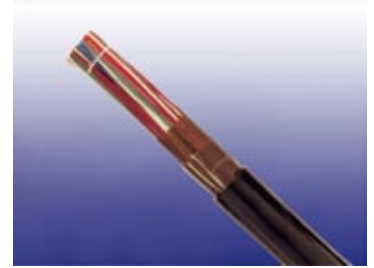


## Cellular PE Insulated & PE Sheathed Jelly Filled Cables to CW 1128 & CW 1128/1179

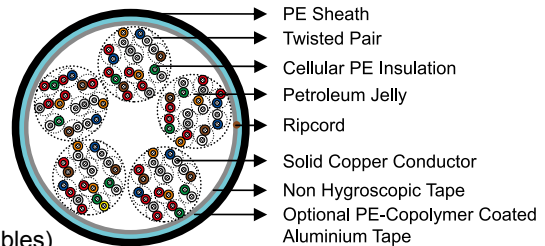
### APPLICATION

The cables are designed for use in access or trunk networks, from telephone exchange to subscriber area. The cables are suitable for installation in ducts, direct burial in the ground and also for aerial installation with integral suspension strand. Jelly filled construction is for subscriber's cables installed underground or along the edge of pavement. An armoured option is offered for direct burial installations. A figure-8 self support option is offered for aerial installation.



### STANDARDS

- CW 1128 (Unscreened jelly filled cables)
- CW 1128/1179 (Screened jelly filled cables)
- CW 1128/1252 (Self supporting jelly filled cables)
- CW 1128/1198 (Steel wire armoured jelly filled cables)
- CW 1128/1179/1198 (Steel wire armoured screened jelly filled cables)



### CONSTRUCTION

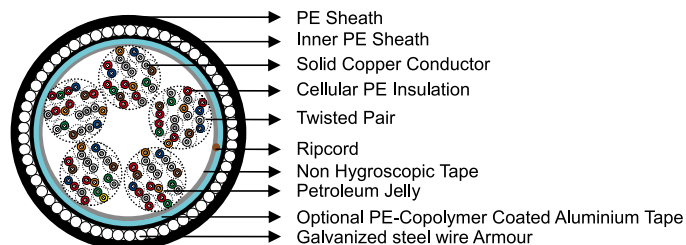
- **Conductors:** Solid annealed bare copper 0.4/0.5/0.6/0.63/0.9 mm as per class 1 of BS 6360/IEC 60228.
- **Insulation:** Cellular polyethylene as per BS 6234/BS EN 50290-2-23/IEC 60708.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- **Cabling Element:** Twisted Pairs.
- **Cable Core Assembly:** Cables are composed of 10-pair units. Any extra pairs form a separate unit. Units are identified by colour coded binders. Standard construction is per CW 1128 given in Cable Make Up Chart below.
- **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):** Laminated sheath made of an aluminium tape (0.15mm) coated with PE-copolymer on one or both sides is applied longitudinally with overlap over the cable core to provide 100% electrical shielding coverage and ensures a barrier against water vapor.
- **Inner Bedding (for armoured cables):** Black polyethylene compound
- **Armour (for armoured cables):** Galvanized steel wire armour is applied over an inner polyethylene sheath.
- **Filling:** The cable core interstices are filled with petroleum jelly to avoid longitudinal water penetration within the cable. The water resistant filling compound is applied to the air space between non-hygroscopic tape and shield, shield and sheath within the cable core.
- **Sheath:** Black low density polyethylene as per BS 6234/IEC 60708/ASTM D 1248 which is compounded to withstand exposure to sunlight, temperature variations, ground chemicals and other environmental contaminants.
- **Ripcord (optional):** Ripcord may be provided for slitting the sheath longitudinally to facilitate its removal.
- **Continuity Wire (optional):** One tinned copper drain wire may be longitudinally laid to ensure electrical continuity of the screen.



