	18.9	18.1	552	500
	1.5	7/0.53	0.8	1.8	20.3	12.1	688	500
	2.5	7/0.57	0.8	1.8	22.5	7.47	938	500
	4	7/0.85	1.0	27.8	4.61	4.61	1443	500
22	0.5	7/0.30	0.8	1.8	17.8	36	399	500
	0.75	7/0.37	0.8	1.8	18.8	24.5	472	500
	1	7/0.43	0.8	1.8	19.8	18.1	588	500
	1.5	7/0.53	0.8	1.8	21.3	12.1	708	500
	2.5	7/0.67	0.8	1.8	23.6	7.41	965	500
	4	7/0.85	1.0	1.8	29.1	4.61	1493	500
23	0.5	7/0.30	0.8	1.8	17.6	36	413	500
	0.75	7/0.37	0.8	1.8	18.6	24.5	489	500
	1	7/0.43	0.8	1.8	19.8	18.1	589	500
	1.5	7/0.53	0.8	1.8	21.3	12.1	736	500
	2.5	7/0.67	0.8	1.8	23.6	7.41	1004	500
	4	7/0.85	1.0	1.9	29.1	4.61	1556	500
24	0.5	7/0.30	0.8	1.8	18.5	36	433	500
	0.75	7/0.37	0.8	1.8	19.6	24.5	512	500
	1	7/0.43	0.8	1.8	20.9	18.1	617	500
	1.5	7/0.53	0.8	1.8	22.5	12.1	770	500
	2.5	7/0.67	0.8	1.8	25.0	7.41	1050	500
	4	7/0.85	1.0	2.0	30.9	4.61	1633	500
25	0.5	7/0.30	0.8	1.8	18.5	36	443	500
	0.75	7/0.37	0.8	1.8	19.6	24.5	526	500
	1	7/0.43	0.8	1.8	20.9	18.1	634	500
	1.6	7/0.53	0.8	1.8	22.5	12.1	792	500
	2.5	7/0.67	0.8	1.8	25.0	7.41	1082	500
	4	7/0.85	1.0	2.0	30.9	4.61	1685	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

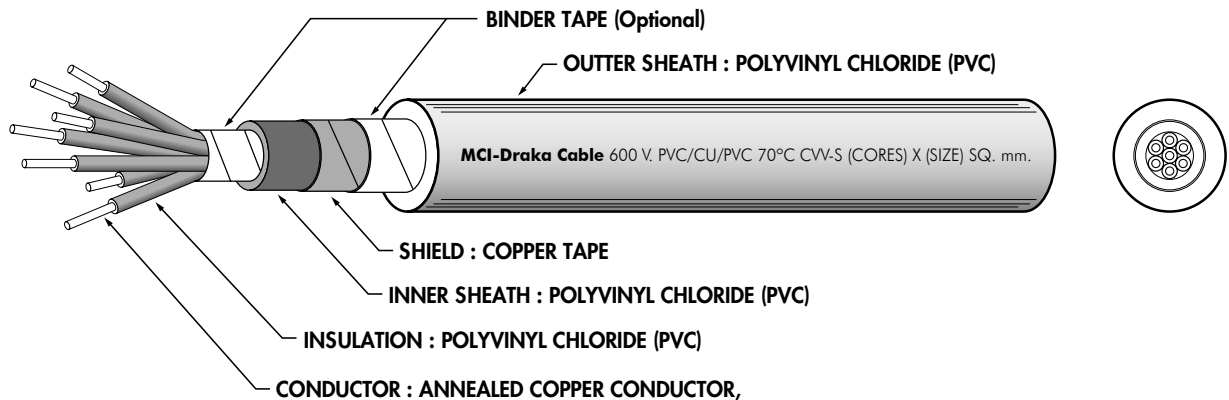
No of core	Conductor		Insulation thickness mm. (Nominal)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω /km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm.						
26	0.5	7/0.30	0.8	1.8	18.5	36	455	500
	0.75	7/0.37	0.8	1.8	19.6	24.5	540	500
	1	7/0.43	0.8	1.8	20.9	18.1	652	500
	1.5	7/0.53	0.8	1.8	22.5	12.1	816	500
	2.5	7/0.67	0.8	1.8	25.0	7.41	195	500
	4	7/0.85	1.0	2.0	30.9	4.81	264	500
27	0.5	7/0.30	0.8	1.8	18.9	36	144	500
	0.75	7/0.37	0.8	1.8	20.0	24.5	153	500
	1	7/0.43	0.8	1.8	21.3	18.1	184	500
	1.5	7/0.53	0.8	1.8	23.0	12.1	178	500
	2.5	7/0.67	0.8	1.8	25.5	7.41	199	500
	4	7/0.85	1.0	2.0	31.7	4.61	278	500
28	0.5	7/0.30	0.8	1.8	18.9	36	144	500
	0.75	7/0.37	0.8	1.8	20.0	24.5	153	500
	1	7/0.43	0.8	1.8	21.3	18.1	164	500
	1.5	7/0.53	0.8	1.8	23.0	12.1	178	500
	2.5	7/0.57	0.8	1.8	25.6	7.41	200	500
	4	7/0.85	1.0	2.0	31.8	4.61	276	500
29	0.6	7/0.30	0.8	1.8	19.5	36	149	500
	0.75	7/0.37	0.8	1.8	20.7	24.5	159	500
	1	7/0.43	0.8	1.8	22.0	18.1	170	500
	1.5	7/0.53	0.8	1.8	23.8	12.1	184	500
	2.5	7/0.67	0.8	1.8	26.5	7.41	207	500
	4	7/0.85	1.0	2.0	32.9	4.81	290	500
30	0.5	7/0.30	0.8	1.8	19.5	36	149	500
	0.75	7/0.37	0.8	1.8	22.0	18.1	170	500
	1	7/0.43	0.8	1.8	22.0	18.1	170	500
	1.5	7/0.53	0.8	1.8	23.8	12.1	184	500
	2.5	7/0.67	0.8	1.8	26.5	7.41	207	500
	4	7/0.85	1.0	2.0	32.9	4.61	290	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.



- Application** : Supervisory electrical equipment, and instruments, particularly in and around process plants, where transducer generated circuits panels, controller and associated devices.
- Classification** : Maximum conductor temperature 70°C
Rated circuit voltage 600 volts.
- Testing voltage** : 3,500 volts.
- Standard** : IEC 60502
- Optional** : Filler
Binder tape

- Construction** : Number of core : 2 cores to 30 cores
- Conductor : Annealed copper conductor (Optional : Solid or Flexible or Concentric stranded.)
- Insulation : Polyvinyl chloride (PVC)
Colour : 2-4 cores : Red, Yellow Blue, Black.
more than 4 cores : Black colour with marking core numbers.
- Inner Sheath : Polyvinyl chloride (PVC)
Black Colour.
- Shield : Copper Tape
- Outer Sheath : Polyvinyl chloride (PVC)
Black Colour.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of (No/mm.)	Insulation thickness (mm)	Bedding thickness (mm)	Coppers tape thickness (mm)	Sheath thickness (mm)	Overall diameter (approx.) (mm)	Cables weight (approx.) (kg/km)	Standard length (m)
2	0.5	7/0.30	0.8	1.0	0.1	1.8	11.4	176	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	11.7	191	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	12.1	205	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	12.7	231	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	13.5	272	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	15.4	360	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	16.5	131	500/D
3	0.5	7/0.30	0.8	1.0	0.1	1.8	11.7	192	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	12.2	211	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	12.5	228	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	13.2	251	500/D
	2.5	7/0.69	0.8	1.0	0.1	1.8	14.1	312	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	16.1	421	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	17.3	516	500/D
4	0.5	7/0.30	0.8	1.0	0.1	1.8	12.4	215	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	12.9	238	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	13.3	259	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	14.0	299	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	15.0	363	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	17.3	497	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	18.7	616	500/D
5	0.5	7/0.30	0.8	1.0	0.1	1.8	13.2	237	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	13.7	263	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	14.2	287	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	15.0	334	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	16.1	408	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	18.7	560	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	20.2	699	500/D
6	0.5	7/0.30	0.8	1.0	0.1	1.8	14.0	265	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	14.6	295	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	15.1	324	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	16.0	379	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	17.2	468	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	20.0	649	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	21.7	815	500/D
7	0.5	7/0.30	0.8	1.0	0.1	1.8	14.0	271	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	14.6	304	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	15.1	335	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	16.0	395	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	17.2	491	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	20.0	686	500/D
	5	7/1.04	1.0	1.0	0.1	1.8	21.7	669	500/D
10	7/1.35	1.0	1.0	0.1	1.8	24.5	1225	500/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of (No/mm.)	Insulation thickness (mm)	Bedding thickness (mm)	Coppers tape thickness (mm)	Sheath thickness (mm)	Overall diameter (approx.) (mm)	Cables weight (approx.) (kg/km)	Standard length (m)
8	0.5	7/0.30	0.8	1.0	0.1	1.8	14.7	301	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	15.4	339	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	15.9	375	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	16.9	444	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	18.3	556	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	21.4	783	500/D
	6	7/1.04	10.0	1.0	0.1	1.8	23.3	995	500/D
9	0.5	7/0.30	0.8	1.0	0.1	1.8	15.5	333	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	16.2	377	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	16.8	418	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	17.9	497	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	19.4	624	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	22.8	885	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	24.9	1127	500/D
10	0.5	7/0.30	0.8	1.0	0.1	1.8	16.5	385	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	17.3	413	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	17.9	459	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	19.1	547	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	20.8	689	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	24.6	980	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	28.9	1260	500/D
11	0.5	7/0.30	0.8	1.0	0.1	1.8	16.5	377	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	17.3	429	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	17.9	477	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	19.1	572	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	20.6	724	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	24.6	1038	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	26.9	1328	500/D
12	0.5	7/0.30	0.8	1.0	0.1	1.8	16.9	398	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	17.7	450	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	18.4	477	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	19.5	502	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	21.4	603	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	25.3	767	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	27.7	1101	500/D
13	0.5	7/0.30	0.8	1.0	0.1	1.8	17.6	405	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	18.4	462	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	19.1	517	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	20.5	622	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	22.3	792	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	26.5	1135	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	29.0	1463	500/D
10	7/1.35	1.0	1.0	0.1	2.0	33.9	2167	500/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of (No/mm.)	Insulation thickness (mm)	Bedding thickness (mm)	Coppers tape thickness (mm)	Sheath thickness (mm)	Overall diameter (approx.) (mm)	Cables weight (approx.) (kg/km)	Standard length (m)
14	0.5	7/0.30	0.8	1.0	0.1	1.8	17.6	417	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	18.4	478	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	19.2	535	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	20.5	647	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	22.3	827	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	26.5	1192	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	29.0	1542	500/D
	10	7/1.35	1.0	1.2	0.1	2.0	33.9	2289	500/D
15	0.5	7/0.30	0.8	1.0	0.1	1.8	17.9	438	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	18.6	503	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	19.5	564	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	20.9	683	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	22.8	877	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	27.1	1268	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	29.9	1857	500/D
	10	7/1.35	1.0	1.2	0.1	2.0	34.7	2444	500/D
16	0.5	7/0.30	0.8	1.0	0.1	1.8	18.3	456	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	19.2	525	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	20.0	590	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	21.4	717	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	23.4	922	500/D
	4	7/0.85	1.0	1.0	0.1	1.8	27.6	1336	500/D
	6	7/1.04	1.0	1.0	0.1	1.8	30.5	1749	500/D
	10	7/1.35	1.0	1.2	0.1	2.0	35.6	2563	500/D
17	0.5	7/0.30	0.8	1.0	0.1	1.8	19.0	484	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	20.0	558	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	20.8	628	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	22.3	762	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	24.4	982	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	29.3	1439	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	32.8	1912	500/D
	10	7/1.35	1.0	1.2	0.1	2.2	37.8	2790	500/D
18	0.5	7/0.30	0.8	1.0	0.1	1.8	19.0	490	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	20.0	566	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	20.4	638	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	22.3	778	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	24.4	1005	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	29.3	1476	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	32.8	1965	500/D
	10	7/1.35	1.0	1.2	0.1	2.2	37.8	2878	500/D
19	0.5	7/0.30	0.8	1.0	0.1	1.8	19.0	502	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	20.0	581	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	20.4	657	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	22.3	802	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	24.4	1040	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	29.3	1532	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	32.8	2043	500/D
	10	7/1.35	1.0	1.2	0.1	2.2	37.8	3000	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of (No/mm.)	Insulation thickness (mm)	Bedding thickness (mm)	Coppers tape thickness (mm)	Sheath thickness (mm)	Overall diameter (approx.) (mm)	Cables weight (approx.) (kg/km)	Standard length (m)
20	0.5	7/0.30	0.8	1.0	0.1	1.8	19.8	528	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	20.8	611	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	21.7	690	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	23.3	844	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	25.5	1095	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	30.7	1613	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	34.3	2151	500/D
21	0.5	7/0.30	0.8	1.0	0.1	1.8	19.8	544	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	20.8	632	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	21.7	715	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	23.3	877	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	25.5	1140	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	30.7	1685	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	34.3	2250	500/D
22	0.5	7/0.30	0.8	1.0	0.1	1.8	20.6	577	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	21.7	670	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	22.6	758	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	24.3	929	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	26.6	1208	500/D
	4	7/0.85	1.0	1.0	0.1	1.9	32.1	1707	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	35.9	2385	500/D
23	0.5	7/0.30	0.8	1.0	0.1	1.8	20.6	591	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	21.7	687	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	22.6	779	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	24.3	957	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.8	26.6	1248	500/D
	4	7/0.85	1.0	1.2	0.1	1.9	32.1	1882	500/D
	6	7/1.04	1.0	1.2	0.1	2.0	35.9	2473	500/D
24	0.5	7/0.30	0.8	1.0	0.1	1.8	21.6	620	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	22.7	721	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	23.7	817	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	25.5	1004	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.2	1321	500/D
	4	7/0.85	1.0	1.2	0.1	2.0	34.5	1987	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	38.3	2624	500/D
26	0.5	7/0.30	0.8	1.0	0.1	1.8	21.6	643	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	22.7	750	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	23.7	853	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	25.5	1051	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.2	1389	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	34.7	2111	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	38.3	2775	500/D
26	0.5	7/0.30	0.8	1.0	0.1	1.8	21.6	643	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	22.7	750	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	23.7	853	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	25.5	1051	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.2	1389	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	34.7	2111	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	38.3	2775	500/D
26	0.5	7/0.30	0.8	1.0	0.1	1.8	21.6	643	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	22.7	750	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	23.7	853	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	25.5	1051	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.2	1389	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	34.7	2111	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	38.3	2775	500/D
26	0.5	7/0.30	0.8	1.0	0.1	1.8	21.6	643	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	22.7	750	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	23.7	853	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	25.5	1051	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.2	1389	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	34.7	2111	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	38.3	2775	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - S

600 V 70°C PVC INSULATED AND SHEATHED, COPPER TAPE SHIELDED.

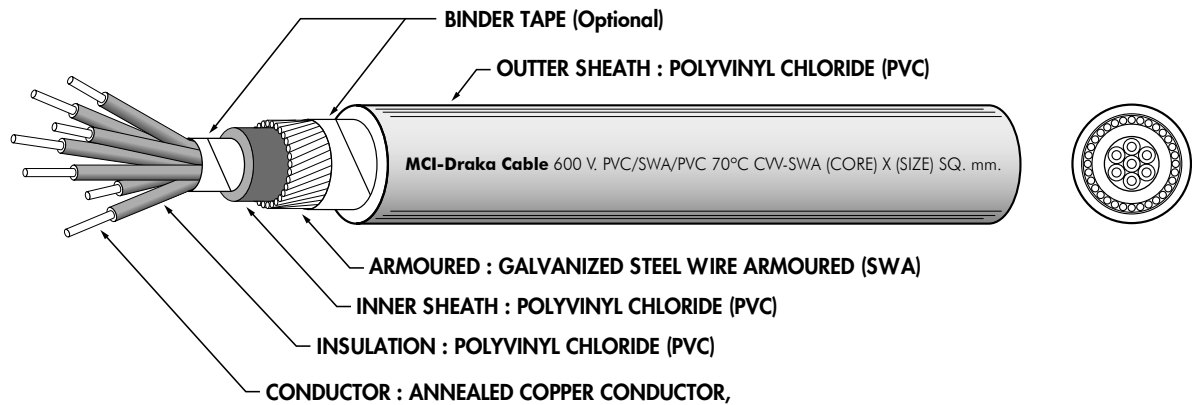
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of (No/mm.)	Insulation thickness (mm)	Bedding thickness (mm)	Coppers tape thickness (mm)	Sheath thickness (mm)	Overall diameter (approx.) (mm)	Cables weight (approx.) (kg/km)	Standard length (m)
27	0.5	7/0.30	0.8	1.0	0.1	1.8	22.0	662	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	23.2	773	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	24.2	879	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	26.0	1065	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.8	1434	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	35.4	2181	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	39.1	2869	500/D
28	0.5	7/0.30	0.8	1.0	0.1	1.8	22.0	674	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	23.2	788	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	24.2	898	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	26.0	1110	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	28.8	1470	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	35.4	2238	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	39.1	2948	500/D
29	0.5	7/0.30	0.8	1.0	0.1	1.8	22.6	684	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	23.9	800	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	24.9	912	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	26.8	1128	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	29.7	1495	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	36.6	2275	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	40.4	2998	500/D
30	0.5	7/0.30	0.8	1.0	0.1	1.8	22.6	696	500/D
	0.75	7/0.37	0.8	1.0	0.1	1.8	23.9	818	500/D
	1	7/0.43	0.8	1.0	0.1	1.8	24.9	922	500/D
	1.5	7/0.53	0.8	1.0	0.1	1.8	26.8	1152	500/D
	2.5	7/0.67	0.8	1.0	0.1	1.9	29.7	1530	500/D
	4	7/0.85	1.0	1.2	0.1	2.1	36.6	2331	500/D
	6	7/1.04	1.0	1.2	0.1	2.2	40.4	3076	500/D
	10	7/1.35	1.0	1.4	0.1	2.4	47.2	4598	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

CVV - SWA

600 V 70°C PVC INSULATED AND SHEATHED, ARMoured TYPE.



Application : Supervisory electrical equipment, and instruments, particularly in and around process plants, where transducer generated signals are transmitted through marshalled circuits panels, controller and associated devices.

