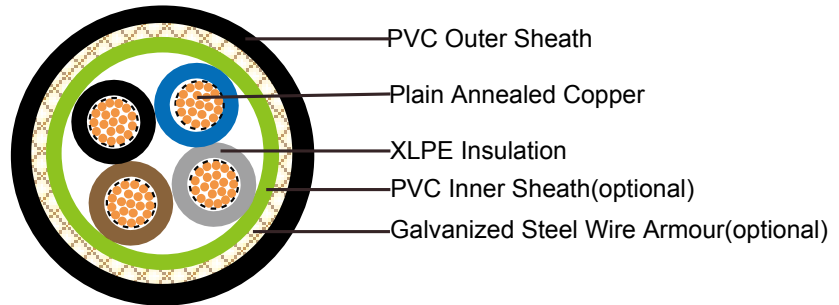
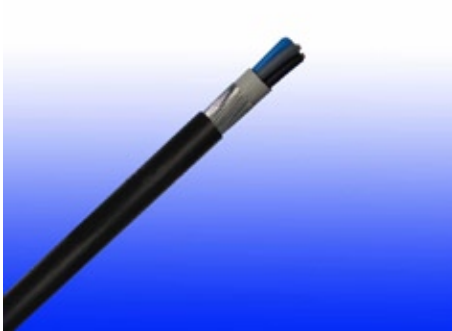




600/1000V XLPE Insulated, PVC Sheathed, Armoured Power Cables (2-5 Cores)

FGD400 1RV-R (CU/XLPE/PVC 600/1000V Class 2)

FGD400 1RVMV-R (CU/XLPE/PVC/SWA/PVC 600/1000V Class 2)



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design adapted to IEC 60502-1; BS 5467

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)**	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)**	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.

Insulation: Extruded cross-linked XLPE compound.

Inner Sheath(optional): PVC Compound

Armouring(optional): Galvanized Steel Wire

Outer Sheath: Thermoplastic PVC compound. UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance

standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour as per BS7671

	With Earth Conductor	Without Earth Conductor
2Cores	-	Brown, Blue
3Cores	Yellow/Green, Brown, Blue	Brown, Gray, Black
4Cores	Yellow/Green, Brown, Gray, Black	Brown, Gray, Black, Blue
5Cores	Yellow/Green, Brown, Gray, Black, Blue	Brown, Gray, Black, Blue, Black
Above 5 Cores	Yellow/Green, Black Numbered	Black Numbered

Sheath Colour: Black (other colors upon request)

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5secs max.

Minimum bending radius: 8 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor			FGD400 1RV-R		FGD400 1RVMV-R			
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Unarmoured		Armoured			
			Nominal Overall Diameter	Approx. Weight	Diameter Under Armour	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm ²	No./mm	mm	mm	mm	mm	mm	mm	kg/km
2Cores								
2G1.5	7/0.53	0.7	10.0	126	8.5	0.9	13.9	350
2G2.5	7/0.67	0.7	10.8	158	9.3	0.9	14.7	400
2G4	7/0.85	0.7	11.9	205	10.4	0.9	15.8	475
2G6	7/1.04	0.7	13.0	264	11.5	0.9	16.9	560
2G10	7/1.35	0.7	14.9	378	13.4	1.25	19.5	810
2G16	7/1.70	0.7	17.0	534	15.5	1.25	21.6	980
2G25	7/2.14	0.9	20.4	650	18.9	1.6	25.7	1410
2G35	7/2.52	0.9	22.7	880	21.2	1.6	28.0	1930
3Cores								
3G1.5	7/0.53	0.7	10.5	145	9.0	0.9	14.4	390
3G2.5	7/0.67	0.7	11.4	185	9.9	0.9	15.3	450
3G4	7/0.85	0.7	12.5	247	11.0	0.9	16.4	540
3G6	7/1.04	0.7	13.8	323	11.6	1.25	17.7	745
3G10	7/1.35	0.7	15.8	474	14.3	1.25	20.4	950
3G16	7/1.70	0.7	18.0	682	16.5	1.25	23.0	1250