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## OUTDOOR TELEPHONE CABLES

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### ELECTRICAL CHARACTERISTICS

Nominal Conductor Diameter	mm	0.4	0.5	0.6	0.63	0.9
Conductor Gauge Size	AWG	26	24	-	22	19
Conductor Size	mm <sup>2</sup>	0.126	0.196	0.283	0.312	0.636
Maximum Average Conductor Resistance @20°C	Ω/km	143	91	63	58	28
Minimum Insulation Resistance @500V DC	MΩ·km	1500	1500	1500	1500	1500
Maximum Average Mutual Capacitance @800Hz*	nF/km	56	56	42	56	59
Maximum Individual Mutual Capacitance @800Hz (for 99% cases)	nF/km	64	64	46	64	65
Maximum Individual Capacitance Unbalance @800Hz pair-to-pair	pF/500m	275	275	275	275	275
Maximum Conductor Loop Resistance @20°C	Ω/km	300	192	130	114	60
Impedance @1KHz	Ω	994	796	665	660	445
Impedance @100KHz	Ω	147	134	127	125	122
Impedance @512KHz	Ω	120	118	117.5	117	116
Impedance @1MHz	Ω	117	115	114.5	114	113
Maximum Average Attenuation @0.8KHz	dB/km	1.64	1.30	1.1	1.04	0.74
Maximum Average Attenuation @1KHz	dB/km	1.68	1.35	1.14	1.08	0.76
Maximum Average Attenuation @3KHz	dB/km	3.18	2.52	2.3	2.01	1.42
Maximum Average Attenuation @150KHz	dB/km	11.4	8.3	7.2	6.2	4.4
Maximum Average Attenuation @772KHz	dB/km	24.3	19.4	17.4	15.4	10.8
Maximum Average Attenuation @1000KHz	dB/km	27.1	21.4	18.5	17.5	12.8
Dielectric Strength Conductor to Conductor (3secs)	V DC	500	500	500	500	500
Nominal Insulation Thickness	mm	0.175	0.20	0.375	0.26	0.30
Nominal Insulated Conductor Diameter	mm	0.75	0.90	1.35	1.15	1.50

Remarks: For screened cables of 20 pairs or less the maximum average mutual capacitance values shall not apply and the maximum for 99% shall be increased by 3nF.

### 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 1128 given in Colour Code Chart

Cabling Element No.	a-wire	b-wire
1	WHITE	BLUE
2	WHITE	ORANGE
3	WHITE	GREEN
4	WHITE	BROWN
5	WHITE	GREY
6	RED	BLUE
7	RED	ORANGE
8	RED	GREEN
9	RED	BROWN
10	RED	GREY

Unit Number	Binder Colour
1	BLUE
2	ORANGE
3	GREEN
4	BROWN
5	GREY
6	WHITE
7	RED
8	BLACK
9	YELLOW
10	VIOLET

Cable Size	No. and Pair Size of Units in Centre and 1st Layer	
	Centre	1st Layer
2 pairs	1 X 2	
5 pairs	1 X 5	
10 pairs	1 X 10	
20 pairs	4 X 5	
	2 X 10	
50 pairs	5 X 10	
	1 X 10	4 X 10
100 pairs	2 X 10	8 X 10
	3 X 10	7 X 10
	4 X 5	8 X 10

**Note:**

The two pair cable is manufactured as a quad, coloured Orange, Green, White, and Black in order of rotation.

## DIMENSIONS AND WEIGHT

Cellular PE Insulated and LAP Sheathed Jelly Filled Cable to CW 1128 & CW 1128/1179