Classification : Maximum conductor temperature 70°C
Rated circuit voltage 600 volts.

Testing voltage : 3,500 volts.

Standard : IEC 60502

Optional : Filler
Binder tape

Construction : Number of core : 2 cores to 30 cores

Conductor : Annealed copper conductor,
(Optional : Solid or Flexible or Concentric stranded.)

Insulation : Polyvinyl chloride (PVC)
Colour : 2-4 cores : Red, Yellow
Blue, Black.

more than 4 cores : Black colour
with marking core numbers.

Inner Sheath : Polyvinyl chloride (PVC)
Black Colour.

Armoured : Galvanized Steel Wire Armoured (SWA)

Outer Sheath : Polyvinyl chloride (PVC)
Black Colour.

Note: We reserve the right to alter this specification without notice.

CVV - SWA

600 V 70°C PVC INSULATED AND SHEATHED, ARMoured TYPE.

No. of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & dia armoured wire No./mm (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No.& dia. of wires No./mm										
2	0.5	7/0.30	0.8	1.0	7	26/0.9	9	1.8	12.2	36	282	500
	0.75	7/0.37	0.8	1.0	7	27/0.9	9	1.8	12.6	24.5	301	500
	1	7/0.43	0.8	1.0	8	29/0.9	9	1.8	13.0	18.1	324	500
	1.5	7/0.53	0.8	1.0	8	31/0.9	10	1.8	13.6	12.1	354	500
	2.5	7/0.67	0.8	1.0	9	34/0.9	11	1.8	14.4	7.41	406	500
	4	7/0.85	1.0	1.0	11	30/1.25	13	1.8	17.0	4.61	611	500
3	0.5	7/0.30	0.8	1.0	7	27/0.9	9	1.8	12.6	36	306	500
	0.75	7/0.37	0.8	1.0	8	29/0.9	9	1.8	13.0	24.5	328	500
	1	7/0.43	0.8	1.0	8	30/0.9	10	1.8	13.5	18.1	355	500
	1.5	7/0.53	0.8	1.0	9	32/0.9	10	1.8	14.0	12.1	393	500
	2.5	7/0.67	0.8	1.0	10	36/0.9	11	1.8	14.9	7.41	458	500
	4	7/0.85	1.0	1.0	12	37/1.25	14	1.8	17.7	4.61	692	500
4	0.5	7/0.30	0.8	1.0	8	30/0.9	10	1.8	13.2	36	334	500
	0.75	7/0.37	0.8	1.0	8	31/0.9	10	1.8	13.7	24.5	360	500
	1	7/0.43	0.8	1.0	9	33/0.9	11	1.8	14.2	18.1	393	500
	1.5	7/0.53	0.8	1.0	9	26/1.25	12	1.8	15.6	12.1	519	500
	2.5	7/0.67	0.8	1.0	11	29/1.25	13	1.8	16.6	7.41	603	500
	4	7/0.85	1.0	1.0	13	34/1.25	15	1.8	18.8	4.61	782	500
5	0.5	7/0.30	0.8	1.0	9	33/0.9	10	1.8	14.1	36	365	500
	0.75	7/0.37	0.8	1.0	9	34/0.9	11	1.8	14.5	24.5	395	500
	1	7/0.43	0.8	1.0	10	38/0.9	12	1.8	15.1	18.1	432	500
	1.5	7/0.53	0.8	1.0	10	28/1.25	13	1.8	16.5	12.1	571	500
	2.5	7/0.67	0.8	1.0	12	31/1.25	14	1.8	17.7	7.41	668	500
	4	7/0.85	1.0	1.0	14	37/1.25	17	1.8	20.2	4.61	862	500
6	0.5	7/0.30	0.8	1.0	9	35/0.9	11	1.8	14.8	36	402	500
	0.75	7/0.37	0.8	1.0	10	27/1.25	12	1.8	26.0	24.5	522	500
	1	7/0.43	0.8	1.0	11	29/1.25	13	1.8	16.7	18.1	569	500
	1.5	7/0.53	0.8	1.0	11	31/1.25	14	1.8	17.5	12.1	635	500
	2.5	7/0.67	0.8	1.0	13	34/1.25	15	1.8	18.7	7.41	748	500
	4	7/0.85	1.0	1.0	15	32/1.60	19	1.8	22.3	4.61	1155	500
7	0.5	7/0.30	0.8	1.0	9	35/0.9	11	1.8	14.8	36	408	500
	0.75	7/0.37	0.8	1.0	10	27/1.25	12	1.8	16.0	24.5	529	500
	1	7/0.43	0.8	1.0	11	29/1.25	13	1.8	16.7	18.1	579	500
	1.5	7/0.53	0.8	1.0	11	31/1.25	14	1.8	17.5	12.1	650	500
	2.5	7/0.67	0.8	1.0	13	34/1.25	15	1.8	18.6	7.41	776	500
	4	7/0.85	1.0	1.0	16	32/1.60	19	1.8	22.4	4.61	1143	500
8	0.5	7/0.30	0.8	1.0	10	28/1.25	13	1.8	16.2	36	533	500
	0.75	7/0.37	0.8	1.0	11	29/1.25	13	1.8	16.8	24.5	579	500
	1	7/0.43	0.8	1.0	11	31/1.25	14	1.8	17.5	18.1	637	500
	1.5	7/0.53	0.8	1.0	12	34/1.25	15	1.8	18.5	12.1	723	500
	2.5	7/0.67	0.8	1.0	14	37/1.25	16	1.8	19.9	7.41	861	500
	4	7/0.85	1.0	1.0	17	35/1.60	20	1.8	23.7	4.61	1273	500
9	0.5	7/0.30	0.8	1.0	11	30/1.25	13	1.8	17.0	36	580	500
	0.75	7/0.37	0.8	1.0	12	31/1.25	14	1.8	17.7	24.5	631	500
	1	7/0.43	0.8	1.0	12	33/1.25	15	1.8	18.5	18.1	702	500
	1.5	7/0.53	0.8	1.0	13	36/1.25	16	1.8	19.5	12.1	793	500
	2.5	7/0.67	0.8	1.0	15	40/1.25	17	1.8	21.0	7.41	950	500
	4	7/0.85	1.0	1.0	18	37/1.60	22	1.8	25.1	4.61	1408	500

Note: We reserve the right to alter this specification without notice.

CVV - SWA

600 V 70°C PVC INSULATED AND SHEATHED, ARMoured TYPE.

No. of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & dia armoured wire No./mm (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No.& dia. of wires No./mm										
10	0.5	7/0.30	0.8	1.0	12	32/1.25	14	1.8	18.0	36	629	500
	0.75	7/0.37	0.8	1.0	13	34/1.25	15	1.8	18.8	24.5	693	500
	1	7/0.43	0.8	1.0	14	35/1.25	16	1.8	19.6	18.1	757	500
	1.5	7/0.53	0.8	1.0	15	39/1.25	17	1.8	20.7	12.1	866	500
	2.5	7/0.67	0.8	1.0	16	33/1.60	20	1.8	23.1	7.41	1160	500
	4	7/0.85	1.0	1.0	20	40/1.60	23	1.8	26.8	4.61	1546	500
11	0.5	7/0.30	0.8	1.0	12	32/1.25	14	1.8	18.0	36	640	500
	0.75	7/0.37	0.8	1.0	13	34/1.25	15	1.8	18.8	24.5	706	500
	1	7/0.43	0.8	1.0	14	36/1.25	16	1.8	19.6	18.1	782	500
	1.5	7/0.53	0.8	1.0	15	39/1.25	17	1.8	20.7	12.1	888	500
	2.5	7/0.67	0.8	1.0	16	33/1.60	20	1.8	23.1	7.41	1192	500
	4	7/0.85	1.0	1.0	20	40/1.60	23	1.8	26.8	4.61	1597	500
12	0.5	7/0.30	0.8	1.0	12	33/1.25	15	1.8	18.4	36	671	500
	0.75	7/0.37	0.8	1.0	13	35/1.25	16	1.8	19.2	24.5	736	500
	1	7/0.43	0.8	1.0	14	37/1.25	17	1.8	20.1	18.1	817	500
	1.5	7/0.53	0.8	1.0	15	40/1.25	18	1.8	21.2	12.1	930	500
	2.5	7/0.67	0.8	1.0	17	34/1.60	20	1.8	23.6	7.41	1250	500
	4	7/0.85	1.0	1.0	21	42/1.60	24	1.8	27.5	4.61	1682	500
13	0.5	7/0.30	0.8	1.0	13	35/1.25	16	1.8	19.1	36	695	500
	0.75	7/0.37	0.8	1.0	14	29/1.60	17	1.8	20.6	24.5	888	500
	1	7/0.43	0.8	1.0	15	30/1.80	18	1.8	21.5	18.1	957	500
	1.5	7/0.53	0.8	1.0	16	33/1.60	19	1.8	22.7	12.1	1082	500
	2.5	7/0.67	0.8	1.0	18	36/1.60	21	1.8	24.6	7.41	1298	500
	4	7/0.85	1.0	1.0	22	44/1.60	25	1.9	28.9	4.61	1760	500
14	0.5	7/0.30	0.8	1.0	13	35/1.25	16	1.8	19.1	36	707	500
	0.75	7/0.37	0.8	1.0	14	37/1.25	16	1.8	19.9	24.5	776	500
	1	7/0.43	0.8	1.0	15	39/1.25	17	1.8	20.8	18.1	865	500
	1.5	7/0.53	0.8	1.0	16	33/1.60	19	1.8	22.7	12.1	1106	500
	2.5	7/0.67	0.8	1.0	18	36/1.60	21	1.8	24.8	7.41	1333	500
	4	7/0.85	1.0	1.0	22	44/1.60	25	1.9	28.9	4.61	1816	500
15	0.5	7/0.30	0.8	1.0	13	36/1.25	16	1.8	19.4	36	733	500
	0.75	7/0.37	0.8	1.0	14	38/1.25	17	1.8	20.2	24.5	807	500
	1	7/0.43	0.8	1.0	15	40/1.25	18	1.8	21.2	18.1	901	500
	1.5	7/0.53	0.8	1.0	16	34/1.60	20	1.8	23.1	12.1	1152	500
	2.5	7/0.67	0.8	1.0	18	37/1.60	21	1.8	25.0	7.41	1394	500
	4	7/0.85	1.0	1.0	23	45/1.60	26	1.9	29.5	4.61	1906	500
16	0.5	7/0.30	0.8	1.0	14	37/1.25	16	1.8	19.8	36	770	500
	0.75	7/0.37	0.8	1.0	15	39/1.25	17	1.8	20.6	24.5	850	500
	1	7/0.43	0.8	1.0	16	32/1.60	19	1.8	22.3	18.1	1056	500
	1.5	7/0.53	0.8	1.0	17	34/1.60	20	1.8	23.6	12.1	1215	500
	2.5	7/0.67	0.8	1.0	19	38/1.60	22	1.8	25.6	7.41	1475	500
	4	7/0.85	1.0	1.0	23	46/1.60	26	1.9	30.2	4.61	2033	500
17	0.5	7/0.30	0.8	1.0	14	38/1.25	17	1.8	20.5	36	815	500
	0.75	7/0.37	0.8	1.0	15	32/1.60	19	1.8	22.1	24.5	1014	500
	1	7/0.43	0.8	1.0	16	34/1.60	20	1.8	23.2	18.1	1128	500
	1.5	7/0.53	0.8	1.0	18	36/1.60	21	1.8	24.5	12.1	1288	500
	2.5	7/0.67	0.8	1.0	20	40/1.60	23	1.8	26.6	7.41	1566	500
	4	7/0.85	1.0	1.0	25	49/1.60	28	2.0	31.7	4.61	2171	500

Note: We reserve the right to alter this specification without notice.

CVV - SWA

600 V 70°C PVC INSULATED AND SHEATHED, ARMoured TYPE.

No. of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & dia armoured wire No./mm (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No.& dia. of wires No./mm										
18	0.5	7/0.30	0.8	1.0	14	38/1.25	17	1.8	20.5	36	807	500
	0.75	7/0.37	0.8	1.0	15	32/1.60	19	1.8	22.1	24.5	1006	500
	1	7/0.43	0.8	1.0	16	34/1.60	20	1.8	23.2	18.1	1120	500
	1.5	7/0.53	0.8	1.0	18	36/1.60	21	1.8	23.2	18.1	1120	500
	2.5	7/0.67	0.8	1.0	20	40/1.60	23	1.8	26.6	7.41	1559	500
	4	7/0.85	1.0	1.0	25	49/1.60	28	2.0	31.7	4.61	2160	500
19	0.5	7/0.30	0.8	1.0	14	38/1.25	17	1.8	20.5	36	818	500
	0.75	7/0.37	0.8	1.0	15	32/1.60	19	1.8	21.5	24.5	1020	500
	1	7/0.43	0.8	1.0	16	34/1.60	20	1.8	23.2	18.1	1138	500
	1.5	7/0.53	0.8	1.0	18	36/1.60	21	1.8	24.5	12.1	1303	500
	2.5	7/0.67	0.8	1.0	20	40/1.60	23	1.8	26.6	7.41	1593	500
	4	7/0.85	1.0	1.0	25	49/1.60	28	2.0	31.7	4.61	2215	500
20	0.5	7/0.30	0.8	1.0	15	40/1.25	18	1.8	21.3	36	858	500
	0.75	7/0.37	0.8	1.0	16	33/1.60	19	1.8	22.9	24.5	1089	500
	1	7/0.43	0.8	1.0	17	35/1.60	20	1.8	24.0	18.1	1193	500
	1.5	7/0.53	0.8	1.0	19	38/1.60	22	1.8	25.5	12.1	1368	500
	2.5	7/0.67	0.8	1.0	21	42/1.60	24	1.8	27.7	7.41	1674	500
	4	7/0.85	1.0	1.0	28	42/2.00	30	2.0	34.0	4.61	2570	500
21	0.5	7/0.30	0.8	1.0	15	40/1.25	18	1.8	21.3	36	888	500
	0.75	7/0.37	0.8	1.0	16	33/1.60	19	1.8	22.9	24.5	1105	500
	1	7/0.43	0.8	1.0	17	35/1.60	20	1.8	24.0	18.1	1236	500
	1.5	7/0.53	0.8	1.0	19	38/1.60	22	1.8	25.5	12.1	1421	500
	2.5	7/0.67	0.8	1.0	21	42/1.60	24	1.8	27.7	7.41	1748	500
	4	7/0.85	1.0	1.0	26	42/2.00	30	2.0	34.0	4.61	2685	500
22	0.5	7/0.30	0.8	1.0	16	33/1.60	19	1.8	22.7	36	1038	500
	0.75	7/0.37	0.8	1.0	17	35/1.60	20	1.8	23.7	24.5	1148	500
	1	7/0.43	0.8	1.0	18	37/1.60	21	1.8	24.9	18.1	1282	500
	1.5	7/0.53	0.8	1.0	20	40/1.60	23	1.8	26.4	12.1	1475	500
	2.5	7/0.67	0.8	1.0	22	44/1.60	25	1.8	28.8	7.41	1812	500
	4	7/0.85	1.0	1.0	27	44/2.00	31	2.1	35.5	4.61	2795	500
23	0.5	7/0.30	0.8	1.0	16	33/1.80	19	1.8	22.7	36	1051	500
	0.75	7/0.37	0.8	1.0	17	35/1.60	20	1.8	23.7	24.5	1163	500
	1	7/0.43	0.8	1.0	18	37/1.60	21	1.8	24.9	18.1	1303	500
	1.5	7/0.53	0.8	1.0	20	40/1.60	23	1.8	26.4	12.1	1502	500
	2.5	7/0.67	0.8	1.0	22	44/1.60	25	1.8	28.8	7.41	1851	500
	4	7/0.85	1.0	1.0	27	44/2.00	31	2.1	35.5	4.61	2858	500
24	0.5	7/0.30	0.8	1.0	17	35/1.60	20	1.8	23.7	36	1104	500
	0.75	7/0.37	0.8	1.0	18	37/1.60	21	1.8	24.8	24.5	1221	500
	1	7/0.43	0.8	1.0	19	39/1.60	22	1.8	26.0	18.1	1369	500
	1.5	7/0.53	0.8	1.0	21	45/1.60	24	1.8	27.6	12.1	1629	500
	2.5	7/0.67	0.8	1.0	23	47/1.60	27	1.8	30.2	7.41	1945	500
	4	7/0.85	1.0	1.0	29	46/2.00	33	2.2	37.3	4.61	3014	500
25	0.5	7/0.30	0.8	1.0	17	35/1.60	20	1.8	23.7	36	1116	500
	0.75	7/0.37	0.8	1.0	18	37/1.60	21	1.8	24.8	24.5	1234	500
	1	7/0.43	0.8	1.0	19	39/1.60	22	1.8	26.0	18.1	1386	500
	1.5	7/0.53	0.8	1.0	21	45/1.60	24	1.8	27.6	12.1	1600	500
	2.5	7/0.67	0.8	1.0	23	47/1.60	27	1.8	30.2	7.41	1977	500
	4	7/0.85	1.0	1.0	29	46/2.00	33	2.2	37.3	4.61	3065	500

Note: We reserve the right to alter this specification without notice.

