



TECHNICAL DATA



• 3rd Edition • บริษัท ซีที อิเล็กทริก ซัพพลาย จำกัด

CT ELECTRIC SUPPLY CO., LTD.

โทร : 02 550 9555



MASCI
ISO 9000 QMS03196/800
TIS 18001 OHS07012/210
OHSAS 18001 OHSAS07009/130



ISO 14001 TH009912
ISO 14001 TH013591



TIS 11-2553
TIS 85-2548
TIS 293-2541
TIS 2202-2547



TIS 64-2517
TIS 118-2522
TIS 2143-2546
TIS 386-2531

บริษัท ซีที อิเล็กทริก ซัพพลาย จำกัด
ที่อยู่ : 168/27 หมู่ที่ 3 ตำบล บางคูเวียง
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THAI-YAZAKI ELECTRIC WIRE COMPANY LIMITED



THAI-YAZAKI ELECTRIC WIRE CO., LTD.

Index

Technical Data

For
Electric Wires
and Cables



Publication : 3rd Edition August 2019

This catalog provides a comprehensive
descriptions of the main products of
Thai-Yazaki Electric Wire Co., Ltd.

These products are manufactured
in conformity to the Thai Industrial
Standard (TIS), Thai-Yazaki Standard, and
IEC 60502 Standard.

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Technical Data and
General information

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Aluminium Conductor Cables

Electrical Insulation Tape

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Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G	Mil	mm.	Cir.Mil	in ²	mm ²	lb/1,000 ft	kg/km
5/0	-	7/0	-	500	12.700	250,000	0.1964	126.7	756.9	1,126
-	-	-	12	472.4	12.000	223,162	0.1753	113.1	675.6	1,005
-	-	6/0	-	464	11.786	215,296	0.1691	109.1	651.7	969.9
-	4/0	-	-	460	11.684	211,600	0.1662	107.2	640.5	953.0
4/0	-	-	-	454	11.532	206,100	0.1619	104.4	624.0	928.1
-	-	5/0	-	432	10.973	186,624	0.1466	94.56	565.0	840.6
3/0	-	-	-	425	10.795	180,600	0.1419	91.52	546.9	813.6
-	-	3/0	-	409.6	10.404	167,772	0.1318	85.03	508.0	755.9
-	-	-	4/0	400	10.160	160,000	0.1257	81.07	484.5	720.7
-	-	-	10	393.7	10.000	155,000	0.1217	78.54	468.0	698.2
2/0	-	-	-	380	9.652	144,400	0.1134	73.17	437.1	650.5
-	-	3/0	-	372	9.440	138,384	0.1087	70.12	418.9	623.4
-	2/0	-	-	364.8	9.266	133,079	0.1045	67.42	402.7	599.4
-	-	-	9	354.3	9.000	125,528	0.09859	63.62	380.0	565.6
-	-	2/0	-	348	8.839	121,104	0.09512	61.36	366.6	545.5
0	-	-	-	340	8.636	115,600	0.09079	58.58	349.9	520.8
-	0	-	-	324.9	8.250	105,560	0.08291	53.49	319.5	475.5
-	-	0	-	324	8.230	104,976	0.08245	53.19	317.8	472.8
-	-	-	8	315	8.000	99,225	0.07793	50.27	300.3	446.9
1	-	1	-	300	7.629	90,000	0.07069	45.60	272.4	405.4
-	1	-	-	289.3	7.348	83,694	0.06573	42.41	253.3	377.0
2	-	-	-	284	7.214	80,660	0.06335	40.87	244.2	363.3
-	-	2	-	276	7.010	76,176	0.05983	39.60	230.6	343.2
-	-	-	7.0	275.6	7.000	75,955	0.05966	38.48	229.9	342.1
3	-	-	-	259	6.579	67,080	0.05269	33.99	203.1	302.2
-	2	-	-	257.6	6.544	66,358	0.05212	33.63	200.9	299.0
-	-	-	6.5	255.9	6.500	65,485	0.05143	32.18	189.2	295.0
-	-	3	-	252	6.401	63,504	0.04988	32.18	192.2	286.1
4	-	-	-	238	6.045	56,640	0.04449	28.70	171.5	255.1
-	-	-	6.0	236.2	6.000	55,790	0.04382	28.27	168.9	251.1
-	-	4	-	232	5.893	53,824	0.04227	27.27	162.9	242.4
-	3	-	-	229.4	5.827	52,624	0.04133	26.66	159.3	237.0
5	-	-	-	220	5.588	48,400	0.03801	24.52	146.5	218.0
-	-	-	5.5	216.5	5.500	46,872	0.03681	23.72	141.9	210.9
-	-	5	-	212	5.385	44,944	0.03530	22.77	136.0	202.4
-	4	-	-	204.3	5.189	41,738	0.03278	21.15	126.3	188.0
6	-	-	-	203	5.156	41,210	0.03237	20.88	124.8	185.6
-	-	-	5.0	196.9	5.000	38,770	0.03045	19.63	117.4	174.5
-	-	6	-	192	4.877	36,864	0.02895	18.68	111.6	166.3
-	5	-	-	181.9	4.621	33,088	0.02599	16.77	100.2	149.1
7	-	-	-	180	4.572	32,400	0.02545	16.42	98.08	146.0
-	-	-	4.5	177.2	4.500	31,400	0.02466	15.90	95.04	141.4
-	-	7	-	176	4.470	30,976	0.02433	15.70	93.77	139.6
8	-	-	-	165	4.191	27,220	0.02138	13.80	82.40	122.7
-	6	-	-	162	4.115	26,244	0.02061	13.30	79.43	118.2

Wire Gauges



Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G	Mil	mm.	Cir.Mil	in ²	mm ²	lb/1,000 ft	kg/km
-	-	8	-	160	4.064	25,600	0.02011	12.97	77.50	115.30
-	-	-	4.0	157.5	4.000	24,806	0.01948	12.57	75.08	111.80
9	-	-	-	148	3.759	21,900	0.01720	11.10	66.29	98.68
-	7	-	-	144.3	3.665	20,822	0.01635	10.55	63.01	93.79
-	-	9	-	144	3.658	20,736	0.01629	10.52	62.78	93.52
-	-	-	3.5	137.8	3.500	18,989	0.01491	9.621	57.46	85.53
10	-	-	-	134	3.404	17,960	0.01410	9.098	54.34	80.88
-	8	-	-	128.5	3.264	16,512	0.01297	8.368	49.99	74.39
-	-	10	-	128	3.251	16,384	0.01287	8.302	49.60	73.81
-	-	-	3.2	126	3.200	15,876	0.01247	8.042	48.06	71.49
11	-	-	-	120	3.048	14,400	0.01131	7.297	43.59	64.87
-	-	11	-	116	2.946	13,456	0.01057	6.818	40.74	60.61
-	9	-	-	114.4	2.906	13,087	0.01028	6.632	39.62	58.96
-	-	-	2.9	114.2	2.900	13,042	0.01024	6.605	39.47	58.72
12	-	-	-	109	2.769	11,880	0.009331	6.020	35.96	53.52
-	-	12	-	104	2.642	10,816	0.008495	5.481	32.74	48.73
-	-	-	2.6	102.4	2.600	10,486	0.008246	5.309	31.78	47.29
-	10	-	-	101.9	2.588	10,384	0.008156	5.282	31.43	46.78
13	-	-	-	95	2.413	9,025	0.007088	4.573	27.32	40.65
-	-	13	-	92	2.337	8,464	0.006648	4.289	25.62	38.13
-	11	-	-	90.74	2.305	8,234	0.006467	4.172	24.92	37.09
-	-	-	2.3	90.55	2.300	8,199	0.006439	4.155	24.82	36.94
14	-	-	-	83	2.108	6,889	0.005411	3.491	20.85	31.04
-	12	-	-	80.81	2.053	6,530	0.005129	3.309	19.77	29.42
-	-	14	-	80	2.032	6,400	0.005027	3.243	19.37	28.83
-	-	-	2.0	78.74	2.000	6,200	0.004869	3.142	18.77	27.93
15	-	15	-	72	1.829	5,184	0.004072	2.627	18.46	27.36
-	-	-	-	71.96	1.828	5,178	0.004067	2.624	15.67	23.33
-	-	-	1.8	70.87	1.800	5,023	0.003945	2.545	15.20	22.63
16	-	-	-	65	1.651	4,225	0.003318	2.141	12.79	19.03
-	14	-	-	64.08	1.628	4,106	0.003225	2.081	12.43	18.50
-	-	16	-	64	1.626	4,096	0.003217	2.075	12.40	18.45
-	-	-	1.6	62.99	1.600	3,968	0.003116	2.011	12.01	17.88
17	-	-	-	58	1.473	3,364	0.002642	1.705	10.18	15.16
-	15	-	-	57.07	1.450	3,257	0.002558	1.650	9.859	14.67
-	-	17	-	56	1.422	3,136	0.002463	1.589	9.493	14.13
-	-	-	1.4	55.12	1.400	3,038	0.002386	1.539	9.196	13.68
-	16	-	-	50.82	1.291	2,583	0.002029	1.309	7.820	11.64
18	-	-	-	49	1.245	2,401	0.001886	1.217	7.269	10.82
-	-	18	-	48	1.219	2,304	0.001810	1.167	6.976	10.38
-	-	-	1.2	47.24	1.200	2,232	0.001753	1.131	6.756	10.06
-	17	-	-	45.26	1.150	2,048	0.001608	1.037	6.197	9.219
19	-	-	-	42	1.067	1,764	0.001385	0.8938	5.388	7.946
-	18	-	-	40.3	1.024	1,624	0.001275	0.8226	4.914	7.313
-	-	19	-	40	1.016	1,600	0.001257	0.8107	4.845	7.207
-	-	-	1.0	39.37	1.000	1,550	0.001217	0.7854	4.690	6.982
-	-	20	-	36	0.914	1,296	0.001018	0.6576	3.923	5.838

Wire Gauges



Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G	Mil	mm.	Cir.Mil	in ²	mm ²	lb/1,000 ft	kg/km
-	19	-	-	35.89	0.9116	1,288	0.001012	0.6529	3.900	5.804
-	-	-	0.90	35.43	0.9000	1,255	0.0009857	0.6362	3.799	5.656
20	-	-	-	35	0.8890	1,225	0.0009621	0.6207	3.708	5.518
21	-	21	-	32	0.8128	1,024	0.0008042	0.5189	3.099	4.613
-	20	-	-	31.96	0.8118	1,021	0.0008019	0.5174	3.091	4.600
-	-	-	0.80	31.50	0.8000	992.3	0.0007794	0.5027	3.004	4.469
-	-	21	-	28.46	0.7229	810	0.0006362	0.4105	2.452	3.649
22	-	22	-	28	0.7112	784	0.0006158	0.3973	2.373	3.532
-	-	-	0.70	27.56	0.7000	759.6	0.0005966	0.3848	2.299	3.421
-	-	-	0.65	25.59	0.6500	654.8	0.0005143	0.3318	1.982	2.950
-	22	-	-	25.35	0.6438	642.6	0.0005047	0.3256	1.945	2.895
23	-	-	-	25	0.6350	625	0.0004909	0.3167	1.892	2.816
-	-	23	-	24	0.6096	576	0.0004524	0.2919	1.744	2.595
-	-	-	0.60	23.62	0.6000	557.9	0.0004382	0.2827	1.689	2.513
-	23	-	-	22.57	0.5733	509.4	0.0004001	0.2581	1.542	2.295
24	-	24	-	22	0.5583	484	0.0003801	0.2452	1.465	2.180
-	-	-	0.55	21.65	0.5500	468.7	0.0003681	0.2376	1.419	2.112
-	24	-	-	20.10	0.5106	404	0.0003173	0.2047	1.223	1.820
25	-	25	-	20	0.5080	400	0.0003142	0.2027	1.211	1.802
-	-	-	0.50	19.69	0.5000	387.7	0.0003045	0.1963	1.174	1.745
26	-	26	-	18	0.4572	324	0.0002545	0.1642	0.9809	1.460
-	25	-	-	17.90	0.4547	320.4	0.0002516	0.1623	0.9697	1.443
-	-	-	0.45	17.72	0.4500	314	0.0002466	0.1590	0.9504	1.414
-	-	27	-	16.4	0.4166	269	0.0002113	0.1363	0.7844	1.212
27	-	-	-	16	0.4064	256	0.0002011	0.1297	0.7750	1.153
-	26	-	-	15.94	0.4049	254.1	0.0001996	0.1288	0.7693	1.145
-	-	-	0.40	15.75	0.400	248.1	0.0001949	0.1257	0.7512	1.118
-	-	28	-	14.8	0.3759	219	0.0001720	0.1110	0.6629	0.9868
-	27	-	-	14.20	0.361	201.6	0.0001583	0.1021	0.6101	0.9077
28	-	-	-	14	0.3556	196	0.0001539	0.09932	0.5931	0.8330
-	-	-	0.35	13.78	0.3500	189.9	0.0001491	0.09621	0.5746	0.8553
-	-	29	-	13.6	0.3454	185	0.0001453	0.09372	0.5600	0.8332
29	-	-	-	13	0.3302	169	0.0001327	0.08563	0.5114	0.7613
-	28	-	-	12.64	0.3211	159.8	0.0001255	0.08097	0.4837	0.7198
-	-	-	0.30	12.60	0.3200	158.8	0.0001246	0.08042	0.7806	0.7149
-	-	30	-	12.4	0.3150	153.8	0.0001208	0.07791	0.4656	0.6926
30	-	-	-	12	0.3048	144	0.0001131	0.07297	0.4359	0.6487
-	-	31	-	11.6	0.2946	134.6	0.0001057	0.06818	0.4074	0.6061
-	-	-	0.29	11.42	0.2900	130.4	0.0001024	0.06605	0.3947	0.5872
-	29	-	-	11.26	0.2859	126.8	0.00009959	0.06425	0.3838	0.5712
-	-	32	-	10.8	0.2743	116.6	0.00009158	0.05913	0.3530	0.5257
-	-	-	0.26	10.24	0.2600	104.9	0.00008239	0.05309	0.3175	0.4720
-	30	-	-	10.03	0.2546	100.6	0.00007901	0.05097	0.305	0.4531
31	-	33	-	10	0.2540	100	0.00007954	0.05067	0.3027	0.4505
-	-	34	-	9.2	0.2337	84.64	0.00006648	0.04289	0.2562	0.3813
-	-	-	0.23	9.055	0.2300	81.99	0.00006440	0.04155	0.2482	0.3694

Wire Gauges



Gauge				Diameter		Sectional Area			Weight	
B.W.G.	A.W.G.	S.W.G.	mm.G	Mill	mm.	Cir.Mil	in ²	mm ²	lb/1,000 ft	kg/km
32	-	-	-	9	0.2286	81.102	0.00006362	0.04104	0.2452	0.3649
-	31	-	-	8.928	0.2238	79.71	0.00006260	0.04039	0.2413	0.3591
-	-	35	-	8.4	0.2134	70.56	0.00005542	0.03575	0.2136	0.3178
33	-	-	-	8	0.2032	64	0.00005027	0.03243	0.1937	0.2883
-	32	-	-	7.950	0.2019	65.20	0.00004964	0.03203	0.1913	0.2847
-	-	-	0.20	7.874	0.2000	62	0.00004869	0.03142	0.1877	0.2793
-	-	36	-	7.6	0.1930	57.76	0.00004536	0.02927	0.1748	0.2602
-	-	-	0.18	7.087	0.1800	50.23	0.00003945	0.02545	0.1520	0.2263
-	33	-	-	7.080	0.1798	50.13	0.00003937	0.02540	0.1517	0.2258
34	-	-	-	7	0.1778	49	0.00003848	0.02483	0.1483	0.2207
-	-	37	-	6.8	0.1727	46.24	0.00003632	0.02343	0.1400	0.2083
-	34	-	-	6.305	0.1601	39.75	0.00003122	0.02014	0.1203	0.1790
-	-	-	0.16	6.299	0.1600	39.68	0.00003116	0.02011	0.1201	0.1788
-	-	38	-	6	0.1524	36	0.00002827	0.01824	0.1090	0.1622
-	35	-	-	5.615	0.1426	31.53	0.00002476	0.01597	0.09543	0.1420
-	-	-	0.14	5.512	0.1400	30.38	0.00002386	0.01539	0.09196	0.1368
-	-	39	-	5.2	0.1321	27.04	0.00002124	0.01370	0.08186	0.1218
35	36	-	-	5.000	0.1270	25	0.00001963	0.01267	0.07565	0.1126
-	-	40	-	4.8	0.1219	23.04	0.00001810	0.01167	0.06976	0.1037
-	-	-	0.12	4.724	0.1200	22.32	0.00001753	0.01131	0.06756	0.1006
-	37	-	-	4.453	0.1131	19.83	0.00001557	0.01005	0.06001	0.08934
-	-	41	-	4.4	0.1118	19.36	0.00001521	0.009810	0.05812	0.08721
36	-	42	-	4	0.1016	16.00	0.00001257	0.008107	0.04845	0.07207
-	38	-	-	3.965	0.1007	15.72	0.00001235	0.007968	0.04760	0.07084
-	-	-	0.10	3.937	0.1000	15.50	0.00001217	0.007854	0.04690	0.06982
-	-	43	-	3.6	0.09114	12.96	0.00001018	0.006567	0.03923	0.05838
-	39	-	-	3.531	0.08969	12.47	0.000009794	0.006319	0.03775	0.05618
-	-	44	-	3.2	0.08138	10.24	0.000008042	0.005819	0.03099	0.04613
-	40	-	-	3.145	0.07987	9.891	0.000007768	0.005012	0.02994	0.04456
-	41	45	-	3.800	0.07113	7.842	0.000006159	0.003973	0.02374	0.03532
-	42	-	-	2.494	0.06334	6.219	0.000004884	0.003151	0.01882	0.02801
-	-	46	-	2.4	0.06096	5.760	0.000004528	0.002929	0.01744	0.02595
-	43	-	-	2.221	0.05641	4.932	0.000003873	0.002495	0.01498	0.02222
-	-	47	-	2	0.05080	4.000	0.000003142	0.002027	0.01211	0.01802
-	44	-	-	1.987	0.05023	3.911	0.000003072	0.001982	0.01184	0.01762
-	-	-	0.05	1.969	0.05000	3.877	0.000003045	0.001963	0.01174	0.01745
-	45	-	-	1.761	0.04473	3.102	0.000002436	0.001572	0.009383	0.01398
-	-	48	-	1.6	0.04064	2.560	0.000002011	0.001297	0.007750	0.01153
-	46	-	-	1.568	0.03984	2.460	0.000001931	0.001246	0.007446	0.01108
-	47	-	-	1.397	0.03547	1.951	0.000001532	0.0009884	0.005904	0.008787
-	48	-	-	1.224	0.03159	1.547	0.000001215	0.0007838	0.004683	0.006968
-	-	49	-	1.2	0.03048	1.440	0.000001131	0.0007297	0.004359	0.006487
-	49	-	-	1.108	0.02813	1.227	0.000009635	0.0006216	0.003713	0.005526
-	-	50	-	1	0.02540	1.000	0.000007854	0.0005067	0.003027	0.004505
-	50	-	-	0.986	0.02505	0.9728	0.000007641	0.0004929	0.002945	0.004382

NOTE B.W.G. - Birmingham Iron Wire Gauge
A.W.G. - American Wire Gauge
S.W.G. - British Standard Wire Gauge
mm.G. - Millimeter Gauge

Conversion table AWG/MCM (kcmil) to the metric cross-section area

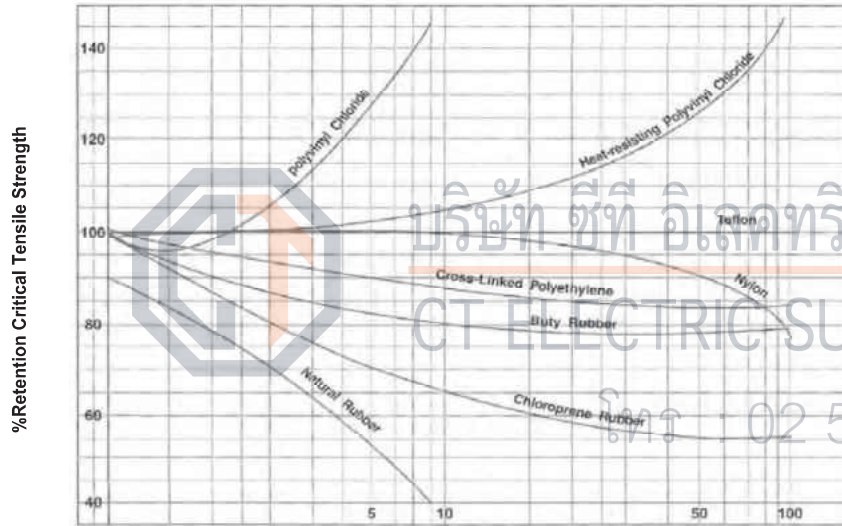


Conductor Cross-section area AWG/MCM (kcmil)	Theoretical Cross-Section area mm ²	Advised Cross-Section area mm ²
20	0.51	0.5
18	0.82	1
16	1.31	1.5
14	2.08	2.5
12	3.31	4
10	5.27	6
8	8.40	10
6	13.30	16
4	21.20	25
3	26.70	25
2	33.60	35
1	42.40	50
1/0	53.40	50
2/0	67.50	70
3/0	85.00	95
4/0	107.02	120
250	126.70	120
300	152.00	150
350	177.40	185
400	202.70	240
500	253.40	240
600	304.00	300
700	354.00	400
750	380.00	400
800	405.40	400
900	456.00	500
1000	506.70	500
1250	633.40	630
1500	760.10	800

