



Caledonian

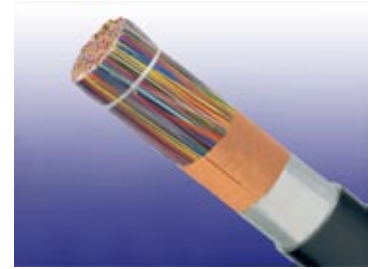
OUTDOOR TELEPHONE CABLES

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Thin Wall Cellular PE Insulated & PE Sheathed Air Core Cables to CW 1224

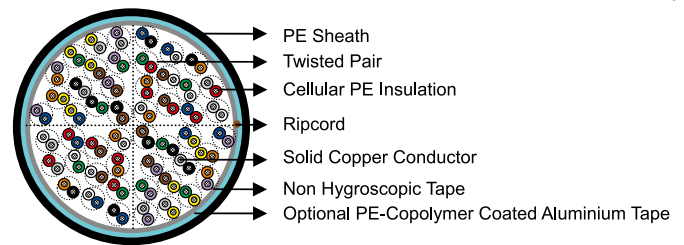
APPLICATION

The cables are designed for local main network where it is pressurized. They are used as subscriber distribution cables and as connection between central offices. The cables are suitable for installation in ducts in access or trunk networks.



STANDARDS

- CW 1224



CONSTRUCTION

- **Conductors:** Solid annealed bare copper, 0.32/0.4/0.5/0.63/0.9mm as per class 1 of BS 6360/IEC 60228.
- **Insulation:** Cellular polyethylene as per BS EN 50290-2-23/IEC 60708/BS 6234.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- **Cabling Element:** Twisted Pairs.
- **Cable Core Assembly:** Cables with up to 100 pairs are composed of 25-pair units or 12/13-pair units; cables with over 100 pairs are composed of 25, 50 or 100-pair units cabled together. Any extra pairs form a separate unit. 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(optional):** A layer of aluminium tape (0.15mm) coated with PE-copolymer on one or both sides and applied longitudinally with overlap over the cable core to provide 100% electrical shielding coverage and ensures a barrier against water vapor.
- **Sheath:** Black low density polyethylene as per BS 6234/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 incorporated for 200 and larger 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	0.32	0.4	0.5	0.63	0.9
Conductor Gauge Size	AWG	28	26	24	22	19
Conductor Size	mm ²	0.08	0.126	0.196	0.312	0.636

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Maximum Average Conductor Resistance @20°C	Ω/km	223	143	91	58	28
Minimum Insulation Resistance @500V DC	MΩ·km	6500	6500	6500	6500	6500
Maximum Average Mutual Capacitance @800Hz*	nF/km	53	53	53	56	59
Maximum Individual Mutual Capacitance @800Hz (for 99% cases)	nF/km	60	60	60	60	64
Maximum Individual Capacitance Unbalance @800Hz pair-to-pair (for 99% cases)	pF/500m	275	275	275	275	275
Maximum Conductor Loop Resistance @20°C	Ω/km	470	300	192	114	60
Impedance @1KHz	Ω	1000	994	796	660	445
Impedance @100KHz	Ω	156	147	134	125	122
Impedance @512KHz	Ω	122	120	118	117	116
Impedance @1MHz	Ω	120	117	115	114	113
Maximum Average Attenuation @0.8KHz	dB/km	1.76	1.64	1.30	1.04	0.74
Maximum Average Attenuation @1KHz	dB/km	1.8	1.68	1.35	1.08	0.76
Maximum Average Attenuation @3KHz	dB/km	3.4	3.18	2.52	2.01	1.42
Maximum Average Attenuation @150KHz	dB/km	16.8	11.4	8.3	6.2	4.4
Maximum Average Attenuation @772KHz	dB/km	29.5	24.3	19.4	15.4	10.8
Maximum Average Attenuation @1000KHz	dB/km	33.5	27.1	21.4	17.5	12.8
Dielectric Strength Conductor to Conductor (3secs)	V DC	500	500	500	500	500
Nominal Insulation Thickness	mm	0.095	0.13	0.15	0.175	0.225
Nominal Insulated Conductor Diameter	mm	0.51	0.66	0.8	0.98	1.35

* Mutual capacitance values may be increased by 3% for cables with a nominal number of pairs less than 400.