CVV - SWA

600 V 70°C PVC INSULATED AND SHEATHED, ARMoured TYPE.

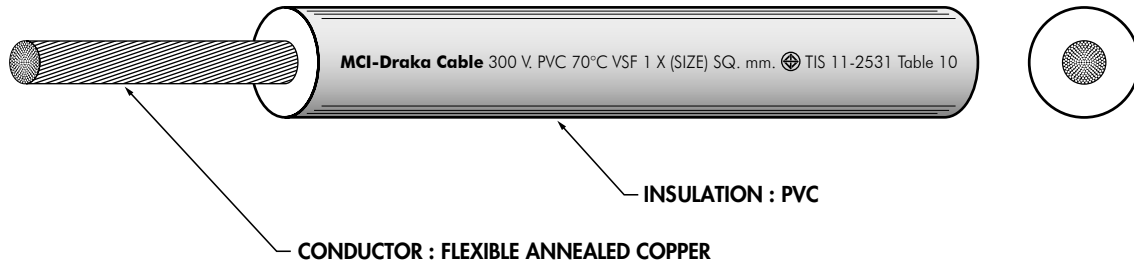
No. of core	Conductor		Insulation thickness mm. (Nominal)	Bedding thickness mm. (Nominal)	Overall diameter before armoured mm. (Approx.)	No. & dia armour wire No./mm (Approx.)	Overall diameter after armoured mm. (Approx.)	Sheath thickness mm. (Nominal)	Overall diameter of cable mm. (Approx.)	Conductor resistance at 20°C Ω/km (Max.)	Cable weight kg / km (Approx.)	Standard length m/Drum (Approx.)
	Size mm ²	No. & dia. of wires No./mm										
26	0.5	7/0.30	0.8	1.0	17	35/1.60	20	1.8	23.7	36	1126	500
	0.75	7/0.37	0.8	1.0	18	37/1.60	21	1.8	24.8	24.5	1248	500
	1	7/0.43	0.8	1.0	19	39/1.60	22	1.8	26.0	18.1	1404	500
	1.5	7/0.53	0.8	1.0	21	45/1.60	24	1.8	27.6	12.1	1624	500
	2.5	7/0.67	0.8	1.0	23	47/1.60	27	1.8	30.2	7.41	2011	500
	4	7/0.85	1.0	1.0	29	48/2.00	33	2.2	37.3	4.61	3120	500
27	0.5	7/0.30	0.8	1.0	17	35/1.60	21	1.8	24.1	36	1154	500
	0.75	7/0.37	0.8	1.0	18	37/1.60	22	1.8	25.2	24.5	1280	500
	1	7/0.43	0.8	1.0	19	40/1.60	23	1.8	26.5	18.1	1441	500
	1.5	7/0.53	0.8	1.0	21	43/1.60	26	1.8	28.1	12.1	1669	500
	2.5	7/0.67	0.8	1.0	23	48/1.60	27	1.8	30.7	7.41	2069	500
	4	7/0.85	1.0	1.0	29	47/2.00	34	2.2	38.1	4.61	3216	500
28	0.5	7/0.30	0.8	1.0	17	35/1.60	21	1.8	24.1	36	1166	500
	0.75	7/0.37	0.8	1.0	18	37/1.60	22	1.8	25.2	24.5	1296	500
	1	7/0.43	0.8	1.0	20	40/1.60	23	1.8	26.5	18.1	1460	500
	1.5	7/0.53	0.8	1.0	21	43/1.60	26	1.8	28.2	12.1	1694	500
	2.5	7/0.67	0.8	1.0	24	48/1.60	27	1.8	30.7	7.41	2105	500
	4	7/0.85	1.0	1.0	30	47/2.00	34	2.2	38.1	4.61	3273	500
29	0.5	7/0.30	0.8	1.0	18	35/1.60	21	1.8	24.7	36	1192	500
	0.75	7/0.37	0.8	1.0	19	39/1.60	22	1.8	25.9	24.5	1324	500
	1	7/0.43	0.8	1.0	20	41/1.60	24	1.8	27.2	18.1	1493	500
	1.5	7/0.53	0.8	1.0	22	44/1.60	25	1.8	28.9	12.1	1731	500
	2.5	7/0.67	0.8	1.0	25	49/1.60	28	1.8	31.6	7.41	2152	500
	4	7/0.85	1.0	1.0	31	49/2.00	35	2.2	39.3	4.61	3353	500
30	0.5	7/0.30	0.8	1.0	18	36/1.60	21	1.8	24.7	36	1204	500
	0.75	7/0.37	0.8	1.0	19	39/1.60	22	1.8	25.9	24.5	1339	500
	1	7/0.43	0.8	1.0	20	41/1.60	24	1.8	27.2	18.1	1511	500
	1.5	7/0.53	0.8	1.0	22	44/1.60	25	1.8	28.9	12.1	1755	500
	2.5	7/0.67	0.8	1.0	25	49/1.60	28	1.8	31.6	7.41	2186	500
	4	7/0.85	1.0	1.0	31	49/2.00	35	2.2	39.3	4.61	3408	500

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VSF

300 V 70°C PVC INSULATED FLEXIBLE CONDUCTOR, SINGLE CORE.



Application : For marking cross connection between terminals inside appliances, instruments or apparatus.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 10

Construction : Conductor : Flexible annealed copper, sizes 0.5 mm² up to 2.5 mm²
Insulation : Polyvinyl chloride (Any colour as requested).

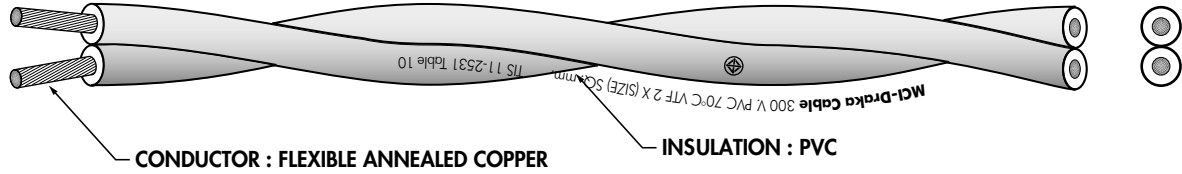
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
1	0.5	16/0.20	0.8	3.2	0.0160	9	12	100/C
	0.5	28/0.15	0.8	3.2	0.0160	9	12	100/C
	0.75	24/0.20	0.8	3.4	0.0140	11	15	100/C
	0.75	42/0.15	0.8	3.4	0.0140	11	15	100/C
	1	32/0.20	0.8	3.6	0.0127	14	18	100/C
	1.5	30/0.25	0.8	3.9	0.0111	18	23	100/C
	2.5	50/0.25	0.8	4.8	0.0092	24	33	100/C

C : Packing in coil.

Note: We reserve the right to alter this specification without notice.

VTF

300 V 70°C PVC INSULATED TWISTED FLEXIBLE CONDUCTOR.



Application : For used mainly for small indoor electrical appliances such as desk-lamp, radios, electric hot plated. etc.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 10

Construction : Conductor : Flexible annealed copper wires, sizes 0.5 mm² up to 2.5 mm²

Insulation : Polyvinyl chloride
2 Core : Light-Grey, Black color

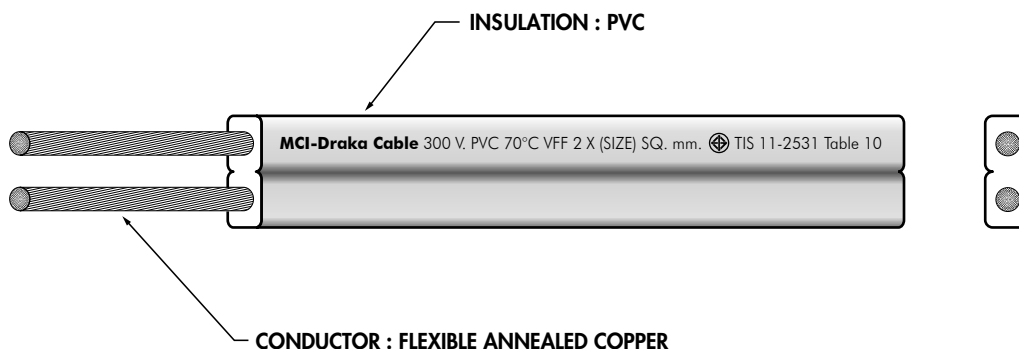
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
2	0.5	16/0.20	0.8	3.2	0.0160	7	24	100/C
	0.5	28/0.15	0.8	3.2	0.0160	7	24	100/C
	0.75	24/0.20	0.8	3.4	0.0140	10	30	100/C
	0.75	42/0.15	0.8	3.4	0.0140	10	30	100/C
	1	32/0.20	0.8	3.6	0.0127	11	36	100/C
	1.5	30/0.25	0.8	3.9	0.0111	15	47	100/C
	2.5	50/0.25	0.8	4.8	0.0092	20	70	100/C

C : Packing in coil.

Note: We reserve the right to alter this specification without notice.

VFF

300 V 70°C PVC INSULATED FLAT TYPE, FLEXIBLE CONDUCTOR.



Application : For used in dry room for small indoor electrical appliances such as desk-lamp, radios, fans etc.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 10

Construction : Conductor : Flexible annealed copper wires, sizes 0.5 mm² up to 2.5 mm²

Insulation : Polyvinyl chloride
(Any colour with a white, grey or Black continuous identification strip shall be displayed on one core.)

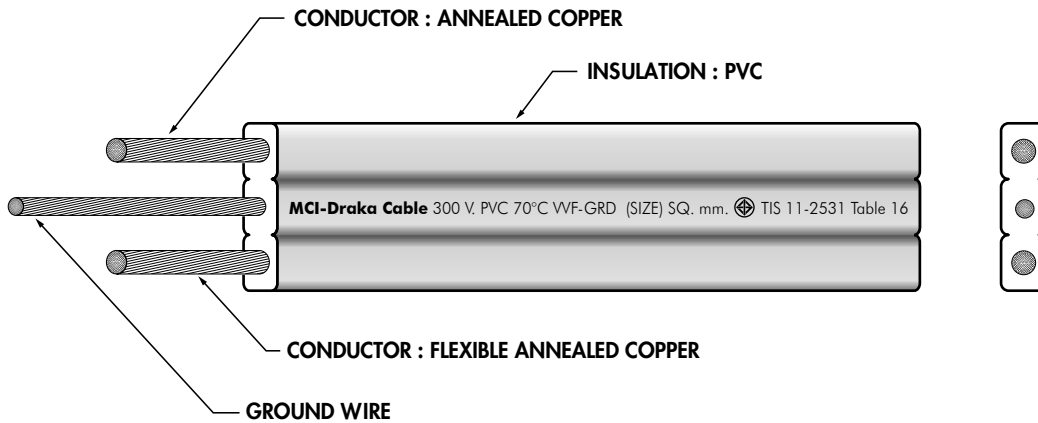
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
				Lower limit	Upper limit				
2	0.5	16/0.20	0.8	2.4 x 4.9	3.2 x 6.2	0.0160	8	22	100/C
	0.5	28/0.15	0.8	2.4 x 4.8	3.2 x 6.2	0.0160	8	22	100/C
	0.75	24/0.20	0.8	2.6 x 5.2	3.4 x 6.6	0.0140	10	27	100/C
	0.75	42/0.15	0.8	2.6 x 5.2	3.4 x 6.6	0.0140	10	28	100/C
	1	32/0.20	0.8	2.8 x 5.6	3.6 x 7.0	0.0127	12	33	100/C
	1.5	30/0.25	0.8	3.0 x 6.0	3.9 x 7.6	0.0111	15	44	100/C
	2.5	50/0.25	0.8	3.5 x 7.0	4.8 x 9.4	0.0092	21	65	100/C

C : Packing in coil.

Note: We reserve the right to alter this specification without notice.

VFF-GRD

300 V 70°C PVC INSULATED FLAT TYPE, FLEXIBLE CONDUCTOR WITH GROUND.



Application : For used in dry room for small indoor electrical appliances such as desk-lamp, radios, fans etc.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 16

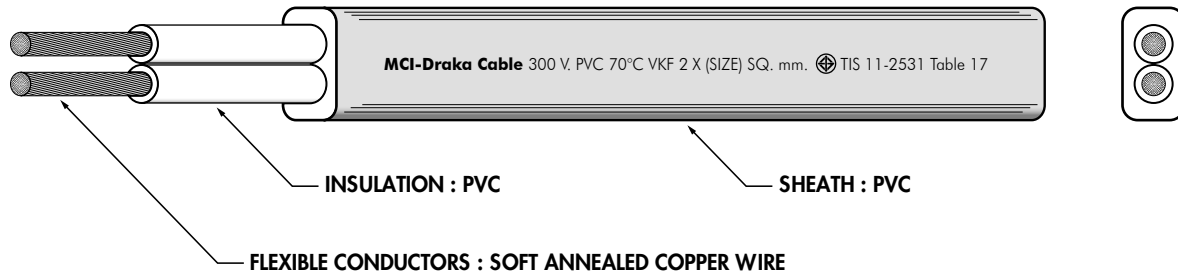
Construction : Conductor : Flexible annealed copper wires, sizes 1 mm² up to 2.5 mm²
Ground conductor sizes 1 mm² up to 1.5 mm²

Insulation : Polyvinyl chloride
(Any colour with one different colour tracer on lateral side of wire, or colour thread at one of conductor)

Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm)	Insulation thickness (mm)	Overall cross sectional area of ground conductor (mm ²)	Thickness of ground insulator (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
					Lower limit	Upper limit				
1	32/0.20	0.8	1	0.6	2.8 x 8.0	3.6 x 9.8	0.0127	12	50	500/C
1.5	30/0.25	0.8	1	0.6	3.0 x 8.6	3.9 x 10.5	0.0111	15	60	500/C
2.5	50/0.25	0.8	1.5	0.6	3.5 x 9.6	4.8 x 12.5	0.0092	21	90	500/C

C : Packing in coil.

Note: We reserve the right to alter this specification without notice.

VKF**300 V 70°C PVC INSULATED AND SHEATHED FLAT TYPE, FLEXIBLE CONDUCTOR.**

Application : Exposed wiring in air or in raceway, wet or dry location and used for mobile electrical equipment

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 300 volts.

Standard : TIS 11-2531 TABLE 17

Construction : Conductor : Flexible annealed copper wires, sizes 0.5 mm² up to 35 mm² for 2 cores.

Insulation : Polyvinyl chloride (Light Grey and Black colour for 2 cores; Light Grey, Black and Red colour for 3 cores.)

Sheath : Polyvinyl chloride (Black or White colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)		Minimum insulation resistance at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
					Lower limit	Upper limit				
2	0.5	16/0.20	0.6	0.9	3.8x5.8	4.7x7.2	0.0132	8	38	100/C
	0.5	28/0.15	0.6	0.9	3.8x5.8	4.7x7.2	0.0133	8	38	100/C
	1	32/0.20	0.6	0.9	4.1x6.6	5.2x8.0	0.0104	11	55	100/C
	1.5	30/0.25	0.6	1.2	5.0x7.6	6.2x9.4	0.0090	15	75	100/C
	2.5	50/0.25	0.7	1.2	5.6x9.0	7.2x11.5	0.0083	20	110	100/C
	4	56/0.30	0.8	1.2	6.4x10.0	8.0x13.0	0.0076	27	150	100/C
	6	84/0.30	0.8	1.2	6.8x11.5	8.8x14.5	0.0065	36	200	100/C
	10	80/0.40	0.9	1.2	8.0x13.5	10.5x17.5	0.0057	50	330	100/C
	16	126/0.40	1.0	1.2	9.8x17.5	12.0x20.5	0.0047	67	460	100/C
	25	196/0.40	1.2	1.4	12.0x21.5	14.5x25.0	0.0045	89	700	500/D
35	276/0.40	1.2	1.4	13.5x24.0	16.0x28.0	0.0038	111	940	500/D	
3	0.5	16/0.20	0.6	0.9	3.8x7.8	4.7x9.6	0.0132	6	67	100/C
	0.5	28/0.15	0.6	0.9	3.8x7.8	4.7x9.6	0.0133	6	67	100/C
	1	32/0.20	0.6	0.9	4.1x9.0	5.2x11.0	0.0104	10	93	100/C
	1.5	30/0.25	0.6	1.2	5.0x10.0	6.2x12.5	0.0090	13	115	100/C
	2.5	50/0.25	0.7	1.2	5.6x12.0	7.2x16.0	0.0083	18	177	100/C
	4	56/0.30	0.8	1.2	6.4x14.5	8.0x18.5	0.0076	24	262	100/C
	6	84/0.30	0.8	1.2	6.8x16.0	8.8x20.5	0.0065	31	341	100/C
	10	80/0.40	0.9	1.2	8.0x19.5	10.5x25.0	0.0057	43	524	500/D
16	126/0.40	1.0	1.4	10.0x25.5	12.5x29.0	0.0047	57	781	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

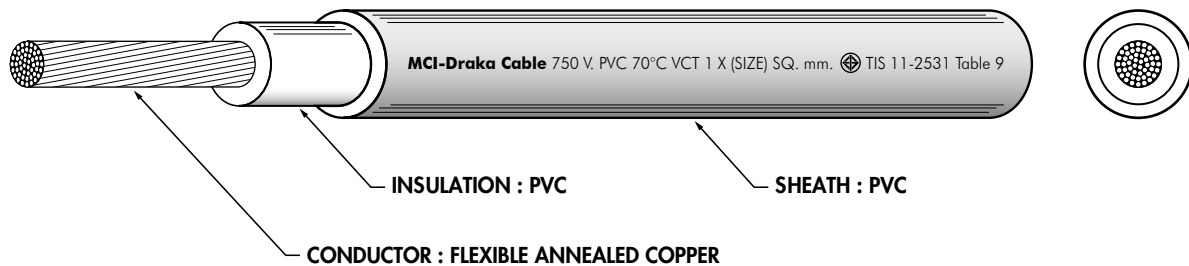
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR, SINGLE CORE.