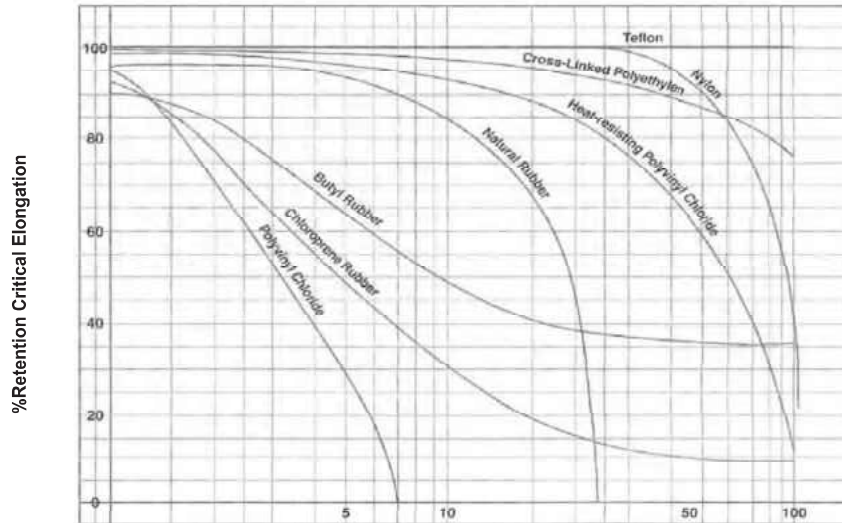
SI Prefixes

Multiply factor	Prefix	Symbol
1 000 000 000 000 =	10 ¹²	tera T
1 000 000 000 =	10 ⁹	giga G
1 000 000 =	10 ⁶	mega M
1 000 =	10 ³	kilo k
100 =	10 ²	hecto h
10 =	10 ¹	deca da
0.1 =	10 ⁻¹	deci d
0.01 =	10 ⁻²	centi c
0.001 =	10 ⁻³	milli m
0.000 001 =	10 ⁻⁶	micro μ
0.000 000 001 =	10 ⁻⁹	nano n
0.000 000 000 001 =	10 ⁻¹²	pico p
0.000 000 000 000 001 =	10 ⁻¹⁵	femto f
0.000 000 000 000 000 001 =	10 ⁻¹⁸	atto a

Properties of Insulation and Jacket Materials Long - Time Heat Aging Curves



Days in Air Oven 120 °C



Days in Air Oven 120 °C

Condition of Installation

Minimum Bending Radius

Type of cable	Number of core	Single core		multi core
		Round conductor	Sector shape conductor	
PVC & PE Sheath	Unshield Cable	8D	12D	6D
	Shield Cable	10D	12D	8D
Wire armoured cable		10D	12D	10D
Lead sheathed		10D	12D	10D
Corrugated metal armoured cable		-	-	8D
Flattape armoured cable		-	-	8D
Al. flat sheathed cable		20D	20D	20D
Al. corrugated sheathed cable		15D	15D	15D
Al. solid conductor		-	-	10D
Gabtyre cable		6D	-	4D

D : Overall diameter of cable

Permissible Maximum Pulling Tension

Pulling tool	Material of conductor	Permissible maximum pulling tension (kgf)
Pulling eye	Copper	7 x (Number of core) x (Cross-sectional area of conductor)
	Aluminium	4 x (Number of core) x (Cross-sectional area of conductor)
Cable grip	Copper & Aluminium	The same as using the pulling eye, but the maximum tension should be less than 1.5 tons.

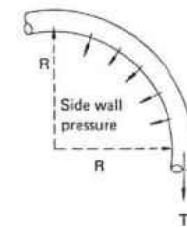
Note : When cable grip is used is should cover more than 500 mm. in length of the cable end and be bound to the cable sheath

Side Wall Pressure to Cable

Permissible maximum side wall pressure to the cable at bending point during installation is
 500 kg/m for CV cable (Single core and multi core)
 300 kg/m for PVC insulated PVC sheathed cable
 250 kg/m for CV triplex type

$$\text{Side wall pressure to cable} = \frac{\text{Pulling tension (kgf)}}{\text{bending radius (m)}}$$

$$= \frac{T}{R}$$



Symbols of Electrical Units

Electrical Unit	Symbol
CURRENT (AMPERE)	A
VOLTAGE (VOLT)	V (kV)
RESISTANCE (OHM)	Ω (k Ω , M Ω)
ELECTRIC POWER (WATT)	W (kW, MW.)
ELECTRIC ENERGY (WATT HOUR)	Wh (kWh.)
HORSE POWER	HP
POWER FACTOR (COS ϕ)	P.F.
FREQUENCY (HERTZ)	Hz
CAPACITANCE (FARAD)	F (μ F, pF.)
APPARENT POWER (VOLTAMPERE)	VA (kVA)
DIRECT CURRENT	DC
ALTERNATING CURRENT	AC
EFFICIENCY	Eff.
MAXIMUM VALUES (VOLTAMPERE)	Em, Im
AVERAGE VALUES (VOLTAMPERE)	Eav, lav
EFFECTIVE VALUES (VOLTAMPERE)	E, I
INSTANTANEOUS VALUES (VOLTAMPERE)	e, i

Electrical Formulas

Direct Current	Alternating Current	
	Single Phase	Three Phase
$A = \frac{kW \times 1000}{V}$	$A = \frac{kW \times 1000}{V \times P.F.}$	$A = \frac{kW \times 1000}{1.73 \times V \times P.F.}$
$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{V}$	$A = \frac{kVA \times 1000}{1.73 \times V}$
$A = \frac{HP \times 746}{V \times (\%Eff.)}$	$A = \frac{HP \times 746}{V \times (\%Eff.) \times P.F.}$	$A = \frac{HP \times 746}{1.73 \times V \times (\%Eff.) \times P.F.}$
$kW = \frac{A \times V}{1000}$	$kW = \frac{A \times V \times P.F.}{1000}$	$kW = \frac{A \times V \times 1.73 \times P.F.}{1000}$
$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V}{1000}$	$kVA = \frac{A \times V \times 1.73}{1000}$
$HP = \frac{A \times V \times (\%Eff.)}{746}$	$HP = \frac{A \times V \times (\%Eff.) \times P.F.}{746}$	$HP = \frac{A \times V \times 1.73(\%Eff.) \times P.F.}{746}$

Approximate Motor Amperes per Terminal

1 phase	220 V ac = 4	amps/HP
3 phase	200 V ac = 2.5	amps/HP
3 phase	380 V ac = 1.41	amps/HP
3 phase	440 V ac = 1	amps/HP
3 phase	550 V ac = 1	amps/HP

Table of The Dimensions for The Motor Starters

The figures are based on normal 3 - phase motors for a.c. at 50 c.p.s. 1400 - 1450 r.p.m.

Motor ratings in HP at service voltage						Rating of motor starter (A)	Relay setting (A)	Max. quick-blow back-up fuse (A)	Min cross section of cables (mm ²)
220 V		380 V		440 V					
HP	Full load current (A)	HP	Full load current (A)	HP	Full load current (A)				
		0.05		0.05		15	0.15 - 0.25	1	1.5
0.05		0.1		0.1		15	0.25 - 0.4	2	1.5
		0.15		0.20		15	0.4 - 0.65	4	1.5
0.1		0.2		0.25	0.5	15	0.4 - 0.65	4	1.5
0.15		0.25	0.6	0.50	0.9	15	0.6 - 1	6	1.5
0.25	1.1	0.5	1.0			15	1.0 - 1.6	6	1.5
		0.75	1.5	0.75	1.2	15	1.0 - 1.6	6	1.5
0.5	1.8	1.0	1.9	1.0	1.6	15	1.5 - 2.5	15 (10)	1.5
0.75	2.5	1.5	2.6	2	3.2	15	2.5 - 4	25 (15)	1.5
1.0	3.2	2	3.4	2.5	3.9	15	2.5 - 4	25 (15)	1.5
1.5	4.4	2.5	4.2	3	4.5	15	4 - 6.5	25 (20)	1.5
2.0	5.8	3	4.9	4	6.0	15	4 - 6.5	25 (20)	1.5
2.5	7.3	4	6.3	5	7.5	15	6 - 10	35 (25)	1.5
3	8.4	5	7.8	6	8.5	15	6 - 10	35 (25)	1.5
4	11	6	9.3	7.5	11.0	15	9 - 14	35	1.5
5	13.5	7.5	11.5			15	9 - 14	35	1.5
		10	15	10	14	25	13 - 20	60	2.5
7.5	19.5	15	22	15	21	25	16 - 25	60	4
10	26	20	29	20	27	60	20 - 31	100	6
15	39	25	36	30	39	60	28 - 43	125	10
20	51	30	42			60	40 - 60	160	16
		35	50	35	46	60	40 - 60	160	16
		40	56	40	52	60	40 - 60	160	16
25	63	50	69	50	65	100	50 - 75	200	16
35	91	60	83	60	76	100	70 - 100	200	25
40	100	75	104	75	96	200	84 - 120	400	35
50	125	100	136	100	125	200	105 - 150	500	50
75	184	125	167	125	155	200	140 - 200	500	95
		150	200	150	180	350	175 - 250	600	120
100	245	175	235	175	215	350	175 - 250	600	120
120	295	200	268	200	240	350	210 - 300	850	150
150	370	250	335	250	300	600	280 - 400	850	240
175	425	300	400	300	360	600	350 - 500	1000	400
200	475	350	470	350	410	600	350 - 500	1000	400
225	540	400	535	400	450	600	420 - 600	1000	

Figures in brackets apply to hand operated motor starters.

Standard Coefficient of Conversion

Items	Description				
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 foot	= 0.305 m	= 0.33 yd.		
	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	
	2. AREA	1 MCM	= 1000 CM (Circular Mil)	= 0.5067 mm ²	= 1/1000in ²
1 CM		= 0.0005067 mm ²	= 0.000007854 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		
1 m 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 B.t.u.	= 0.001341 hp.-hr.		
	1 hp.-hr.	= 2,684,000 joules	= 1,980,000 ft.-lb.	= 273,700 kg.-m.	
		= 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	= 6.199 kg-m/min	= 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
Stranded 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	Density (g/cm ³)
	μΩ-cm	μΩ-in	Ω-cmil/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	2.70
Hard-drawn aluminium	2.92	1.15	17.5	0.0038	2.70
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

Temperature Correction Factors for Conductor Resistance

Factors for correcting resistances at various temperatures of conductor to the standard reference temperature of 20 °C and reciprocals of the factors for calculating resistances at other temperatures from the value at 20 °C

Temperature °C	Correction Factor		Reciprocal of Factor	
	Copper	Aluminum	Copper	Aluminum
0	1.085	1.088	0.921	0.919
5	1.063	1.064	0.941	0.940
10	1.041	1.042	0.961	0.960
15	1.020	1.021	0.980	0.980
20	1.000	1.000	1.000	1.000
25	0.981	0.980	1.020	1.020
30	0.962	0.961	1.039	1.040
35	0.944	0.943	1.059	1.060
40	0.927	0.925	1.079	1.081
45	0.911	0.908	1.098	1.101
50	0.895	0.892	1.118	1.121
55	0.879	0.876	1.138	1.141
60	0.864	0.861	1.157	1.161
65	0.850	0.846	1.177	1.181
70	0.836	0.832	1.197	1.202
75	0.822	0.819	1.216	1.222
80	0.809	0.805	1.236	1.242
85	0.797	0.792	1.255	1.262
90	0.784	0.780	1.275	1.282

The correction factor is given by:

$$k = \frac{1}{k_1} = \frac{1}{1 + \alpha(\theta - 20)}$$

Where :

- k = temperature correction factor of conductor
- k₁ = reciprocal of k
- α = constant mass temperature coefficient at 20 °C per °C
 - = 0.00393 for copper (based on 100% conductivity)
 - = 0.00403 for aluminum (based on 61% conductivity)
- θ = referred temperature, °C

Electrical Formulas

D.C. resistance

Method of calculation of conductor maximum d.c. resistance

$$R_{dc} = \frac{4A}{\pi d^2} \times K_1 \times K_2 \times K_3$$

Where:

- R_{dc} = the d.c. resistance at 20°C, Ω/km
- A = the standard resistivity of the conductor metal at 20°C
 - 17.241 for annealed copper
 - 28.264 for aluminium alloy 1350
 - 17.654 for tinned copper

K₁ = a factor dependent on the diameter of the wire in the conductor, on the kind of metal and on whether or not the copper wires are tinned or nickel-coated.

K₂ = A factor dependent on the conductor construction.

- 1.00 for Solid conductors
- 1.02 for stranded or uniaxial conductors in fixed cables, where the diameter of wires exceeds 0.6 mm
- 1.03 for stranded or bunched conductors in all cables where the diameter of wires ≤ 0.6 mm
- 1.04 for stranded or bunched conductors in all cables where the diameter of wires > 0.6 mm

K₃ = A factor dependent on whether or not the conductor is, typically, used also in multicore cables.

- 1.00 for conductors in fixed cables of < 500 mm² (typically single core cables)
- 1.02 for conductors in fixed cables of < 500 mm² (typically multi core cables)
- 1.05 for conductors in all flexible cords and cables

n = the number of wires in the conductor

d = the diameter of wires in the conductor

Diameter of wire in conductor mm	K ₁			
	Solid Conductor		Stranded Conductor	
	Plain or silver plated copper	Tinned copper or plain aluminium	Plain or silver plated copper	Tinned copper or plain aluminium
≤0.10	-	-	1.07	1.12
>0.10 ≤0.31	-	-	1.04	1.07
>0.31 ≤0.91	1.03	1.05	1.02	1.04
>0.91 ≤3.60	1.03	1.04	1.02	1.03
>3.60 ≤4.50	1.03	1.04	-	-
>4.50	1.03	1.03	-	-

Inductance

The inductance, L, per core of a 3-core cable or of three single-core cables comprises two parts namely the self-inductance of the conductor and the mutual inductance with other cores.

The formula for calculating the Inductance of a cable is given by:

$$L = K + 0.2 \log_{10} \left(\frac{22}{d} \right) \text{ (mH/km)}$$

Where:

- L = Inductance of cable in (mH/km)
- K = Constant relating to the conductor formation (see table below)
- S = Axial spacing between conductors within the cable (mm) or axial spacing between Conductors of a trefoil group of single core cables (mm) or = 1.26 x phase spacing for a flat formation of three single-core cables (mm)
- d = conductor diameter or for shaped designs the diameter of an equivalent circular conductor (mm)

Typical Values for K for Different Stranded Conductors (at 50Hz)

Number of Wires in Conductor	K
9	0.0642
7	0.0554
37	0.0528
61 and Over	0.0514
1 (Solid)	0.05
Hollow core conductor, 12 mm duct	0.0383

Reactance (Inductive Reactance)

$$X = 2 \times \pi \times f \times L \text{ (}\Omega/\text{km)}$$

Where:

- f = Frequency (Hz)
- L = Inductance (mH/km)

Impedance

$$Z = \sqrt{R^2 + X^2} \text{ (}\Omega/\text{km)}$$

Where:

- R = Conductor Resistance (Ω/km)
- X = Cable Inductive Reactance (Ω/km)

Dielectric loss (A.C. cables only)

The dielectric loss per unit length in each phase is giving by :

$$W_d = \omega C U_0^2 \tan \delta \text{ (W/m)}$$

Where:

- $\omega = 2\pi f$
- C = Capacitance per unit length (F/m)
- U_0 = voltage to earth (V)

Type of cable	Permittivity (ϵ)	$\tan \delta$	U_0
PVC	8	0.1	6
PE (HD and LD)	2.3	0.001	127
XLPE			
- up to and including 18/30 (36)kV cable (unfilled)	2.5	0.004	127
- greater 18/30 (36)kV cable (unfilled)	2.5	0.001	127
- greater 18/30 (36)kV cable (filled)	3	0.005	63.5

Capacitance

The capacitance of circular conductor is giving by :

$$C = \frac{\epsilon}{18 \ln \left(\frac{D_1}{d_c} \right)} 10^{-9} \text{ (F/m)}$$

Where:

- ϵ = relative permittivity of the insulation
- D_1 = external diameter of the insulation (excluding screen) (mm)
- d_c = diameter of conductor, including screen, if any (mm)

The same formula can be used for oval conductors if the geometric mean of the appropriate major and minor diameters is substituted for D_1 and d_c .

AC resistance at temperature :

$$R_{ac} = R_{dc} (1 + y_s + y_p)$$

Where:

R_{dc} = DC resistance at operating temperature

y_s = Skin effect factor

y_p = Proximity effect factor

Skin effect factor y_s

$$y_s = X_s^4 / (192 + X_s^4)$$

Where:

$$X_s^4 = 8 \times \pi \times f \times 10^{-7} \times \frac{k_s}{R_{dc}}$$

k_s = Factor determined by conductor construction

Type of conductor	Weather dried and impregnated or not	k_s	k_p
Copper Round, stranded	Yes	1	0.8
	No	1	1
Aluminium Round, stranded	Either	1	see note
	Either		

f = Frequency (Hz)

R_{dc} = DC resistance at operating temperature

Proximity effect factor y_p

1. For 2 core and 2 single core cables :

$$y_p = X_p^4 / (192 + 0.8X_p^4) \times \left(\frac{d_c}{S} \right)^2 \times 2.9$$

2. For 3 core and 3 single core cables :

$$y_p = X_p^4 / (192 + 0.8X_p^4) \times \left(\frac{d_c}{S} \right)^2 \times \left[0.312 \times \left(\frac{d_c}{S} \right)^2 + \frac{1.18}{[X_p^4 / (192 + 0.8X_p^4) + 0.27]} \right]$$

Where:

$$X_p^4 = 8 \times \pi \times f \times 10^{-7} \times \frac{k_p}{R_{dc}}$$

R_{dc} = DC resistance at operating temperature

k_p = Factor determined by conductor construction

d_c = Diameter of conductor (mm)

S = Spacing between conductor centres (mm)

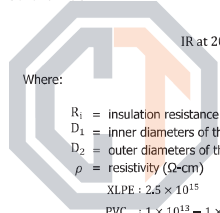
Charging Current

$$I_c = \omega CV \times 10^{-6} \text{ (A)}$$

Where:

- I_c = charging current (A/km)
- ω = 2 π time the frequency of the applied voltage
- C = capacitance between the electrodes between which the voltage is applied ($\mu\text{F}/\text{km}$)
- V = applied voltage (V)

Insulation Resistance



$$IR \text{ at } 20^\circ\text{C} = 3.67 \times 10^{-12} \times \rho \times \log_{10} \left(\frac{D_2}{D_1} \right) \text{ (M}\Omega\text{-km)}$$

Where:

- R_i = insulation resistance of one kilometer of cable in Megohms (M Ω -km)
- D_1 = inner diameters of the insulation (mm)
- D_2 = outer diameters of the insulations (mm)
- ρ = resistivity ($\Omega\text{-cm}$)
- XLPE : 2.5×10^{15}
- PVC : $1 \times 10^{13} - 1 \times 10^{14}$

Short-Circuit Current Rating

Copper Conductor

$$I = A \times \sqrt{\left(\frac{0.0297}{t} \right) \log \left(\frac{234 + T_2}{234 + T_1} \right)} \times 1.973$$

Aluminium Conductor

$$I = A \times \sqrt{\left(\frac{0.0125}{t} \right) \log \left(\frac{228 + T_2}{228 + T_1} \right)} \times 1.973$$

Where:

- I = Short circuit current (kA)
- A = Cross-section area (mm²)
- t = Short circuit duration (sec)
- T_1 = Max. permissible continuous operating temp ($^\circ\text{C}$) ; PVC=70, XLPE=90
- T_2 = Max. permissible temperature at short circuit ($^\circ\text{C}$) ; PVC=160, XLPE=250

Short-Circuit Current 1 sec at conductor (kA)

