

## Solid PE Insulated & LAP Sheathed Jelly Filled Cables to RUS (REA) PE-39 (ICEA S-84-608)

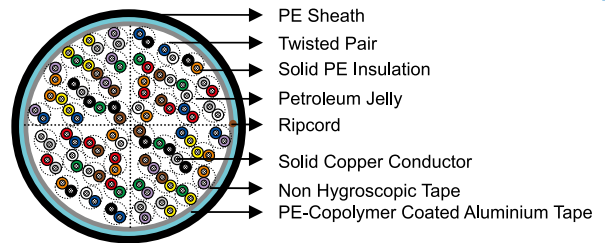
### APPLICATION

The cables are designed for use as subscriber distribution cables and as connection between central offices. The recommended installation is in ducts.



### STANDARDS

- RUS (REA) PE-39 (RUS 7 CFR 1755.390)
- ICEA S-84-608



### CONSTRUCTION

- **Conductors:** Solid annealed bare copper, 0.4/0.5/0.63/0.9mm, as per ASTM B-3/class 1 of IEC 60228.
- **Insulation:** Solid medium or high density polyethylene as per ASTM D 1248/IEC 60708.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- **Cabling Element:** Twisted Pairs.
- **Cable Core Assembly:** Cables of 25 pairs or less are assembled into cylindrical core. Cables larger than 25 pairs are assembled into units, which are then used to form the core. Units are identified by colour coded binders.
- **Core Wrapping:** One or more non-hygroscopic polyester tapes are helically or longitudinally laid with an overlap. These tapes furnish thermal, mechanical as well as high dielectric protection between shielding and individual conductors.
- **Moisture Barrier:** A layer of corrugated PE copolymer coated aluminium tape (0.2mm/8mil) is applied longitudinally with overlap over the cable core to provide 100% electrical shielding coverage and ensure a barrier against water vapor.
- **Sheath:** Black low or medium density polyethylene as per ASTM D 1248/IEC 60708, being able to withstand exposure to sunlight, temperature variations, ground chemicals and other environmental contaminants.
- **Ripcord:** Ripcord may be provided for slitting the sheath longitudinally to facilitate its removal.
- **Spare Pairs (optional):** Spare pairs may be provided for large pair cables.
- **Continuity Wire (optional):** One tinned copper drain wire may be longitudinally laid to ensure electrical continuity of the screen.

### ELECTRICAL PROPERTIES

Nominal Conductor Diameter	mm	0.4	0.5	0.63	0.9
Conductor Gauge Size	AWG	26	24	22	19
Maximum Average DC Resistance	$\Omega/\text{km} / \Omega/\text{mile}$	140/225	87/140	55/88.6	27.0/43.4
Maximum Individual DC Resistance	$\Omega/\text{km} / \Omega/\text{mile}$	144.2/232	89.5/144	56.5/91.0	28.0/45.0
Minimum Insulation Resistance @500V DC	$\text{M}\Omega\text{-km} / \text{M}\Omega\text{-mile}$	1600/1000	1600/1000	1600/1000	1600/1000
Maximum Average Resistance Unbalance	%	1.5	1.5	1.5	1.5