Application : For mobile-electrical equipment used in mines, factories, farm or house hold appliances. This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

Construction : Conductor : Flexible annealed copper, sizes 0.5 mm² up to 95 mm²
 Insulation : Polyvinyl chloride (Black colour)
 Sheath : Polyvinyl chloride (Black colour)

Classification : Maximum conductor temperature 70°C
 Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 9

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm.)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum Continuous current rating in free air (Ampere)	Cables weight (approx.) (kg/km)	Standard length (m)
1	0.5	16/0.20	0.8	1.0	5.4	0.0160	10	29	100/C
	0.75	24/0.20	0.8	1.0	5.6	0.0140	13	33	100/C
	1	32/0.20	0.8	1.2	6.2	0.0127	15	41	100/C
	1.5	30/0.25	0.8	1.2	6.6	0.0111	19	48	100/C
	2.5	50/0.25	0.8	1.2	7.4	0.0092	27	60	100/C
	4	56/0.30	0.9	1.4	8.6	0.0084	36	90	100/C
	6	84/0.30	0.9	1.4	9.4	0.0071	46	110	100/C
	10	80/0.40	1.1	1.8	12.0	0.0068	67	210	100/C
	16	126/0.40	1.1	1.8	13.5	0.0050	88	270	100/C
	25	196/0.40	1.3	2.2	16.0	0.0048	116	410	100/C
	35	276/0.40	1.3	2.2	17.5	0.0041	145	540	500/D
	50	396/0.40	1.5	2.6	21.0	0.0040	181	750	500/D
	70	360/0.50	1.5	2.6	23.0	0.0034	226	980	500/D
95	475/0.50	1.7	3.0	26.5	0.0034	268	1300	500/D	

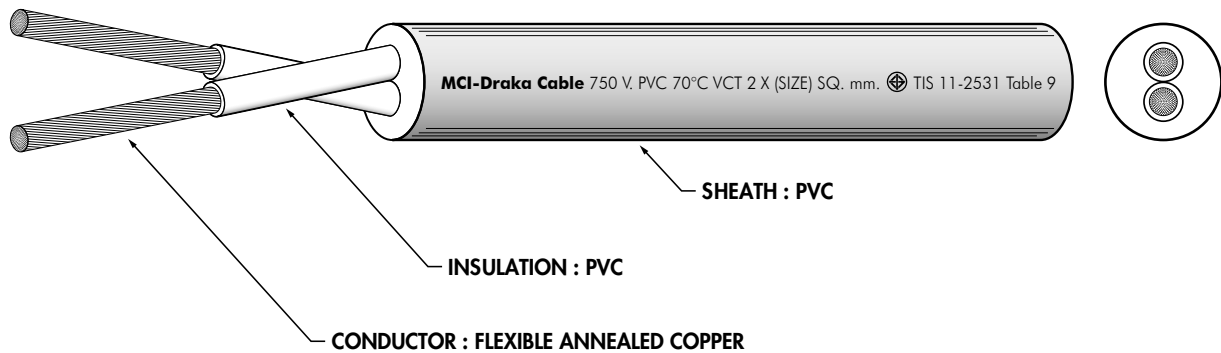
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR, TWO CORES.



Application : For mobile-electrical equipment used in mines, factories, farm or house hold appliances.
This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 9

Construction : Conductor : Flexible annealed copper, sizes 0.5 mm² up to 35 mm²
Insulation : Polyvinyl chloride (Light Grey and Black colour)
Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm.)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum Continuous current rating in free air (Ampere)	Cables weight (approx.) (kg/km)	Standard length (m)
2	0.5	16/0.20	0.8	1.2	8.8	0.0160	9	80	100/C
	0.75	24/0.20	0.8	1.2	9.2	0.0140	12	90	100/C
	1	32/0.20	0.8	1.2	9.6	0.0127	14	95	100/C
	1.5	30/0.25	0.8	1.4	11.0	0.0111	18	120	100/C
	2.5	50/0.25	0.8	1.4	12.5	0.0092	24	160	100/C
	4	56/0.30	0.9	1.6	14.5	0.0084	33	230	100/C
	6	84/0.30	0.9	1.6	16.0	0.0071	42	290	100/C
	10	80/0.40	1.1	1.8	20.0	0.0068	60	510	100/C
	16	126/0.40	1.1	2.2	23.0	0.0050	80	710	500/D
	25	196/0.40	1.3	2.4	27.5	0.0048	104	1030	500/D
35	276/0.40	1.3	2.6	31.0	0.0041	130	1380	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

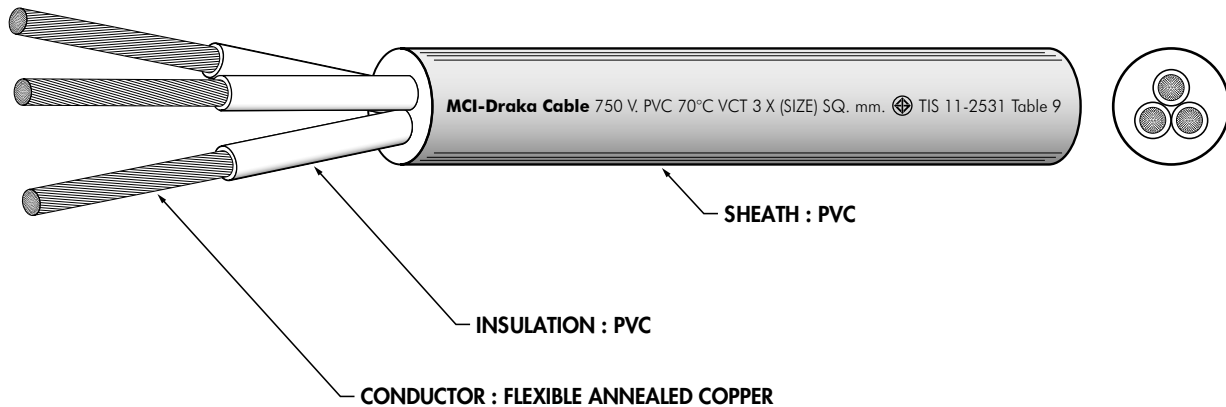
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR, THREE CORES.



Application : For mobile-electrical equipment used in mines, factories, farm or house hold appliances. This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 9

Construction : Conductor : Flexible annealed copper, sizes 0.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (Grey, Black and Red colour)

Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm.)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum Continuous current rating in free air (Ampere)	Cables weight (approx.) (kg/km)	Standard length (m)
3	0.5	16/0.20	0.8	1.2	9.2	0.0160	8	90	100/C
	0.75	24/0.20	0.8	1.2	9.6	0.0140	10	100	100/C
	1	32/0.20	0.8	1.4	10.5	0.0127	12	120	100/C
	1.5	30/0.25	0.8	1.4	11.5	0.0111	15	140	100/C
	2.5	50/0.25	0.8	1.4	13.0	0.0092	20	190	100/C
	4	56/0.30	0.9	1.6	15.5	0.0084	27	280	100/C
	6	84/0.30	0.9	1.8	17.5	0.0071	35	370	100/C
	10	80/0.40	1.1	2.0	21.5	0.0068	51	650	500/D
	16	126/0.40	1.1	2.4	25.0	0.0050	67	900	500/D
	25	196/0.40	1.3	2.6	30.0	0.0048	87	1320	500/D
35	276/0.40	1.3	2.8	33.5	0.0041	108	1770	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

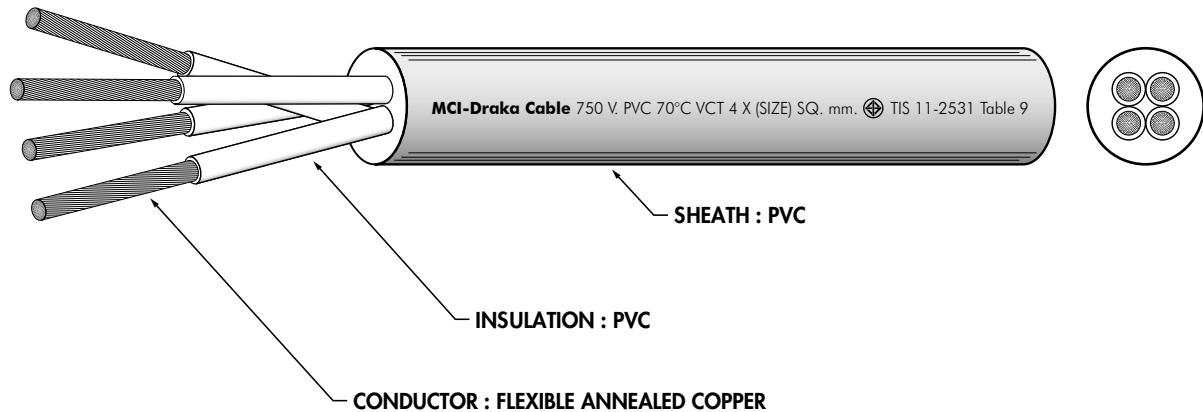
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR, FOUR CORES.



Application : For mobile-electrical equipment used in mines, factories, farm or house hold appliances.
This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 9

Construction : Conductor : Flexible annealed copper, sizes 0.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride
(Light Grey, Black, Red and Blue colour)

Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm.)	Insulation thickness (mm)	Sheath thickness (mm)	Overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum Continuous current rating in free air (Ampere)	Cables weight (approx.) (kg/km)	Standard length (m)
4	0.5	16/0.20	0.8	1.4	10.5	0.0160	7	110	100/C
	0.75	24/0.20	0.8	1.4	11.0	0.0140	9	130	100/C
	1	32/0.20	0.8	1.6	12.0	0.0127	11	150	100/C
	1.5	30/0.25	0.8	1.6	12.5	0.0111	13	180	100/C
	2.5	50/0.25	0.8	1.6	15.0	0.0092	18	240	100/C
	4	56/0.30	0.9	1.8	17.0	0.0084	25	350	100/C
	6	84/0.30	0.9	2.0	19.5	0.0071	32	480	100/C
	10	80/0.40	1.1	2.2	24.0	0.0068	46	820	500/D
	16	126/0.40	1.1	2.6	28.0	0.0050	60	1150	500/D
	25	196/0.40	1.3	2.8	33.0	0.0048	78	1680	500/D
35	276/0.40	1.3	3.1	37.0	0.0041	97	2290	500/D	

TISI PERMITTED TO INCREASE THE MAXIMUM OVERALL DIAMETER BY 5%

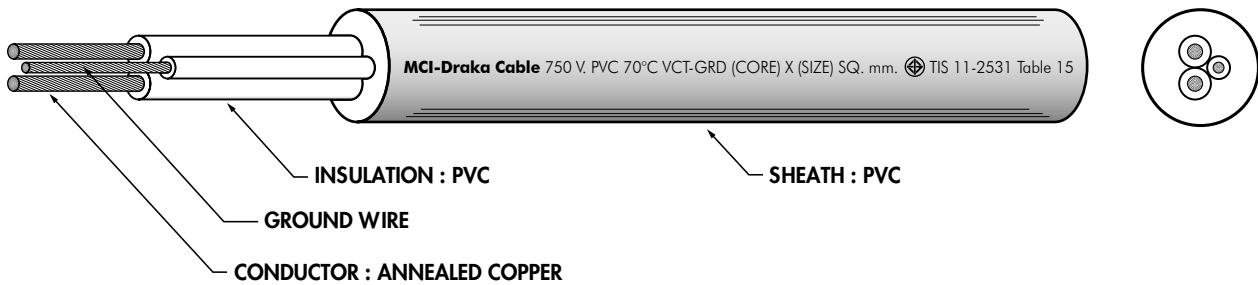
C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT-GRD

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR WITH GROUND.



Application : For mobile-electrical equipment used in mines, factories, farm or house hold appliances. This cable is particularly suitable for use in chemical factories or in places where cables come in contact with oils.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 750 volts.

Standard : TIS 11-2531 TABLE 15

Construction : Conductor : Flexible annealed copper wires, sizes 1 mm² up to 35 mm²
Ground conductor sizes 1 mm² up to 10 mm²

Insulation : Polyvinyl chloride
(Light Grey, and Black colour for 2 cores ; Light Grey, Black and Red colour for 3 cores; Light Grey, Black, Red and Blue colour for 4 cores;)

Sheath : Polyvinyl chloride (Black colour)

Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm.)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground Insulation (mm)	Sheath thickness (mm)	Maximum Overall diameter (mm)	Minimum insulation resistand at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
2	1	32/0.20	0.8	1	0.6	1.2	10.5	0.0127	14	110	500/D
	1.5	30/0.25	0.8	1	0.6	1.4	11.5	0.0111	18	130	500/D
	2.5	50/0.25	0.8	1.5	0.6	1.4	13.0	0.0092	24	170	500/D
	4	56/0.30	0.9	2.5	0.6	1.6	15.5	0.0084	33	250	500/D
	6	84/0.30	0.9	4	0.6	1.6	17.0	0.0071	42	320	500/D
	10	80/0.40	1.1	4	0.6	1.8	20.0	0.0068	60	520	500/D
	16	126/0.40	1.1	6	0.6	2.2	23.0	0.0050	80	730	500/D
	25	196/0.40	1.3	6	0.6	2.4	27.5	0.0048	104	1030	500/D
35	276/0.40	1.3	10	0.6	2.6	31.0	0.0041	130	1410	500/D	

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

VCT-GRD

750 V 70°C PVC INSULATED AND SHEATHED FLEXIBLE CONDUCTOR WITH GROUND.

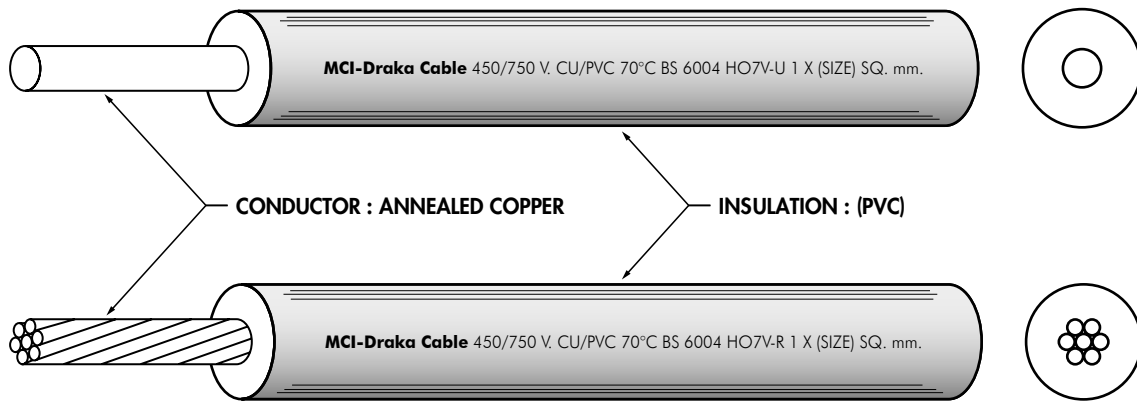
Number of core	Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm.)	Insulation thickness (mm)	Nominal cross sectional area of ground conductor (mm ²)	Thickness of ground insulation (mm)	Sheath thickness (mm)	Maximum Overall diameter (mm)	Minimum insulation resistand at 70°C (MΩ_km)	Maximum continuous current rating in free air (Ampere)	Cable weight (approx.) (kg/km)	Standard length (m)
3	1	32/0.20	0.8	1	0.6	1.4	11.5	0.0127	12	140	500/D
	1.5	30/0.25	0.8	1	0.6	1.4	12.5	0.0111	15	160	500/D
	2.5	50/0.25	0.8	1.5	0.6	1.4	14.5	0.0092	20	210	500/D
	4	56/0.30	0.9	2.5	0.6	1.6	17.0	0.0084	27	310	500/D
	6	84/0.30	0.9	4	0.6	1.8	19.0	0.0071	35	420	500/D
	10	80/0.40	1.1	4	0.6	2.0	23.5	0.0068	51	680	500/D
	16	126/0.40	1.1	6	0.6	2.4	27.5	0.0050	67	950	500/D
	25	196/0.40	1.3	6	0.6	2.6	32.5	0.0048	87	1350	500/D
	35	276/0.40	1.3	10	0.6	2.8	36.5	0.0041	108	1860	500/D
4	1	32/0.20	0.8	1	0.6	1.6	13.0	0.0127	11	180	500/D
	1.5	30/0.25	0.8	1	0.6	1.6	13.5	0.0111	13	210	500/D
	2.5	50/0.25	0.8	1.5	0.6	1.6	16.0	0.0092	18	280	500/D
	4	56/0.30	0.9	2.5	0.6	1.8	18.5	0.0084	25	400	500/D
	6	84/0.30	0.9	4	0.6	2.0	21.0	0.0071	32	530	500/D
	10	80/0.40	1.1	4	0.6	2.2	26.0	0.0068	46	1080	500/D
	16	126/0.40	1.1	6	0.6	2.6	30.5	0.0050	60	1280	500/D
	25	196/0.40	1.3	6	0.6	2.8	36.0	0.0048	78	1810	500/D
	35	276/0.40	1.3	10	0.6	3.1	40.5	0.0041	97	2430	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

HO7V-U, HO7V-R

450/750 V 70°C PVC INSULATED NON SHEATHED, SINGLE CORE



Application : Building wiring, for installation on insulator or in raceway, dry and wet location.

Classification : Maximum conductor temperature 70°C
Circuit voltage does not exceed 450 volts

Standard : BS 6004

Construction : Conductor : Solid or stranded annealed copper, size 1.5 mm² up to 630 mm²

Insulation : Polyvinyl chloride
(Any color as requested)

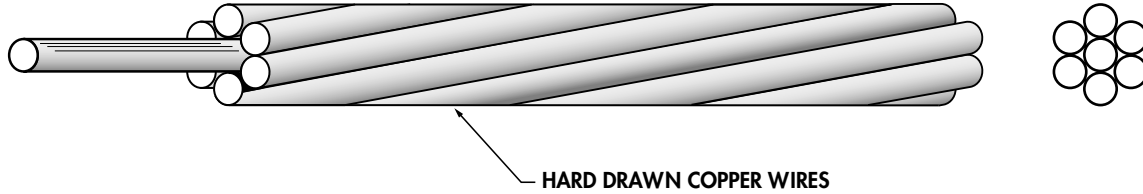
Nominal cross sectional area (mm ²)	Number and diameter of wire (No./mm.)	Insulation thickness (mm)	Approx. overall diameter (mm)	Minimum insulation resistance at 70°C (MΩ_km)	Maximum Conductor resistance at 20°C (Ω/km)	Cable weight (approx.) (kg/km)	Standard length (m)
1.5	1/1.38	0.7	2.8	0.011	12.1	20	100/C
1.5	7/0.53	0.7	3.0	0.010	12.1	21	100/C
2.5	1/1.78	0.8	3.4	0.010	7.41	32	100/C
2.5	7/0.67	0.8	3.6	0.0099	7.41	32	100/C
4	1/2.25	0.8	3.8	0.0087	4.61	45	100/C
4	7/0.85	0.8	4.1	0.0082	4.61	48	100/C
6	7/1.04	0.8	4.7	0.0070	3.08	70	100/C
10	7/1.35	1.0	6.0	0.0067	1.83	115	100/C
16	7/1.70	1.0	7.1	0.0056	1.15	175	100/C
25	7/2.14	1.2	8.8	0.0053	0.727	276	100/C
35	19/1.53	1.2	10.0	0.0046	0.524	367	100/C
50	19/1.78	1.4	11.7	0.0046	0.387	498	500/D
70	19/2.14	1.4	13.5	0.0040	0.268	704	500/D
95	19/2.52	1.6	15.8	0.0039	0.193	974	500/D
120	37/2.03	1.6	17.3	0.0035	0.153	1206	500/D
150	37/2.25	1.8	19.3	0.0035	0.124	1485	500/D
185	37/2.52	2.0	21.6	0.0035	0.0991	1863	500/D
240	61/2.25	2.2	24.6	0.0034	0.0754	2429	500/D
300	61/2.52	2.4	27.4	0.0033	0.0601	3042	500/D
400	61/2.85	2.6	30.8	0.0031	0.0470	3878	500/D
500	61/3.20	2.8	34.3	0.0030	0.0366	4874	500/D
630	127/2.52	2.8	38.2	0.0027	0.0283	6195	500/D

C : Packing in coil.