Size (mm ²)	Copper		Aluminium	
	XLPE	PVC	XLPE	PVC
1.5	0.21	0.17	-	-
2.5	0.35	0.29	-	-
4	0.57	0.46	-	-
6	0.85	0.68	-	-
10	1.42	1.14	0.93	0.75
16	2.27	1.83	1.48	1.19
25	3.55	2.85	2.32	1.87
35	4.97	3.99	3.25	2.61
50	7.10	5.71	4.64	3.73
70	9.94	7.99	6.50	5.23
95	13.5	10.8	8.82	7.09
120	17.0	13.7	11.1	8.96
150	21.3	17.1	13.9	11.2
185	26.3	21.1	17.2	13.8
240	34.1	27.4	22.3	17.9
300	42.6	34.2	27.8	22.4
400	56.8	45.6	37.1	29.9
500	71.0	57.1	46.4	37.3
630	89.4	71.9	58.5	47.0
800	113.6	91.3	74.2	59.7
1000	142.0	114.1	92.8	74.7

Short Circuit Performance of Metallic Shields and Sheath of Insulated Cable

$$I = \frac{A}{\sqrt{t}} \sqrt{K \log \left[\frac{T_2 + \lambda}{T_1 + \lambda} \right]}$$

$$M = \sqrt{K \log \left[\frac{T_2 + \lambda}{T_1 + \lambda} \right]}$$

$$I = \frac{MA}{\sqrt{t}}$$

- I = Short-circuit current of copper shield (A)
- A = Effective cross-sectional area of shield or sheath (circular mils) see table below
- t = Time of short circuit (second)

Type of shield or sheath	Formula for calculating A
1. Wires applied either helically, as a braid or serving or longitudinally with corrugations.	nd_s^2
2. Helically applied tape, not overlapped.	$1.27nwb$
3. Helically applied flat tape, overlapped. See note 3.	$4bd_m \times \sqrt{\frac{100}{2(100 - L)}}$
4. Corrugated tape, longitudinally applied.	$1.27[\pi(d_{is} + 50) + B]b$
5. Tubular sheath.	$4bd_m$

Where :

- A = Effective cross-sectional area. shield or sheath, cmil.
- B = Tape overlap. mils (usually 375)
- b = Thickness of tape. mils
- d_{is} = Diameter over extruded insulation screen, mils.
- d_m = Mean diameter of shield or sheath. mils.
- d_s = Diameter of wires. mils
- w = Width of tape. mils.
- n = Number of serving or braid wires. or tapes.
- L = Overlap of tape. percent

Voltage Drop Calculation

For single phase:

$$V_{1\phi} = \frac{2I(R \cos \theta + X \sin \theta)L}{1000}$$

Where :

I is the nominal full load or starting current as applicable (A)

R is the ac resistance of the cable (Ω/km)

X is the ac reactance of the cable (Ω/km)

$\cos \theta$ is the load power factor (pu)

L is the length of the cable (m)

For three phase:

$$V_{3\phi} = \frac{\sqrt{3}I(R \cos \theta + X \sin \theta)L}{1000}$$

Where :

I is the nominal full load or starting current as applicable (A)

R is the ac resistance of the cable (Ω/km)

X is the ac reactance of the cable (Ω/km)

$\cos \theta$ is the load power factor (pu)

L is the length of the cable (m)

Calculating Maximum Cable Length Due to Voltage Drop

It may be more convenient to calculate the maximum length of a cable for a particular conductor size given a maximum permissible voltage drop (5% of the at full load Ref. NEC Standard) rather than the voltage drop itself. The maximum cable length that will achieve this can be calculated by re-arranging the voltage maximum permissible voltage drop:

For single phase:

$$L_{max} = \frac{1000V_{1\phi}}{2I(R \cos \theta + X \sin \theta)}$$

Where :

I is the nominal full load or starting current as applicable (A)

R is the ac resistance of the cable (Ω/km)

X is the ac reactance of the cable (Ω/km)

$\cos \theta$ is the load power factor (pu)

$V_{1\phi}$ is the maximum permissible single phase voltage drop (V)

For three phase:

$$L_{max} = \frac{1000V_{3\phi}}{\sqrt{3}I(R \cos \theta + X \sin \theta)}$$

Where :

I is the nominal full load or starting current as applicable (A)

R is the ac resistance of the cable (Ω/km)

X is the ac reactance of the cable (Ω/km)

$\cos \theta$ is the load power factor (pu)

$V_{3\phi}$ is the maximum permissible three phase voltage drop (V)

Electrical Data from EIT Standard 2001-56

Table 5-8 : Correction factor for groups of more than one circuit

Group of circuit	Correction factor
2	0.80
3	0.70
4	0.65
5	0.60
6	0.57
7	0.54
8	0.52
9	0.50
10-12	0.45
13-16	0.41
17-20	0.38

Note (Table 5-8)

- 1) These factors are applicable to uniform groups of cables, equally loaded.
- 2) The correction factor are applied to:
 - Groups of two or three or four Single core cables
 - Multi cores cables.
- 3) If a system consists of both two or three or four cables, the total number of cables is taken as the number of circuits, and the correction factor is applied to the table for two or three or four loaded conductors for the two or three or four core cables respectively.
- 4) If a group consists of n Single core cables it may either be considered as n/2 circuits of two loaded conductor or n/3 circuits of three loaded conductor

Remark : This page refer EIT Standard 2001-56

Table 5-20: Current-carrying capacities in amperes for copper conductor, PVC insulated, with or without sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C in conduit

No. of Conductor Single/ multicores	Group for installation method : Group 1				Group for installation method : Group 2			
	2		3		2		3	
	Single core	Multi core	Single core	Multi core	Single core	Multi core	Single core	Multi core
Installation Method								
Type of Cable	60227 IEC 01, 60227 IEC 02, 60227 IEC 05, 60227 IEC 06, 60227 IEC 10, NYY, NYY-G, VCT, VCT-G, IEC 60502-1 and special cable such as flame retardant (FR), low smoke and halogen free (LSHF) etc.							
Size (sq.mm.)	Current-carrying capacities (amperes)							
1	10	10	9	9	12	11	10	10
1.5	13	12	12	11	15	14	13	13
2.5	17	16	16	15	21	20	18	17
4	23	22	21	20	28	26	24	23
6	30	28	27	25	36	33	31	30
10	40	37	37	34	50	45	44	40
16	53	50	49	45	66	60	59	54
25	70	65	64	59	88	78	77	70
35	86	80	77	72	109	97	96	86
50	104	96	94	86	131	116	117	103
70	131	121	118	109	167	146	149	130
95	158	145	143	131	202	175	180	156
120	183	167	164	150	234	202	208	179
150	209	191	188	171	261	224	228	196
185	238	216	213	194	297	256	258	222
240	279	253	249	227	348	299	301	258
300	319	291	285	259	398	343	343	295
400	-	-	-	-	475	-	406	-
500	-	-	-	-	545	-	464	-

Note (Table 5-20)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
- 2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
- 3) Installation method given in Table 5-47.
- 4) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-21: Current-carrying capacities in amperes for copper insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 70°C or 90°C / ambient temperature 40 °C on wall

No. of Conductor Single/ multicores	Group for installation method : Group 3				
	2	Not more than 3			Not more than 3
	Flat	Round		Round	
Type of Cable	Multi core	Single core		Multi core	
Type of insulation	PVC	PVC	XLPE	PVC	XLPE
Conductor temperature	70°C	70°C	90°C	70°C	90°C
Installation Method					
Type of Cable	VAF, VAF-G	NYY, IEC 60502-1	IEC 60502-1	NYY, NYY-G, 60227 IEC 10, IEC 60502-1	IEC 60502-1
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	14	12	16	12	15
1.5	17	16	21	15	20
2.5	23	22	28	21	27
4	32	29	37	28	36
6	41	37	49	36	47
10	56	51	67	50	65
16	74	69	90	66	87
25	-	90	118	84	108
35	-	112	147	104	134
50	-	145	190	125	163
70	-	186	244	160	208
95	-	227	297	194	253
120	-	264	345	225	293
150	-	304	397	260	338
185	-	348	455	297	386
240	-	411	537	351	455
300	-	474	620	404	524
400	-	552	722	-	-
500	-	629	823	-	-

Note (Table 5-21)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43
- 2) Installation method given in Table 5-47
- 3) Type of cable given in Table 5-48

Remark : This page refer EIT Standard 2001-56

Table 5-22 : Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70°C, ambient temperature 40°C on insulator

Installation Methods	Group for installation method : Group 4	
Type of Cable	60227 IEC 01, 60227 IEC 10, NYY	
Size (sq.mm.)	Current-carrying capacities (amperes)	
1	-	-
1.5	-	-
2.5	-	-
4	30	37
6	39	48
10	56	67
16	78	92
25	113	127
35	141	157
50	171	191
70	221	244
95	271	297
120	315	345
150	365	397
185	418	453
240	495	535
300	573	617
400	692	741
500	-	-

Note (Table 5-22)

- 1) Installation method given in Table 5-47
- 2) Type of cable given in Table 5-48

Remark : This page refer EIT Standard 2001-56

Table 5-23: Current-carrying capacities in amperes for copper conductor, PVC insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 70°C / ambient temperature 30 °C in duct in ground or direct burial.

No. of conductor	Group for installation method : Group 5		Group for installation method : Group 6	
	2		3	
Type of Cable	Single core and Multi core	Single core and Multi core	Not more than 3 Single core and Multi core	
Installation Methods				
Type of Cable	NYY, NYY-G, IEC 60502-1			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1	17	15	21	
1.5	21	19	26	
2.5	28	25	35	
4	36	33	45	
6	46	41	57	
10	62	55	76	
16	81	72	99	
25	106	94	128	
35	129	114	154	
50	153	136	181	
70	190	168	223	
95	232	204	267	
120	265	234	304	
150	303	266	342	
185	344	303	386	
240	404	361	448	
300	462	404	507	
400	529	462	577	
500	605	527	654	

Note (Table 5-23)

- 1) Where the ambient temperature in the intended location of the cable differs from 30°C (reference ambient temperature), the correction factor given in Table 5-44
- 2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.
- 3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
- 4) Installation method given in Table 5-47.
- 5) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-24 : Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70°C or 90°C / ambient temperature 40°C in free air

Conductor Temperature	70°C	90°C
Type of Cable	60227 IEC 05, 60227 IEC 06	60227 IEC 07, 60227 IEC 08
Size (sq.mm.)	Current-carrying capacities (amperes)	
0.5	3	3
0.75	6	6
1	10 ²⁾	10
1.5	-	16
2.5	-	25

Note (Table 5-24)

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

- For insulated with PVC 70°C

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

- For insulated with PVC 90°C

Ambient Temperature (Degree celsius)	31-50	51-55	56-60	61-65	66-70
Correction factor	1.00	0.96	0.83	0.67	0.47

2) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-25 : Current-carrying capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70°C or 90°C / ambient temperature 40°C in free air

No. of conductor	2	3
Type of Cable	60227 IEC 52, 60227 IEC 53, 60227 IEC 56, 60227 IEC 57	
Size (sq.mm.)	Current-carrying capacities (amperes)	
0.5	3	3
0.75	6	6
1	10	10
1.5	16	16
2.5	25	20

Note (Table 5-25)

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

- For insulated with PVC 70°C

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

- For insulated with PVC 90°C

Ambient Temperature (Degree celsius)	31-50	51-55	56-60	61-65	66-70
Correction factor	1.00	0.96	0.83	0.67	0.47

2) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-26 : Current-carrying capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70°C / ambient temperature 40°C in free air

No./Type of conductor	Single core 2 wires or	3, 4, 5 Cores
	2 cores with or without ground	
Type of cable	60227 IEC 02, VCT, VCT-G	VCT, VCT-G
Size (sq.mm.)	Current-carrying capacities (amperes)	
1.5	16	-
2.5	25	-
4	30	26
6	39	34
10	51	47
16	73	63
25	97	83
35	140	102
50	175	-
70	216	-
95	258	-
120	302	-
150	347	-
185	394	-
240	471	-

Note (Table 5-26)

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

Ambient Temperature (Degree celsius)	31-35	36-40	41-45	46-50	51-55
Correction factor	1.11	1.00	0.87	0.71	0.50

2) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-27: Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 KV, conductor temperature 90°C / ambient temperature 40 °C in conduit

No. of Conductor Single/ multicore	Group for installation method : Group 1				Group for installation method : Group 2			
	2		3		2		3	
	Single core	Multi core	Single core	Multi core	Single core	Multi core	Single core	Multi core
Installation Method								
Type of Cable	IEC 60502-1 and special cable such as flame retardant (FR), low smoke and halogen free (LSHF) etc.							
Size (sq.mm.)	Current-carrying capacities (amperes)							
1	13	13	12	12	15	15	14	14
1.5	17	17	15	15	21	20	18	18
2.5	24	23	21	20	28	27	25	24
4	32	30	28	27	38	36	34	32
6	41	38	36	35	49	46	44	40
10	56	52	49	46	68	63	60	55
16	74	69	66	62	91	83	80	73
25	96	90	86	81	121	108	106	96
35	119	110	106	99	149	133	131	116
50	144	132	128	118	180	159	159	140
70	182	167	163	149	230	201	202	177
95	219	200	197	179	278	241	245	212
120	253	230	227	207	322	278	284	244
150	289	264	259	236	358	304	311	273
185	329	299	295	268	409	349	349	309
240	386	351	346	315	480	418	410	362
300	442	402	396	360	549	484	468	414
400	-	-	-	-	622	-	531	-
500	-	-	-	-	713	-	606	-

Note (Table 5-27)

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.

2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.

3) Installation method given in Table 5-47.

4) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-28: Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C on insulator

Installation Methods	Group for installation method : Group 4	
Type of Cable	IEC 60502-1	
Size (sq.mm.)	Current-carrying capacities (amperes)	
4	47	54
6	60	68
10	82	90
16	110	124
25	147	166
35	183	206
50	224	250
70	289	321
95	354	391
120	413	455
150	480	525
185	551	602
240	654	711
300	758	821
400	917	987
500	1064	1140

Note (Table 5-28)

1) Installation method given in Table 5-47

Remark : This page refer EIT Standard 2001-56

Table 5-29: Current-carrying capacities in amperes for copper conductor, XLPE insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 90°C / ambient temperature 30 °C in duct in ground or direct burial.

No. of conductor	Group for installation method : Group 5		Group for installation method : Group 6	
	2	3	Not more than 3	
Type of Cable	Single core and Multi core		Single core and Multi core	
Installation Methods				
Type of Cable	IEC 60502-1			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1.5	25	22	33	
2.5	33	29	43	
4	43	38	55	
6	54	47	70	
10	71	63	92	
16	94	83	119	
25	124	109	152	
35	150	132	184	
50	180	159	217	
70	223	196	266	
95	271	238	318	
120	313	275	362	
150	355	312	406	
185	406	356	459	
240	477	418	533	
300	543	475	601	
400	625	545	684	
500	717	623	777	

Note (Table 5-29)

- 1) Where the ambient temperature in the intended location of the cable differs from 30 °C (reference ambient temperature), the correction factor given in Table 5-44
- 2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.
- 3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
- 4) Installation method given in Table 5-47.
- 5) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-30: Current-carrying capacities in amperes for copper conductor, PVC insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C install in perforated trays or ladder cleats

Single/ multicores	Group for installation method : Group 7				
	Single core				Multi cores
	Installation Method				
Type of Cable	60227 IEC 10, NYY, NYY-G and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.				
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	-	-	-	-	13
1.5	-	-	-	-	16
2.5	-	-	-	-	22
4	-	-	-	-	30
6	-	-	-	-	37
10	-	-	-	-	52
16	-	-	-	-	70
25	99	96	127	113	88
35	124	119	157	141	110
50	151	145	191	171	133
70	196	188	244	221	171
95	239	230	297	271	207
120	279	268	345	315	240
150	324	310	397	365	278
185	371	356	453	418	317
240	441	422	535	495	374
300	511	488	617	573	432
400	599	571	741	692	-
500	686	652	854	800	-

Note (Table 5-30)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
- 2) If installation more than 1 circuit, the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.
- 3) Installation method given in Table 5-47.
- 4) Type of cable given in Table 5-48.

Remark : This page refer EIT Standard 2001-56

Table 5-31: Current-carrying capacities in amperes for copper conductor, PVC insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C install in ventilated or unventilated cable channel

Single/ multicores	Group for installation method : Group 7			
	Single core			
	Installation Method			
Type of Cable	60227 IEC 10, NYY, NYY-G, IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1	-	-	12	10
1.5	-	-	15	13
2.5	-	-	21	17
4	-	-	28	23
6	-	-	36	30
10	-	-	50	40
16	-	-	66	54
25	90	77	84	70
35	112	96	104	86
50	145	117	125	103
70	186	149	160	130
95	227	180	194	156
120	264	208	225	179
150	304	228	260	196
185	348	258	297	222
240	411	301	351	258
300	474	343	404	295
400	552	406	-	-
500	629	464	-	-

Note (Table 5-31)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
- 2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

Exception : If spacing for circuit more than two time of cable diameter, the correction factor do not apply.

Remark : This page refer EIT Standard 2001-56

Table 5-32: Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C install in perforated trays or ladder cleats

Single/ multicores	Group for installation method : Group 7				
	Single core				Multi cores
Installation Method					
Type of Cable	IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.				
Size (sq.mm.)	Current-carrying capacities (amperes)				
1	-	-	-	-	16
1.5	-	-	-	-	21
2.5	-	-	-	-	29
4	-	-	-	-	38
6	-	-	-	-	49
10	-	-	-	-	68
16	-	-	-	-	91
25	128	123	166	147	116
35	160	154	206	183	144
50	197	188	250	224	175
70	254	244	321	289	224
95	311	298	391	354	271
120	364	349	455	413	315
150	422	404	525	480	363
185	485	464	602	551	415
240	577	552	711	654	490
300	670	640	821	758	565
400	790	754	987	917	-
500	908	861	1140	1064	-

Note (Table 5-32)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
- 2) If installation more than 1 circuit, the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.
- 3) Installation method given in Table 5-47.
- 4) Type of cable given in Table 5-47.

Remark : This page refer EIT Standard 2001-56

Table 5-33: Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C install in ventilated or unventilated cable channel

Single/ multicores	Group for installation method : Group 7			
	Single core			
Installation Method				
Type of Cable	IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc.			
Size (sq.mm.)	Current-carrying capacities (amperes)			
1	-	-	15	14
1.5	-	-	20	18
2.5	-	-	27	24
4	-	-	36	32
6	-	-	47	40
10	-	-	65	55
16	-	-	87	73
25	118	106	108	96
35	147	131	134	116
50	190	159	163	140
70	244	202	208	177
95	297	245	253	212
120	345	284	293	244
150	397	311	338	273
185	455	349	386	309
240	537	410	455	362
300	620	468	524	414
400	722	531	-	-
500	823	606	-	-

Note (Table 5-33)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
- 2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

Exception : If spacing for circuit more than two time of cable diameter, the correction factor do not apply.