Cable Code	Number of Pairs	Minimum Sheath Thickness mm	Maximum Overall Diameter mm (Unscreened)	Nominal Weight kg/km (Unscreened)	Maximum Overall Diameter mm (Screened)	Nominal Weight kg/km (Screened)
<b>0.4mm Conductor, 0.75mm Insulated Wire</b>						
TP1128-02YF(L)2Y-5P04	5	1.1	7.5	50	9.0	60
TP1128-02YF(L)2Y-10P04	10	1.1	8.5	75	10.0	85
TP1128-02YF(L)2Y-20P04	20	1.1	10.0	120	11.5	130
TP1128-02YF(L)2Y-50P04	50	1.2	14.0	245	15.5	260
TP1128-02YF(L)2Y-100P04	100	1.3	18.5	440	20.0	470
<b>0.5mm Conductor, 0.9mm Insulated Wire</b>						
TP1128-02YF(L)2Y-2P05	2	1.1	7.5	52	9.0	62
TP1128-02YF(L)2Y-5P05	5	1.1	8.0	73	9.5	83
TP1128-02YF(L)2Y-10P05	10	1.1	9.5	120	11.0	130
TP1128-02YF(L)2Y-20P05	20	1.2	12.0	210	13.5	220
TP1128-02YF(L)2Y-50P05	50	1.3	16.5	460	18.0	480
TP1128-02YF(L)2Y-100P05	100	1.4	22.0	880	23.5	910
<b>0.6mm Conductor, 1.35mm Insulated Wire</b>						
TP1128-02YF(L)2Y-2P06	2	1.1	8.5	72	10.0	82
TP1128-02YF(L)2Y-5P06	5	1.2	11.0	87	12.5	97
TP1128-02YF(L)2Y-10P06	10	1.2	13.0	145	14.5	155
TP1128-02YF(L)2Y-20P06	20	1.3	16.0	240	17.5	250
TP1128-02YF(L)2Y-50P06	50	1.4	24.0	520	25.5	540
TP1128-02YF(L)2Y-100P06	100	1.6	32.0	960	33.5	990



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## OUTDOOR TELEPHONE CABLES

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(Continued from previous page)

Cable Code	Number of Pairs	Minimum Sheath Thickness mm	Maximum Overall Diameter mm (Unscreened)	Nominal Weight kg/km (Unscreened)	Maximum Overall Diameter mm (Screened)	Nominal Weight kg/km (Screened)
<b>0.63mm Conductor, 1.15mm Insulated Wire</b>						
TP1128-02YF(L)2Y-2P063	2	1.1	8.0	75	9.5	85
TP1128-02YF(L)2Y-5P063	5	1.1	9.5	90	11.0	100
TP1128-02YF(L)2Y-10P063	10	1.2	11.5	150	13.0	160
TP1128-02YF(L)2Y-20P063	20	1.2	14.0	250	15.5	260
TP1128-02YF(L)2Y-50P063	50	1.4	20.5	530	22.0	550
TP1128-02YF(L)2Y-100P063	100	1.5	27.5	900	29.0	1000
<b>0.9mm Conductor, 1.5mm Insulated Wire</b>						
TP1128-02YF(L)2Y-2P09	2	1.1	9.0	120	10.5	130
TP1128-02YF(L)2Y-5P09	5	1.2	11.5	140	13.0	150
TP1128-02YF(L)2Y-10P09	10	1.2	14.0	240	15.5	250
TP1128-02YF(L)2Y-20P09	20	1.3	18.0	440	19.5	450
TP1128-02YF(L)2Y-50P09	50	1.5	26.5	980	28.0	1000
TP1128-02YF(L)2Y-100P09	100	1.7	36.0	1970	37.5	2000

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

Cellular PE Insulated, PE Inner Sheathed, Steel Wire Armoured and PE Outer Sheathed Jelly Filled Cable to CW 1128/1198