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

BARE STRANDED CONDUCTOR



Application : For grounding conductor from ground to air terminal and other application, wiring in air or in plastic tube.

Standard : TIS 11-2531

Construction : Conductor : Annealed copper wires, concentric stranded conductor, sizes 10 mm² up to 500 mm²
Direction of outermost layer S

Nominal cross sectional area (mm ²)	Number and diameter of wire (No/mm)	Overall conductor diameter (approx.) (mm)	Maximum conductor resistance at 20°C (MΩ.km)	Conductor weight (approx.) (kg/km)	Standard length (m)
10	7/1.35	4	1.83	92	1000/D
16	7/1.70	5	1.15	145	1000/D
25	7/2.14	6	0.727	230	1000/D
35	19/1.53	8	0.524	320	1000/D
50	19/1.78	9	0.387	430	1000/D
70	19/2.14	11	0.268	620	1000/D
95	19/2.52	13	0.193	860	1000/D
120	37/2.03	14	0.153	1085	500/D
150	37/2.25	16	0.124	1335	500/D
185	37/2.52	18	0.0991	1675	500/D
240	61/2.25	20	0.0754	2200	500/D
300	61/2.52	23	0.0601	2760	500/D
400	61/2.85	26	0.0470	3530	500/D
500	61/3.20	29	0.0366	4450	500/D

D : Packing in drum.

Note: We reserve the right to alter this specification without notice.

TECHNICAL INFORMATION

WIRE GAUGES

BRITISH IMPERIAL STANDARD WIRE GAUGE (S.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	kg/km
4/0	400	0.4000	10.16	160,000	0.1257	81.1	484.3	720.74
3/0	372	0.3720	9.4488	138,384	0.1087	70.1	418.9	623.37
2/0	348	0.3480	8.8392	121,104	0.0951	61.36	366.6	545.53
1/0	324	0.3240	8.2296	104,976	0.082448	53.19	317.8	472.88
1	300	0.300	7.62	90,000	0.070686	45.60	272.4	405.42
2	276	0.276	7.0104	76,176	0.059829	38.60	230.6	343.15
3	252	0.252	6.4008	63,504	0.049876	32.18	192.2	286.06
4	232	0.232	5.8928	53,824	0.042273	27.27	162.9	242.46
5	212	0.212	5.3848	44,944	0.035299	22.77	136.0	202.46
6	192.0	0.192	4.8768	36,864	0.028953	18.68	111.6	166.06
7	176	0.176	4.4704	30,976	0.024329	15.70	93.8	139.54
8	160	0.160	4.064	25,600	0.020106	12.972	77.5	115.32
9	144	0.144	3.6576	20,736	0.016286	10.507	62.8	93.408
10	128	0.128	3.2512	16,384	0.012868	8.302	49.6	73.804
11	116	0.116	2.9464	13,456	0.010568	6.818	40.7	60.614
12	104	0.104	2.6416	10,816	0.008495	5.481	32.7	48.722
13	92	0.092	2.3368	8,464	0.006648	4.289	25.6	38.127
14	80	0.080	2.032	6,400	0.005027	3.243	19.4	28.830
15	72	0.072	1.8288	5,184	0.004072	2.627	15.7	23.352
16	64	0.064	1.6256	4,096	0.003217	2.075	12.4	18.451
17	56	0.056	1.4224	3,136	0.002463	1.589	9.493	14.127
18	48	0.048	1.2192	2,304	0.001810	1.1675	6.974	10.379
19	40	0.040	1.016	1,600	0.001257	0.8107	4.843	7.207
20	36	0.036	0.9144	1,296	0.001018	0.6567	3.923	5.838
21	32	0.032	0.8128	1,024.0	0.000804	0.5189	3.100	4.613
22	28	0.028	0.7112	784.0	0.000616	0.3973	2.373	3.532
23	24	0.024	0.6096	576.0	0.000452	0.2919	1.744	2.595
24	22	0.022	0.5588	484.0	0.000380	0.2452	1.465	2.180
25	20	0.020	0.508	400.0	0.000314	0.2027	1.211	1.802
26	18	0.018	0.4572	324.0	0.000254	0.1642	0.98073	1.460
27	16	0.0164	0.41656	269.0	0.000211	0.13628	0.81413	1.212

WIRE GAUGES

BRITISH IMPERIAL STANDARD WIRE GAUGE (S.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	kg/km
28	14.9	0.0149	0.37846	222.0	0.000174	0.11249	0.67201	1.00008
29	13.6	0.0136	0.34544	185.0	0.000145	0.09372	0.55986	0.83318
30	12.4	0.0124	0.31496	153.8	0.000121	0.07791	0.46542	0.69263
31	11.6	0.0116	0.29464	134.56	0.0001057	0.06818	0.40731	0.60614
32	11	0.0108	0.27432	116.64	0.0000916	0.05910	0.35306	0.52542
33	10	0.0100	0.254	100.00	0.0000785	0.05067	0.30269	0.45046
34	9.2	0.0092	0.23368	84.64	0.0000665	0.04289	0.25620	0.38127
35	8.4	0.0084	0.21336	70.56	0.0000554	0.03575	0.21358	0.31785
36	8	0.0076	0.19304	57.76	0.0000454	0.02927	0.174836	0.26019
37	7	0.0068	0.17272	46.24	0.0000363	0.02343	0.139966	0.20829
38	1	0.0006	0.01524	0.36	0.0000003	0.00018	0.001090	0.00162
39	5	0.0052	0.13208	27.04	0.0000212	0.01370	0.081849	0.12181
40	5	0.0048	0.12192	23.04	0.0000181	0.01167	0.069741	0.10379
41	4	0.0044	0.11176	19.36	0.0000152	0.00981	0.058602	0.08721
42	4	0.0040	0.1016	16.00	0.0000126	0.00811	0.048431	0.07207
43	4	0.0036	0.09144	12.96	0.0000102	0.00657	0.039229	0.05838
44	3	0.0032	0.08128	10.24	0.0000080	0.00519	0.030996	0.04613
45	3	0.0028	0.07112	7.84	0.0000062	0.00397	0.023731	0.03532
46	2	0.0024	0.06096	5.76	0.0000045	0.00292	0.017435	0.02595
47	2	0.0020	0.0508	4.00	0.0000031	0.00203	0.012108	0.01802
48	2	0.0016	0.04064	2.56	0.0000020	0.00130	0.007749	0.01153
49	1	0.0012	0.03048	1.44	0.0000011	0.00073	0.004359	0.00649
50	1	0.0010	0.0254	1.00	0.0000008	0.00051	0.003027	0.00450

WIRE GAUGES

BIRMINGHAM IRON WIRE GAUGE (B.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	Kg/km
4/0	454	0.4540	11.5316	206,116	0.1619	104.4	623.9	928.48
3/0	425	0.4250	10.795	180,625	0.1419	91.5	546.9	813.65
2/0	380	0.3800	9.652	144,400	0.1134	73.17	437.1	650.47
1/0	340	0.3400	8.636	115,600	0.090792	58.58	349.9	520.74
1	300	0.300	7.62	90,000	0.070686	45.60	272.4	405.42
2	284	0.284	7.2136	80,656	0.063347	40.87	244.2	363.33
3	259	0.259	6.5786	67,081	0.052658	33.99	203.1	302.18
4	238	0.238	6.0452	56,644	0.044488	28.70	171.5	255.16
5	220	0.220	5.588	48,400	0.038013	24.52	146.5	218.02
6	203.0	0.203	5.1562	41,209	0.032366	20.88	124.8	185.63
7	180	0.180	4.572	32,400	0.025447	16.42	98.08	145.95
8	165	0.165	4.191	27,225	0.021383	13.795	82.40	122.64
9	148	0.148	3.7592	21,904	0.017203	11.099	66.29	98.670
10	134	0.134	3.4036	17,956	0.014103	9.098	54.34	80.885
11	120	0.120	3.048	14,400	0.011310	7.297	43.59	64.867
12	109	0.109	2.7686	11,881	0.009331	6.020	35.96	53.520
13	95	0.095	2.413	9,025	0.007088	4.573	27.32	40.654
14	83	0.083	2.1082	6,889	0.005411	3.491	20.85	31.032
15	72	0.072	1.8288	5,184	0.004072	2.627	18.46	23.352
16	65	0.065	1.651	4,225	0.003318	2.141	12.79	19.032
17	58	0.058	1.4732	3,364	0.002642	1.705	10.180	15.154
18	49	0.049	1.2446	2,401	0.001886	1.2166	7.269	10.816
19	42	0.042	1.0668	1,764	0.001385	0.8938	5.388	7.946
20	35	0.035	0.889	1,225	0.000962	0.6207	3.708	5.518
21	32	0.032	0.8128	1,024.0	0.000804	0.5189	3.099	4.613
22	28	0.028	0.7112	784.0	0.000616	0.3973	2.373	3.532
23	25	0.025	0.635	625.0	0.000491	0.3167	1.892	2.815
24	22	0.022	0.5588	484.0	0.000380	0.2452	1.465	2.180
25	20	0.020	0.508	400.0	0.000314	0.2027	1.211	1.802
26	18	0.018	0.4572	324.0	0.000254	0.1642	0.9809	1.460
27	16	0.016	0.4064	256.0	0.000201	0.12972	0.7750	1.153

WIRE GAUGES

BIRMINGHAM IRON WIRE GAUGE (B.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	Kg/km
28	14	0.014	0.3556	196.0	0.000154	0.09931	0.5931	0.8829
29	13	0.013	0.3302	169.0	0.000133	0.08563	0.5114	0.76128
30	12	0.012	0.3048	144.0	0.000113	0.07297	0.4359	0.64867
31	10	0.010	0.254	100.00	0.0000785	0.05067	0.3027	0.45046
32	9	0.009	0.2286	81.00	0.0000636	0.04104	0.2452	0.36488
33	8	0.008	0.2032	64.00	0.0000503	0.03243	0.1937	0.28830
34	7	0.007	0.1778	49.00	0.0000385	0.02483	0.1483	0.22073
35	5	0.005	0.127	25.00	0.0000196	0.01267	0.07565	0.11262
36	4	0.004	0.1016	16.00	0.0000126	0.00811	0.04845	0.07207

WIRE GAUGES

AMERICAN WIRE GAUGE (A.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	Kg/km
4/0	460	0.4600	11.684	211.600	0.1662	107.2	640.5	953.18
3/0	409.6	0.4096	10.4038	167.772	0.1318	85.0	507.9	755.75
2/0	364.8	0.3648	9.26592	133.079	0.1045	67.43	402.8	599.47
1/0	324.9	0.3249	8.25246	105.560	0.082907	53.49	319.5	475.51
1	289.3	0.2893	7.34822	83.694	0.065734	42.41	253.5	377.01
2	257.6	0.2576	6.54304	66.358	0.052117	33.62	200.9	298.92
3	229.4	0.2294	5.82676	52.624	0.041331	26.67	159.3	237.05
4	204.3	0.2043	5.18922	41.738	0.032781	21.15	126.4	188.02
5	181.9	0.1819	4.62026	33.088	0.025987	16.77	100.2	149.05
6	162.0	0.1620	4.1148	26.244	0.020612	13.30	79.46	118.22
7	144.3	0.1443	3.66522	20.822	0.016354	10.55	63.02	93.798
8	128.50	0.1285	3.2639	16.512	0.012969	8.367	49.97	74.382
9	114.4	0.1144	2.90576	13.087	0.010279	6.631	39.63	58.954
10	101.9	0.1019	2.58826	10.384	0.008155	5.261	31.43	46.774
11	90.74	0.09074	2.3048	8.234	0.006467	4.172	24.92	37.090
12	80.81	0.08081	2.05257	6.530	0.005129	3.309	19.77	29.416
13	71.96	0.07196	1.82778	5.178	0.004067	2.624	15.68	23.326
14	64.08	0.06408	1.62763	4.106	0.003225	2.081	12.43	18.497
15	57.07	0.05707	1.44958	3.257	0.002558	1.650	9.858	14.672
16	50.82	0.05082	1.29083	2.583	0.002028	1.309	7.818	11.63
17	45.26	0.04526	1.1496	2.048	0.001609	1.038	6.200	9.228
18	40.3	0.04030	1.02362	1.624	0.001276	0.8229	4.917	7.316
19	35.89	0.03589	0.91161	1.288	0.001012	0.6527	3.899	5.802
20	31.96	0.03196	0.81178	1.021	0.000802	0.5176	3.092	4.601
21	28.46	0.02846	0.72288	810.0	0.000636	0.4104	2.452	3.649
22	25.35	0.02535	0.64389	642.6	0.000505	0.3256	1.945	2.895
23	22.57	0.02257	0.57328	509.4	0.000400	0.2581	1.542	2.295
24	20.10	0.02010	0.51054	404.0	0.000317	0.2047	1.233	1.820
25	17.90	0.01790	0.45466	320.4	0.000252	0.1624	0.9699	1.443
26	15.94	0.01594	0.40488	254.1	0.000200	0.1287	0.7692	1.14
27	14.20	0.01420	0.36068	201.6	0.000158	0.10217	0.6100	0.9083

WIRE GAUGES

AMERICAN WIRE GAUGE (A.W.G.)

Number of Wire Gauge	Diameter			Sectional area			Weight	
	Mil	Inch	mm.	Cir. Mil	Inch ²	mm ²	lb/100 ft	Kg/km
28	12.64	0.01264	0.32106	159.8	0.000125	0.08096	0.4837	0.7197
29	11.26	0.01126	0.286	126.8	0.000100	0.06424	0.3836	0.5711
30	10.03	0.01003	0.25476	100.6	0.000079	0.05098	0.3042	0.4532
31	8.928	0.008928	0.22677	79.71	0.0000626	0.04039	0.2413	0.3591
32	7.950	0.007950	0.20193	63.20	0.0000496	0.03203	0.1913	0.2847
33	7.080	0.007080	0.17983	50.13	0.0000394	0.02540	0.1517	0.2258
34	6.305	0.006305	0.16015	39.75	0.0000312	0.02014	0.1203	0.1791
35	5.615	0.005615	0.14262	31.53	0.0000248	0.01598	0.09542	0.1420
36	5.000	0.005000	0.127	25.00	0.0000196	0.01267	0.07567	0.1126
37	4.453	0.004453	0.11311	19.83	0.0000156	0.010048	0.06001	0.0893
38	3.965	0.003965	0.10071	15.72	0.0000123	0.007966	0.04759	0.0708
39	3.531	0.003531	0.08969	12.47	0.0000098	0.006318	0.03774	0.0562
40	3.145	0.003145	0.07988	9.89	0.0000078	0.005012	0.02993	0.0446
41	2.800	0.002800	0.07112	7.84	0.0000062	0.003973	0.02374	0.0353
42	2.494	0.002494	0.06335	6.22	0.0000049	0.003152	0.01882	0.0280
43	2.221	0.002221	0.05641	4.93	0.0000039	0.002500	0.01493	0.0222
44	1.978	0.001978	0.05024	3.91	0.0000031	0.001982	0.01184	0.0176

CONTINUOUS CURRENT RATING FOR EACH CONDITION OF WIRES & CABLES

1. Maximum allowable current carrying capacities for the insulated cables installed in locations where the ambient temperature is not in excess of 40°C shall not be less than those stated in the tables.
2. In locations where the ambient temperature exceeds 40°C the following multipliers must be used to obtain the maximum allowable current carrying capacities.

Temperature °C	MULTIPLIER		
	INSULATION GRADE		
	60°C	75°C	90°C
45	0.89	0.93	0.95
50	0.71	0.85	0.89
55	0.50	0.76	0.84
60	-	0.66	0.78
70	-	0.38	0.63
75	-	-	0.54
80	-	-	0.45
85	-	-	0.32
90	-	-	-

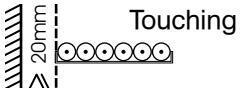
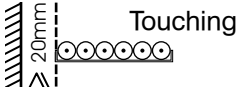
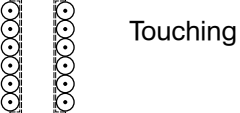
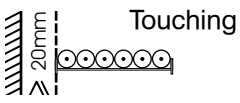
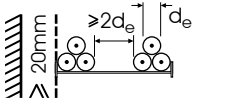
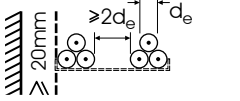
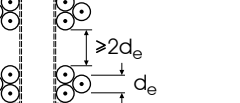
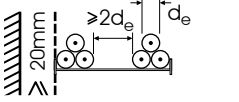
3. In a single conduit where the conductors are installed, the allowable ampacity of each conductor shall be reduced as shown in the following table.