# Caledonian

## OUTDOOR TELEPHONE CABLES

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	%	5	5	5	5
Maximum Individual Resistance Unbalance					
Average Mutual Capacitance	nF/km / nF/kft	48.5-54.0 /14.8-16.5	48.5-54.0 /14.8-16.5	48.5-54.0 /14.8-16.5	48.5-54.0 /14.8-16.5
Maximum Individual Mutual Capacitance	nF/km / nF/kft	57/17.4	57/17.4	57/17.4	57/17.4
Maximum Individual Capacitance Unbalance pair-to-pair	pF/km / pF/kft	145/44	145/44	145/44	145/44
Capacitance Unbalance RMS pair-to-pair	pF/km / pF/kft	45/13.7	45/13.7	45/13.7	45/13.7
Maximum Individual Capacitance Unbalance pair-to-ground	pF/km / pF/kft	2625/800	2625/800	2625/800	2625/800
Maximum Average Capacitance Unbalance pair-to-ground	pF/km / pF/kft	574/175	574/175	574/175	574/175
Maximum Conductor Loop Resistance @20°C	Ω/km / Ω/mile	300/482	192/309	114/183.6	60/96.4
Impedance @1KHz	Ω	994	796	660	445
Impedance @100KHz	Ω	147	134	125	122
Impedance @512KHz	Ω	120	118	117	116
Impedance @1MHz	Ω	117	115	114	113
Maximum Average Attenuation @0.8KHz	dB/km / dB/kft	1.64/0.5	1.30/0.39	1.04/0.32	0.74/0.22
Maximum Average Attenuation @1KHz	dB/km / dB/kft	1.68/0.51	1.35/0.41	1.08/0.33	0.76/0.23
Maximum Average Attenuation @3KHz	dB/km / dB/kft	3.18/0.97	2.52/0.77	2.01/0.61	1.42/0.43
Maximum Average Attenuation @150KHz	dB/km / dB/kft	11.4/3.47	8.3/2.53	6.2/1.89	4.4/1.34
Maximum Average Attenuation @772KHz	dB/km / dB/kft	24.3/7.4	19.4/5.9	15.4/4.7	10.8/3.3
Maximum Average Attenuation @1000KHz	dB/km / dB/kft	27.1/8.25	21.4/6.52	17.5/5.33	12.8/3.89
Dielectric Strength					
Conductor to Conductor (3secs)	V DC	2400	3000	4000	5000
Conductor to Screen (3secs)	V DC	10000	10000	10000	10000
Minimum EL Far-end Cross-talk-Mean Power Sum					
@150KHz	dB/305m / dB/kft	61	63	63	65
@772KHz	dB/305m / dB/kft	47	49	49	57
@1.6MHz	dB/305m / dB/kft	41	42	43	44
@3.15MHz	dB/305m / dB/kft	35	37	37	39
@6.3MHz	dB/305m / dB/kft	29	31	31	33
Minimum Far-end Cross-talk-Worst Pair Power Sum					
@150KHz	dB/305m / dB/kft	57	57	57	59
@772KHz	dB/305m / dB/kft	43	43	43	45
@1.6MHz	dB/305m / dB/kft	37	37	37	39
@3.15MHz	dB/305m / dB/kft	31	31	31	33
@6.3MHz	dB/305m / dB/kft	25	25	25	27
Minimum Near-end Cross-talk-Mean Power Sum					
@150KHz	dB/305m / dB/kft	58	58	58	58
@772KHz	dB/305m / dB/kft	47	47	47	47
@1.6MHz	dB/305m / dB/kft	43	43	43	43
@3.15MHz	dB/305m / dB/kft	38	38	38	38
@6.3MHz	dB/305m / dB/kft	34	34	34	34
Minimum Near-end Cross-talk-Worst Pair Power Sum					
@150KHz	dB/305m / dB/kft	53	53	53	53
@772KHz	dB/305m / dB/kft	42	42	42	42
@1.6MHz	dB/305m / dB/kft	38	38	38	38
@3.15MHz	dB/305m / dB/kft	33	33	33	33
@6.3MHz	dB/305m / dB/kft	29	29	29	29
Nominal Insulation Thickness	mm	0.15	0.2	0.26	0.3
Nominal Insulated Conductor Diameter	mm	0.7	0.9	1.15	1.5

## MECHANICAL AND THERMAL PROPERTIES

**Temperature range during operation (fixed state):** -30°C – +70°C

**Temperature range during installation (mobile state):** -20°C – +50°C

**Minimum bending radius:** 10 x Overall Diameter (unarmoured cables); 15 x Overall Diameter (armoured cables)

## COLOUR CODE

Standard colour code is per ICEA S-84-608 given in Colour Code Chart

## DIMENSIONS AND WEIGHT

Solid PE Insulated & LAP Sheathed Jelly Filled Cables to RUS (REA) PE-39 (ICEA S-84-608)

