



大同塑膠絕緣電線電纜

Tatung Plastic Insulated Wire & Cable

Ing Plastic Insulated
Wire & Cable

www



本產品榮獲商檢局國際標準品質保證 ISO 9001 認證登錄 XA3Y005-06

Ing Plastic Insulated Wire & Cable

一、塑膠絕緣電線簡介

INTRODUCTION TO PLASTIC INSULATED WIRE AND CABLE

(1) PVC 絕緣電線

PVC INSULATED WIRE

Polyvinyl chloride (簡稱PVC) 係一高重合度之聚合物化學材料，具有高絕緣特性，以及抗磨擦、耐候性，最適用於電線電纜之絕緣與被覆體，謂之PVC電線、電纜。

本公司之PVC材料與先進國外廠商技術合作並引進最新技術，所配出PVC具有高性能之電氣特性與絕緣特性，用於外覆保護之PVC更具耐候、耐寒、耐溫及耐化學藥品之特殊性能，使製造出電纜能在連續供電情況下耐溫高至60°C，若有特別要求耐熱時，可配用耐熱75~105°C之PVC材料之電纜。

Polyvinyl chloride (PVC) is a chemical compound of high degree of polymerization with characteristics of high insulation and abrasion-resistant, weather-proof. It is called PVC cable or PVC wire if PVC is used as an insulation or sheath to cables or wires. There is a technical collaboration for the production of PVC between Tatung Co. and a well-known foreign manufacturer with its most advanced technology. The specifically compounded PVC possesses excellent electrical performances and insulation properties. In case, it is used as sheath material, It also has special properties of weather-proof, heat-resistant, cold-resistant & chemical-resistant. It is designed to withstand 60°C temperature rise under continuous operation, if situation requires, the cables to withstand 75-105°C are also available upon special request.

(2) PE 絕緣電線

PE INSULATED WIRE

Polyethylene (簡稱PE)，其絕緣電阻及高頻率電力損失等電力特性，遠超過其他材料，同時又具有安定之化學性能、重量輕等諸多優點，最適用於作電線絕緣材料。電纜之外被仍以具耐磨損及耐候之PVC材料保護之。

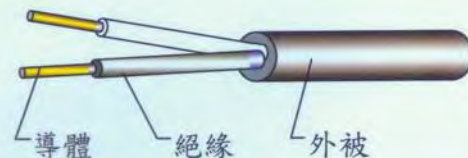
Polyethylene (PE) excels other materials in insulation resistance and high frequency power losses. In the meantime, PE possesses many other merits such as chemically stable, light-weight etc.. Usually the PE cable is still protected by abrasion-resistant and weather-proof PVC sheath.

3) PVC 電線、PE 電線主要特性

PROPERTIES OF PVC WIRE AND PE WIRE

項目種類 ITEMS		PVC	PE	
電氣特性 Electrical Properties	體積固有電阻20°C時 · Ω · cm Volume Resistivity at 20°C (Ω · cm)		10 ¹³ ~10 ¹⁵	7 x 10 ¹⁶
	介電常數 (50Hz) Dielectric Constant (50Hz)		5~9	2.3
	tan δ (50Hz) Dielectric Loss Tangent (50Hz)		8~15	0.05
	介電強度 KV/mm dielectric Strength KV/mm		25~35	30~50
物理特性 Physical Properties	常溫 Before aging	抗張強度 (kg/mm ²) Tensile Strength	1.0~2.4	1.4
		伸長率 (%) Elongation	150~300	450
	老化 After Aging	抗張強度殘率 (%) Ratio of Tensile Strength After Aging to Before Aging	85以上 above 85	85以上 above 85
		伸長殘率 (%) Ratio of Elongation After Aging to Before Aging	70以上 Above 70	70以上 Above 70
最高使用導體溫度 °C Max Operating Conductor Temperature °C		60	75	
最高短路導體溫度 °C Max Conductor Temperature at Short Circuit °C		120	150	

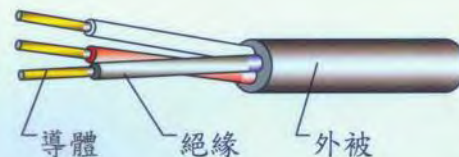
表二 600V 二心聚氯乙烯絕緣及被覆電纜(VV-LF)
符合 CNS 3301C2058 規定且通過 RoHs 檢測合格