LOCATIONS	Multiplier			
	Number of Conductors			
	1-3 cores	4 cores	5 cores	7-10 cores
Metal conduit.	0.70	0.63	0.56	0.49
Hard Vinyl (PVC) Conduit	0.60	0.53	0.46	0.39

4. Correction factors for groups of more than one circuit of single core cables and multicore cables.
 - 4.1 Correction factors for groups of more than one circuit of Single Core Cables in free air.
 - 4.2 Correction factors for groups of more than one Multicore Cables in free air.
5. These ampacity tables are calculated by using the value of the purity of copper 99.99% and MCI-Draka special grade Polyethylene (PE) and Polyvinyl chloride (PVC).
6. The equivalent cross-sectional area of the aluminium and copper shall be as following (Can be used as ampacity comparison.)

$$(\text{Area of conductor}) = (\text{Area of Cu conductor}) \times 1.6$$

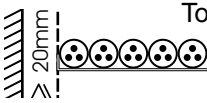
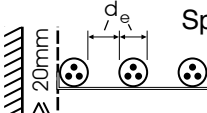
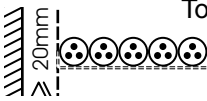
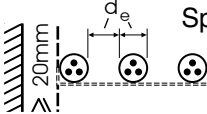
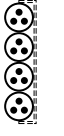
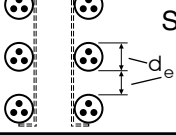
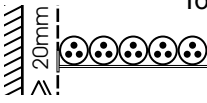
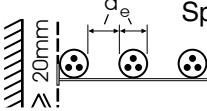
4.1 Correction factors for groups of more than one circuit of Single Core Cables in free air.

Installation method (See Note 1)		Number of three-phase circuit (Note 4)				Use as a multiplier to rating for
		Number of trays	1	2	3	
Unperforated trays (Note 2)		1	0.95	0.90	0.85	Three cables in horizontal formation
		2	0.92	0.85	0.80	
		3	0.90	0.80	0.75	
Perforated trays (Note 2)		1	0.95	0.90	0.85	Three cables in horizontal formation
		2	0.95	0.85	0.80	
		3	0.90	0.85	0.80	
Vertical Perforated trays (Note 3)		1	0.95	0.85	-	Three cables in vertical formation
		2	0.90	0.85	-	
Ladder supports, cleats, etc. (Note 2)		1	1.00	0.95	0.95	Three cables in horizontal formation
		2	0.95	0.90	0.90	
		3	0.95	0.90	0.85	
Unperforated trays (Note 2)		1	1.00	0.95	0.95	Three cables in trefoil formation
		2	0.95	0.90	0.85	
		3	0.95	0.90	0.85	
Perforated trays (Note 2)		1	1.00	1.00	0.95	Three cables in trefoil formation
		2	0.95	0.95	0.90	
		3	0.95	0.85	-	
Vertical Perforated trays (Note 3)		1	1.00	0.90	0.90	Three cables in trefoil formation
		2	1.00	0.90	0.85	
Ladder supports, cleats, etc. (Note 2)		1	1.00	1.00	1.00	Three cables in trefoil formation
		2	0.95	0.95	0.95	
		3	0.95	0.95	0.90	

Notes:

- 1) Factors are given for single layers of cables (or trefoil groups) as shown in the tables and DO NOT apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.
- 2) Values are given for a vertical spacing between trays of 300 mm. For closer spacing the factors should be reduced.
- 3) Values are given for a horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing the factors should be reduced.
- 4) For circuits having more than one cable in parallel per phase, each set of three conductors should be considered as a circuit for the purposes of this table.

4.2 Correction factors for groups of more than one circuit of Single Core Cables in free air.

Installation method (See Note 1)		Number of trays	Number of Cable						
			1	2	3	4	6	9	
Unperforated trays (Notes 2)	 Touching	1	0.95	0.85	0.80	0.75	0.70	0.70	
		2	0.95	0.85	0.75	0.75	0.70	0.65	
		3	0.95	0.85	0.75	0.70	0.65	0.60	
	 Spaced	1	1.00	0.95	0.95	0.95	0.90	-	
		2	0.95	0.95	0.90	0.90	0.85	-	
		3	0.95	0.95	0.90	0.90	0.85	-	
Perforated trays (Noted 2)	 Touching	1	1.00	0.90	0.80	0.80	0.75	0.75	
		2	1.00	0.85	0.80	0.75	0.75	0.70	
		3	1.00	0.85	0.80	0.75	0.70	0.65	
	 Spaced	1	1.00	1.00	1.00	0.95	0.90	-	
		2	1.00	1.00	0.95	0.90	0.85	-	
		3	1.00	1.00	0.95	0.90	0.85	-	
Vertical Perforated trays (Note 3)	 Touching	1	1.00	0.90	0.80	0.75	0.75	0.70	
		2	1.00	0.90	0.80	0.75	0.70	0.70	
	 Spaced	1	1.00	0.90	0.90	0.90	0.85	-	
		2	1.00	0.90	0.90	0.85	0.85	-	
Ladder supports, cleats, etc. (Note 2)	 Touching	1	1.00	0.85	0.80	0.80	0.80	0.80	
		2	1.00	0.85	0.80	0.80	0.75	0.75	
		3	1.00	0.85	0.80	0.75	0.75	0.70	
	 Spaced	1	1.00	1.00	1.00	1.00	1.00	-	
		2	1.00	1.00	1.00	0.95	0.95	-	
		3	1.00	1.00	0.95	0.95	0.95	-	

Notes:

- 1) Factors apply to single layer groups of cables as shown above and DO NOT apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.
- 2) Values are given for a vertical spacing between trays of 300 mm. For closer vertical spacing the factors should be reduced.
- 3) Values are given for a horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing the factors should be reduced.

Temperature correction factors for conductor resistance (Reference temperature 20°C)

Temperature (t) °C	Copper	Aluminum
0	1.085	1.088
1	1.081	1.083
2	1.076	1.078
3	1.072	1.074
4	1.067	1.069
5	1.063	1.064
6	1.058	1.060
7	1.054	1.055
8	1.049	1.051
9	1.045	1.046
10	1.041	1.042
11	1.037	1.038
12	1.032	1.033
13	1.028	1.029
14	1.024	1.025
15	1.020	1.021
16	1.016	1.016
17	1.012	1.012
18	1.008	1.008

Temperature (t) °C	Copper	Aluminum
19	1.004	1.004
20	1.000	1.000
21	0.996	0.996
22	0.992	0.992
23	0.988	0.988
24	0.985	0.984
25	0.981	0.980
26	0.977	0.976
27	0.973	0.973
28	0.970	0.969
29	0.966	0.965
30	0.962	0.961
31	0.959	0.958
32	0.955	0.954
33	0.951	0.950
34	0.948	0.947
35	0.944	0.943
36	0.941	0.939
37	0.937	0.936

The correction factor formula :

1 Plain annealed copper conductors

$$\text{factor} = \frac{1}{1 + 0.00393 (t - 20)}$$

2 Plain aluminum conductors

$$\text{factor} = \frac{1}{1 + 0.00403 (t - 20)}$$

where:

t : temperature of the conductor at the time of measurement in °C

Temperature correction factors for insulation resistance (Reference temperature 20°C)

Temperature (t) °C	natural Rubber	Isobutylene Isoprene rubber	SBR	Silicone Rubber	Chloroprene Rubber	EPR	Vinyl	Temperature (t) °C	natural Rubber	Isobutylene Isoprene rubber	SBR	Silicone Rubber	Chloroprene Rubber	EPR	Vinyl
0	0.37	0.34	0.34	0.26	0.14	0.42	0.42	18	0.91	0.90	0.90	0.87	0.81	0.91	0.85
1	0.39	0.35	0.36	0.28	0.15	0.43	0.43	19	0.95	0.96	0.95	0.93	0.90	0.95	0.92
2	0.41	0.38	0.38	0.30	0.17	0.45	0.44	20	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	0.43	0.40	0.40	0.32	0.19	0.48	0.45	21	1.05	1.07	1.09	1.07	1.10	1.05	1.11
4	0.45	0.42	0.42	0.34	0.21	0.50	0.46	22	1.10	1.14	1.18	1.14	1.20	1.10	1.24
5	0.48	0.44	0.44	0.37	0.23	0.52	0.48	23	1.16	1.22	1.27	1.23	1.30	1.15	1.39
6	0.50	0.46	0.47	0.40	0.25	0.54	0.49	24	1.22	1.30	1.36	1.31	1.45	1.20	1.55
7	0.53	0.49	0.50	0.43	0.28	0.56	0.50	25	1.28	1.38	1.45	1.40	1.60	1.25	1.74
8	0.55	0.52	0.53	0.46	0.31	0.59	0.52	26	1.35	1.45	1.55	1.50	1.75	1.30	1.96
9	0.58	0.54	0.56	0.49	0.34	0.62	0.53	27	1.42	1.55	1.70	1.61	1.95	1.35	2.22
10	0.61	0.58	0.59	0.52	0.37	0.65	0.55	28	1.49	1.65	1.85	1.73	2.15	1.42	2.52
11	0.64	0.61	0.62	0.56	0.41	0.68	0.57	29	1.56	1.77	2.00	1.87	2.35	1.48	2.87
12	0.67	0.64	0.65	0.60	0.45	0.70	0.60	30	1.64	1.89	2.15	2.01	2.60	1.55	3.25
13	0.71	0.68	0.69	0.64	0.49	0.74	0.63	31	1.72	2.00	2.30	2.16	2.90	1.62	3.75
14	0.74	0.72	0.73	0.69	0.54	0.77	0.66	32	1.81	2.15	2.50	2.32	3.20	1.70	4.25
15	0.78	0.76	0.77	0.72	0.60	0.80	0.70	33	1.90	2.32	2.70	2.49	3.50	1.78	4.90
16	0.82	0.81	0.81	0.78	0.66	0.84	0.74	34	2.00	2.50	2.90	2.68	3.80	1.84	5.60
17	0.86	0.85	0.85	0.83	0.73	0.86	0.79	35	2.10	2.69	3.20	2.88	4.20	1.90	6.45

Remark :

High insulation resistance materials such as polyethylene, shall comply with the detail specification. For insulation without a specification, Factor = 1

AC/DC RESISTANCE RATIOS

The AC/DC resistance ratio of the conductor is given by the following formula.

$$k_2 = 1 + \lambda_s + \lambda_p$$

where :

k_2 = AC/DC resistance ratio of conductor

λ_s = skin effect factor

λ_p = proximity effect factor

The skin effect factor is given by;

$$\lambda_s = \frac{X^4}{192 + 0.8X^4}$$

where :

$$x = \sqrt{\frac{8\pi f}{R_0 k_1 \times 10^4}}$$

f = supply frequency, Hz

R_0 = DC resistance of conductor at 20°C, Ω/km

k_1 = reciprocal factor of temperature correction factor

The proximity effect factor is given by;

$$\lambda_p = \frac{X'^4}{192 + 0.8X'^4} \left(\frac{d_1}{S}\right)^2 \left\{ 0.312 \left(\frac{d_1}{S}\right)^2 + \frac{1.18}{\frac{X'^4}{192 + 0.8X'^4} + 0.27} \right\}$$

where :

$$X' = \sqrt{0.8 X}$$

d_1 = diameter of conductor, mm

S = distance between conductor axes, mm

PROPERTIES OF INSULATION AND SHEATH MATERIALS

RESISTANCE TO INDUSTRIAL CHEMICALS

Reagent	Relative Rating							Reagent	Relative Rating						
	BR	CR	EPR	PVC	PE	XLPE	NYLON		BR	CR	EPR	PVC	PE	XLPE	NYLON
Acetone	⊙	○	⊙	×	⊙	⊙	○	Chloring Gas	△	△	×	×	×	×	⊙
Aniline	○	×	○	○	○	○	○	Ozone	○	○	○	⊙	⊙	×	
Ethanol	⊙	⊙	⊙	△	○	○	○	Bromine	×	×	×	×	×	×	
Ethyleneglycol	○	⊙	○	△	⊙	⊙	○	Nitric Acid, conc.	×	×	×	×	△	△	×
Xylene	×	×	×	×	○	○	○	Nitric Acid, 10%	×	×	△	○	○	○	△
Glycerin	⊙	⊙	⊙	○	⊙	⊙	○	Fuming Nitric Acid	×	×	×	×	×	×	○
Cresol	○	△	○	△	○	○	×	Tap Water	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Chloroform	×	×	×	×	△	△	×	Sea Water	○	⊙	⊙	⊙	⊙	⊙	⊙
Acetic Acid, conc.	○	△	○	×	○	○	△	Sulfuric Acid, conc.	×	×	×	△	△	△	×
Acetic Acid, 10%	○	×	○	△	⊙	⊙	○	Sulfuric Acid, 10%	○	○	○	⊙	○	○	○
Ethyl Acetate	○	×	△	×	○	○	○	Phosphoric Acid	○	△	○	×	⊙	⊙	○
Carbon Tetrachloride	×	×	×	×	×	×	△	Sodium Hydroxide, 10%	○	○	○	○	○	○	⊙
Cyclohexane	△	×	×		△	△		Freon	×	×		○	○	○	
Diocyl Phthalate	⊙	×		×				Formic Acid	△	×		○	○	○	⊙
Trichloroethylene	×	×	×	△	△	△	△	JIC No. 1 Oil (OF Oil)	×	△	×	△	○	○	
Trichlorobenzene	×	×	×		△	△		ASTM No.1 Oil	○	○	△	△	○	○	
Toluene	×	×	×	×	△	△	○	ASTM No.2 Oil	△	○	△	△	○	○	
Carbon Disulfide	×	×	×	△	○	○		ASTM No.3 Oil	×	△	×	△	△	△	
Phenol	○	△	○	×	○	○	×	Gasolin	×	△	×	×	○	○	○
Furtural	⊙	○	⊙	△	⊙	⊙		Creosote Oil	△	×	×	×	△	△	
Hexane	×	△	×	△	○	○		JIS No.2 Oil	×	×	×	△	○	○	
Benzene	×	×	×	×	△	△	○	Heavy Oil	×	×	×	△	△	△	
Methanol	⊙	⊙	⊙	×	○	○	△	Lube Oil	×	△	△	△	△	△	○
Methyl Ethyl Ketone	△	×	△	×	○	○		Silicone Oil	⊙	⊙	⊙	○	⊙	⊙	
Dioxane				×	○	○		Vegetable Oil	⊙	⊙	○		⊙	⊙	
Nitrobenzene	○	×	○	×	○	○		Petroleum Ether	△	△		×	⊙	⊙	
Formaline	○	○		○	○	○	△	Trans Oil	×	△	×	○	○	○	
Ammonia, conc.	○	△	○	△	○	○	○	Naphta	×	×	×	○	○	○	○
Ammonia, 10%	○	△	○	○	○	○	⊙	Coal Tar					○	○	
Sodium Chloride	○	○	○	○	⊙	⊙	⊙								
Hydrochloric Acid, conc.	○	○	○	△	○	○	×								
Hydrochloric Acid, 10%	⊙	○	○	○	⊙	⊙	○								

Where : ⊙ : High Resistance
 × : Not Applicable

○ : Fair Resistance
 △ : Poor Resistance, care on use

PROPERTIES OF INSULATION AND SHEATH MATERIALS

GENERAL COMPARISON DATA

Material	Polyvinyl Chloride	Low Density Polyethylene	Cross-linked Polyethylene	Polysoprene	Styrene Butadiene Copolymer	Polychloroprene	Chlorosulphonated Polyethylene
Designation	PVC	PE	XLPE	NR	SBR	CR	CSM
Chemical structure	$\left(\text{CH}_2 - \underset{\text{Cl}}{\text{CH}} \right)_n$	$\left(\text{CH}_2 - \text{CH}_2 \right)_n$	$\sim \text{CH}_2 - \text{CH} - \text{CH}_2 \sim$ $\sim \text{CH}_2 - \text{CH} - \text{CH}_2 \sim$	CH_2 $\left(\text{CH}_2 - \text{C} = \text{CH} - \text{CH}_2 \right)_n$	$\left(\text{CH}_2 - \text{C} = \text{CH} - \text{CH}_2 \right)_m$ $\left(\text{CH}_2 - \text{CH} \right)_n$	$\left(\text{CH}_2 - \text{C} = \text{CH} - \text{CH}_2 \right)_n$ $\left(\text{CH}_2 - \text{CH} - \text{CH}_2 \right)_m$	$\left(\text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH}_2 \right)_n$ $\left(\text{CH}_2 - \text{CH}_2 - \text{CH} - \text{CH}_2 \right)_m \left(\text{CH} \right)_n \text{SO}_2 \text{Cl}$
Density	1.3 – 1.5	0.91 – 0.93	0.91 – 0.93	0.93 – 0.94	0.93 – 0.94	1.15 – 1.23	1.10
Hardness (Shore)	D30 – 90	D45 – 60	D45 – 60	30 – 90	10 – 95	20 – 90	50 – 90
Max. Operating Temp.	70 °C	75	92	60	75	80	90
Emergency Temp. Rating	85 °C	90	130	85			
Short Circuit Temp. Rating	120 °C	150	250	150			
Brittleness Temp.	~ -40 °C	< -70	< -70	-55 – -58	-30 – -65	-30 – -50	-20 – -50
Softening Temp.	120 – 140 °C	100 – 115					
Thermal Expansion	$0.7 - 2.5 \times 10^{-4}$ /°C	$1.6 - 1.8 \times 10^{-4}$ /°C	$1.6 - 1.8 \times 10^{-4}$ /°C	1.8×10^{-4} /°C	1.8×10^{-4} /°C	1.9×10^{-4} /°C	1.8×10^{-4} /°C
Thermal Conductivity	$3.0 - 4.0 \times 10^{-4}$ Cal/cm·sec·°C	8×10^{-4} Cal/cm·sec·°C	8×10^{-4} Cal/cm·sec·°C	5.1×10^{-4} Cal/cm·sec·°C	5.8×10^{-4} Cal/cm·sec·°C	5.6×10^{-4} Cal/cm·sec·°C	6.3×10^{-4} Cal/cm·sec·°C
Specific Heat	0.3 – 0.5	0.55	0.55	0.52	–	0.52	0.52
Tensile Strength	1.5 – 2.5 kg/mm ²	1.5 – 2.0 kg/mm ²	1.8 – 3.0 kg/mm ²	0.8 – 3.0 kg/mm ²	0.4 – 3.0 kg/mm ²	0.7 – 3.0 kg/mm ²	0.5 – 2.0 kg/mm ²
Elongation	200 – 400 %	300 – 700 %	300 – 700 %	300 – 700 %	100 – 700 %	400 – 900 %	100 – 500 %
Abrasion Resistance	Excellent	Good	Excellent	Good	Good	Good	Good
Voltage Breakdown	20 – 30 kv/mm	30 – 50 kv/mm	30 – 50 kv/mm	16 – 32 kv/mm	16 – 30 kv/mm	15 – 25 kv/mm	16 – 32 kv/mm
Volume Resistivity	$10^{12} - 10^{15} \Omega\text{-cm}$	$> 10^{16} \Omega\text{-cm}$	$> 10^{16} \Omega\text{-cm}$	$10^{15} - 10^{16} \Omega\text{-cm}$	$10^{14} - 10^{15} \Omega\text{-cm}$	$10^{13} - 10^{12} \Omega\text{-cm}$	$10^{13} - 10^{14} \Omega\text{-cm}$
Dielectric Constant	5 – 7	2.2 – 2.4	2.2 – 2.4	3 – 5	3 – 5	7 – 10	7 – 10
Dissipation Factor (Tan δ)	0.1 – 0.03	< 0.0005	< 0.0005	0.3 – 0.5	2 – 5	1.7 – 4	1.7 – 4
Weathering	Good	Inferior*	Inferior*	Poor	Poor	Excellent	Good
Ozone Resistance	Excellent	Excellent	Excellent	Inferior	Inferior	Good	Good
Flame Resistance	Self-Extinguish	Burn	Burn	Burn	Burn	Self-Extinguish	Self-Extinguish
Track Resistance	Inferior	Excellent	Excellent	Fair	Fair	Inferior	Good
Water Resistance	Fair	Excellent	Excellent	Fair	Fair	Fair	Fair
Acid Resistance	Excellent	Good	Good	Good	Fair	Excellent	Good
Alkali Resistance	Excellent	Excellent	Excellent	Good	Good	Excellent	Excellent
Oil Resistance	Good	Excellent	Excellent	Poor	Inferior	Good	Fair
Solvent Resistance	Fair	Excellent	Excellent	Inferior	Inferior	Fair	Fair

* Improved to "good" with mixture of carbon black.