3G25	7/2.14	0.9	21.7	910	20.2	1.6	27.0	1840
3G35	7/2.52	0.9	24.0	1180	22.4	1.6	29.2	2050
3G50	19/1.78	1.0	25.5	1600	24.2	1.6	31.2	2590
3G70	19/2.14	1.1	29.0	2240	28.2	2.0	36.2	3560
3G95	19/2.52	1.1	33.5	3050	31.7	2.0	40.1	4590
3G120	37/2.03	1.2	37.5	3800	36.0	2.0	44.6	5810
3G150	37/2.25	1.4	40.5	4640	39.5	2.5	49.5	6920
3G185	37/2.52	1.6	45.0	5870	43.3	2.5	53.5	8340
3G240	61/2.25	1.7	50.5	7670	48.4	2.5	59.0	10450
3G300	61/2.52	1.8	57.0	9460	54.4	2.5	65.4	12700
3G400	61/2.85	2.0	63.0	11945	57.8	2.5	70.0	15326
3Cores+1Core Earth Conductor								
3G10+6	7/1.35	0.7	16.5	543	17.6	1.25	20.1	1042
3G16+10	7/1.70	0.7	18.85	793	20.6	1.25	22.5	1567
3G25+10	7/2.14	0.9	22.1	1021	26.3	1.25	23.6	2091
3G25+16	7/2.14	0.9	23.0	1070	26.6	1.25	25.8	2150
3G35+16	19/1.53	0.9	24.3	1349	26.8	1.6	27.7	2390
3G35+25	19/1.53	0.9	25.2	1470	27.2	1.6	28.6	2505
3G50+16	19/1.78	1	26.1	1769	28.5	1.6	29.8	2916
3G50+25	19/1.78	1	27.3	1890	29.2	1.6	31.3	3107
3G50+35	19/1.78	1	27.8	1995	30.0	1.6	32.0	3175
3G70+25	19/2.14	1.1	30.2	2530	34.0	2.0	35.0	3203
3G70+35	19/2.14	1.1	30.9	2660	34.5	2.0	35.9	4067
3G70+50	19/2.14	1.1	31.5	2840	35	2.0	36.8	4310
3G95+16	19/2.52	1.1	34.6	3240	36.3	2.0	38.0	4856
3G95+25	19/2.52	1.1	35.1	3340	36.7	2.0	39.3	5047
3G95+35	19/2.52	1.1	36.0	3470	37.2	2.0	40.2	5115
3G95+50	19/2.52	1.1	36.8	3650	37.6	2.0	41.4	5289
3G120+35	37/2.03	1.2	38.2	3920	39.4	2.5	44.0	6160
3G120+50	37/2.03	1.2	39.1	4400	39.9	2.5	44.9	6473
3G120+70	37/2.03	1.2	40.0	4610	40.3	2.5	45.6	6793
3G120+95	37/2.03	1.2	41.2	4820	41.2	2.5	46.8	7120
3G150+50	37/2.25	1.4	41.5	5240	45.0	2.5	49.7	7549
3G150+50	37/2.25	1.4	42.3	5450	45.2	2.5	49.8	7565
3G150+95	37/2.25	1.4	43.6	5660	45.5	2.5	50.8	8196
3G150+120	37/2.25	1.4	44.8	6240	46.0	2.5	51.8	8590
3G185+70	37/2.52	1.6	46.0	6470	50.4	2.5	54.0	8950
3G185+95	37/2.52	1.6	47.5	6680	50.6	2.5	54.7	9573
3G185+120	37/2.52	1.6	47.9	6990	51.0	2.5	55.8	9968