標稱截面積 mm ²	導體		絕緣 厚度 mm	被覆 厚度 mm	完成 外徑 (約) mm	導體電阻 Ω/km(20°C)	試驗電壓 V/1min	絕緣電阻 MΩ.km(20°C)	概算重量 Kg/ km
	構成 單線數/電線徑 NO/mm	外徑 (約) mm							
--	1/1.0	1.0	0.8	1.5	8.7	23.3	1500	50	85
--	1/1.2	1.2	0.8	1.5	9.1	16.1	1500	50	95
--	1/1.6	1.6	0.8	1.5	9.9	9.10	1500	50	130
--	1/2.0	2.0	0.8	1.5	11.0	5.76	1500	50	160
--	1/2.6	2.6	1.0	1.5	13.0	3.42	1500	50	240
--	1/3.2	3.2	1.2	1.5	15.0	2.25	1500	50	335
2	7/0.6	1.8	0.8	1.5	10.5	9.42	1500	50	135
3.5	7/0.8	2.4	0.8	1.5	11.5	5.30	1500	50	180
5.5	7/1.0	3.0	1.0	1.5	13.5	3.40	1500	50	260
8	7/1.2	3.6	1.2	1.5	15.5	2.36	1500	50	360
	圓型壓縮	3.4			15.5	2.34			330
14	7/1.6	4.8	1.4	1.5	19.0	1.33	2000	40	555
	圓型壓縮	4.4			18.0	1.34			505
22	7/2.0	6.0	1.6	1.6	23	0.840	2000	40	815
	圓型壓縮	5.5		1.5	21	0.849			730
30	7/2.3	6.9	1.6	1.6	24	0.635	2000	40	935
	圓型壓縮	6.4			23	0.622			925
38	7/2.6	7.8	1.8	1.8	27	0.497	2500	40	1250
	圓型壓縮	7.3			26	0.491			1170
50	19/1.8	9.0	1.8	1.8	29	0.386	2500	30	1520
	圓型壓縮	8.4			28	0.373			1440
60	19/2.0	10.0	1.8	1.8	32	0.309	2500	30	1820
	圓型壓縮	9.3			31	0.311			1700
80	19/2.3	11.5	2.0	2.0	36	0.234	2500	30	2360
	圓型壓縮	10.7			34	0.234			2240
100	19/2.6	13.0	2.0	2.0	39	0.184	2500	30	2900
	圓型壓縮	12.0			37	0.187			2680
125	19/2.9	14.5	2.2	2.2	43	0.147	3000	20	3500
	圓型壓縮	13.5			41	0.149			3340
150	37/2.3	16.1	2.2	2.2	47	0.120	3000	20	4100
	圓型壓縮	14.7			44	0.124		30	3870
200	37/2.6	18.2	2.4	2.4	52	0.0940	3000	20	5170
	圓型壓縮	17.0			50	0.0933			5090
250	61/2.3	20.7	2.4	2.4	58	0.0736	3000	20	6530
	圓型壓縮	19.0			54	0.0754			6210
325	61/2.6	23.4	2.6	2.6	64	0.0576	3000	20	8230
	圓型壓縮	21.7			61	0.0579			8000

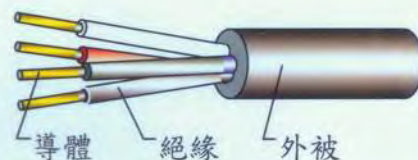
表三 600V 三心聚氯乙炔絕緣及被覆電纜(VV-LF)

符合 CNS 3301C2058 規定且通過 RoHs 檢測合格



標稱截面積 mm ²	導體		絕緣 厚度 mm	被覆 厚度 mm	完成 外徑 (約) mm	導體電阻 Ω/km(20℃)	試驗電壓 V/1min	絕緣電阻 MΩ.km(20℃)	概算重量 Kg/ km
	構成 單線數/電線徑 NO/mm	外徑 (約) mm							
--	1/1.0	1.0	0.8	1.5	8.7	23.3	1500	50	100
--	1/1.2	1.2	0.8	1.5	9.1	16.1	1500	50	120
--	1/1.6	1.6	0.8	1.5	9.9	9.10	1500	50	155
--	1/2.0	2.0	0.8	1.5	11.0	5.76	1500	50	200
--	1/2.6	2.6	1.0	1.5	13.0	3.42	1500	50	305
--	1/3.2	3.2	1.2	1.5	15.0	2.25	1500	50	435
2	7/0.6	1.8	0.8	1.5	10.5	9.42	1500	50	165
3.5	7/0.8	2.4	0.8	1.5	11.5	5.30	1500	50	235
5.5	7/1.0	3.0	1.0	1.5	13.5	3.40	1500	50	335
8	7/1.2	3.6	1.2	1.5	15.5	2.36	1500	50	465
	圓型壓縮	3.4			15.5	2.34			435
14	7/1.6	4.8	1.4	1.5	19.0	1.33	2000	40	740
	圓型壓縮	4.4			18.0	1.34			670
22	7/2.0	6.0	1.6	1.6	23	0.840	2000	40	1070
	圓型壓縮	5.5		1.5	21	0.849			1000
30	7/2.3	6.9	1.6	1.6	24	0.635	2000	40	1340
	圓型壓縮	6.4			23	0.622			1290
38	7/2.6	7.8	1.8	1.8	27	0.497	2500	40	1690
	圓型壓縮	7.3			26	0.491			1630
50	19/1.8	9.0	1.8	1.8	29	0.386	2500	30	2090
	圓型壓縮	8.4			28	0.373			2010
60	19/2.0	10.0	1.8	1.8	32	0.309	2500	30	2480
	圓型壓縮	9.3			31	0.311			2370
80	19/2.3	11.5	2.0	2.0	36	0.234	2500	30	3250
	圓型壓縮	10.7			34	0.234			3120
100	19/2.6	13.0	2.0	2.0	39	0.184	2500	30	3990
	圓型壓縮	12.0			37	0.187			3780
125	19/2.9	14.5	2.2	2.2	43	0.147	3000	20	4910
	圓型壓縮	13.5			41	0.149			4720
150	37/2.3	16.1	2.2	2.2	47	0.120	3000	20	5810
	圓型壓縮	14.7			44	0.124		30	5520
200	37/2.6	18.2	2.4	2.4	52	0.0940	3000	20	7330
	圓型壓縮	17.0			50	0.0933			7260
250	61/2.3	20.7	2.4	2.4	58	0.0736	3000	20	9300
	圓型壓縮	19.0			54	0.0754			8980
325	61/2.6	23.4	2.6	2.6	64	0.0576	3000	20	11780
	圓型壓縮	21.7			61	0.0579			11530