Cable Code	Number of Pairs	Minimum Bedding Thickness mm	Steel Wire Diameter mm	Minimum Sheath Thickness mm	Maximum Overall Diameter mm	Nominal Weight kg/km
<b>0.4mm Conductor, 0.75mm Insulated Wire</b>						
TP1128-02YF2Y(SWA)2Y-5P04	5	1.1	0.9	0.9	12.7	239
TP1128-02YF2Y(SWA)2Y-10P04	10	1.1	0.9	0.9	13.7	275
TP1128-02YF2Y(SWA)2Y-20P04	20	1.1	0.9	0.9	15.2	418
TP1128-02YF2Y(SWA)2Y-50P04	50	1.2	1.25	0.9	19.9	600
TP1128-02YF2Y(SWA)2Y-100P04	100	1.3	2.0	1.0	25.3	1310
<b>0.5mm Conductor, 0.9mm Insulated Wire</b>						
TP1128-02YF2Y(SWA)2Y-2P05	2	1.1	0.9	0.9	12.7	238
TP1128-02YF2Y(SWA)2Y-5P05	5	1.1	0.9	0.9	13.2	269
TP1128-02YF2Y(SWA)2Y-10P05	10	1.1	0.9	0.9	14.7	345
TP1128-02YF2Y(SWA)2Y-20P05	20	1.2	0.9	0.9	17.2	488
TP1128-02YF2Y(SWA)2Y-50P05	50	1.3	2.0	1.0	23.3	1100
TP1128-02YF2Y(SWA)2Y-100P05	100	1.4	2.0	1.1	29.0	1710
<b>0.6mm Conductor, 1.35mm Insulated Wire</b>						
TP1128-02YF2Y(SWA)2Y-2P06	2	1.1	0.9	0.9	13.7	308
TP1128-02YF2Y(SWA)2Y-5P06	5	1.2	0.9	0.9	16.2	349
TP1128-02YF2Y(SWA)2Y-10P06	10	1.2	1.25	0.9	18.9	405
TP1128-02YF2Y(SWA)2Y-20P06	20	1.3	2.0	1.0	22.8	578
TP1128-02YF2Y(SWA)2Y-50P06	50	1.4	2.0	1.1	31.0	1170
TP1128-02YF2Y(SWA)2Y-100P06	100	1.6	2.0	1.3	40.2	2310
<b>0.63mm Conductor, 1.15mm Insulated Wire</b>						
TP1128-02YF2Y(SWA)2Y-2P063	2	1.1	0.9	0.9	13.2	318
TP1128-02YF2Y(SWA)2Y-5P063	5	1.1	0.9	0.9	14.7	359
TP1128-02YF2Y(SWA)2Y-10P063	10	1.2	0.9	0.9	16.7	415
TP1128-02YF2Y(SWA)2Y-20P063	20	1.2	1.25	0.9	19.9	588
TP1128-02YF2Y(SWA)2Y-50P063	50	1.4	2.0	1.1	27.5	1270
TP1128-02YF2Y(SWA)2Y-100P063	100	1.5	2.0	1.2	25.5	2410
<b>0.9mm Conductor, 1.5mm Insulated Wire</b>						

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Cable Code	Number of Pairs	Minimum Bedding Thickness mm	Steel Wire Diameter mm	Minimum Sheath Thickness mm	Maximum Overall Diameter mm	Nominal Weight kg/km
TP1128-02YF2Y(SWA)2Y-2P09	2	1.1	0.9	0.9	14.2	308
TP1128-02YF2Y(SWA)2Y-5P09	5	1.2	0.9	0.9	16.7	470
TP1128-02YF2Y(SWA)2Y-10P09	10	1.2	1.25	0.9	19.9	721
TP1128-02YF2Y(SWA)2Y-20P09	20	1.3	2.0	1.0	24.8	1200
TP1128-02YF2Y(SWA)2Y-30P09	30	1.4	2.0	1.1	27.8	1520
TP1128-02YF2Y(SWA)2Y-50P09	50	1.5	2.0	1.2	34.5	2350
TP1128-02YF2Y(SWA)2Y-100P09	100	1.7	2.0	1.4	44.4	3660

Cellular PE Insulated, PE inner Sheathed, Steel Wire Armoured and LAP Sheathed Jelly Filled Cable to CW 1128/1179/1198