Remark : This page refer EIT Standard 2001-56

Table 5-40: The correction factor for groups more than one circuit for Single core cable install on tray

Installation Method	No. of cable tray	Number of circuit per cable tray					
		1	2	3	4	5-6	7-8
Perforated tray (note 2) 	1	1.00	0.91	0.87	0.82	0.78	0.77
	2	0.96	0.87	0.81	0.78	0.74	0.69
	3	0.95	0.85	0.78	0.75	0.70	0.65
Vertical perforated tray (note 3) 	1	1.00	0.86	0.80	0.75	0.71	0.70
	2	0.95	0.84	0.77	0.72	0.67	0.66
Ladder cleats (note 2) 	1	1.00	0.97	0.96	0.94	0.93	0.92
	2	0.98	0.93	0.89	0.88	0.86	0.83
	3	0.97	0.90	0.86	0.83	0.80	0.77
Perforated tray (note 2) 	1	1.00	0.98	0.96	0.93	0.89	-
	2	0.97	0.93	0.89	0.85	0.80	-
	3	0.96	0.92	0.86	0.82	0.76	-
Vertical perforated tray (note 3) 	1	1.00	0.91	0.89	0.88	0.87	-
	2	1.00	0.90	0.86	0.85	0.83	-
Ladder cleats (note 2) 	1	1.00	1.00	1.00	1.00	1.00	-
	2	0.97	0.95	0.93	0.92	0.91	-
	3	0.96	0.94	0.90	0.89	0.86	-

Remark : This page refer EIT Standard 2001-56

Table 5-40: The correction factor for groups more than one circuit for Single core cable install on tray

Installation Method	No. of cable tray	Number of circuit per cable tray					
		1	2	3	4	5-6	7-9
Perforated tray (note 2) 	1	1.00	0.93	0.90	0.87	0.83	-
	2	0.97	0.89	0.85	0.81	0.76	-
	3	0.96	0.88	0.82	0.78	0.72	-
Vertical perforated tray (note 3) 	1	1.00	0.91	0.89	0.88	0.87	-
	2	0.94	0.90	0.86	0.85	0.83	-
Ladder cleats (note 2) 	1	1.00	0.97	0.96	0.96	0.96	-
	2	0.97	0.94	0.93	0.92	0.91	-
	3	0.96	0.93	0.92	0.91	0.88	-

Note (Table 5-40)

- 1) Factors are given for single layer of cables (or trefoil groups) only
- 2) Values are given for vertical spacing between trays of at least 300 mm, and at least 20 mm, between the trays and any wall only.
- 3) Values are given for horizontal spacing between trays of at least 225 mm, with trays mounted back to back only.
- 4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

Remark : This page refer EIT Standard 2001-56

Table 5-41: The correction factor for groups more than one circuit for multi cores cable install on perforated or unperforated tray or ladder cleats

Installation Method	No. of cable tray	Number of circuit per cable tray						
		1	2	3	4	5-6	7-9	
Perforated tray (note 2)		1	1.00	0.88	0.82	0.77	0.73	0.72
		2	1.00	0.87	0.80	0.77	0.73	0.68
		3	1.00	0.86	0.79	0.76	0.71	0.66
		4-6	1.00	0.84	0.77	0.73	0.68	0.64
		1	1.00	1.00	0.98	0.95	0.91	-
		2	1.00	0.99	0.96	0.92	0.87	-
Vertical perforated tray (note 3)		1	1.00	0.88	0.82	0.77	0.73	0.72
		2	1.00	0.88	0.81	0.76	0.71	0.70
		1	1.00	0.91	0.89	0.88	0.87	-
		2	1.00	0.91	0.88	0.87	0.85	-
Unperforated tray (note 2)		1	0.97	0.84	0.78	0.75	0.71	0.68
		2	0.97	0.83	0.76	0.72	0.68	0.63
		3	0.97	0.82	0.75	0.71	0.66	0.61
		4-6	0.97	0.81	0.73	0.69	0.63	0.58
Ladder cleats (note 2)		1	1.00	0.87	0.82	0.80	0.79	0.78
		2	1.00	0.86	0.80	0.78	0.76	0.73
		3	1.00	0.85	0.79	0.76	0.73	0.70
		4-6	1.00	0.84	0.77	0.73	0.60	0.64
		1	1.00	1.00	1.00	1.00	1.00	-
		2	1.00	0.99	0.98	0.97	0.96	-
3	1.00	0.98	0.97	0.96	0.93	-		

Note (Table 5-41)

- 1) Factors are given for single layer of cables (or trefoil groups) only as shown in table and do not apply when cables are installed in more than one layer touching each other.
- 2) Values are given for vertical spacing between trays of at least 300 mm, and at least 20 mm, between the trays and any wall only.
- 3) Values are given for horizontal spacing between trays of at least 225 mm, with trays mounted back to back only.
- 4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

Remark : This page refer EIT Standard 2001-56

Table 5-42 : Current-carrying capacities in amperes accordance TIS 293-2541 for aluminium conductor, PVC insulated for rated voltage 450/750 , conductor temperature 70°C / ambient temperature 40°C on insulator

Installation Methods		
Size (sq.mm.)	Current-carrying capacities (amperes)	
25	97	86
35	121	108
50	147	132
70	189	171
95	231	210
120	268	245
150	310	284
185	354	327
240	419	389
300	485	452
400	584	547
500	674	635

Note (Table 5-42)

- 1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43

Remark : This page refer EIT Standard 2001-56

Table 5-43: Correction factor for ambient air temperatures other than 40°C to be applied to current-carrying capacities for cables in free air

Ambient Temperature (Degree celcius)	Insulation			
	PVC	XLPE or EPR	MI	
			70°C	105°C
11-15	1.34	1.23	1.41	1.21
16-20	1.29	1.19	1.34	1.16
21-25	1.22	1.14	1.26	1.13
26-30	1.15	1.10	1.18	1.09
31-35	1.08	1.05	1.09	1.04
36-40	1.00	1.00	1.00	1.00
41-45	0.91	0.96	0.91	0.96
46-50	0.82	0.90	0.79	0.91
51-55	0.70	0.84	0.67	0.87
56-60	0.57	0.78	0.53	0.82
61-65	-	0.71	-	0.76
66-70	-	0.64	-	0.70
71-75	-	0.55	-	0.65
76-80	-	0.45	-	0.59
81-85	-	-	-	0.51
86-90	-	-	-	0.43
91-95	-	-	-	0.35

Table 5-44: Correction factor for ambient air temperatures other than 30°C to be applied to current-carrying capacities for cables in the ground

Ambient Temperature (Degree celcius)	Insulation	
	PVC	XLPE or EPR
11-15	1.18	1.12
16-20	1.12	1.08
21-25	1.07	1.03
26-30	1.00	1.00
31-35	0.94	0.96
36-40	0.87	0.91
41-45	0.80	0.86
46-50	0.71	0.82
51-55	0.62	0.76
56-60	0.51	0.70
61-65	-	0.65
66-70	-	0.57
71-75	-	0.49
76-80	-	0.41

Remark : This page refer EIT Standard 2001-56

Table 5-45: Correction factor for Single core or multi cores, rated voltaed 0,6/1 kV install in direct burial when group of circuit more than 1 circuit, flat horizontal

No. of circuit	Space between outside of each cable (mm.)				
	Touching	1 time of cable diameter	125	250	500
2	0.75	0.80	0.85	0.90	0.90
3	0.65	0.70	0.75	0.80	0.85
4	0.60	0.60	0.70	0.75	0.80
5	0.55	0.55	0.65	0.70	0.80
6	0.50	0.55	0.60	0.70	0.80

Table 5-46: Correction factor for Single core or multi cores, rated voltaed 0,6/1 kV install in conduit in direct burial when group of circuit more than 1 circuit, flat horizontal.

No. of circuit	Space between outside of each cable (mm.)			
	Touching	125	500	1000
2	0.85	0.90	0.95	0.95
3	0.75	0.85	0.90	0.95
4	0.70	0.80	0.85	0.90
5	0.65	0.80	0.85	0.90
6	0.60	0.80	0.80	0.90

Remark : This page refer EIT Standard 2001-56

Table 5-47: Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities

Methods of Wiring	Methods of Installation	Group of Installation	Note
Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in thermal insulated wall.		Group 1	Ceiling or thermal insulated wall has a thermal conductant not less than $10 \text{ W/m}^2 \cdot \text{K}$
Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in concrete wall.		Group 2	The inner skin of the concrete has a thermal conductant not greater than 2 K.m/W
Single core or multi cores cable, insulated and sheathed on a wall		Group 3	-
Single core or multi cores cable, insulated with or without sheathed wiring in spacing on insulator		Group 4	Spacing between cable and cable, wall and cable not less than diameter of cable.
Single core or multi cores cable with sheathed install in duct in ground		Group 5	-
Single core or multi cores cable with sheathed install direct burial		Group 6	-

Remark : This page refer EIT Standard 2001-56

Table 5-47: Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities

Methods of Wiring	Methods of Installation	Group of Installation	Note
Single core or multi cores cable with sheathed install on perforated or unperforated tray or ladder cleats.		Group 7	Perforated tray must have ventilated area not less than 30 percent of surface tray

Note (Table 5-47)

-If no confirmation that thermal conductant not less than $10 \text{ W/m}^2 \cdot \text{K}$, consider that install in conduit in ceiling or thermal insulated wall shall be apply current carrying capacities in group 1.

Remark : This page refer EIT Standard 2001-56

Table 5-48: Requirements for Installation copper conductor, PVC insulated cable according to TIS 11-2553

Cable Name	Size (mm ²)	Type of Conductor	No. of core	Temp. of conductor	Sheath	Voltage U ₀ /U (V)	Application
60227 IEC 01	1.5-4.00	Solid or Stranded	1 core	70°C	-	450/750	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 02	1.5-2.40	Flexible	1 core	70°C	-	450/750	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 05	0.5-1.0	Solid or Stranded	1 core	70°C	-	300/500	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 06	0.5-1.0	Flexible	1 core	70°C	-	300/500	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 07	0.5-2.5	Solid	1 core	90°C	-	300/500	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 08	0.5-2.5	Flexible	1 core	90°C	-	300/500	- Installation in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 10	1.5-3.5	Solid or Stranded	Multi-core Multi-core with ground	70°C	✓	300/500	- Installation exposed or in raceway, dry location - Do not allow for under ground installing neither directly burial or in conduit in ground
60227 IEC 41	0.8	Stranded	2 cores	70°C	-	300/300	- For electronic appliances
60227 IEC 43	0.5-0.75	Flexible	1 core	70°C	✓	300/300	- Used in dry room for small indoor decorative lighting chains
60227 IEC 52	0.5-0.75	Flexible	Multi-core	70°C	✓	300/300	- For mobile-electrical equipment , electrical appliances
60227 IEC 53	0.75-2.5	Flexible	Multi-core	70°C	✓	300/500	- For mobile-electrical equipment , electrical appliances
60227 IEC 56	0.5-0.75	Flexible	Multi-core	90°C	✓	300/300	- For mobile-electrical equipment , electrical appliances
60227 IEC 57	0.75-2.5	Flexible	Multi-core Multi-core with ground	90°C	✓	300/500	- For mobile-electrical equipment , electrical appliances
NYG	1-500	Stranded	1 core	70°C	✓	450/750	- Installation into tray, ladder
NYG	50-200		Multi-core				- Installation in conduit in ground or direct burial in ground
NYG	25-300		Multi-core with ground				
VAF	1-16	Solid or Stranded	2 cores	70°C	✓	300/500	- For surface or direct embeded in plaster
VAG-G			2 cores with ground				- Do not allow for installing in conduit. - Do not allow for under ground installing neither directly burial or in conduit in ground
VCT	4-35	Flexible	1 core	70°C	✓	450/750	- For electrical appliances
VCT-G			Multi-core				- Installation into tray, ladder
VCT-G			Multi-core with ground				- Installation in conduit in ground or direct burial in ground

Remark : This page refer EIT Standard 2001-56

Voltage Drop for Single-Core Cable

Table ๑1 Single-core 70 °C PVC insulated copper conductor cables

Conductor cross sectional area (mm ²)	2 cables, single-phase a.c.				3 or 4 cables, three-phase a.c.		
	Group 1, 2 (enclosed in conduit or trunking)	Group 3, 7 (Clipped direct, on tray or in free air)		Group 1, 2 (enclosed in conduit or trunking)	Group 3, 7 (Clipped direct, on tray or in free air)		
		Touching	Spaced		Trefoil	Touching	Spaced
(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)
1.0	44	44	44	38	38	38	38
1.5	29	29	29	25	25	25	25
2.5	18	18	18	15	15	15	15
4	11	11	11	9.5	9.5	9.5	9.5
6	7.3	7.3	7.3	6.4	6.4	6.4	6.4
10	4.4	4.4	4.4	3.8	3.8	3.8	3.8
16	2.8	2.8	2.8	2.4	2.4	2.4	2.4
25	1.81	1.75	1.75	1.52	1.50	1.50	1.52
35	1.33	1.25	1.27	1.13	1.11	1.12	1.15
50	1.00	0.94	0.97	0.85	0.81	0.84	0.86
70	0.71	0.66	0.69	0.61	0.57	0.60	0.63
95	0.56	0.50	0.54	0.48	0.44	0.47	0.50
120	0.48	0.41	0.45	0.40	0.35	0.39	0.43
150	0.41	0.35	0.39	0.35	0.30	0.34	0.38
185	0.36	0.29	0.34	0.31	0.26	0.30	0.34
240	0.30	0.25	0.29	0.27	0.21	0.25	0.29
300	0.27	0.22	0.26	0.24	0.18	0.23	0.26
400	0.25	0.19	0.23	0.22	0.16	0.20	0.24
500	0.23	0.17	0.21	0.20	0.15	0.18	0.22

Table ๑3 Single-core 90 °C XLPE insulated copper conductor cables

Conductor cross sectional area (mm ²)	2 cables, single-phase a.c.				3 or 4 cables, three-phase a.c.		
	Group 1, 2 (enclosed in conduit or trunking)	Group 3, 7 (Clipped direct, on tray or in free air)		Group 1, 2 (enclosed in conduit or trunking)	Group 3, 7 (Clipped direct, on tray or in free air)		
		Touching	Spaced		Trefoil	Touching	Spaced
(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)	(mV/A/m)
1.0	46	46	46	40	40	40	40
1.5	31	31	31	27	27	27	27
2.5	19	19	19	16	16	16	16
4	12	12	12	10	10	10	10
6	7.9	7.9	7.9	6.8	6.8	6.8	6.8
10	4.7	4.7	4.7	4.0	4.0	4.0	4.0
16	2.9	2.9	2.9	2.5	2.5	2.5	2.5
25	1.85	1.85	1.85	1.60	1.57	1.58	1.60
35	1.37	1.35	1.37	1.17	1.14	1.15	1.17
50	1.04	1.00	1.02	0.91	0.87	0.87	0.90
70	0.75	0.70	0.73	0.65	0.61	0.62	0.64
95	0.58	0.52	0.56	0.50	0.45	0.46	0.50
120	0.49	0.42	0.47	0.42	0.37	0.38	0.42
150	0.42	0.36	0.40	0.37	0.31	0.33	0.37
185	0.37	0.31	0.35	0.32	0.26	0.27	0.31
240	0.32	0.25	0.30	0.27	0.22	0.23	0.27
300	0.28	0.22	0.26	0.24	0.19	0.20	0.24
400	0.25	0.19	0.23	0.22	0.17	0.18	0.22
500	0.23	0.17	0.21	0.20	0.15	0.16	0.20

Remark : This page refer EIT Standard 2001-56

Voltage Drop for Multi-Cores Cable

Table 2 Multi-cores 70 °C PVC insulated copper conductor cable

Conductor cross sectional area (mm ²)	Two-core cable, single-phase a.c. (mV/A/m)	Three- or four-core cable, three-phase a.c. (mV/A/m)
1.0	44	38
1.5	29	25
2.5	18	15
4	11	9.5
6	7.3	6.4
10	4.4	3.8
16	2.8	2.4
25	1.75	1.50
35	1.25	1.10
50	0.93	0.80
70	0.65	0.57
95	0.49	0.43
120	0.41	0.36
150	0.34	0.29
185	0.29	0.25
240	0.24	0.21
300	0.21	0.18
400	0.17	0.15

Table 4 Multi-cores 90 °C XLPE insulated copper conductor cable

Conductor cross sectional area (mm ²)	Two-core cable, single-phase a.c. (mV/A/m)	Three- or four-core cable, three-phase a.c. (mV/A/m)
1.0	46	40
1.5	31	27
2.5	19	16
4	12	10
6	7.9	6.8
10	4.7	4.0
16	2.9	2.5
25	1.85	1.60
35	1.35	1.15
50	0.99	0.86
70	0.68	0.60
95	0.52	0.44
120	0.42	0.36
150	0.35	0.31
185	0.30	0.25
240	0.24	0.22
300	0.21	0.18
400	0.19	0.16

Remark : This page refer EIT Standard 2001-56

Copper Conductor Cables

Building Wires and Cables

TIS 11 Part 3-2553 : Non-Sheathed Cables for Fixed Wiring

60227 IEC 01 THW	450/750V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE	B1
YK 60227 IEC 01 THW	450/750V 70°C STRANDED CONDUCTOR PVC INSULATED SUPER SOFT SINGLE CORE	B3
60227 IEC 02 THW (f)	450/750V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE	B4
60227 IEC 05 IV	300/500 V 70°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE	B5
60227 IEC 06 IV (f)	300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE	B6
60227 IEC 07 HIM	300/500 V 90°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE	B7
60227 IEC 08 HIM (f)	300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE	B8
60227 IEC 10	300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED	B9

TIS 11 Part 4-2553 : Sheathed Cables for Fixed Wiring

TIS 11 Part 5-2553 : Flexible Cables (Cords)



60227 IEC 52 VKF	300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE	B13
60227 IEC 52	300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE	B14
60227 IEC 53 VKF	300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE	B15
60227 IEC 53	300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE	B16
60227 IEC 56 HVKF	300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE	B17
60227 IEC 56	300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE	B18
60227 IEC 57 HVKF	300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE	B19
60227 IEC 57	300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE	B20

TIS 11 Part 101-2553 : Sheathed Cables for General Purposes

VAF	300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE	B21
VAF-G	300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, FLAT TYPE	B22
NYN	450/750 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED	B23
NYN-G	450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND	B28
VCT	450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE	B31
VCT-G	450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE	B33

Low Voltage Power Cables



500V-NYY-SWA	300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE	B36
NYN-SWA	450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE	B39
500V-NYCY	300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH CONCENTRIC CONDUCTORS POWER CABLE	B42
NYCY	450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH CONCENTRIC CONDUCTORS POWER CABLE	B43
FD-0.6/1KV-CV	0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE	B44
YK FD-0.6/1KV-CV	0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT SUPER SOFT POWER CABLE	B49
FD-0.6/1KV-CV-AWA	0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE	B53
FD-0.6/1KV-CV-SWA	0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE	B55
FD-0.6/1KV-CV-STA	0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE	B58

B B

Medium Voltage Power Cables

1.8/3KV-CV	1.8/3(3.6)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B61
3.6/6KV-CV	3.6/6(7.2)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B63
6/10KV-CV	6/10(12)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B66
8.7/15KV-CV	8.7/15(17.5)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B68
12/20KV-CV	12/20(24)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B70
18/30KV-CV	18/30(36)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE	B72

High Voltage Power Cables

69KV-CE	69 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATH POWER CABLE	B74
115KV-CE	115 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATH POWER CABLE	B75

Control Cables

CVV	600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE	B76
CVV-S	600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE	B76

Fire Safety Cables

FRLH-IE	450/750V 90°C CROSS-LINKED POLYETHYLENE INSULATED FLAME RETARDANT WITH LOW SMOKE AND ZERO HALOGEN POWER CABLE	B84
FDLH-0,6/1KV-CE	0,6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED POLYOLEFIN SHEATHED FLAME RETARDANT WITH LOW SMOKE AND ZERO HALOGEN POWER CABLE	B86
FDLH-0,6/1KV-CE-SWA	0,6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE	B91
FS/LH-0,6/1KV-XLPE (C)	600/1000V 90°C MICA TAPE CROSS-LINKED POLYETHYLENE INSULATED FLAME RETARDANT WITH LOW SMOKE AND ZERO HALOGEN POWER CABLE	B94
FS/FDLH-0,6/1KV-CE	0,6/1 kV 90°C MICA TAPE CROSS-LINKED POLYETHYLENE INSULATED POLYOLEFIN SHEATHED FIRE RESISTANCE FLAME RETARDANT WITH LOW SMOKE AND ZERO HALOGEN POWER CABLE	B96
FS/FDLH-0,6/1KV-CE-SWA	0,6/1 kV 90°C MICA TAPE CROSS-LINKED POLYETHYLENE INSULATED POLYOLEFIN SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT, LOW SMOKE AND ZERO HALOGEN POWER CABLE	B101

Automobile Wire and Cables

T-AV	60°C LOW VOLTAGE FLEXIBLE CONDUCTOR PVC INSULATED FOR AUTOMOBILE	B104
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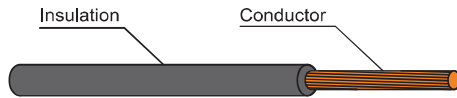
Bare Conductor

FHC	HARD DRAWN COPPER STRANDED CONDUCTOR	B105
FAC	ANNEALED COPPER STRANDED CONDUCTOR	B106

60227 IEC 01 THW



450/750V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 1

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MQ-km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum (mm)	Maximum (mm)					
1.5	Solid	0.7	2.6	3.2	12.1	0.011	21	21	100/C
1.5	Stranded	0.7	2.7	3.3	12.1	0.010	21	22	100/C
2.5	Solid	0.8	3.2	3.9	7.41	0.010	28	32	100/C
2.5	Stranded	0.8	3.3	4.0	7.41	0.009	28	35	100/C
4	Solid	0.8	3.6	4.4	4.61	0.0085	37	47	100/C
4	Stranded	0.8	3.8	4.6	4.61	0.0077	37	50	100/C
6	Solid	0.8	4.1	5.0	3.08	0.0070	49	65	100/C
6	Stranded	0.8	4.3	5.2	3.08	0.0065	49	70	100/C
10	Solid	1.0	5.3	6.4	1.83	0.0070	68	110	100/C
10	Stranded	1.0	5.6	6.7	1.83	0.0065	68	120	100/C
16	Stranded	1.0	6.4	7.8	1.15	0.0050	91	180	100/C
25	Stranded	1.2	8.1	9.7	0.727	0.0050	122	280	100/C
35	Stranded	1.2	9.0	10.9	0.524	0.0043	151	370	100/C
50	Stranded	1.4	10.6	12.8	0.387	0.0043	184	500	500/D
70	Stranded	1.4	12.1	14.6	0.268	0.0035	234	700	500/D
95	Stranded	1.6	14.1	17.1	0.193	0.0035	292	1,000	500/D
120	Stranded	1.6	15.6	18.8	0.153	0.0032	341	1,200	500/D
150	Stranded	1.8	17.3	20.9	0.124	0.0032	391	1,500	500/D
185	Stranded	2.0	19.3	23.3	0.0991	0.0032	454	1,900	500/D
240	Stranded	2.2	22.0	26.6	0.0754	0.0032	543	2,500	500/D
300	Stranded	2.4	24.5	29.6	0.0601	0.0030	628	3,100	500/D
400	Stranded	2.6	27.5	33.2	0.0470	0.0028	736	3,900	500/D