表四 600V 四心聚氯乙稀絕緣及被覆電纜(VV-LF)
符合 CNS 3301C2058 規定且通過 RoHs 檢測合格



導 體			絕緣 厚度 Mm	被覆 厚度 mm	完成 外徑 (約) mm	導體電阻 $\Omega/\text{km}(20^{\circ}\text{C})$	試驗電壓 V/1min	絕緣電阻 $\text{M}\Omega\cdot\text{km}(20^{\circ}\text{C})$	概算重量 Kg/ km
標稱截 面 積 mm^2	構成 單線數/電線徑 NO/mm	外徑 (約) mm							
--	1/1.0	1.0	0.8	1.5	8.7	23.3	1500	50	125
--	1/1.2	1.2	0.8	1.5	9.1	16.1	1500	50	145
--	1/1.6	1.6	0.8	1.5	9.9	9.10	1500	50	190
--	1/2.0	2.0	0.8	1.5	11.0	5.76	1500	50	250
--	1/2.6	2.6	1.0	1.5	13.0	3.42	1500	50	385
--	1/3.2	3.2	1.2	1.5	15.0	2.25	1500	50	550
2	7/0.6	1.8	0.8	1.5	10.5	9.42	1500	50	200
3.5	7/0.8	2.4	0.8	1.5	11.5	5.30	1500	50	290
5.5	7/1.0	3.0	1.0	1.5	13.5	3.40	1500	50	420
8	7/1.2	3.6	1.2	1.5	15.5	2.36	1500	50	590
	圓型壓縮	3.4			15.5	2.34			550
14	7/1.6	4.8	1.4	1.5	19.0	1.33	2000	40	945
	圓型壓縮	4.4			18.0	1.34			875
22	7/2.0	6.0	1.6	1.6	23	0.840	2000	40	1390
	圓型壓縮	5.5		1.5	21	0.849			1290
30	7/2.3	6.9	1.6	1.6	24	0.635	2000	40	1720
	圓型壓縮	6.4			23	0.622			1650
38	7/2.6	7.8	1.8	1.8	27	0.497	2500	40	2180
	圓型壓縮	7.3			26	0.491			2100
50	19/1.8	9.0	1.8	1.8	29	0.386	2500	30	2690
	圓型壓縮	8.4			28	0.373			2600
60	19/2.0	10.0	1.8	1.8	32	0.309	2500	30	3210
	圓型壓縮	9.3			31	0.311			3090
80	19/2.3	11.5	2.0	2.0	36	0.234	2500	30	4200
	圓型壓縮	10.7			34	0.234			4070
100	19/2.6	13.0	2.0	2.0	39	0.184	2500	30	5200
	圓型壓縮	12.0			37	0.187			4950
125	19/2.9	14.5	2.2	2.2	43	0.147	3000	20	6380
	圓型壓縮	13.5			41	0.149			6150
150	37/2.3	16.1	2.2	2.2	47	0.120	3000	20	7550
	圓型壓縮	14.7			44	0.124		30	7210
200	37/2.6	18.2	2.4	2.4	52	0.0940	3000	20	9590
	圓型壓縮	17.0			50	0.0933			9480
250	61/2.3	20.7	2.4	2.4	58	0.0736	3000	20	12200
	圓型壓縮	19.0			54	0.0754			11750
325	61/2.6	23.4	2.6	2.6	64	0.0576	3000	20	15240
	圓型壓縮	21.7			61	0.0579			15100