Cable Code	Number of Pairs	Nominal Sheath Thickness mm/inch	Nominal Overall Diameter mm/inch	Nominal Weight kg/km / lbs/kft
0.4mm Conductor, 0.7mm Insulated Wire				
TP39-2YF(L)2Y-25P04	25	1.5/0.059	14.0/0.551	203/136
TP39-2YF(L)2Y-50P04	50	1.5/0.059	17.1/0.673	326/219
TP39-2YF(L)2Y-75P04	75	1.5/0.059	19.5/0.768	446/300
TP39-2YF(L)2Y-100P04	100	1.7/0.067	22.0/0.866	569/382
TP39-2YF(L)2Y-150P04	150	1.7/0.059	25.7/1.012	827/556
TP39-2YF(L)2Y-200P04	200	1.7/0.067	28.7/1.130	1023/687
TP39-2YF(L)2Y-300P04	300	1.8/0.071	33.6/1.323	1451/975
TP39-2YF(L)2Y-400P04	400	1.9/0.075	37.8/1.488	1876/1261
TP39-2YF(L)2Y-600P04	600	2.0/0.079	45.8/1.803	2781/1869
TP39-2YF(L)2Y-900P04	900	2.1/0.083	54.7/2.154	4057/2726
0.5mm Conductor, 0.9mm Insulated Wire				
TP39-2YF(L)2Y-6P05	6	1.5/0.059	11.3/0.445	123/83
TP39-2YF(L)2Y-12P05	12	1.5/0.059	13.3/0.524	180/121
TP39-2YF(L)2Y-18P05	18	1.7/0.067	14.9/0.587	233/157
TP39-2YF(L)2Y-25P05	25	1.7/0.067	16.3/0.642	285/192
TP39-2YF(L)2Y-50P05	50	1.7/0.067	20.4/0.803	478/321
TP39-2YF(L)2Y-75P05	75	1.8/0.071	23.8/0.937	673/452
TP39-2YF(L)2Y-100P05	100	2.0/0.079	27.0/1.063	869/584
TP39-2YF(L)2Y-150P05	150	2.2/0.087	31.6/1.244	1273/855
TP39-2YF(L)2Y-200P05	200	2.4/0.094	35.4/1.394	1579/1061
TP39-2YF(L)2Y-300P05	300	2.5/0.098	42.5/1.673	2307/1550
TP39-2YF(L)2Y-400P05	400	2.5/0.098	48.4/1.906	3026/2033
TP39-2YF(L)2Y-600P05	600	2.5/0.098	57.9/2.280	4429/2976
0.63mm Conductor, 1.15mm Insulated Wire				
TP39-2YF(L)2Y-6P063	6	1.5/0.059	12.6/0.496	158/106
TP39-2YF(L)2Y-12P063	12	1.5/0.059	15.1/0.594	240/161
TP39-2YF(L)2Y-18P063	18	1.7/0.067	17.0/0.669	317/213
TP39-2YF(L)2Y-25P063	25	1.7/0.067	18.9/0.744	398/267
TP39-2YF(L)2Y-50P063	50	1.7/0.067	24.3/0.957	696/468
TP39-2YF(L)2Y-75P063	75	1.8/0.071	28.2/1.110	984/661
TP39-2YF(L)2Y-100P063	100	1.9/0.075	32.2/1.268	1278/859
TP39-2YF(L)2Y-150P063	150	2.1/0.083	38.0/1.496	1898/1275
TP39-2YF(L)2Y-200P063	200	2.2/0.087	43.4/1.709	2405/1616
TP39-2YF(L)2Y-300P063	300	2.2/0.087	52.0/2.047	3516/2363
TP39-2YF(L)2Y-400P063	400	2.2/0.087	59.2/2.331	4614/3100
0.9mm Conductor, 1.5mm Insulated Wire				
TP39-2YF(L)2Y-6P09	6	1.5/0.059	15.3/0.602	244/164
TP39-2YF(L)2Y-12P09	12	1.5/0.059	18.9/0.744	397/267
TP39-2YF(L)2Y-18P09	18	1.7/0.067	21.7/0.854	542/364
TP39-2YF(L)2Y-25P09	25	1.7/0.067	24.7/0.972	708/476