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 CW 1224 given in Colour Code Chart

DIMENSIONS AND WEIGHT

Cellular PE Insulated & LAP Sheathed Air Core Cable to CW 1224

Cable Code	Number of Pairs	Minimum Sheath Thickness mm	Maximum Overall Diameter mm	Nominal Weight kg/km
0.32mm Conductor, 0.51mm Insulated Wire				
TP1224-02Y(L)2Y-100P032	100	1.6	16.0	266
TP1224-02Y(L)2Y-200P032	200	1.7	20.0	490
TP1224-02Y(L)2Y-300P032	300	1.7	23.5	706
TP1224-02Y(L)2Y-400P032	400	1.8	26.0	910
TP1224-02Y(L)2Y-500P032	500	1.8	28.5	1085
TP1224-02Y(L)2Y-600P032	600	1.9	31.0	1330
TP1224-02Y(L)2Y-800P032	800	1.9	34.5	1740
TP1224-02Y(L)2Y-1000P032	1000	2.0	38.0	2150
TP1224-02Y(L)2Y-1200P032	1200	2.1	41.0	2560
TP1224-02Y(L)2Y-1600P032	1600	2.2	46.5	3370
TP1224-02Y(L)2Y-2000P032	2000	2.3	51.5	4180
TP1224-02Y(L)2Y-2400P032	2400	2.4	55.5	4990
TP1224-02Y(L)2Y-3200P032	3200	2.5	63.0	6610



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Cable Code	Number of Pairs	Minimum Sheath Thickness mm	Maximum Overall Diameter mm	Nominal Weight kg/km
TP1224-02Y(L)2Y-4000P032	4000	2.7	71.0	8230
TP1224-02Y(L)2Y-4800P032	4800	2.7	76.0	9850
0.4mm Conductor, 0.66mm Insulated Wire				
TP1224-02Y(L)2Y-50P04	50	1.6	15.5	220
TP1224-02Y(L)2Y-100P04	100	1.6	19.0	380
TP1224-02Y(L)2Y-200P04	200	1.7	24.5	700
TP1224-02Y(L)2Y-300P04	300	1.8	28.5	1009
TP1224-02Y(L)2Y-400P04	400	1.9	32.0	1300
TP1224-02Y(L)2Y-500P04	500	1.9	35.0	1550
TP1224-02Y(L)2Y-600P04	600	2.0	38.0	1900
TP1224-02Y(L)2Y-800P04	800	2.1	43.0	2490
TP1224-02Y(L)2Y-1000P04	1000	2.2	47.5	3075
TP1224-02Y(L)2Y-1200P04	1200	2.3	51.5	3660
TP1224-02Y(L)2Y-1400P04	1400	2.4	55.5	4235
TP1224-02Y(L)2Y-1600P04	1600	2.4	58.5	4818
TP1224-02Y(L)2Y-2000P04	2000	2.5	64.5	5980
TP1224-02Y(L)2Y-2400P04	2400	2.6	70.0	7645
TP1224-02Y(L)2Y-3000P04	3000	2.8	74.0	9466
TP1224-02Y(L)2Y-3200P04	3200	3.0	80.0	10076
0.5mm Conductor, 0.8mm Insulated Wire				
TP1224-02Y(L)2Y-50P05	50	1.6	17.0	320
TP1224-02Y(L)2Y-100P05	100	1.7	22.0	540
TP1224-02Y(L)2Y-200P05	200	1.8	28.5	1000
TP1224-02Y(L)2Y-300P05	300	1.9	33.5	1500
TP1224-02Y(L)2Y-400P05	400	2.0	37.5	1944
TP1224-02Y(L)2Y-500P05	500	2.1	41.5	2577
TP1224-02Y(L)2Y-600P05	600	2.1	44.5	2800
TP1224-02Y(L)2Y-800P05	800	2.3	51.5	3743
TP1224-02Y(L)2Y-1000P05	1000	2.4	56.0	4450
TP1224-02Y(L)2Y-1200P05	1200	2.5	61.5	5460
TP1224-02Y(L)2Y-1600P05	1600	2.6	69.5	7060
TP1224-02Y(L)2Y-2000P05	2000	2.7	75.0	8660
TP1224-02Y(L)2Y-2400P05	2400	2.7	80.0	10260
0.63mm Conductor, 0.98mm Insulated Wire				
TP1224-02Y(L)2Y-100P063	100	1.7	25.0	785
TP1224-02Y(L)2Y-200P063	200	1.9	33.5	1490
TP1224-02Y(L)2Y-300P063	300	2.0	39.5	2200
TP1224-02Y(L)2Y-400P063	400	2.1	44.5	2890
TP1224-02Y(L)2Y-600P063	600	2.3	53.5	4235
TP1224-02Y(L)2Y-800P063	800	2.5	61.0	5590
TP1224-02Y(L)2Y-1000P063	1000	2.6	67.5	6800
TP1224-02Y(L)2Y-1200P063	1200	2.7	73.5	8100
TP1224-02Y(L)2Y-1600P063	1600	2.7	80.0	10700
0.9mm Conductor, 1.35mm Insulated Wire				
TP1224-02Y(L)2Y-50P09	50	1.7	24.5	805
TP1224-02Y(L)2Y-100P09	100	1.9	32.5	1515
TP1224-02Y(L)2Y-200P09	200	2.1	45.0	2935
TP1224-02Y(L)2Y-300P09	300	2.4	56.0	4318
TP1224-02Y(L)2Y-400P09	400	2.5	62.0	5700

*The above part number will be changed for unscreened cables by deleting the (L).