C : Packing in Coil
D : Packing in Drum

60227 IEC 01 THW



450/750V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 1

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
		R (Ω/km)			
1.5	Solid	14.4777	0.5259	0.1652	14.4786
1.5	Stranded	14.4777	0.5276	0.1657	14.4786
2.5	Solid	8.8661	0.5121	0.1609	8.8675
2.5	Stranded	8.8661	0.5202	0.1634	8.8676
4	Solid	5.5159	0.4917	0.1545	5.5180
4	Stranded	5.5159	0.4929	0.1548	5.5181
6	Solid	3.6852	0.4742	0.1490	3.6883
6	Stranded	3.6852	0.4788	0.1504	3.6883
10	Solid	2.1896	0.4694	0.1475	2.1946
10	Stranded	2.1896	0.4736	0.1488	2.1947
16	Stranded	1.3760	0.4575	0.1437	1.3835
25	Stranded	0.8700	0.4596	0.1444	0.8819
35	Stranded	0.6271	0.4403	0.1383	0.6422
50	Stranded	0.4633	0.4367	0.1378	0.4833
70	Stranded	0.3210	0.4298	0.1350	0.3482
95	Stranded	0.2314	0.4304	0.1352	0.2680
120	Stranded	0.1836	0.4236	0.1331	0.2268
150	Stranded	0.1491	0.4231	0.1329	0.1997
185	Stranded	0.1195	0.4232	0.1329	0.1787
240	Stranded	0.0914	0.4194	0.1318	0.1603
300	Stranded	0.0734	0.4177	0.1312	0.1503
400	Stranded	0.0581	0.4160	0.1307	0.1430

YK 60227 IEC 01 THW



450/750V 70°C STRANDED CONDUCTOR PVC INSULATED SUPER SOFT SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Stranded annealed copper wire
: Sizes 6 mm² up to 185 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 1

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)	
			Minimum	Maximum					(m)	(m/D)
6	Non-Compacted	0.8	4.3	5.2	3.08	0.0065	49	70	100/C	1000 2000
10	Non-Compacted	1.0	5.6	6.7	1.83	0.0065	68	120	100/C	1000 2000
16	Compacted	1.0	6.4	7.8	1.15	0.0050	91	180	100/C	1000 2000
25	Compacted	1.2	8.1	9.7	0.727	0.0050	122	280	100/C	1000 2000
35	Compacted	1.2	9.0	10.9	0.524	0.0043	151	370	100/C	1000 2000
50	Compacted	1.4	10.6	12.8	0.387	0.0043	184	500	500/D	1000 2000
70	Compacted	1.4	12.1	14.6	0.263	0.0035	234	700	500/D	1000 2000
95	Compacted	1.6	14.1	17.1	0.193	0.0035	292	1000	500/D	1000 2000
120	Compacted	1.6	15.6	18.8	0.153	0.0032	341	1200	500/D	1000 2000
150	Compacted	1.8	17.3	20.9	0.124	0.0032	391	1500	500/D	1000 2000
185	Compacted	2.0	19.3	23.3	0.0991	0.0032	454	1900	500/D	1000 2000
240	Compacted	2.2	22.0	26.6	0.0754	0.0032	543	2500	500/D	1000 2000

C : Packing in Coil

D : Packing in Drum

Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance	Inductance	Reactance	Impedance
		R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
6	Non-Compacted	3.6852	0.5606	0.1761	3.6894
10	Non-Compacted	2.1896	0.5219	0.1639	2.1958
16	Compacted	1.3776	0.4642	0.1458	1.3838
25	Compacted	0.8700	0.4594	0.1443	0.8819
35	Compacted	0.6271	0.4496	0.1413	0.6428
50	Compacted	0.4633	0.4477	0.1407	0.4841
70	Compacted	0.3210	0.4354	0.1368	0.3489
95	Compacted	0.2314	0.4347	0.1366	0.2687
120	Compacted	0.1836	0.4295	0.1349	0.2279
150	Compacted	0.1491	0.4292	0.1348	0.2010
185	Compacted	0.1194	0.4281	0.1345	0.1799
240	Compacted	0.0914	0.4257	0.1337	0.1620

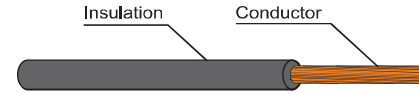
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Building Wires and Cables

60227 IEC 02 THW (f)



450/750V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Flexible annealed copper wire
: Sizes 1.5 mm² up to 240 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 3

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum	Maximum					
1.5	Flexible	0.1	2.8	3.4	13.3	0.010	16	24	100/C
2.5	Flexible	0.8	3.4	4.1	7.98	0.009	25	37	100/C
4	Flexible	0.8	3.9	4.8	4.95	0.0070	30	54	100/C
6	Flexible	0.8	4.4	5.3	3.30	0.0060	39	75	100/C
10	Flexible	1.0	5.7	6.8	1.91	0.0056	51	130	100/C
16	Flexible	1.0	6.7	8.1	1.21	0.0046	73	185	100/C
25	Flexible	1.2	8.4	10.2	0.780	0.0044	97	285	100/C
35	Flexible	1.2	9.7	11.7	0.554	0.0038	140	400	100/C
50	Flexible	1.4	11.5	13.9	0.386	0.0037	175	555	500/D
70	Flexible	1.4	13.2	16.0	0.272	0.0032	216	765	500/D
95	Flexible	1.6	15.1	18.2	0.206	0.0032	258	1,000	500/D
120	Flexible	1.6	16.7	20.2	0.161	0.0029	302	1,300	500/D
150	Flexible	1.8	18.6	22.5	0.129	0.0029	347	1,600	500/D
185	Flexible	2.0	20.6	24.9	0.106	0.0029	394	1,900	500/D
240	Flexible	2.2	23.5	28.4	0.0801	0.0028	471	2,500	500/D

C : Packing in Coil

D : Packing in Drum

Nominal cross sectional area (mm ²)	A.C. Resistance	Inductance	Reactance	Impedance
	R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
1.5	15.9135	0.5149	0.1618	15.9143
2.5	9.5481	0.5038	0.1583	9.5494
4	5.9227	0.4846	0.1522	5.9246
6	3.9485	0.4637	0.1457	3.9512
10	2.2854	0.4531	0.1423	2.2898
16	1.4478	0.4437	0.1394	1.4545
25	0.9334	0.4409	0.1385	0.9436
35	0.6830	0.4312	0.1355	0.6767
50	0.4621	0.4294	0.1349	0.4814
70	0.3258	0.4215	0.1324	0.3517
95	0.2469	0.4230	0.1329	0.2804
120	0.1932	0.4174	0.1311	0.2335
150	0.1550	0.4172	0.1311	0.2030
185	0.1277	0.4187	0.1315	0.1833
240	0.0969	0.4164	0.1308	0.1628

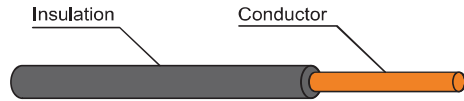
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Building Wires and Cables

60227 IEC 05 IV



300/500 V 70°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Solid annealed copper wire
: Sizes 0.5 mm² up to 1 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
: Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
: 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 3-2553, Table 5

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ-km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum	Maximum					
0.5	Solid	0.6	1.9	2.3	36.0	0.015	3	8.8	100/C
0.75	Solid	0.6	2.1	2.5	24.5	0.012	6	12	100/C
1	Solid	0.6	2.2	2.7	18.1	0.011	10	14	100/C

C : Packing in Coil

Nominal cross sectional area (mm ²)	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
0.5	43.0740	0.5798	0.1821	43.0744
0.75	29.3143	0.5486	0.1723	29.3148
1	21.6567	0.5366	0.1686	21.6573

60227 IEC 06 IV (f)



300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

CABLE STRUCTURE

Conductor : Flexible annealed copper wire
: Sizes 0.5 mm² up to 1 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
: Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
: 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 3-2553, Table 7

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ-km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum	Maximum					
0.5	Flexible	0.6	2.1	2.5	39.0	0.013	3	9	100/C
0.75	Flexible	0.6	2.2	2.7	26.0	0.011	6	12	100/C
1	Flexible	0.6	2.4	2.8	19.5	0.010	10	15	100/C

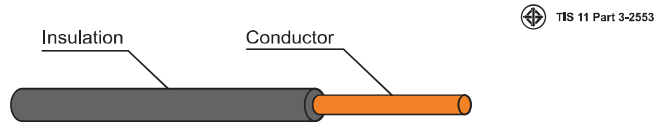
C : Packing in Coil

Nominal cross sectional area (mm ²)	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
0.5	46.6635	0.5642	0.1773	46.6638
0.75	31.1090	0.5394	0.1695	31.1095
1	23.3318	0.5225	0.1641	23.3323

60227 IEC 07 HIV



300/500 V 90°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE



CABLE STRUCTURE

Conductor : Solid annealed copper wire
: Sizes 0.5 mm² up to 2.5 mm²

Insulation : Polyvinyl chloride (PVC/E)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 90 °C
: Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
: 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 3-2553, Table 9

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MQ-km)	Continuous current rating in free air maximum (40 °C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum	Maximum					
0.5	Solid	0.6	1.9	2.3	36.0	0.015	3	8.6	100/C
0.75	Solid	0.6	2.1	2.5	24.5	0.013	6	11	100/C
1	Solid	0.6	2.2	2.7	18.1	0.012	10	14	100/C
1.5	Solid	0.7	2.6	3.2	12.1	0.011	16	20	100/C
2.5	Solid	0.8	3.2	3.9	7.41	0.009	25	32	100/C

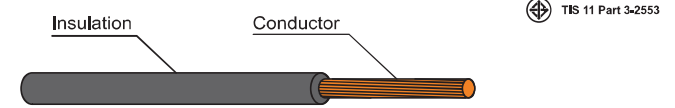
C : Packing in Coil

Nominal cross sectional area (mm ²)	A.C. Resistance (Ω/km)		Inductance (mH/km)		Reactance (Ω/km)		Impedance (Ω/km)	
	R	X _L	L	Z	X _L	Z	Z	
0.5	43.0740	0.5758	0.1809	43.0744	0.1809	43.0744	43.0744	
0.75	29.3143	0.5526	0.1736	29.3148	0.1736	29.3148	29.3148	
1	21.6567	0.5401	0.1697	21.6573	0.1697	21.6573	21.6573	
1.5	14.4777	0.5288	0.1661	14.4786	0.1661	14.4786	14.4786	
2.5	8.8661	0.5198	0.1633	8.8676	0.1633	8.8676	8.8676	

60227 IEC 08 HIV (f)



300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



CABLE STRUCTURE

Conductor : Flexible annealed copper wire
: Sizes 0.5 mm² up to 2.5 mm²

Insulation : Polyvinyl chloride (PVC/E)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 90 °C
: Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
: 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 3-2553, Table 11

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MQ-km)	Continuous current rating in free air maximum (40 °C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum	Maximum					
0.5	Flexible	0.6	2.1	2.5	39.0	0.013	3	9	100/C
0.75	Flexible	0.6	2.2	2.7	26.0	0.012	6	12	100/C
1	Flexible	0.6	2.4	2.8	19.5	0.010	10	15	100/C
1.5	Flexible	0.7	2.8	3.4	13.3	0.009	16	21	100/C
2.5	Flexible	0.8	3.4	4.1	7.98	0.009	25	33	100/C

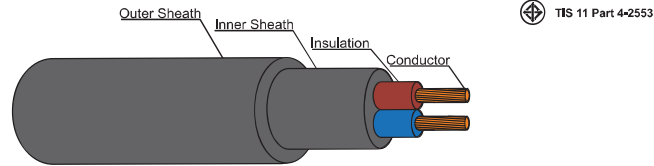
C : Packing in Coil

Nominal cross sectional area (mm ²)	A.C. Resistance (Ω/km)		Inductance (mH/km)		Reactance (Ω/km)		Impedance (Ω/km)	
	R	X _L	L	Z	X _L	Z	Z	
0.5	46.6635	0.5642	0.1773	46.6638	0.1773	46.6638	46.6638	
0.75	31.1090	0.5394	0.1695	31.1095	0.1695	31.1095	31.1095	
1	23.3318	0.5225	0.1641	23.3323	0.1641	23.3323	23.3323	
1.5	15.9135	0.5149	0.1618	15.9143	0.1618	15.9143	15.9143	
2.5	9.5481	0.5038	0.1583	9.5494	0.1583	9.5494	9.5494	

60227 IEC 10



300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²
Insulation : Polyvinyl chloride (PVC/C)
Core identification 2 Cores : Blue, Brown
Inner Sheath : Black polyvinyl chloride (PVC)
Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts
Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line
Testing voltage : 2,000 Volts
Reference standard : TIS 11 Part 4-2553, Table 1

APPLICATION

For installation exposed, or in raceway, wet or dry location

Number of cores	Nominal cross sectional area (mm ²)	Conductor Type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
						Minimum	Maximum					
2	1.5	Solid	0.7	0.4	1.2	7.6	10.0	12.1	0.011	16	120	100/C
	1.5	Stranded	0.7	0.4	1.2	7.8	10.5	12.1	0.010	16	130	100/C
	2.5	Solid	0.8	0.4	1.2	8.6	11.5	7.41	0.010	22	160	100/C
	2.5	Stranded	0.8	0.4	1.2	9.0	12.0	7.41	0.009	22	180	100/C
	4	Solid	0.8	0.4	1.2	9.6	12.5	4.61	0.0085	30	210	100/C
	4	Stranded	0.8	0.4	1.2	10.0	13.0	4.61	0.0077	30	220	100/C
	6	Solid	0.8	0.4	1.2	11.5	13.5	3.08	0.0070	37	270	100/C
	6	Stranded	0.8	0.4	1.2	11.0	14.0	3.08	0.0065	37	290	100/C
	10	Solid	1.0	0.6	1.4	13.0	16.5	1.83	0.0070	52	420	500/D
	10	Stranded	1.0	0.6	1.4	13.5	17.5	1.83	0.0065	52	460	500/D
	16	Stranded	1.0	0.6	1.4	15.5	20.0	1.15	0.0052	70	650	500/D
	25	Stranded	1.2	0.8	1.4	18.5	24.0	0.727	0.0050	88	950	500/D
	35	Stranded	1.2	1.0	1.6	21.0	27.5	0.524	0.0044	110	1,300	500/D

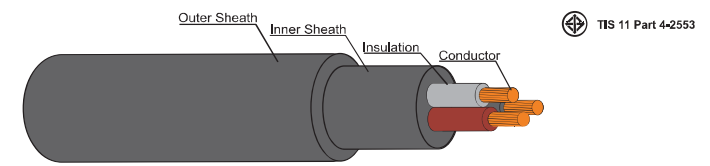
C : Packing in Coil
 D : Packing in Drum

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance			
			R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
2	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1052	8.8667
	2.5	Stranded	8.8661	0.3405	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5188
	4	Stranded	5.5159	0.3164	0.0994	5.5188
	6	Solid	3.6853	0.2951	0.0927	3.6864
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Solid	2.1897	0.2891	0.0908	2.1915
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8700	0.2748	0.0863	0.8743
	35	Stranded	0.6272	0.2554	0.0803	0.6323

60227 IEC 10



300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²
Insulation : Polyvinyl chloride (PVC/C)
Core identification 3 Cores : Brown, Black, Grey or Blue, Brown, Green/Yellow
Inner Sheath : Black polyvinyl chloride (PVC)
Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts
Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line
Testing voltage : 2,000 Volts
Reference standard : TIS 11 Part 4-2553, Table 1

APPLICATION

For installation exposed, or in raceway, wet or dry location

Number of cores	Nominal cross sectional area (mm ²)	Conductor Type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
						Minimum	Maximum					
3	1.5	Solid	0.7	0.4	1.2	8.0	10.6	12.1	0.011	16	140	100/C
	1.5	Stranded	0.7	0.4	1.2	8.2	11.0	12.1	0.010	16	150	100/C
	2.5	Solid	0.8	0.4	1.2	9.2	12.0	7.41	0.010	22	190	100/C
	2.5	Stranded	0.8	0.4	1.2	9.4	12.5	7.41	0.009	22	210	100/C
	4	Solid	0.8	0.4	1.2	10.0	13.0	4.61	0.0085	30	250	100/C
	4	Stranded	0.8	0.4	1.2	10.5	13.5	4.61	0.0077	30	270	100/C
	6	Solid	0.8	0.4	1.4	11.5	14.5	3.08	0.0070	37	340	100/C
	6	Stranded	0.8	0.4	1.4	12.0	15.5	3.08	0.0065	37	370	100/C
	10	Solid	1.0	0.6	1.4	14.0	17.5	1.83	0.0070	52	520	500/D
	10	Stranded	1.0	0.6	1.4	14.5	19.0	1.83	0.0065	52	570	500/D
	16	Stranded	1.0	0.8	1.4	16.5	27.5	1.15	0.0052	70	810	500/D
	25	Stranded	1.2	0.8	1.6	20.5	26.0	0.727	0.0050	88	1,200	500/D
	35	Stranded	1.2	1.0	1.6	22.0	29.0	0.524	0.0044	110	1,600	500/D

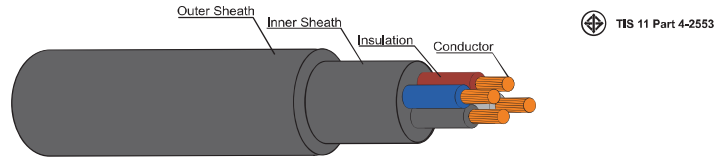
C : Packing in Coil
 D : Packing in Drum

Number of cores	Nominal cross sectional area (mm ²)	Conductor Type	A.C. Resistance			
			R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
3	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1052	8.8667
	2.5	Stranded	8.8661	0.3405	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5188
	4	Stranded	5.5159	0.3164	0.0994	5.5188
	6	Solid	3.6853	0.2951	0.0927	3.6864
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Solid	2.1897	0.2891	0.0908	2.1915
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8700	0.2748	0.0863	0.8744
	35	Stranded	0.6273	0.2554	0.0803	0.6324

60227 IEC 10



300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 4 Cores: Blue, Brown, Black, Grey or Brown, Black, Grey and Green/Yellow

Inner Sheath : Black polyvinyl chloride (PVC)

Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 4-2553, Table 1

APPLICATION

For installation exposed, or in raceway, wet or dry location

Number of cores	Nominal cross sectional area (mm ²)	Conductor Type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
						Minimum	Maximum					
4	1.5	Solid	0.7	0.4	1.2	8.6	11.5	12.1	0.011	16	160	100C
	1.5	Stranded	0.7	0.4	1.2	9.0	12.0	12.1	0.010	16	180	100C
	2.5	Solid	0.8	0.4	1.2	10.0	13.0	7.41	0.010	22	230	100C
	2.5	Stranded	0.8	0.4	1.2	10.0	13.5	7.41	0.009	22	250	100C
	4	Solid	0.8	0.4	1.4	11.5	14.5	4.61	0.0085	30	320	100C
	4	Stranded	0.8	0.4	1.4	12.0	15.0	4.61	0.0077	30	340	100C
	6	Solid	0.8	0.6	1.4	12.5	16.0	3.08	0.0070	37	440	500D
	6	Stranded	0.8	0.6	1.4	13.0	17.0	3.08	0.0065	37	470	500D
	10	Solid	1.0	0.6	1.4	15.5	19.0	1.83	0.0070	52	660	500D
	10	Stranded	1.0	0.6	1.4	16.0	20.5	1.83	0.0065	52	700	500D
	16	Stranded	1.0	0.8	1.4	18.0	23.5	1.15	0.0052	70	1,000	500D
	25	Stranded	1.2	1.0	1.6	22.5	28.5	0.727	0.0050	88	1,600	500D
35	Stranded	1.2	1.0	1.6	24.5	32.0	0.524	0.0044	110	2,000	500D	