3G185+150	37/2.52	1.6	48.5	7395	51.6	2.5	56.6	1023
3G240+70	61/2.25	1.7	49.2	7580	57.0	2.5	56.0	11294
3G240+95	61/2.25	1.7	52.3	8480	58.0	2.5	57.9	11620
3G240+120	61/2.25	1.7	53.4	8690	59.0	2.5	61.0	12015
3G240+150	61/2.25	1.7	54.9	9095	60.0	2.5	62.2	12373
3G300+95	61/2.52	1.8	55.6	9380	63	2.5	64.7	13803
3G300+120	61/2.52	1.8	58.1	10480	64.2	2.5	65.9	14197
3G300+150	61/2.52	1.8	57.3	11170	65.7	2.5	66.8	14556
3G300+185	61/2.52	1.8	58.7	11480	66.4	2.5	68.1	15015
3G300+240	61/2.52	1.8	62.4	11290	67	2.5	69.4	15697
4Cores								
4G1.5	7/0.53	0.7	11.3	169	10.0	0.9	15.4	430
4G2.5	7/0.67	0.7	12.3	220	10.8	0.9	16.2	505
4G4	7/0.85	0.7	13.6	297	12.1	0.9	17.5	710
4G6	7/1.04	0.7	15.0	392	13.5	1.25	19.6	855
4G10	7/1.35	0.7	17.2	585	15.7	1.25	21.8	1120
4G16	7/1.70	0.7	19.7	851	18.2	1.6	25.0	1600
4G25	7/2.14	0.9	23.9	1200	22.4	1.6	29.2	2160
4G35(S)	7/2.52	0.9	25.0	1600	24.4	1.6	31.4	2560
4G50(S)	19/1.78	1.0	28.0	2200	28.0	1.6	35.2	3180
4G70(S)	19/2.14	1.1	32.0	3050	32.2	2.0	40.6	4490
4G95(S)	19/2.52	1.1	37.0	4070	36.0	2.0	44.6	5725
4G120(S)	37/2.03	1.2	42.0	5915	38.0	2.5	50.0	7550
4G150(S)	37/2.25	1.4	46.0	6350	42.8	2.5	53.0	8555
4G185(S)	37/2.52	1.6	50.0	7890	48.4	2.5	59.0	10560
4G240(S)	61/2.25	1.7	57.0	10400	55.0	2.5	66.0	13180
4G300(S)	61/2.52	1.8	63.0	12810	59.6	2.5	71.0	16100
4G400(S)	61/2.85	2.0	71.0	15869	66.1	3.15	79.4	20715
4G500(S)	61/3.20	2.2	78.0	20300	74.6	3.15	88.5	25347
4Cores+1Core Earth Conductor								
4G10+6	7/1.35	0.7	19	654	17.6	1.25	26.1	1362
4G16+10	7/1.70	0.7	21.95	962	20.6	1.25	27.3	1473
4G25+10	7/2.14	0.7	26.65	1311	26.3	1.25	32.6	1680
4G25+16	7/2.14	0.7	27.3	1369	26.6	1.25	33.4	2012
4G35+16	19/1.53	0.9	27.6	1769	25.6	1.6	44.5	2940
4G35+25	19/1.53	0.9	28.4	1890	26.2	1.6	46.2	3050
4G50+16	19/1.78	1	29.4	2369	28.5	1.6	48.2	3560



4G50+25	19/1.78	1	31.6	2490	29.2	1.6	49.9	3670
4G50+35	19/1.78	1	33.6	3249	30.0	1.6	42.5	3759
4G70+25	19/2.14	1.1	34.2	3340	34	2.0	55.1	4980
4G70+35	19/2.14	1.1	35.6	3470	34.5	2.0	44.9	5036
4G70+50	19/2.14	1.1	37.8	3650	35	2.0	45.9	5468
4G95+16	19/2.52	1.1	41.5	4239	36.3	2.0	47.3	6105
4G95+25	19/2.52	1.1	42.6	4360	36.7	2.0	49.0	6215
4G95+35	19/2.52	1.1	43.3	4510	37.2	2.0	50.1	6325
4G95+50	19/2.52	1.1	44.1	4670	37.6	2.0	51.7	6455
4G120+35	37/2.03	1.2	42.6	6335	39.4	2.5	54.2	7968
4G120+50	37/2.03	1.2	43.8	6515	39.9	2.5	56.9	8280
4G120+70	37/2.03	1.2	45.9	6725	40.3	2.5	57.9	8511
4G120+95	37/2.03	1.2	46.4	6920	41.2	2.5	61.2	8790
4G150+70	37/2.25	1.4	47.3	6950	45.2	2.5	56.5	8879
4G150+95	37/2.25	1.4	48.5	7160	45.5	2.5	57.6	10179
4G150+120	37/2.25	1.4	50.2	7370	46.0	2.5	58.7	10739
4G185+70	37/2.52	1.6	53.7	7965	50.4	2.5	62.0	11200
4G185+95	37/2.52	1.6	52.4	8490	50.6	2.5	63.2	1263
4G185+120	37/2.52	1.6	53.9	8700	51.0	2.5	64.2	13050
4G185+150	37/2.52	1.6	55.6	8910	51.6	2.5	65.4	13680
4G240+70	61/2.25	1.7	59.4	9260	57	2.5	66.9	14140
4G240+95	61/2.25	1.7	59.4	9600	58	2.5	68.7	14420
4G240+120	61/2.25	1.7	61.9	11210	59.0	2.5	72.8	14763
4G240+150	61/2.25	1.7	63.4	11420	60.0	2.5	73.1	15241
4G300+95	61/2.52	1.8	67.8	12010	63	2.5	74.6	17467
4G300+120	61/2.52	1.8	64.0	12110	64.2	2.5	75.1	18050
4G300+150	61/2.52	1.8	66.1	13830	65.7	2.5	76.4	18662
4G300+185	61/2.52	1.8	71.5	14520	67	2.5	77.3	19031
4G300+240	61/2.52	1.8	72.0	14830	67	2.5	78.6	19878
5Cores								
5G1.5	7/0.53	0.7	13.7	205	9.9	0.9	18.6	537
5G2.5	7/0.67	0.7	14.9	265	10.8	0.9	19.6	631
5G4	7/0.85	0.7	16.3	360	12.1	0.9	21.2	860
5G6	7/1.04	0.7	18.2	478	15.8	1.5	23.7	1036
5G10	7/1.35	0.7	20.8	720	24	2.8	26.0	1358
5G16	7/1.70	0.7	24.2	1050	27	2.8	30.0	1940
5G25	7/2.14	0.9	29.4	1485	34	2.8	35.4	2619
5G35	19/1.53	0.9	30.3	1940	24.4	1.6	38.1	3140