Cable Code	Number of Pairs	Minimum Bedding Thickness mm	Steel Wire Diameter mm	Minimum Sheath Thickness mm	Maximum Overall Diameter mm	Nominal Weight kg/km
<b>0.4mm Conductor, 0.75mm Insulated Wire</b>						
TP1128-02YF(L)2Y(SWA)2Y-5P04	5	1.1	0.9	0.9	14.2	232
TP1128-02YF(L)2Y(SWA)2Y-10P04	10	1.1	0.9	0.9	15.2	281
TP1128-02YF(L)2Y(SWA)2Y-20P04	20	1.1	0.9	0.9	16.7	428
TP1128-02YF(L)2Y(SWA)2Y-50P04	50	1.2	2.0	1.0	22.3	575
TP1128-02YF(L)2Y(SWA)2Y-100P04	100	1.3	2.0	1.0	26.8	1340
<b>0.5mm Conductor, 0.9mm Insulated Wire</b>						
TP1128-02YF(L)2Y(SWA)2Y-2P05	2	1.1	0.9	0.9	14.2	248
TP1128-02YF(L)2Y(SWA)2Y-5P05	5	1.1	0.9	0.9	14.7	282
TP1128-02YF(L)2Y(SWA)2Y-10P05	10	1.1	0.9	0.9	16.2	356
TP1128-02YF(L)2Y(SWA)2Y-20P05	20	1.2	1.25	0.9	19.4	498
TP1128-02YF(L)2Y(SWA)2Y-50P05	50	1.3	2.0	1.0	24.8	1115
TP1128-02YF(L)2Y(SWA)2Y-100P05	100	1.4	2.1	1.1	30.5	1740
<b>0.6mm Conductor, 1.35mm Insulated Wire</b>						
TP1128-02YF(L)2Y(SWA)2Y-2P06	2	1.1	0.9	0.9	15.2	288
TP1128-02YF(L)2Y(SWA)2Y-5P06	5	1.2	1.25	0.9	18.4	342
TP1128-02YF(L)2Y(SWA)2Y-10P06	10	1.2	1.25	0.9	20.4	416
TP1128-02YF(L)2Y(SWA)2Y-20P06	20	1.3	2.0	1.0	24.3	498
TP1128-02YF(L)2Y(SWA)2Y-50P06	50	1.4	2.0	1.2	33.5	1265
TP1128-02YF(L)2Y(SWA)2Y-100P06	100	1.6	2.0	1.3	41.7	2400
<b>0.63mm Conductor, 1.15mm Insulated Wire</b>						
TP1128-02YF(L)2Y(SWA)2Y-2P063	2	1.1	0.9	0.9	14.7	298
TP1128-02YF(L)2Y(SWA)2Y-5P063	5	1.1	0.9	0.9	16.2	352
TP1128-02YF(L)2Y(SWA)2Y-10P063	10	1.2	1.25	0.9	18.9	426
TP1128-02YF(L)2Y(SWA)2Y-20P063	20	1.2	2.0	1.0	22.3	598
TP1128-02YF(L)2Y(SWA)2Y-50P063	50	1.4	2.0	1.1	29.0	1285
TP1128-02YF(L)2Y(SWA)2Y-100P063	100	1.5	2.0	1.2	37.0	2450
<b>0.9mm Conductor, 1.5mm Insulated Wire</b>						
TP1128-02YF(L)2Y(SWA)2Y-2P09	2	1.1	0.9	0.9	15.7	318
TP1128-02YF(L)2Y(SWA)2Y-5P09	5	1.2	1.25	0.9	18.9	484
TP1128-02YF(L)2Y(SWA)2Y-10P09	10	1.2	2.0	1.0	22.3	730
TP1128-02YF(L)2Y(SWA)2Y-20P09	20	1.3	2.0	1.0	26.3	1209
TP1128-02YF(L)2Y(SWA)2Y-30P09	30	1.4	2.0	1.1	29.3	1529
TP1128-02YF(L)2Y(SWA)2Y-50P09	50	1.5	2.0	1.2	36.0	2363
TP1128-02YF(L)2Y(SWA)2Y-100P09	100	1.7	2.0	1.4	45.9	3671