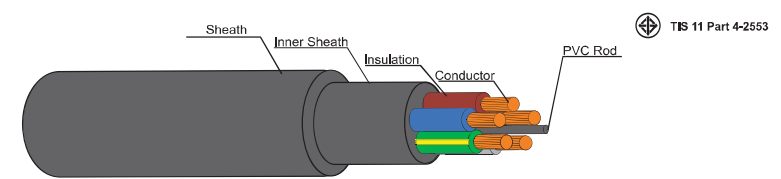
C : Packing in Coil
 D : Packing in Drum

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
4	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1082	8.8667
	2.5	Stranded	8.8661	0.3468	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5168
	4	Stranded	5.5159	0.3164	0.0994	5.5168
	6	Solid	3.6853	0.2951	0.0927	3.6864
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Solid	2.1897	0.2891	0.0908	2.1916
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8701	0.2748	0.0863	0.8744
35	Stranded	0.6273	0.2554	0.0803	0.6324	

60227 IEC 10



300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core Identification : 5 Cores: Blue, Brown, Black, Grey and Black or Blue, Brown, Black, Grey and Green/Yellow

Inner Sheath : Black polyvinyl chloride (PVC)

Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 4-2553, Table 1

APPLICATION

For installation exposed, or in raceway, wet or dry location

Number of cores	Nominal cross sectional area (mm ²)	Conductor Type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air maximum (40°C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
						Minimum	Maximum					
4	1.5	Solid	0.7	0.7	1.2	9.4	12.0	12.1	0.011	16	200	100C
	1.5	Stranded	0.7	0.7	1.2	9.8	12.5	12.1	0.010	16	220	100C
	2.5	Solid	0.8	0.8	1.2	11.0	14.0	7.41	0.010	22	280	100C
	2.5	Stranded	0.8	0.8	1.2	11.0	14.5	7.41	0.009	22	310	100C
	4	Solid	0.8	0.8	1.4	12.5	16.0	4.61	0.0085	30	410	100C
	4	Stranded	0.8	0.8	1.4	13.0	17.0	4.61	0.0077	30	430	100C
	6	Solid	0.8	0.8	1.4	13.5	17.5	3.08	0.0070	37	530	500D
	6	Stranded	0.8	0.8	1.4	14.5	18.5	3.08	0.0065	37	570	500D
	10	Solid	1.0	1.0	1.4	17.0	21.0	1.83	0.0070	52	800	500D
	10	Stranded	1.0	1.0	1.4	17.5	22.0	1.83	0.0065	52	870	500D
	16	Stranded	1.0	1.0	1.6	20.5	26.0	1.15	0.0052	70	1,300	500D
	25	Stranded	1.2	1.2	1.6	24.5	31.5	0.727	0.0050	88	1,900	500D
35	Stranded	1.2	1.2	1.6	27.0	35.0	0.524	0.0044	110	2,600	500D	

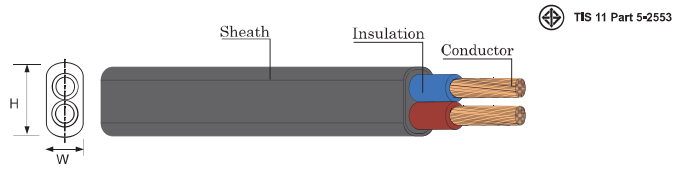
C : Packing in Coil
 D : Packing in Drum

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
5	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1082	8.8667
	2.5	Stranded	8.8661	0.3406	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5168
	4	Stranded	5.5159	0.3164	0.0994	5.5168
	6	Solid	3.6853	0.2951	0.0927	3.6864
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Solid	2.1897	0.2891	0.0908	2.1916
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8701	0.2748	0.0863	0.8744
35	Stranded	0.6273	0.2554	0.0803	0.6324	

60227 IEC 52 VKF



300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



CABLE STRUCTURE

Conductor : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

Insulation : Polyvinyl chloride (PVC/D)

Core identification
2 Cores : Blue and Brown

Sheath : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/300 Volts

Rated voltage : 300 Volts between Line to Earth
: 300 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 5-2553 Table 7

APPLICATION

For household appliances, electrical equipment and electrical illumination.

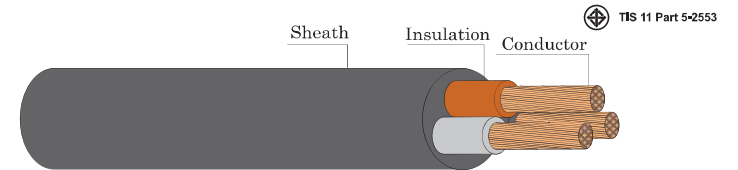
Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					W x H Minimum (mm)	W x H Maximum (mm)					
2	0.5	Flexible	0.5	0.6	3.0 x 4.9	3.7 x 5.9	39.0	0.012	3	28	100/C
	0.75	Flexible	0.5	0.6	3.2 x 5.2	3.8 x 6.3	26.0	0.010	6	35	100/C

C = Packing in coil

60227 IEC 52



300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



CABLE STRUCTURE

Conductor : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

Insulation : Polyvinyl chloride (PVC/D)

Core identification
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey or Blue, Brown and Green/Yellow

Sheath : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/300 Volts

Rated voltage : 300 Volts between Line to Earth
: 300 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 5-2553 Table 7

APPLICATION

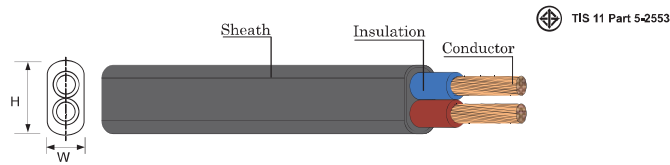
For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					Minimum (mm)	Maximum (mm)					
2	0.5	Flexible	0.5	0.6	4.6	5.9	39.0	0.012	3	40	100/C
	0.75	Flexible	0.5	0.6	4.9	6.3	26.0	0.010	6	48	100/C
3	0.5	Flexible	0.5	0.6	4.9	6.3	39.0	0.012	3	47	100/C
	0.75	Flexible	0.5	0.6	5.2	6.7	26.0	0.010	6	58	100/C

60227 IEC 53 VKF



300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 1 mm²
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification**
2 Cores : Blue and Brown
- Sheath** : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 5-2553 Table 9

APPLICATION

For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					W X H Minimum (mm)	W X H Maximum (mm)					
2	0.75	Flexible	0.6	0.8	3.7 x 6.0	4.5 x 7.2	26.0	0.011	6	43	100/C
	1	Flexible	0.6	0.8	3.9 x 6.2	4.7 x 7.5	19.5	0.010	10	50	100/C

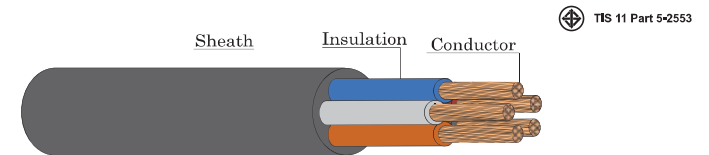
C = Packing in coil

B B

60227 IEC 53



300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 2.5 mm²
- Insulation** : Polyvinyl chloride (PVC/D)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 5-2553 Table 9

- Core identification**
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey or Blue, Brown and Green/Yellow
4 Cores : Blue, Brown, Black and Grey or Brown, Black, Grey and Green/Yellow
5 Cores : Blue, Brown, Black, Grey and Black or Blue, Brown, Black, Grey and Green/Yellow

- Sheath** : Black polyvinyl chloride (PVC/ST5)

APPLICATION

For household appliances, electrical equipment and electrical illumination.

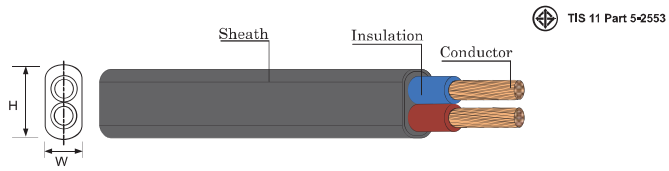
Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					Minimum (mm)	Maximum (mm)					
2	0.75	Flexible	0.6	0.8	5.7	7.2	26.0	0.011	6	60	100/C
	1	Flexible	0.6	0.8	5.9	7.5	19.5	0.010	10	70	100/C
	1.5	Flexible	0.7	0.8	6.8	8.6	13.3	0.010	16	93	100/C
3	2.5	Flexible	0.8	1.0	8.4	10.6	7.98	0.009	25	140	100/C
	0.75	Flexible	0.6	0.8	6.0	7.6	26.0	0.011	6	70	100/C
	1	Flexible	0.6	0.8	6.3	8.0	19.5	0.010	10	82	100/C
4	1.5	Flexible	0.7	0.8	7.4	9.4	13.3	0.010	16	115	100/C
	2.5	Flexible	0.8	1.0	9.2	11.4	7.98	0.009	20	175	100/C
	0.75	Flexible	0.6	0.8	6.6	8.3	26.0	0.011	6	84	100/C
5	1	Flexible	0.6	0.8	7.1	9.0	19.5	0.010	10	105	100/C
	1.5	Flexible	0.7	0.8	8.4	10.5	13.3	0.010	16	145	100/C
	2.5	Flexible	0.8	1.0	10.1	12.5	7.98	0.009	20	215	100/C
5	0.75	Flexible	0.6	0.8	7.4	9.3	26.0	0.011	6	105	100/C
	1	Flexible	0.6	0.8	7.8	9.8	19.5	0.010	10	125	100/C
	1.5	Flexible	0.7	1.1	9.3	11.6	13.3	0.010	16	175	100/C
2.5	Flexible	0.8	1.2	11.2	13.9	7.98	0.009	20	265	100/C	

C = Packing in coil

60227 IEC 56 HVKF



300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



TIS 11 Part 5-2553

CABLE STRUCTURE

Conductor : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

Insulation : Polyvinyl chloride (PVC/E)

Core identification
2 Cores : Blue and Brown

Sheath : Black polyvinyl chloride (PVC/ST10)

TECHNICAL DATA

Classification : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 300/300 Volts

Rated voltage : 300 Volts between Line to Earth
: 300 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 5-2553 Table 11

APPLICATION

For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					W x H Minimum	W x H Maximum					
2	0.5	Flexible	0.5	0.6	3.0 x 4.9	3.7 x 5.9	39.0	0.012	3	28	100/C
	0.75	Flexible	0.5	0.6	3.2 x 5.2	3.8 x 6.3	26.0	0.010	6	35	100/C

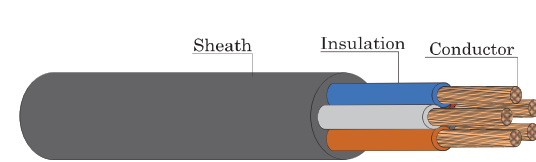
C = Packing in coil

B B

60227 IEC 56



300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



TIS 11 Part 5-2553

CABLE STRUCTURE

Conductor : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

Insulation : Polyvinyl chloride (PVC/E)

Core identification
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey or Blue, Brown and Green/Yellow

Sheath : Black polyvinyl chloride (PVC/ST10)

TECHNICAL DATA

Classification : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 300/300 Volts

Rated voltage : 300 Volts between Line to Earth
: 300 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 5-2553 Table 11

APPLICATION

For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter (mm)		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					Minimum	Maximum					
2	0.5	Flexible	0.5	0.6	4.6	5.9	39.0	0.012	3	38	100/C
	0.75	Flexible	0.5	0.6	4.9	6.3	26.0	0.010	6	46	100/C
3	0.5	Flexible	0.5	0.6	4.9	6.3	39.0	0.012	3	44	100/C
	0.75	Flexible	0.5	0.6	5.2	6.7	26.0	0.010	6	55	100/C

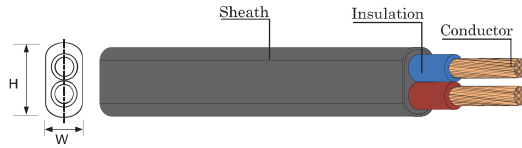
C = Packing in coil

60227 IEC 57 HVKF



300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE

TIS 11 Part 5-2553



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 1 mm²
- Insulation** : Polyvinyl chloride (PVC/E)
- Core identification**
2 Cores : Blue and Brown
- Sheath** : Black polyvinyl chloride (PVC/ST10)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 5-2553 Table 13

APPLICATION

For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MΩ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					W x H Minimum (mm)	W x H Maximum (mm)					
2	0.75	Flexible	0.6	0.8	3.7 x 6.0	4.5 x 7.2	26.0	0.011	6	42	100/C
					3.9 x 6.2	4.7 x 7.5	19.5	0.010	10	50	100/C

C = Packing in coil

B B

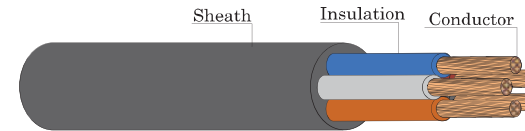
บริษัท ซีที อิเล็กทริก ซัพพลาย จำกัด
CT ELECTRIC SUPPLY CO., LTD.
โทร : 02 550 9555

60227 IEC 57



300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE

TIS 11 Part 5-2553



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 2.5 mm²
- Insulation** : Polyvinyl chloride (PVC/E)
- Core identification**
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey
or Blue, Brown and Green/Yellow
4 Cores : Blue, Brown, Black and Grey
or Brown, Black, Grey and Green/Yellow
5 Cores : Blue, Brown, Black, Grey and Black
or Blue, Brown, Black, Grey and Green/Yellow
- Sheath** : Black polyvinyl chloride (PVC/ST10)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 5-2553 Table 13

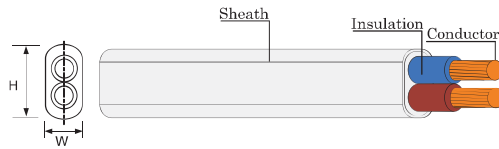
APPLICATION

For household appliances, electrical equipment and electrical illumination.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 90°C minimum (MΩ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					Minimum (mm)	Maximum (mm)					
2	0.75	Flexible	0.6	0.8	5.7	7.2	26.0	0.011	6	57	100/C
	1	Flexible	0.6	0.8	5.9	7.5	19.5	0.010	10	66	100/C
	1.5	Flexible	0.7	0.8	6.8	8.6	13.3	0.010	16	89	100/C
	2.5	Flexible	0.8	1.0	8.4	10.6	7.98	0.009	25	135	100/C
3	0.75	Flexible	0.6	0.8	6.0	7.6	26.0	0.011	6	66	100/C
	1	Flexible	0.6	0.8	6.3	8.0	19.5	0.010	10	78	100/C
	1.5	Flexible	0.7	0.9	7.4	9.4	13.3	0.010	16	110	100/C
4	0.75	Flexible	0.6	0.8	6.6	8.3	26.0	0.011	6	80	100/C
	1	Flexible	0.6	0.9	7.1	9.0	19.5	0.010	10	99	100/C
	1.5	Flexible	0.7	1.0	8.4	10.5	13.3	0.010	16	140	100/C
	2.5	Flexible	0.8	1.1	10.1	12.5	7.98	0.009	20	205	100/C
5	0.75	Flexible	0.6	0.9	7.4	9.3	26.0	0.011	6	99	100/C
	1	Flexible	0.6	0.9	7.8	9.8	19.5	0.010	10	120	100/C
	1.5	Flexible	0.7	1.1	9.3	11.6	13.3	0.010	16	170	100/C
	2.5	Flexible	0.8	1.2	11.2	13.9	7.98	0.009	20	250	100/C

C = Packing in coil

300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Solid and stranded annealed copper
: Sizes 1 mm² up to 16 mm²
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification**
2 Cores : Blue and Brown
- Sheath** : White polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

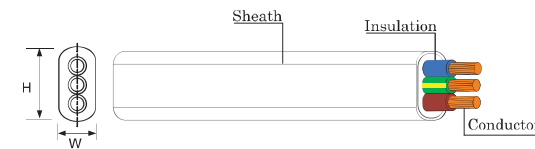
- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 1

APPLICATION

Building wiring for surface or above ceiling wiring or direct embedded in plaster.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
					W x H Minimum (mm)	W x H Maximum (mm)					
1	1	Solid	0.6	0.9	4.0 x 6.2	4.7 x 7.4	18.1	0.0110	14	50	100/C
	1.5	Solid	0.7	0.9	4.4 x 7.0	5.4 x 8.4	12.1	0.0110	17	70	100/C
	2.5	Solid	0.8	1.0	5.2 x 8.4	6.2 x 9.8	7.41	0.0100	23	100	100/C
2	4	Stranded	0.8	1.1	5.6 x 9.6	7.2 x 11.5	4.61	0.0077	32	150	100/C
	6	Stranded	0.8	1.1	6.4 x 10.5	8.0 x 13.0	3.08	0.0065	41	200	100/C
	10	Stranded	1.0	1.2	7.8 x 13.0	9.6 x 16.0	1.83	0.0065	56	310	100/C
	16	Stranded	1.0	1.3	9.0 x 15.5	11.0 x 18.5	1.15	0.0052	74	450	100/C

300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, FLAT TYPE



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Solid and stranded annealed copper
: Sizes 1 mm² up to 16 mm² for phase wires
: Sizes 1 mm² up to 16 mm² for ground wire
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification**
2 Cores + Ground : Blue, Brown and Green/Yellow
- Sheath** : White polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 300/500 Volts
- Rated voltage** : 300 Volts between Line to Earth
: 500 Volts between Line to Line
- Testing voltage** : 2,000 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 1

APPLICATION

Building wiring for surface or above ceiling wiring or direct embedded in plaster.

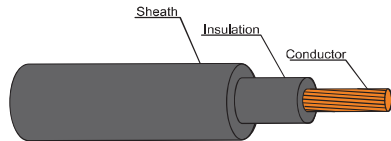
Number of cores	Nominal cross sectional area		Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MQ-km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
	Phase (mm ²)	Ground (mm ²)				W x H Minimum (mm)	W x H Maximum (mm)	Phase (Ω/km)	Ground (Ω/km)				
	1	1					Solid	0.6	0.9				
2	1.5	1.5	Solid	0.7	0.9	4.4 x 7.0	5.4 x 8.4	12.1	12.1	0.0110	17	100	100/C
	2.5	2.5	Solid	0.8	1.0	5.2 x 8.4	6.2 x 9.8	7.41	7.41	0.0100	23	150	100/C
	4	4	Stranded	0.8	1.1	5.6 x 9.6	7.2 x 11.5	4.61	4.61	0.0077	32	220	100/C
2	6	6	Stranded	0.8	1.1	6.4 x 10.5	8.0 x 13.0	3.08	3.08	0.0065	41	290	100/C
	10	10	Stranded	1.0	1.2	7.8 x 13.0	9.6 x 16.0	1.83	1.83	0.0065	56	460	100/C
	16	16	Stranded	1.0	1.3	9.0 x 15.5	11.0 x 18.5	1.15	1.15	0.0052	74	650	500/D

C = Packing in coil
D = Packing in drum

NY Y



450/750 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Single-core : Sizes 1 mm² up to 500 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification Single-cores : Black

Sheath : Black polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 3

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of core	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)			Continuous current rating in ground at 30°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
								Spaced	Touching	Trefold			
1	1	Solid	1.5	1.8	8.5	18.1	0.0207	19	16	15	21	80	100°C
	1	Stranded	1.5	1.8	8.8	18.1	0.0200	19	16	15	21	80	100°C
	1.5	Solid	1.5	1.8	9.0	12.1	0.0184	24	19	19	26	85	100°C
	1.5	Stranded	1.5	1.8	9.2	12.1	0.0175	24	19	19	26	90	100°C
	2.5	Solid	1.5	1.8	9.4	7.41	0.0157	32	24	26	35	100	100°C
	2.5	Stranded	1.5	1.8	9.5	7.41	0.0146	32	24	26	35	110	100°C
	4	Solid	1.5	1.8	10.0	4.81	0.0135	42	33	34	45	120	100°C
	4	Stranded	1.5	1.8	10.5	4.81	0.0124	42	33	34	45	130	100°C
	6	Stranded	1.5	1.8	11.0	3.08	0.0107	54	42	43	57	160	100°C
	10	Stranded	1.5	1.8	12.0	1.83	0.0088	73	57	59	76	210	500/D
	16	Stranded	1.5	1.8	13.0	1.15	0.0074	96	76	78	99	280	500/D
	25	Stranded	1.5	1.8	14.5	0.727	0.0061	127	99	96	128	390	500/D
	35	Stranded	1.5	1.8	16.0	0.524	0.0053	157	124	119	154	490	500/D
	50	Stranded	1.5	1.8	17.0	0.387	0.0046	191	151	145	181	620	500/D
	70	Stranded	1.5	1.8	19.0	0.268	0.0039	244	196	188	223	850	500/D
	95	Stranded	1.7	1.8	21.5	0.193	0.0038	297	239	230	267	1,100	500/D
	120	Stranded	1.7	1.8	23.0	0.153	0.0034	345	273	268	304	1,400	500/D
	150	Stranded	1.9	2.0	26.0	0.124	0.0034	397	324	310	342	1,700	500/D
	185	Stranded	2.1	2.0	28.0	0.0991	0.0034	453	371	356	386	2,100	500/D
	240	Stranded	2.3	2.2	31.5	0.0754	0.0033	535	441	422	448	2,700	500/D
300	Stranded	2.5	2.2	35.0	0.0601	0.0032	617	511	488	507	3,400	500/D	
400	Stranded	2.7	2.2	38.5	0.0470	0.0030	741	599	571	577	4,300	500/D	
500	Stranded	3.1	2.4	43.0	0.0366	0.0031	854	686	652	654	5,400	500/D	