PROPERTIES OF INSULATION AND SHEATH MATERIALS

GENERAL COMPARISON DATA (Continued)

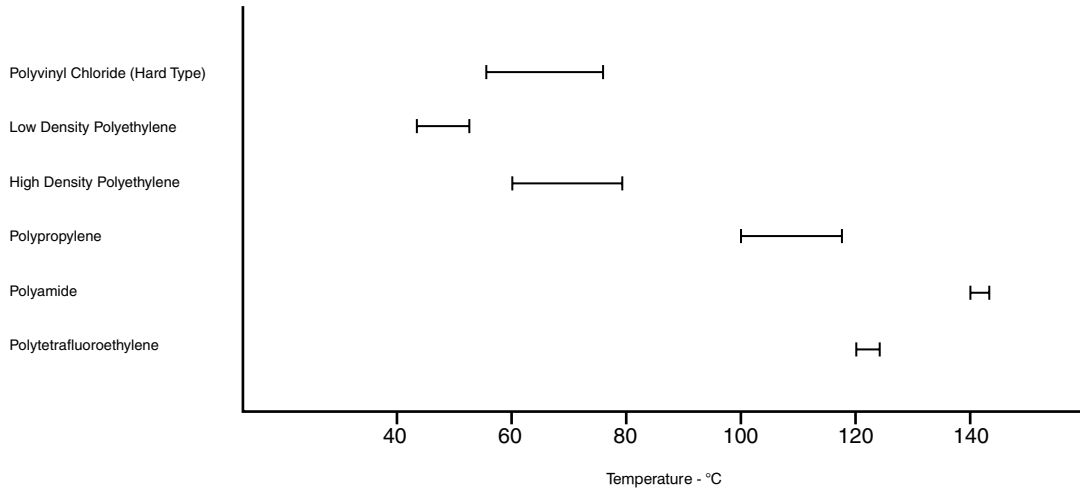
Material	Hexafluoropropylene Vinylidene fluoride Copolymer		Ethylene Propylene Copolymer		Polyorganosiloxane		Polypropylene		Polytetra Fluoroethylene		Polychloro Torluoroethylene		Polyamide	
	EPM, EPDM	FPM	Q	PP	PTFE	PCTFE	Nylon (12)							
Chemical structure	$\text{-(CH}_2\text{-CH}_2\text{)}_m\text{-(CH}_2\text{-CH(CH}_3\text{)-CH}_2\text{-CH}_2\text{)}_n\text{-}$	$\text{-(CF}_2\text{-CF(CH}_3\text{)-CF}_2\text{)}_m\text{-(CF}_2\text{-CF}_2\text{)}_n\text{-}$	$\text{-(Si(CH}_3\text{)-O)}_n\text{-}$	$\text{-(CH}_2\text{-CH(CH}_3\text{)-CH}_2\text{)}_n\text{-}$	$\text{-(CF}_2\text{-CF(CH}_3\text{)-CF}_2\text{)}_n\text{-}$	$\text{-(CF}_2\text{-CF(CH}_3\text{)-CF}_2\text{)}_n\text{-}$	$\text{-(HN(CH}_2\text{)}_5\text{-C)}_n\text{-}$ O							
Density	0.86 – 0.87	1.82 – 1.85	0.97 – 1.40	0.9 – 0.915	2.13 – 2.2	2.1	1.01 – 1.02							
Hardness (Shore)	40 – 85	60 – 90	50 – 85	R85 – 110	D50 – 65	R110 – 115	R110 – 110							
Max. Operating Temp.	90	200	180	80	260	180	90							
Emergency Temp. Rating	°C													
Short Circuit Temp. Rating	°C			150	310		120							
Brittleness Temp.	°C	-44 – -60	70 – -100	< -70	< -70	< -70	-70							
Softening Temp.	°C					210	170 – 180							
Thermal Expansion	/°C													
Thermal Conductivity	Cal/cm · sec · °C	1.6 x 10 ⁻⁴	2.6 x 10 ⁻⁴	0.6 – 8.5 x 10 ⁻⁵	10 x 10 ⁻⁵	4.5 – 7.0 x 10 ⁻⁵	12 x 10 ⁻⁵							
Specific Heat	Cal/°c.g.	5.5 x 10 ⁻⁴	5.7 x 10 ⁻⁴	2.8 x 10 ⁻⁴	6 x 10 ⁻⁴	6 x 10 ⁻⁴	5.9 – 8.3 x 10 ⁻⁴							
				0.46	0.25	0.22	0.62							
Tensile Strength	kg/mm ²	1.5 – 2.5	0.3 – 1.0	2.0 – 4.0	1.4 – 2.1	2.8 – 3.5	5.0 – 6.0							
Elongation	%	300 – 700	50 – 300	200 – 700	200	10 – 100	180 – 285							
Abrasion Resistance		Good	Fair	Excellent	Excellent	Excellent	Excellent							
Voltage Breakdown	kv/mm	20 – 30	20 – 40	20 – 32	15 – 30	10 – 20	20 – 30							
Volume Resistivity	Ω-cm	10 ⁻¹⁴ – 10 ⁻¹⁵	10 ⁻¹⁴ – 10 ⁻¹⁵	> 10 ¹⁶	> 10 ¹⁸	1.2 x 10 ¹⁸	10 ⁻¹⁴ – 10 ⁻¹⁵							
Dielectric Constant		3 – 5	3 – 4	2.0 – 2.2	2.0	2.24 – 2.8	3.5 – 4.5							
Dissipation Factor (Tan δ)		0.2 – 0.8	0.1 – 1.0	0.0002 – 0.0006	> 0.0002	0.0012 – 0.0036	0.03 – 0.06							
Weathering		Excellent	Good	Inferior	Excellent	Excellent	Inferior							
Ozone Resistance		Excellent	Excellent	Excellent	Excellent	Excellent	Good							
Flame Resistance		Burn	Burn	Burn	No Burn	No Burn	Burn							
Track Resistance		Excellent	Excellent	Excellent	Excellent	Excellent	Good							
Water Resistance		Good	Fair	Excellent	Excellent	Excellent	Excellent							
Acid Resistance		Excellent	Poor	Excellent	Excellent	Excellent	Good							
Alkali Resistance		Excellent	Good	Excellent	Excellent	Excellent	Excellent							
Oil Resistance		Inferior	Fair	Excellent	Excellent	Excellent	Excellent							
Solvent Resistance		Poor	Fair	Excellent	Excellent	Excellent	Good							

* Improved to "good" with mixture of carbon black.

PROPERTIES OF INSULATION AND SHEATH MATERIALS

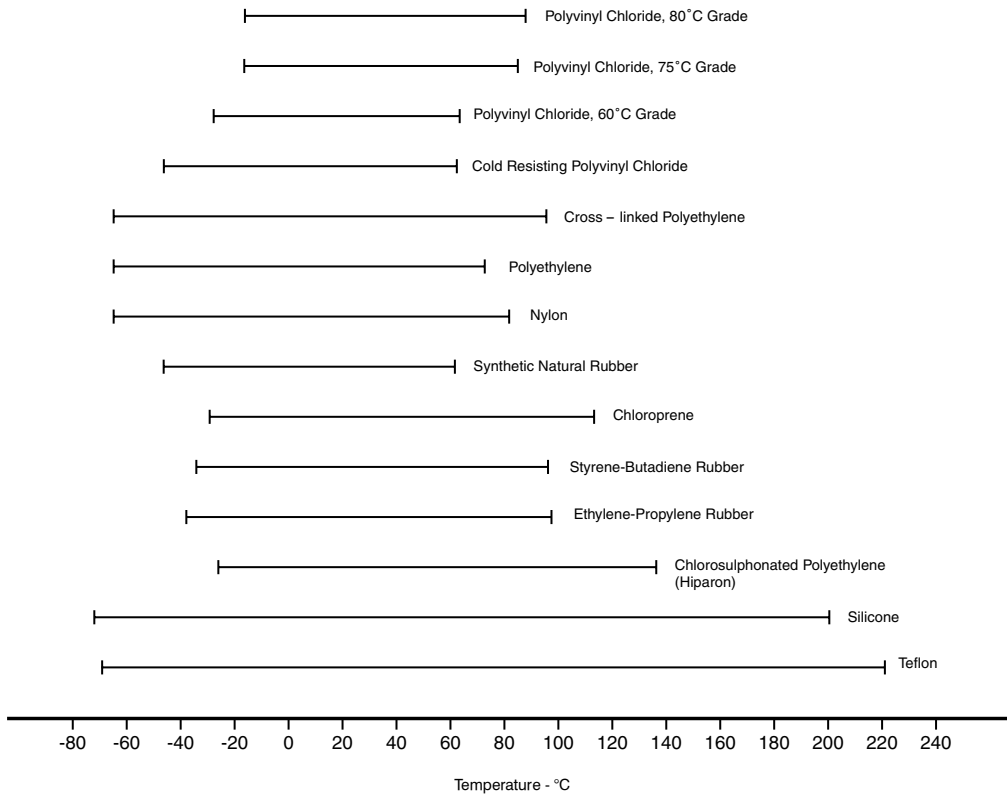
THERMAL PROPERTIES

Deflection temperature of plastics under load [ASTM D648]



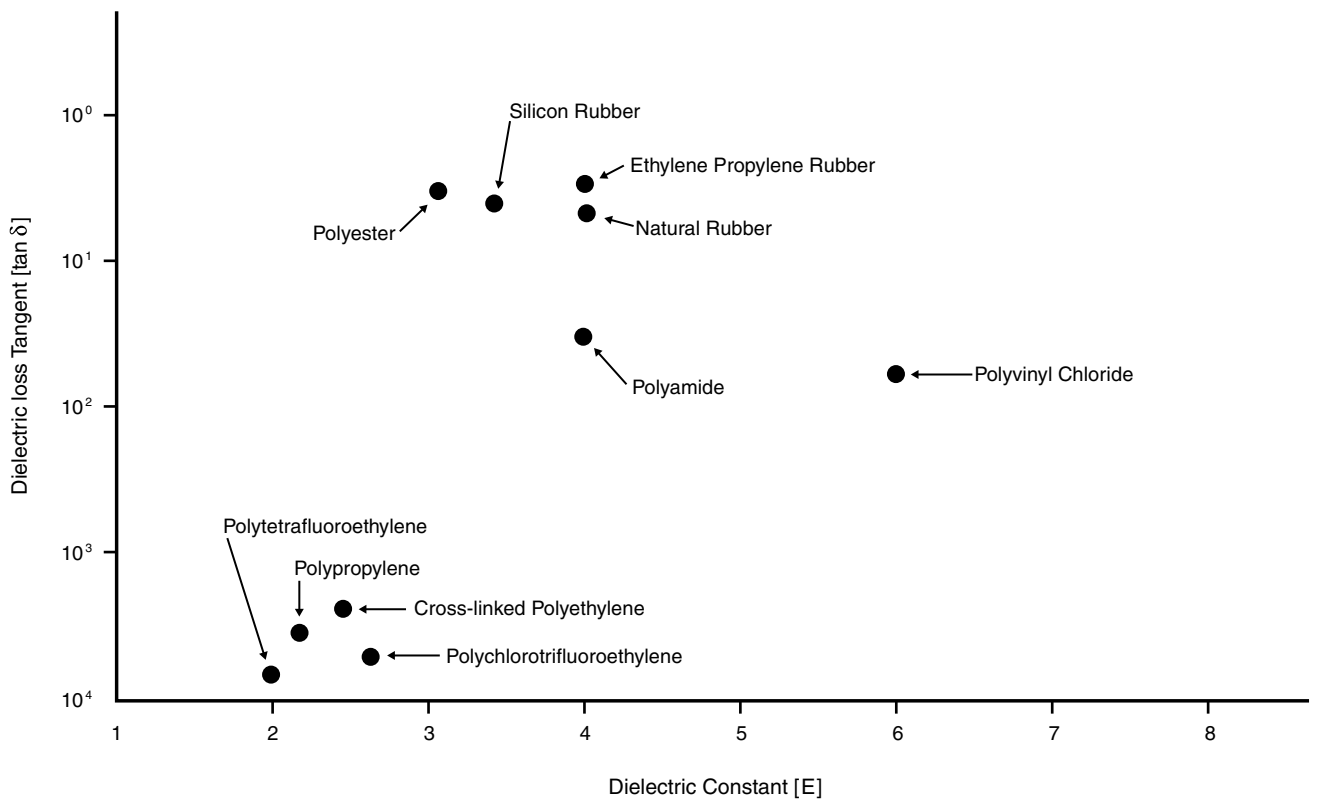
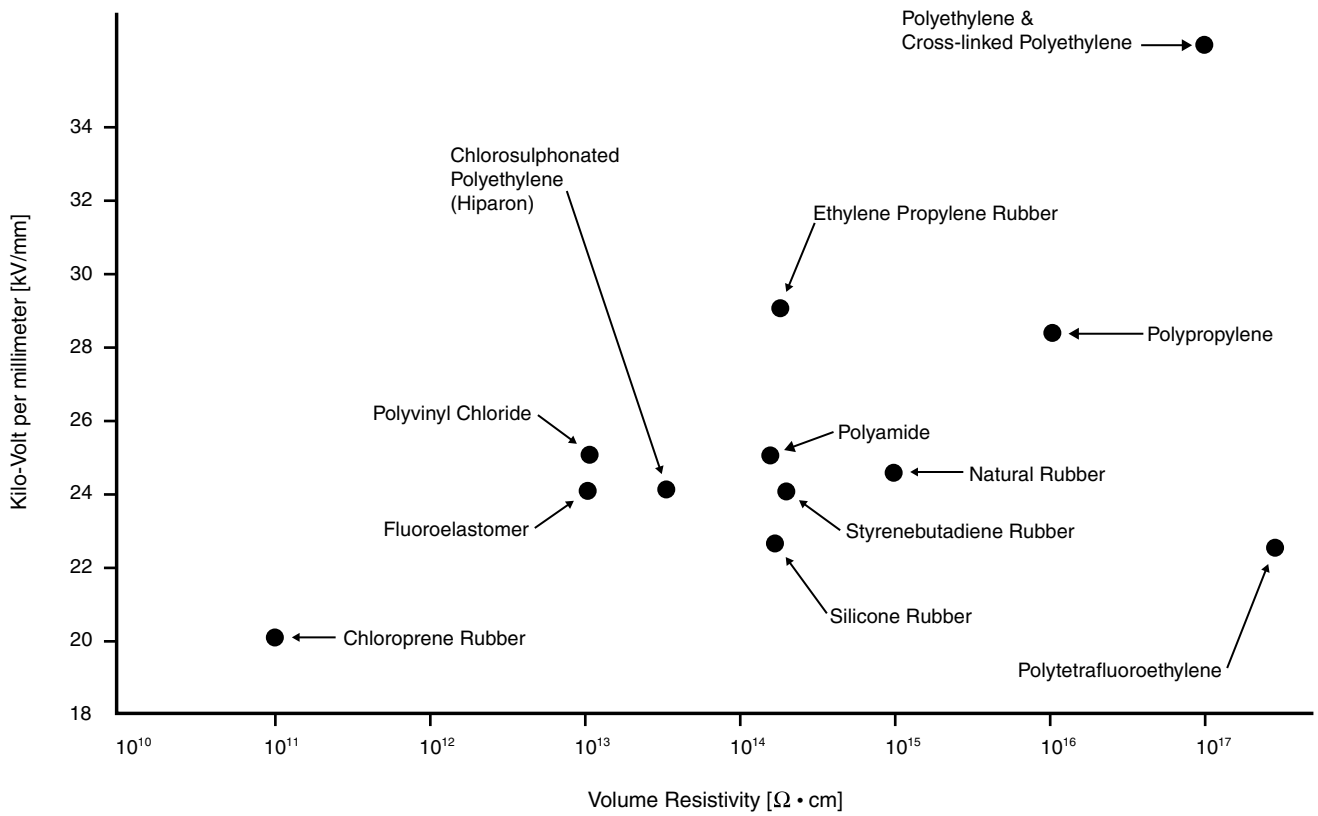
Operating Temperature

Max. point: Max, Continuous Operating Temperature
 Min. point: Brittleness Temperature