5G50	19/1.78	1	34	2667	28.0	1.6	42.6	3555
5G70	19/2.14	1.1	38.5	3698	32.2	2.0	49.2	5444
5G95	19/2.52	1.1	44.6	4934	36.0	2.0	54.1	6941
5G120	37/2.03	1.2	5.8	7171	38.0	2.5	60.6	9154
5G150	37/2.25	1.4	55.6	7699	42.8	2.5	64.3	10372
5G185	37/2.52	1.6	60.4	9566	48.4	2.5	71.5	12828
5G240	61/2.25	1.7	69.1	12610	55.0	2.5	80	15980
5G300	61/2.52	1.8	76.4	15532	59.6	2.5	86.1	19521
5G400	61/2.85	2	86.1	19241	66.1	3.15	96.3	25116

(S) - Sectoral Stranded Conductors

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

FGD400 1RZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
	Horizontal flat spaced	Vertical flat spaced	Trefoil	Horizontal flat spaced	Vertical flat spaced	Trefoil	Horizontal flat spaced	Vertical flat spaced	Trefoil		
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 cables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm ²	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209



70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	684	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936

Voltage Drop (Per Amp Per Meter)

Size of conductor	2 cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1 and 11 (clipped direct or on trays touching)			Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1, 11 and 12 (in trefoil)			Ref. Methods 1 and 11 (Flat and touching)		
1	2	3			4			5			6			7		
mm ²	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.600	0.165	1.600	1.600	0.190	1.600
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.150	0.155	1.50	1.150	0.180	1.150
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.860	0.155	0.870	0.860	0.180	0.870
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.590	0.150	0.610	0.590	0.175	0.620
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.430	0.145	0.450	0.430	0.170	0.460
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.340	0.140	0.370	0.340	0.165	0.380
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.280	0.140	0.310	0.280	0.165	0.320
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.220	0.140	0.260	0.220	0.165	0.280
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.220	0.170	0.165	0.240
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.210
400	0.12	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180

FGD400 1RZ1MZ1-R
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable tray Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm ²	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48
6	62	53	66	56	-	50	-	60
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590
400	787	673	847	728	660	560	790	670

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
				In ducts or in ground	In ducts or in ground
1	2	3	4	5	6
mm ²	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31.0	31.0	27.0	31.0	25.0



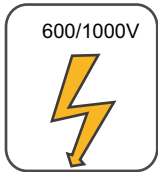
Caledonian

Flame Retardant Power & Control Cables

www.caledonian-cables.co.uk www.addison-cables.com



2.5	19.0	19.0			16.0			19.0	15.0
4	12.0	12.0			10.0			12.0	9.7
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.350	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165	0.190	0.180



Rated Voltage



Standard



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4