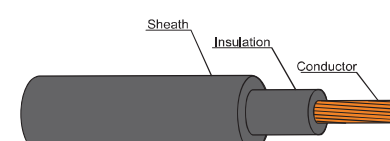
Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W
 Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

NY Y



450/750 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Single-core : Sizes 1 mm² up to 500 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification Single-cores : Black,

Sheath : Black polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 3

APPLICATION

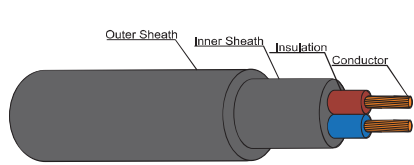
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of core	Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance			Inductance			Reactance			Impedance		
			R (Ω/km)			L (mH/km)			X _L (Ω/km)			Z (Ω/km)		
			Space	Touching	Trefold	Space	Touching	Trefold	Space	Touching	Trefold	Space	Touching	Trefold
1	1	Solid	21.6567	21.6567	21.6567	0.7840	0.6454	0.5991	0.2463	0.2027	0.1892	21.6581	21.6576	21.6575
	1	Stranded	21.6567	21.6567	21.6567	0.7740	0.6353	0.5891	0.2431	0.1996	0.1851	21.6580	21.6576	21.6574
	1.5	Solid	14.4777	14.4777	14.4777	0.7485	0.6099	0.5637	0.2352	0.1916	0.1771	14.4796	14.4789	14.4787
	1.5	Stranded	14.4777	14.4777	14.4777	0.7388	0.6001	0.5539	0.2321	0.1885	0.1740	14.4795	14.4789	14.4787
	2.5	Solid	8.8661	8.8661	8.8661	0.7063	0.5677	0.5214	0.2219	0.1783	0.1638	8.8689	8.8679	8.8676
	2.5	Stranded	8.8661	8.8661	8.8661	0.7025	0.5639	0.5176	0.2207	0.1771	0.1626	8.8688	8.8678	8.8676
	4	Solid	5.5159	5.5159	5.5159	0.6698	0.5312	0.4850	0.2104	0.1669	0.1524	5.5199	5.5184	5.5180
	4	Stranded	5.5159	5.5159	5.5159	0.6649	0.5263	0.4801	0.2089	0.1653	0.1508	5.5198	5.5184	5.5179
	6	Stranded	3.6852	3.6852	3.6852	0.6350	0.4974	0.4512	0.1998	0.1553	0.1417	3.6907	3.6886	3.6880
	10	Stranded	2.1896	2.1896	2.1896	0.5999	0.4612	0.4150	0.1885	0.1449	0.1304	2.1977	2.1944	2.1935
	16	Stranded	1.3760	1.3761	1.3761	0.5702	0.4315	0.3853	0.1791	0.1356	0.1210	1.3875	1.3827	1.3814
	25	Stranded	0.8700	0.8700	0.8700	0.5450	0.4064	0.3602	0.1712	0.1277	0.1132	0.8866	0.8793	0.8773
	35	Stranded	0.6271	0.6272	0.6272	0.5175	0.3789	0.3327	0.1626	0.1190	0.1045	0.6478	0.6394	0.6368
	50	Stranded	0.4632	0.4633	0.4634	0.5023	0.3637	0.3175	0.1578	0.1143	0.0997	0.4894	0.4772	0.4740
	70	Stranded	0.3210	0.3211	0.3212	0.4862	0.3476	0.3014	0.1527	0.1092	0.0947	0.3555	0.3391	0.3348
	95	Stranded	0.2313	0.2315	0.2317	0.4772	0.3386	0.2923	0.1499	0.1064	0.0918	0.2757	0.2548	0.2492
	120	Stranded	0.1836	0.1838	0.1840	0.4664	0.3278	0.2816	0.1465	0.1030	0.0885	0.2349	0.2107	0.2042
	150	Stranded	0.1490	0.1493	0.1496	0.4663	0.3276	0.2814	0.1465	0.1029	0.0884	0.2090	0.1814	0.1737
	185	Stranded	0.1194	0.1198	0.1201	0.4622	0.3235	0.2773	0.1452	0.1016	0.0871	0.1680	0.1571	0.1484
	240	Stranded	0.0913	0.0918	0.0922	0.4568	0.3182	0.2719	0.1435	0.1000	0.0854	0.1701	0.1357	0.1257
300	Stranded	0.0733	0.0740	0.0745	0.4517	0.3131	0.2668	0.1419	0.0984	0.0838	0.1597	0.1231	0.1122	
400	Stranded	0.0580	0.0589	0.0596	0.4465	0.3079	0.2617	0.1403	0.0967	0.0822	0.1518	0.1132	0.1015	
500	Stranded	0.0460	0.0471	0.0480	0.4460	0.3074	0.2612	0.1401	0.0966	0.0820	0.1475	0.1074	0.0951	

NYY



450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Stranded annealed copper
: Multi-core : Sizes 50 mm² up to 300 mm²
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : 2 Cores : Blue, Brown
- Inner sheath** : Black polyvinyl chloride (PVC)
- Sheath** : Black polyvinyl chloride

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
: 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 3

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Continuous current rating in ground at 30°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
2	50	Stranded	1.5	1.2	2.2	33.5	0.387	0.0046	133	181	1800	500/D
	70	Stranded	1.5	1.5	2.2	38.0	0.268	0.0039	171	223	2400	500/D
	95	Stranded	1.7	1.5	2.2	42.5	0.193	0.0038	207	267	3200	500/D
	120	Stranded	1.7	1.5	2.4	46.5	0.153	0.0034	240	304	3900	500/D
	150	Stranded	1.9	1.8	2.6	52.0	0.124	0.0034	278	342	4800	500/D
	185	Stranded	2.1	1.8	2.8	57.0	0.0991	0.0034	317	386	6000	500/D
	240	Stranded	2.3	2.0	3.0	64.0	0.0754	0.0033	374	448	7500	300/D
300	Stranded	2.5	2.0	3.2	70.5	0.0601	0.0032	432	507	9500	300/D	

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

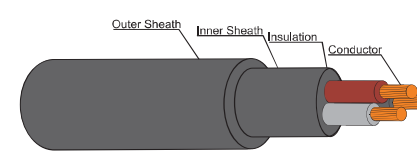
Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area (mm ²)	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
2	50	0.4634	0.2604	0.0818	0.4706
	70	0.3212	0.2506	0.0787	0.3307
	95	0.2317	0.2480	0.0779	0.2444
	120	0.1840	0.2409	0.0757	0.1990
	150	0.1485	0.2402	0.0755	0.1675
	185	0.1201	0.2401	0.0754	0.1418
	240	0.0922	0.2361	0.0742	0.1183
300	0.0744	0.2343	0.0736	0.1047	

NYY



450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Stranded annealed copper
: Multi-core : Sizes 50 mm² up to 300 mm²
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : 3 Cores : Brown, Black, Grey
- Inner sheath** : Black polyvinyl chloride (PVC)
- Sheath** : Black polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
: 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 3

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Continuous current rating in ground at 30°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
3	50	Stranded	1.5	1.2	2.2	36.0	0.387	0.0046	133	181	2,400	500/D
	70	Stranded	1.5	1.5	2.2	40.5	0.268	0.0039	171	223	3,100	500/D
	95	Stranded	1.7	1.5	2.2	46.0	0.193	0.0038	207	267	4,200	500/D
	120	Stranded	1.7	1.5	2.4	50.5	0.153	0.0034	240	304	5,000	500/D
	150	Stranded	1.9	1.8	2.6	56.0	0.124	0.0034	278	342	6,500	500/D
	185	Stranded	2.1	1.8	2.8	61.5	0.0991	0.0034	317	386	8,000	300/D
	240	Stranded	2.3	2.0	3.0	68.0	0.0754	0.0033	374	448	10,000	300/D
300	Stranded	2.5	2.0	3.2	76.0	0.0601	0.0032	432	507	12,500	200/D	

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

Deep of laying (For cable laid direct in ground) 0.8 m

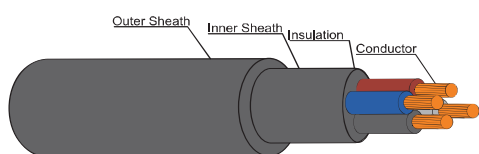
D : Packing in Drum

Number of cores	Nominal cross sectional area (mm ²)	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
3	50	0.4635	0.2604	0.0818	0.4707
	70	0.3213	0.2506	0.0787	0.3308
	95	0.2319	0.2480	0.0779	0.2446
	120	0.1843	0.2409	0.0757	0.1992
	150	0.1459	0.2402	0.0755	0.1678
	185	0.1205	0.2401	0.0754	0.1422
	240	0.0928	0.2361	0.0742	0.1188
300	0.0751	0.2343	0.0736	0.1052	

NYY



450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Stranded annealed copper
 : Multi-core : Sizes 50 mm² up to 300 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 4 Cores : Blue, Brown, Black, Grey

Inner sheath : Black polyvinyl chloride (PVC)

Sheath : Black polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 3

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Continuous current rating in ground at 30°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
4	50	Stranded	1.5	1.5	2.2	39.5	0.387	0.0046	161	2,900	500/D	
	70	Stranded	1.5	1.5	2.4	44.5	0.268	0.0039	171	223	3,900	500/D
	95	Stranded	1.7	1.8	2.6	51.5	0.193	0.0038	207	267	5,500	500/D
	120	Stranded	1.7	1.8	2.8	56.0	0.153	0.0034	240	304	6,500	500/D
	150	Stranded	1.9	2.0	3.0	62.0	0.124	0.0034	278	342	8,000	500/D
	185	Stranded	2.1	2.0	3.2	68.0	0.0991	0.0034	317	386	10,000	300/D
240	Stranded	2.3	2.2	3.4	76.5	0.0754	0.0033	374	448	13,000	300/D	
300	Stranded	2.5	2.2	3.8	85.0	0.0601	0.0032	432	507	16,000	200/D	

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in Drum

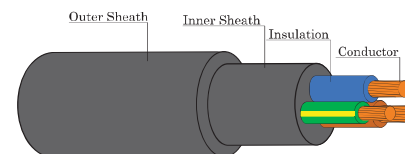
Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area (mm ²)	A.C. Resistance		Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
		R (Ω/km)	L (mH/km)			
4	50	0.4635	0.2604	0.0818	0.4707	
	70	0.3213	0.2506	0.0787	0.3308	
	95	0.2319	0.2490	0.0779	0.2446	
	120	0.1843	0.2409	0.0757	0.1992	
	150	0.1499	0.2402	0.0755	0.1678	
	185	0.1205	0.2401	0.0754	0.1422	
240	0.0928	0.2361	0.0742	0.1188		
300	0.0751	0.2343	0.0736	0.1052		

NYY-G



450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Stranded annealed copper
 : Sizes 25 mm² up to 300 mm² for phase wires
 : Sizes 16 mm² up to 150 mm² for ground wires

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 2 Cores + Ground : Blue, Brown, + Green/Yellow

Inner Sheath : Black polyvinyl chloride (PVC)

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 5

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Conductor				Insulation thickness nominal		Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating Maximum		Cable weight approx. (kg/km)	Standard Length (m)		
	Nominal cross sectional area		Type of Conductor		Phase	Ground				Phase	Ground		(Ω/km)	(Ω/km)			on cable Ladder at 40°C (A)	direct burial in ground at 30°C (A)
	(mm ²)	(mm ²)	Phase	Ground														
2+G	25	16	Stranded	1.3	1.1	1.2	2.0	28.0	0.727	1.15	0.0054	88	128	1,200	500/D			
	35	16	Stranded	1.3	1.1	1.2	2.0	30.0	0.524	1.15	0.0047	110	154	1,500	500/D			
	50	25	Stranded	1.5	1.3	1.2	2.2	34.0	0.387	0.727	0.0046	113	181	2,000	500/D			
	70	35	Stranded	1.5	1.3	1.5	2.2	38.5	0.268	0.524	0.0039	171	223	2,700	500/D			
	95	50	Stranded	1.7	1.5	1.5	2.2	43.5	0.193	0.387	0.0038	207	267	3,600	500/D			
	120	70	Stranded	1.7	1.5	1.5	2.4	47.5	0.153	0.268	0.0034	240	304	4,500	500/D			
	150	95	Stranded	1.9	1.7	1.8	2.6	53.0	0.124	0.193	0.0034	278	342	5,500	500/D			
	185	95	Stranded	2.1	1.7	1.8	2.8	57.5	0.0991	0.193	0.0034	317	386	6,500	500/D			
	240	120	Stranded	2.3	1.7	2.0	3.0	64.5	0.0754	0.153	0.0033	374	448	8,500	500/D			
	300	150	Stranded	2.5	1.9	2.0	3.2	71.0	0.0601	0.124	0.0032	432	507	10,500	300/D			

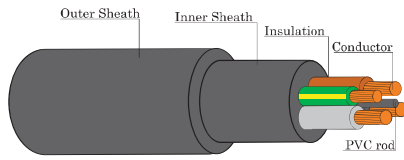
Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in Drum

Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area		A.C. Resistance		Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
	Phase (mm ²)	Ground (mm ²)	R (Ω/km)	L (mH/km)			
					Phase	Ground	
2+G	25	16	0.8700	0.2791	0.0877	0.5744	
	35	16	0.6272	0.2593	0.0814	0.5325	
	50	25	0.4634	0.2604	0.0818	0.4706	
	70	35	0.3212	0.2506	0.0787	0.3307	
	95	50	0.2317	0.2480	0.0779	0.2444	
	120	70	0.1840	0.2409	0.0757	0.1990	
	150	95	0.1495	0.2402	0.0755	0.1675	
	185	95	0.1201	0.2401	0.0754	0.1418	
	240	120	0.0922	0.2361	0.0742	0.1183	
	300	150	0.0744	0.2343	0.0736	0.1047	

450/750 V 70 °C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Stranded annealed copper
 : Sizes 25 mm² up to 300 mm² for phase wires
 : Sizes 16 mm² up to 150 mm² for ground wires

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 2 Cores + Ground : Brown, Black, Grey + Green/Yellow

Inner Sheath : Black polyvinyl chloride (PVC)

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 5

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Conductor				Insulation thickness nominal		Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating Maximum		Cable weight approx. (kg/km)	Standard Length (m)
	Nominal cross sectional area		Type of Conductor		Phase	Ground				Phase	Ground		on cable Ladder at 40°C (A)	direct burial in ground at 30°C (A)		
	Phase (mm ²)	Ground (mm ²)	Phase	Ground												
3+G	25	16	Stranded	1.3	1.1	1.2	2.0	30.5	0.727	1.15	0.0054	88	128	1,500	500D	
	35	16	Stranded	1.3	1.1	1.2	2.0	33.0	0.524	1.15	0.0047	110	154	1,900	500D	
	50	25	Stranded	1.5	1.3	1.5	2.2	38.5	0.387	0.777	0.0046	113	181	2,600	500D	
	70	35	Stranded	1.5	1.3	1.5	2.2	42.5	0.268	0.524	0.0039	171	223	3,500	500D	
	95	50	Stranded	1.7	1.5	1.5	2.4	48.5	0.193	0.387	0.0038	207	267	4,700	500D	
	120	70	Stranded	1.7	1.5	1.8	2.6	53.5	0.153	0.268	0.0034	240	304	6,000	500D	
	150	95	Stranded	1.9	1.7	1.8	2.8	59.0	0.124	0.193	0.0034	278	342	7,500	500D	
	185	95	Stranded	2.1	1.7	2.0	3.0	64.5	0.091	0.193	0.0034	317	388	9,000	500D	
	240	120	Stranded	2.3	1.7	2.0	3.2	72.0	0.0754	0.153	0.0033	374	448	11,500	300D	
	300	150	Stranded	2.5	1.9	2.2	3.4	79.5	0.0601	0.124	0.0032	4362	507	14,000	300D	

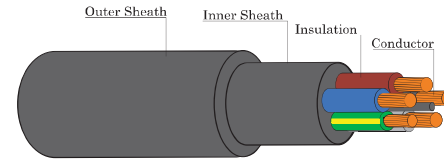
Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in Drum

Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area		A.C. Resistance		Inductance (mH/km)	Reactance (Ω/km)	Impedance (Ω/km)
	Phase		R (Ω/km)	XL (Ω/km)			
	Phase (mm ²)	Ground (mm ²)					
3+G	25	16	0.8701	0.2791	0.0877	0.8745	
	35	16	0.6273	0.2593	0.0814	0.6326	
	50	25	0.4635	0.2604	0.0818	0.4707	
	70	35	0.3213	0.2506	0.0787	0.3308	
	95	50	0.2319	0.2480	0.0779	0.2446	
	120	70	0.1843	0.2409	0.0757	0.1992	
	150	95	0.1499	0.2402	0.0755	0.1678	
	185	95	0.1205	0.2401	0.0754	0.1422	
	240	120	0.0928	0.2361	0.0742	0.1188	
	300	150	0.0751	0.2343	0.0736	0.1052	

450/750 V 70 °C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Stranded annealed copper
 : Sizes 25 mm² up to 300 mm² for phase wires
 : Sizes 16 mm² up to 150 mm² for ground wires

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 4 Cores + Ground : Blue, Brown, Black, Grey + Green/Yellow

Inner Sheath : Black polyvinyl chloride (PVC)

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 5

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Conductor				Insulation thickness nominal		Inner sheath thickness approx. (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating Maximum		Cable weight approx. (kg/km)	Standard Length (m)
	Nominal cross sectional area		Type of Conductor		Phase	Ground				Phase	Ground		on cable Ladder at 40°C (A)	direct burial in ground at 30°C (A)		
	Phase (mm ²)	Ground (mm ²)	Phase	Ground												
4+G	25	16	Stranded	1.3	1.1	1.2	2.0	34.0	0.727	1.15	0.0054	88	128	1,500	500D	
	35	16	Stranded	1.3	1.1	1.5	2.2	38.0	0.524	1.15	0.0047	110	154	2,400	500D	
	50	25	Stranded	1.5	1.3	1.5	2.2	43.5	0.387	0.727	0.0046	113	181	3,300	500D	
	70	35	Stranded	1.5	1.3	1.5	2.4	49.0	0.268	0.524	0.0039	171	223	4,500	500D	
	95	50	Stranded	1.7	1.5	1.8	2.6	56.5	0.193	0.387	0.0038	207	267	6,100	500D	
	120	70	Stranded	1.7	1.5	1.8	2.8	61.5	0.153	0.268	0.0034	240	304	7,500	500D	
	150	95	Stranded	1.9	1.7	2.0	3.0	68.0	0.124	0.193	0.0034	278	342	9,500	500D	
	185	95	Stranded	2.1	1.7	2.0	3.2	76.0	0.091	0.193	0.0034	317	388	11,500	300D	
	240	120	Stranded	2.3	1.7	2.2	3.4	84.5	0.0754	0.153	0.0033	374	448	14,500	300D	
	300	150	Stranded	2.5	1.9	2.2	3.8	93.5	0.0601	0.124	0.0032	4362	507	18,000	200D	

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in Drum

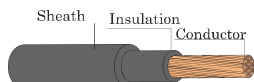
Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area		A.C. Resistance		Inductance (mH/km)	Reactance (Ω/km)	Impedance (Ω/km)
	Phase		R (Ω/km)	XL (Ω/km)			
	Phase (mm ²)	Ground (mm ²)					
4+G	25	16	0.8701	0.2791	0.0877	0.8745	
	35	16	0.6273	0.2593	0.0814	0.6326	
	50	25	0.4635	0.2604	0.0818	0.4707	
	70	35	0.3213	0.2506	0.0787	0.3308	
	95	50	0.2319	0.2480	0.0779	0.2446	
	120	70	0.1843	0.2409	0.0757	0.1992	
	150	95	0.1499	0.2402	0.0755	0.1678	
	185	95	0.1205	0.2401	0.0754	0.1422	
	240	120	0.0928	0.2361	0.0742	0.1188	
	300	150	0.0751	0.2343	0.0736	0.1052	