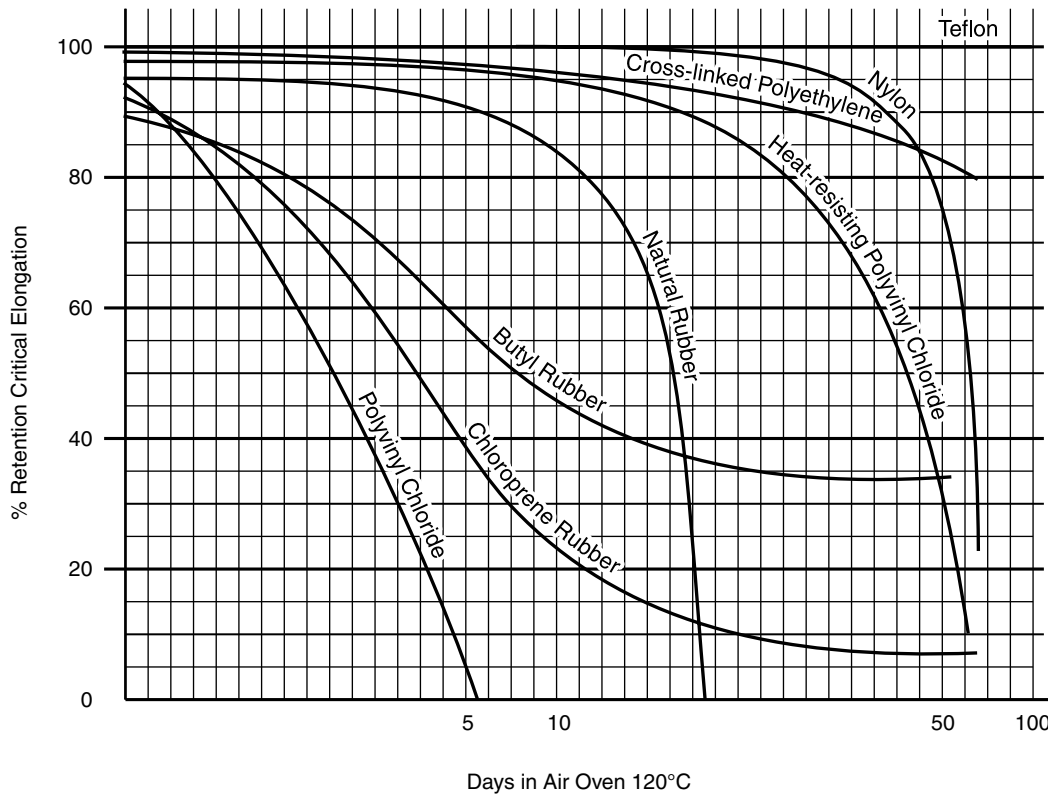
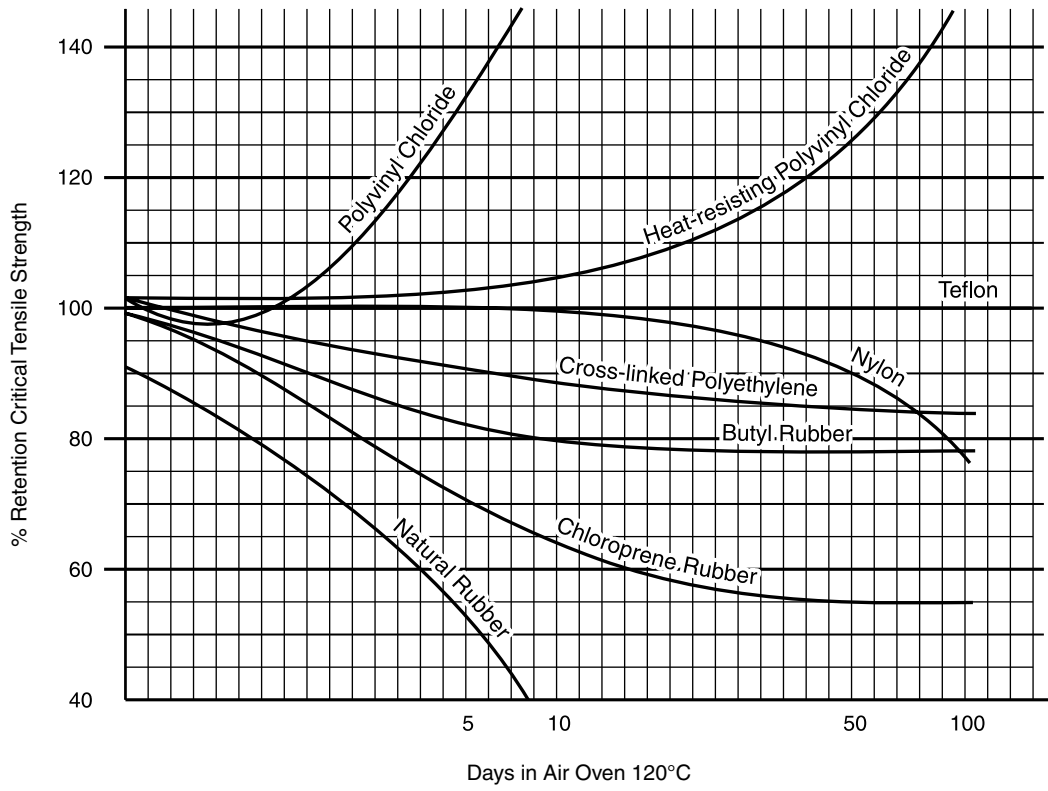
PROPERTIES OF INSULATION AND SHEATH MATERIALS

ELECTRICAL PROPERTIES



PROPERTIES OF INSULATION AND SHEATH MATERIALS

LONG-TIME HEAT AGING CURVES



SYMBOLS OF ELECTRICAL UNITS

ELECTRICAL UNIT		SYMBOL
CURRENT	(AMPERE)	A
VOLTAGE	(VOLT)	V (kV)
RESISTANCE	(OHM)	W (kΩ, MW)
ELECTRIC POWER	(WATT)	W (kW), (MW.)
ELECTRIC ENERGY	(WATT HOUR)	WH (kWH.)
HORSE POWER		HP
POWER FACTOR	(COS θ)	P.F.
FREQUENCY	(HERTZ)	Hz
CAPACITANCE	(FARAD)	F (μ F, ρF)
APPARENT POWER	(VOLT, AMPERE)	VA (kVA)
DIRECT CURRENT		DC
ALTERNATING CURRENT		AC
EFFICIENCY		Eff.
MAXIMUM VALUES	(VOLT, AMPERE)	Em, Im
AVERAGE VALUES	(VOLT, AMPERE)	eav, lav
EFFECTIVE VALUES	(VOLT, AMPERE)	E, I
INSTANTANEOUS VALUES	(VOLT, AMPERE)	e, I

ELECTRICAL FORMULAS.

Electrical formulas for determining Ampere, Kilowatt, Kilovolt-ampere and Horse Power

DIRECT CURRENT	ALTERNATING CURRENT	
	SINGLE PHASE	THREE PHASE
$A = \frac{kW \times 1000}{V}$	$A = \frac{kW \times 1000}{V \times P.F.}$	$A = \frac{kW \times 1000}{1.73 \times V \times P.F.}$
$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{1.73 \times V}$
$A = \frac{HP \times 746}{V \times (\%Eff.)}$	$A = \frac{HP \times 746}{V \times (\%Eff.) \times P.F.}$	$A = \frac{HP \times 746}{1.73 \times V \times (\%Eff.) \times P.F.}$
$kW = \frac{A \times V}{1000}$	$kW = \frac{A \times V \times P.F.}{1000}$	$kW = \frac{A \times V \times 1.73 \times P.F.}{1000}$
$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V \times 1.73}{1000}$
$HP = \frac{A \times V \times (\%Eff.)}{746}$	$HP = \frac{A \times V \times (\%Eff.) \times P.F.}{746}$	$HP = \frac{A \times V \times 1.73 \times (\%Eff.) \times P.F.}{746}$

APPROXIMATE MOTER AMPERES PER TERMINAL :

	220 V a - c = 4	amperes per H.P.
3 phase	220 V a - c = 2.5	amperes per H.P.
3 phase	380 V a - c = 1.41	amperes per H.P.
3 phase	440 V a - c = 1.25	amperes per H.P.
3 phase	550 V a - c = 1	amperes per H.P.

STANDARD COEFFICIENT OF CONVERSION

ITEMS		DESCRIPTIONS			
1. LENGTH.	1 micron	= 0.001 mm.	= 3.94 x 10 ⁵ in.		
	1 mil	= 0.0254 mm.	= 0.001 in.		
	1 mm	= 39.37 mils.	= 0.03937 in.		
	1 cm	= 0.3937 in.	= 0.0328 ft.		
	1 inch	= 25.4 mm.	= 0.083 ft.	= 0.0278 yd.	= 2.54 cm.
	1 feet	= 0.305 m.	= 0.333 vd.		
	1 yard	= 0.914 m.	= 91.44 cm.		
	1 meter	= 39.37 in.	= 3.28 ft.	= 1.094 yd.	
	1 kilometer	= 3,281 ft.	= 1,094 yd.	= 0.6213 mile	
	1 mile	= 5, 280 ft.	= 1,760 yd.	= 1, 609 m.	= 1,609 km.
2. AREA.	1 MCM	= 1000 CM	(Circular Mil)	= 0.5067 mm ²	= 1/1000 in ²
	1 CM	= 0.0005067 mm ²	= 0.0000007854 in ²	= 0.7854 sq. mil.	
	1 mm ²	= 1973 CM	= 0.00155 in ²	= 1,550 sq.mil.	
	1 in ²	= 1273240 Cm	= 645.1 mm ²	= 0.0069 ft. ²	
	1 yd ²	= 1,296 in ²	= 0.83613 m ²		
	1m ²	= 1,550 in ²	= 10.7 ft. ²	= 1.195 yd. ²	
	1 km ²	= 0.001562 mile ²			
	1 mile ²	= 27,880,000 ft. ²	= 3,098,000 yd. ²	= 2,590,000 m ²	= 2.59 km ²
3. VOLUME.	1 cm ³	= 0.061 in ³			
	1 in ³	= 16.39 cm ³	= 0.0036 gal.	= 0.0005787 ft. ³	
	1 l	= 1,000 cm ³	= 61.023 in ³	= 0.2642 gal	= 0.03531 ft. ³
	1 gal.	= 3,785 cm ³	= 231 in ³	= 0.1337 ft. ³	= 0.004951 yd ³
	1 ft ³	= 28,317 cm ³	= 1,728 in ³	= 28.32 l.	= 7.48 gal
	1 yd. ³	= 46,656 in ³	= 0.7646 m ³		
	1 m ³	= 61,023 in ³	= 35.31 ft. ³	= 1.308 yd. ³	
4. WEIGHT.	1 g.	= 15.43 gr.	= 0.03527 oz.	= 0.002205 lb.	
	1 oz.	= 437.5 gr.	= 28.35 g.	= 0.0625 lb.	
	1 lb.	= 7,000 gr.	= 453.6 g.	= 16 oz.	= 0.4536 kg.
	1 kg.	= 15,432 gr.	= 35.27 oz.	= 2.205 lb.	
	1 ton (short)	= 2,000 lb.	= 907.2 kg.	= 0.8928 ton (long)	
	1 ton (long)	= 2,240 lb.	= 1.12 ton (short)	= 1.016 ton (metric)	
	1 ton (metric)	= 2,204.62 lb.			
5. ENERGY.	1 BTU	= 1,055 joules	= 778.1 ft.-lb	= 252 g-cal.	= 107.6 kg.-m.
		= 0.2930 watt-hr.			
	1 watt-hr.	= 3,600 joules	= 2,655.4 ft.-lb.	= 860 g-cal.	= 367.1 kg.-m.
		= 3.413 BTU	= 0.001341 hp.-hr.		
1 hp.-hr.	= 2,684,000 joules	= 1,980,000 ft.-lb.		= 273,700 kg.-cm.	
	= 745.6 watt-hr.				
1 kw-hr	= 2,655,000 ft.-lb.	= 367,100 kg.-m.		= 1.34 hp.-hr.	
6. POWER.	1 watt	= 44.26 ft.-lb./min	= 6.119 kg-m/mim	= 0.001341 hp.	
	1 hp.	= 33,000 ft.-lb./min	= 745.6 watts	= 550 ft.-lb./sec.	
		= 76.04 kg-m/sec			
	1 kw.	= 44,256.7 ft.-lb./min.	= 101.979 kg-m/sec.	= 1.341 hp.	
	= 1,000 watts.				
7. TEMPERATURE.	Temp °C	= 5/9 (temp °F-32)			
	Temp °F	= (9/5 x temp °C) +32			

CONDUCTIVITY AND DENSITY OF METALS

KIND	SYMBOL	CONDUCTIVITY (%IACS)	DENSITY (g/cm ³)
SILVER	Ag	108.6	10.50
STANDARD COPPER (ANNEALED)	Cu	100.0	8.89
GOLD	Au	72.5	19.30
ALUMINIUM	Al	61.0	2.70
IRON	Fe	13.0	7.78
TIN	Sn	12.2	7.29
STEEL	-	11.6	7.78

CONDUCTOR MATERIALS

Material	Specific resistance, 20°C			Temperature coefficient 20°C	Mass g per cu.cm.
	μ Ohms per cm. cube	μ Ohms per in. cube	Ohms-per cir. mil-ft		
Annealed copper	1.724	0.6788	10.37	0.00393	8.89
Hard-drawn copper	1.79	0.695	10.77	0.00378	8.89
Annealed aluminium	2.82	1.113	17.0	0.0039	2.7
Hard-drawn aluminium	2.92	1.15	17.5	0.0038	2.7
Pure iron	10.0	3.93	60.0	0.006	7.86
Steel wire	10.7-17.5	4.2-6.9	64-106	0.006-0.00036	7.78
Cast iron	75-100	29.5-39.4	450-600	0.001-0.00074	7.32

THE COPPER CONDUCTOR RESISTANCE.

NOMINAL DIRECT CURRENT RESISTANCE, OHMS/1,000 METER AT 20°C

TIS 11-2531 (TABLE 18)

The number of wires in the conductors of cables for fixed wiring

Nominal cross-sectional area (mm ²)	Number of wires in conductor	Diameter of wires in conductor (mm)	Maximum resistance of conductor at 20°C (Ohms/km)
			Single core & Multi core
0.5	1	0.80	36.0
1	1	1.13	18.1
1	7	0.40	18.1
1.5	1	1.38	12.1
1.5	7	0.50	12.1
2.5	1	1.78	7.41
2.5	7	0.67	7.41
4	1	2.25	4.61
4	7	0.85	4.61
6	7	1.04	3.08
10	7	1.35	1.83
16	7	1.70	1.15
25	7	2.14	0.727
35	19	1.53	0.524
50	19	1.78	0.387
70	19	2.14	0.268
95	19	2.52	0.193
120	37	2.03	0.153
150	37	2.25	0.124
185	37	2.52	0.0991
240	61	2.25	0.0754
300	61	2.52	0.0601
400	61	2.85	0.0470
500	61	3.20	0.0366

TIS 11-2531 (TABLE 19)

THE DIAMETER OF WIRES IN THE CONDUCTORS OF FLEXIBLE CABLES AND CORDS

Nominal cross-sectional area (mm ²)	Minimum Number of wires in conductor	Maximum Diameter of wires in conductor (mm.)	Maximum resistance of conductor at 20°C (Ohms/km)
			Single core & Multi core
0.5	16	0.21	39.0
0.5	28	0.16	39.0
0.75	24	0.21	26.0
0.75	42	1.16	26.0
1	32	0.21	19.5
1.5	30	0.26	13.3
2.5	50	0.26	7.98
4	56	0.31	4.95
6	84	0.31	3.30
10	80	0.41	1.91
16	126	0.41	1.21
25	196	0.41	0.780
35	276	0.41	0.554
50	396	0.41	0.386
70	360	0.51	0.272
95	475	0.51	0.206

INDUCTANCE AND INDUCTIVE REACTANCE

Inductance and Inductive reactance of the cable is given by the following formula

$$L = 0.05 + 0.46 \log (2D/d) \text{ mH/m.}$$

$$X_L = 0.0157 + 0.144 \log (2D/d) \text{ ohm/km.}$$

Where :

L = Inductance

X_L = Inductive reactance

D = distance between center of conductors in mm. In case of three phase circuit where the three conductors are spread at the corners of an equilateral triangle, D is the distance between any two conductors.

d = Conductor diameter




VOLTAGE DROP TABLE

PVC Insulation, 750V, TIS11-2531 for single core cable per amp per metre.

Power factor lagging = 0.8

Maximum conductor temperature : 70°C

TABLE 1

Conductor area mm ²	 DC (mV)	Single Phase  AC (mV)	Three Phase  AC (mV)
0.5	86.18	69.12	59.86
1	43.33	34.82	30.15
1.5	28.97	23.32	20.19
2.5	17.74	14.32	12.40
4	11.04	8.96	7.76
6	7.37	6.02	5.21
10	4.38	3.62	3.13
16	2.75	2.31	2.00
25	1.74	1.50	1.30
35	1.25	1.11	0.96
50	0.93	0.84	0.73
70	0.64	0.61	0.53
95	0.46	0.47	0.40
120	0.37	0.39	0.34
150	0.30	0.33	0.29
185	0.24	0.28	0.25
240	0.18	0.24	0.21
300	0.15	0.21	0.18
400	0.115	0.18	0.16
500	0.091	0.16	0.14




VOLTAGE DROP TABLE

XLPE Insulation, 600/1000V., IEC 60502 for single core cable per amp per metre.

Power factor lagging = 0.8

Maximum conductor temperature : 90°C

TABLE 2

Conductor area mm ²	 DC (mV)	Single Phase  AC (mV)	Three Phase  AC (mV)
2.5	18.90	15.28	13.23
4	11.76	9.55	8.27
6	7.85	6.42	5.56
10	4.67	3.86	3.34
16	2.93	2.46	2.13
25	1.85	1.60	1.38
35	1.34	1.18	1.02
50	0.99	0.89	0.77
70	0.68	0.65	0.56
95	0.49	0.49	0.43
120	0.39	0.41	0.35
150	0.32	0.35	0.30
185	0.25	0.29	0.25
240	0.19	0.24	0.21
300	0.16	0.21	0.19
400	0.123	0.19	0.16
500	0.097	0.16	0.14
630	0.075	0.15	0.13
800	0.058	0.13	0.12
1000	0.046	0.12	0.11