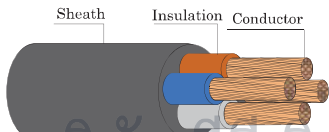
VCT



450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



TIS 11 Part 101-2553



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
 - Single-core : Sizes 4 mm² up to 35 mm²
 - Multi-core : Sizes 4 mm² up to 35 mm²
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification**
 - Single-core : Black
 - 2 Cores : Blue and Brown
 - 3 Cores : Brown, Black, Grey
 - 4 Cores : Blue, Brown, Black, Grey
- Sheath** : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
: 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 7

APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Outer sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
1	4	Flexible	0.9	1.4	8.6	4.95	0.0084	30	90	100/C
	6	Flexible	0.9	1.4	9.4	3.30	0.0071	39	120	100/C
	10	Flexible	1.1	1.8	12.0	1.91	0.0068	51	210	100/C
	16	Flexible	1.1	1.8	13.5	1.21	0.0050	73	270	100/C
	25	Flexible	1.3	2.2	16.0	0.780	0.0048	97	410	100/C
	35	Flexible	1.3	2.2	17.5	0.554	0.0041	140	550	500/D
2	4	Flexible	0.9	1.6	14.5	4.95	0.0084	30	230	100/C
	6	Flexible	0.9	1.6	16.0	3.30	0.0071	39	320	100/C
	10	Flexible	1.1	1.8	20.0	1.91	0.0068	51	500	500/D
	16	Flexible	1.1	2.2	23.0	1.21	0.0050	73	700	500/D
	25	Flexible	1.3	2.4	27.5	0.780	0.0048	97	1000	500/D
	35	Flexible	1.3	2.6	31.0	0.554	0.0041	140	1400	500/D
3	4	Flexible	0.9	1.6	15.5	4.95	0.0084	26	280	100/C
	6	Flexible	0.9	1.8	17.5	3.30	0.0071	34	390	100/C
	10	Flexible	1.1	2.0	21.5	1.91	0.0068	47	650	500/D
	16	Flexible	1.1	2.4	25.0	1.21	0.0050	63	900	500/D
	25	Flexible	1.3	2.6	30.0	0.780	0.0048	83	1300	500/D
	35	Flexible	1.3	2.8	33.5	0.554	0.0041	102	1700	500/D
4	4	Flexible	0.9	1.8	17.0	4.95	0.0084	26	350	100/C
	6	Flexible	0.9	2.0	19.5	3.30	0.0071	34	490	100/C
	10	Flexible	1.1	2.2	24.0	1.91	0.0068	47	800	500/D
	16	Flexible	1.1	2.6	28.0	1.21	0.0050	63	1100	500/D
	25	Flexible	1.3	2.8	33.0	0.780	0.0048	83	1700	500/D
	35	Flexible	1.3	3.1	37.0	0.554	0.0041	102	2200	500/D

C = Packing in coil
D = Packing in drum

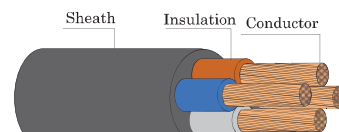
VCT



450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



TIS 11 Part 101-2553



CABLE STRUCTURE

- Conductor** : Flexible annealed copper
 - Single-core : Sizes 4 mm² up to 35 mm²
 - Multi-core : Sizes 4 mm² up to 35 mm²
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification**
 - Single-core : Black
 - 2 Cores : Blue and Brown
 - 3 Cores : Brown, Black, Grey
 - 4 Cores : Blue, Brown, Black, Grey
- Sheath** : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
: 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 7

APPLICATION

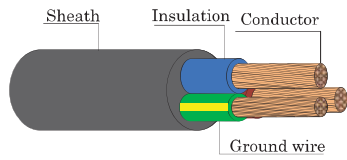
For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

Number of cores	Nominal cross sectional area (mm ²)	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
1	4	5.9227	0.5946	0.1868	5.9256
	6	3.9485	0.5605	0.1761	3.9524
	10	2.2854	0.5529	0.1737	2.2919
	16	1.4478	0.5306	0.1667	1.4574
	25	0.9334	0.5275	0.1657	0.9480
	35	0.6630	0.5086	0.1598	0.6820
2	4	5.9227	0.3084	0.0969	5.9235
	6	3.9485	0.2862	0.0899	3.9495
	10	2.2854	0.2768	0.0870	2.2870
	16	1.4479	0.2638	0.0829	1.4502
	25	0.9334	0.2602	0.0817	0.9370
	35	0.6631	0.2500	0.0785	0.6677
3	4	5.9227	0.3084	0.0969	5.9235
	6	3.9485	0.2862	0.0899	3.9495
	10	2.2854	0.2768	0.0870	2.2870
	16	1.4479	0.2638	0.0829	1.4503
	25	0.9335	0.2602	0.0817	0.9371
	35	0.6632	0.2500	0.0785	0.6678
4	4	5.9227	0.3084	0.0969	5.9235
	6	3.9485	0.2862	0.0899	3.9495
	10	2.2854	0.2768	0.0870	2.2870
	16	1.4479	0.2638	0.0829	1.4503
	25	0.9335	0.2602	0.0817	0.9371
	35	0.6632	0.2500	0.0785	0.6678

VCT-G



450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Flexible annealed copper
 - : Sizes 4 mm² up to 35 mm² for phase wires
 - : Sizes 4 mm² up to 16 mm² for ground wires
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification** : 2 Cores + Ground : Blue, Brown + Green/Yellow
- Sheath** : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
 - : Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
 - : 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 8

APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

Number of cores	Conductor				Insulation thickness nominal		sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
	Nominal cross sectional area		Type of Conductor		Phase (mm)	Ground (mm)			Phase (Ω/km)	Ground (Ω/km)				
	Phase (mm ²)	Ground (mm ²)	Phase	Ground										
2+G	4	4	Flexible	Flexible	0.9	0.9	1.6	15.5	4.95	4.95	0.0094	30	280	100C
	6	6	Flexible	Flexible	0.9	0.9	1.8	17.5	3.30	3.30	0.0071	44	400	100C
	10	10	Flexible	Flexible	1.1	1.1	2.0	21.5	1.91	1.91	0.0058	51	650	500D
	16	16	Flexible	Flexible	1.1	1.1	2.4	25.0	1.21	1.21	0.0050	73	900	500D
	25	16	Flexible	Flexible	1.3	1.1	2.6	28.5	0.780	1.21	0.0048	97	1200	500D
	35	16	Flexible	Flexible	1.3	1.1	2.8	31.5	0.554	1.21	0.0041	140	1500	500D

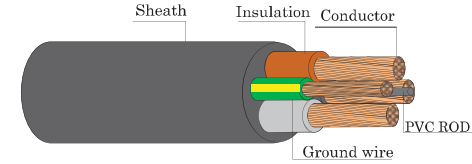
C = Packing in coil
D = Packing in drum

Number of cores	Nominal cross sectional area		A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
	Phase (mm ²)	Ground (mm ²)				
2+G	4	4	5.9227	0.3084	0.0969	5.9235
	6	6	3.9485	0.2862	0.0899	3.9495
	10	10	2.2854	0.2768	0.0870	2.2870
	16	16	1.4479	0.2638	0.0829	1.4502
	25	16	0.9334	0.2602	0.0817	0.9370
	35	16	0.6831	0.2500	0.0785	0.6877

VCT-G



450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE



TIS 11 Part 101-2553

CABLE STRUCTURE

- Conductor** : Flexible annealed copper
 - : Sizes 4 mm² up to 35 mm² for phase wires
 - : Sizes 4 mm² up to 16 mm² for ground wires
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification** : 3 Cores + Ground : Brown, Black and Grey + Green/Yellow
- Sheath** : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C
 - : Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth
 - : 750 Volts between Line to Line
- Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2553 Table 8

APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

Number of cores	Conductor				Insulation thickness nominal		sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
	Nominal cross sectional area		Type of Conductor		Phase (mm)	Ground (mm)			Phase (Ω/km)	Ground (Ω/km)				
	Phase (mm ²)	Ground (mm ²)	Phase	Ground										
3+G	4	4	Flexible	Flexible	0.9	0.9	1.8	17.0	4.95	4.95	0.0094	26	360	100C
	6	6	Flexible	Flexible	0.9	0.9	2.0	19.5	3.30	3.30	0.0071	34	500	100C
	10	10	Flexible	Flexible	1.1	1.1	2.2	24.0	1.91	1.91	0.0058	47	800	500D
	16	16	Flexible	Flexible	1.1	1.1	2.6	28.0	1.21	1.21	0.0050	63	1200	500D
	25	16	Flexible	Flexible	1.3	1.1	2.8	33.0	0.780	1.21	0.0048	83	1600	500D
	35	16	Flexible	Flexible	1.3	1.1	3.1	37.0	0.554	1.21	0.0041	102	2100	500D

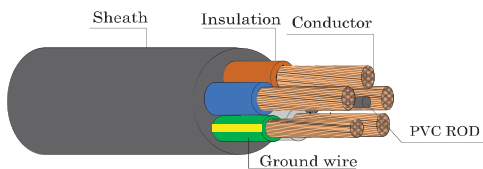
C = Packing in coil
D = Packing in drum

Number of cores	Nominal cross sectional area		A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
	Phase (mm ²)	Ground (mm ²)				
3+G	4	4	5.9227	0.3084	0.0969	5.9235
	6	6	3.9485	0.2862	0.0899	3.9495
	10	10	2.2854	0.2768	0.0870	2.2870
	16	16	1.4479	0.2638	0.0829	1.4503
	25	16	0.9335	0.2602	0.0817	0.9371
	35	16	0.6632	0.2500	0.0785	0.6678

VCT-G



450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE



TIS 11 Part 101-2553

CABLE STRUCTURE

Conductor : Flexible annealed copper
 : Sizes 4 mm² up to 35 mm² for phase wires
 : Sizes 4 mm² up to 16 mm² for ground wires

Insulation : Polyvinyl chloride (PVC/D)

Core identification
 4 Cores + Ground : Blue, Brown, Black and Grey + Green/Yellow

Sheath : Black polyvinyl chloride (PVC/ST5)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
 : 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 101-2553 Table 8

APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

Number of cores	Conductor				Insulation thickness nominal		sheath thickness nominal (mm)	Overall diameter maximum (mm)	Conductor resistance at 20°C maximum		Insulation resistance at 70°C minimum (MΩ·xm)	Continuous current rating in free air at 40°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
	Nominal cross sectional area		Type of Conductor		Phase (mm)	Ground (mm)			Phase (Ω/km)	Ground (Ω/km)				
	Phase (mm ²)	Ground (mm ²)	Phase	Ground										
4+G	4	4	Flexible	Flexible	0.9	0.9	1.8	18.5	4.95	4.95	0.0084	26	440	1000C
	6	6	Flexible	Flexible	0.9	0.9	2.0	21.5	3.30	3.30	0.0071	34	600	500/D
	10	10	Flexible	Flexible	1.1	1.1	2.2	26.5	1.91	1.91	0.0068	47	1,000	500/D
	16	16	Flexible	Flexible	1.1	1.1	2.6	30.5	1.21	1.21	0.0050	63	1,400	500/D
	25	16	Flexible	Flexible	1.3	1.1	2.8	36.5	0.780	1.21	0.0048	83	2,000	500/D
	35	16	Flexible	Flexible	1.3	1.1	3.1	41.5	0.554	1.21	0.0041	102	2,600	500/D

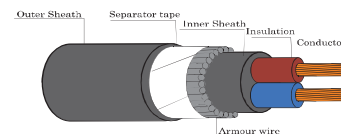
C = Packing in coil
 D = Packing in drum

Number of cores	Nominal cross sectional area		A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
	Phase (mm ²)	Ground (mm ²)				
	4+G	4				
6		6	3.9485	0.2862	0.0899	3.9495
10		10	2.2854	0.2768	0.0870	2.2870
16		16	1.4479	0.2638	0.0829	1.4503
25		16	0.9335	0.2602	0.0817	0.9371
35		16	0.6632	0.2500	0.0785	0.6678

500V-NYY-SWA



300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 2 Cores : Blue, Brown

Inner Sheath : Black polyvinyl chloride (PVC)

Armor : Galvanized Steel Wires

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 4-2553

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Inner Sheath thickness approx. (mm)	Diameter of steel wire armor nominal (mm)	Sheath thickness nominal (mm)	Overall diameter approx. (mm)	Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ·km)	Continuous current rating in ground at 30°C maximum (A)	Cable weight approx. (kg/km)	Standard Length (m)
1.5	Stranded	0.7	0.4	0.8	1.8	13.0	12.1	0.010	29	310	500/D	
2.5	Solid	0.8	0.4	0.8	1.8	14.0	7.41	0.010	38	320	500/D	
2.5	Stranded	0.8	0.4	0.8	1.8	14.5	7.41	0.009	38	340	500/D	
4	Solid	0.8	0.4	0.8	1.8	15.0	4.61	0.0085	50	370	500/D	
4	Stranded	0.8	0.4	0.8	1.8	15.5	4.61	0.0077	50	400	500/D	
6	Stranded	0.8	0.4	0.8	1.8	17.5	3.08	0.0065	63	600	500/D	
10	Stranded	1.0	0.6	1.25	1.8	21	1.83	0.0065	84	950	500/D	
16	Stranded	1.0	0.6	1.6	1.8	24	1.15	0.0052	109	1,300	500/D	
25	Stranded	1.2	0.8	1.6	1.8	28	0.727	0.0050	141	2,000	500/D	
35	Stranded	1.2	1.0	2.0	1.9	31	0.524	0.0044	169	2,400	500/D	

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

Deep of laying (For cable laid direct in ground) 0.8 m

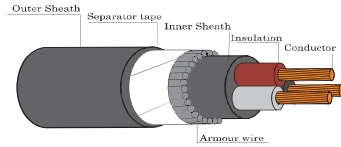
D : Packing in drum

Number of cores	Nominal cross sectional area (mm ²)	Conductor type	A.C. Resistance R (Ω/km)	Inductance L (mH/km)	Reactance XL (Ω/km)	Impedance Z (Ω/km)
1.5	Stranded	14.4777	0.3427	0.1077	14.4781	
2.5	Solid	8.8681	0.3350	0.1052	8.8687	
2.5	Stranded	8.8681	0.3405	0.1070	8.8687	
4	Solid	5.5159	0.3135	0.0985	5.5168	
4	Stranded	5.5159	0.3164	0.0994	5.5168	
6	Stranded	3.6853	0.3011	0.0946	3.8865	
10	Stranded	2.1897	0.2943	0.0925	2.1916	
16	Stranded	1.3761	0.2773	0.0871	1.3788	
25	Stranded	0.8700	0.2748	0.0863	0.8743	
35	Stranded	0.6272	0.2554	0.0803	0.6323	

500V-NYY-SWA



300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 3 Cores : Brown, Black, Grey

Inner Sheath : Black polyvinyl chloride (PVC)

Armor : Galvanized Steel Wires

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 4-2553

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area	Conductor	Insulation thickness nominal	Inner Sheath thickness approx.	Diameter of steel wire armor nominal	Sheath thickness nominal	Overall diameter approx.	Conductor resistance at 20°C maximum	Insulation resistance at 70°C minimum	Continuous current rating in ground at 30°C maximum	Cable weight approx.	Standard Length
	(mm ²)		(mm)	(mm)	(mm)	(mm)	(mm)	(Ω/km)	(MΩ·km)	(A)	(kg/km)	(m)
3	1.5	Solid	0.7	0.4	0.8	1.8	13.0	12.1	0.011	25	330	500/D
	1.5	Stranded	0.7	0.4	0.8	1.8	13.5	12.1	0.010	25	340	500/D
	2.5	Solid	0.8	0.4	0.8	1.8	14.5	7.41	0.010	33	350	500/D
	2.5	Stranded	0.8	0.4	0.8	1.8	15.0	7.41	0.009	33	380	500/D
	4	Solid	0.8	0.4	0.8	1.8	15.5	4.61	0.0085	43	420	500/D
	4	Stranded	0.8	0.4	0.8	1.8	16.0	4.61	0.0077	43	450	500/D
	6	Stranded	0.8	0.4	1.25	1.8	18.5	3.08	0.0065	54	700	500/D
	10	Stranded	1.0	0.6	1.25	1.8	22	1.83	0.0065	71	1,200	500/D
	16	Stranded	1.0	0.8	1.6	1.8	25	1.15	0.0052	93	1,600	500/D
	25	Stranded	1.2	0.8	2.0	1.9	30	0.727	0.0050	120	2,300	500/D
	35	Stranded	1.2	1.0	2.0	2.0	33	0.524	0.0044	144	2,800	500/D

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in drum

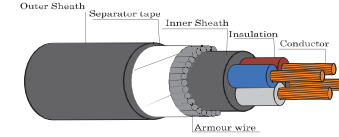
Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area	Conductor type	A.C. Resistance	Inductance	Reactance	Impedance
			R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
3	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1052	8.8667
	2.5	Stranded	8.8661	0.3405	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5168
	4	Stranded	5.5159	0.3164	0.0994	5.5168
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8701	0.2748	0.0863	0.8744
	35	Stranded	0.6273	0.2554	0.0803	0.6324

500V-NYY-SWA



300/500 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



CABLE STRUCTURE

Conductor : Solid and stranded annealed copper
 : Multi-core : Sizes 1.5 mm² up to 35 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : 4 Cores : Blue, Brown, Black, Grey

Inner Sheath : Black polyvinyl chloride (PVC)

Armor : Galvanized Steel Wires

Outer Sheath : Black flame retardant polyvinyl chloride (PVC/ST4)

TECHNICAL DATA

Classification : Maximum conductor temperature 70°C
 : Circuit voltage not exceeding 300/500 Volts

Rated voltage : 300 Volts between Line to Earth
 : 500 Volts between Line to Line

Testing voltage : 2,000 Volts

Reference standard : TIS 11 Part 4-2553

APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

Number of cores	Nominal cross sectional area	Conductor type	Insulation thickness nominal	Inner Sheath thickness approx.	Diameter of steel wire armor nominal	Sheath thickness nominal	Overall diameter approx.	Conductor resistance at 20°C maximum	Insulation resistance at 70°C minimum	Continuous current rating in ground at 30°C maximum	Cable weight approx.	Standard Length
	(mm ²)		(mm)	(mm)	(mm)	(mm)	(mm)	(Ω/km)	(MΩ·km)	(A)	(kg/km)	(m)
4	1.5	Solid	0.7	0.4	0.8	1.8	13.5	12.1	0.011	25	360	500/D
	1.5	Stranded	0.7	0.4	0.8	1.8	14.0	12.1	0.010	25	380	500/D
	2.5	Solid	0.8	0.4	0.8	1.8	15.5	7.41	0.010	33	400	500/D
	2.5	Stranded	0.8	0.4	0.8	1.8	16.0	7.41	0.009	33	420	500/D
	4	Solid	0.8	0.4	1.25	1.8	17.5	4.61	0.0085	43	480	500/D
	4	Stranded	0.8	0.4	1.25	1.8	18.5	4.61	0.0077	43	650	500/D
	6	Stranded	0.8	0.6	1.25	1.8	20	3.08	0.0065	54	800	500/D
	10	Stranded	1.0	0.6	1.6	1.8	24	1.83	0.0065	71	1,400	500/D
	16	Stranded	1.0	0.8	1.6	1.8	27	1.15	0.0052	93	1,800	500/D
	25	Stranded	1.2	1.0	2.0	2.0	33	0.727	0.0050	120	2,800	500/D
	35	Stranded	1.2	1.0	2.0	2.1	36	0.524	0.0044	144	3,500	500/D

Remark : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

D : Packing in drum

Deep of laying (For cable laid direct in ground) 0.8 m

Number of cores	Nominal cross sectional area	Conductor type	A.C. Resistance	Inductance	Reactance	Impedance
			R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
4	1.5	Solid	14.4777	0.3439	0.1081	14.4781
	1.5	Stranded	14.4777	0.3427	0.1077	14.4781
	2.5	Solid	8.8661	0.3350	0.1052	8.8667
	2.5	Stranded	8.8661	0.3405	0.1070	8.8667
	4	Solid	5.5159	0.3135	0.0985	5.5168
	4	Stranded	5.5159	0.3164	0.0994	5.5168
	6	Stranded	3.6853	0.3011	0.0946	3.6865
	10	Stranded	2.1897	0.2943	0.0925	2.1916
	16	Stranded	1.3761	0.2773	0.0871	1.3789
	25	Stranded	0.8701	0.2748	0.0863	0.8744
	35	Stranded	0.6273	0.2554	0.0803	0.6324