

Solid PE Insulated & LAP Sheathed Air Core Cables to IEC 60708

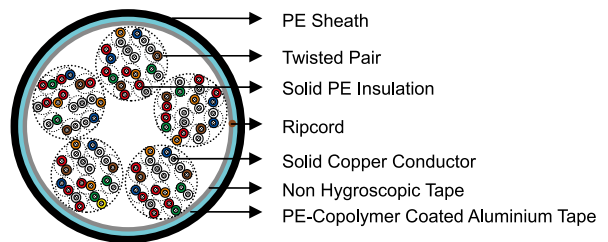
APPLICATION

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. An armoured option is offered for direct burial installations. A figure-8 self support option is offered for aerial installation.



STANDARDS

- IEC 60708



CONSTRUCTION

- **Conductors:** Solid annealed bare copper, 0.4/0.5/0.6/0.8mm as per BS 6360/IEC 60228 Class 1.
- **Insulation:** Solid polyethylene as per IEC 60708/BS EN 50290-2-23/BS 6234/ASTM D 1248/NFC 32-060/VDE 0207.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- **Cabling Element:** Pairs or Quads.
- **Cable Core Assembly:** Cables with 100 pairs or less are composed of 10-pair sub-units; cables with over 100 pairs are composed of 50 or 100-pair units. Any extra pairs form a separate unit. Units are identified by colour coded binders. Standard construction is per IEC 60708 in Cable Make Up Diagram.
- **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 aluminium tape (0.15mm) coated with PE-copolymer on one or both sides is applied longitudinally with overlap over the cable core to provide electrical shielding coverage and ensure a barrier against water vapor. In cables with more than 200 pairs, the aluminum tape may be corrugated for improved cable flexibility.
- **Sheath:** Black low density polyethylene as per BS 6234/IEC 60708/ASTM D 1248, 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 in large pair cables.
- **Continuity Wire (optional):** Tinned copper drain wire may be longitudinally laid to ensure electrical continuity of the screen.

OPTIONAL CONSTRUCTION

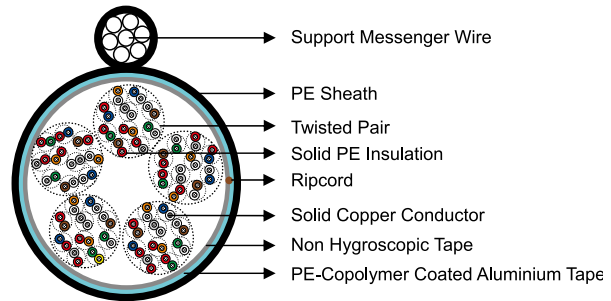
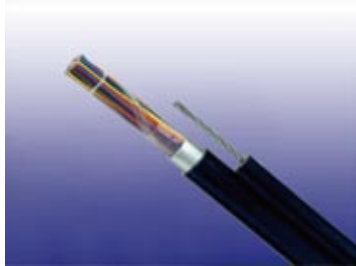
- **Armoured Cable:** Steel wire armour or corrugated steel tape armour is applied over an optional inner polyethylene sheath. For steel tape version, the steel tape is 0.2/0.5mm thick, being coated with a PE copolymer and applied with an overlap. An outer polyethylene sheath is applied over the armour.
- **Self-Support Cables:** Per CW 1252. A 7-strand galvanized steel strand is used as support wire. Black polyethylene



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sheath covers both core and support wire in a figure-8 construction.

ELECTRICAL PROPERTIES

| | | | | | |
|--|-----------------|-------|-------|-------|-------|
| Nominal Conductor Diameter | mm | 0.4 | 0.5 | 0.6 | 0.8 |
| Conductor Gauge Size | AWG | 26 | 24 | - | 20 |
| Conductor Size | mm ² | 0.126 | 0.196 | 0.283 | 0.5 |
| Maximum Average Conductor Resistance @20°C | Ω/km | 143 | 91 | 63 | 34.6 |
| Minimum Insulation Resistance @500V DC | MΩ·km | 5000 | 5000 | 5000 | 5000 |
| Maximum Average Mutual Capacitance @800Hz | nF/km | 53 | 53 | 56 | 59 |
| Maximum Individual Mutual Capacitance @800Hz (for 99% cases) | nF/km | 60 | 60 | 60 | 64 |
| Maximum Individual Capacitance Unbalance @800Hz pair-to-pair | pF/500m | 250 | 250 | 250 | 160 |
| Maximum Individual Capacitance Unbalance @800Hz pair-to-pair (for 95% cases) | pF/500m | 150 | 150 | 150 | 100 |
| Maximum Individual Capacitance Unbalance @800Hz pair-to-ground | pF/500m | 1700 | 1700 | 1700 | 1700 |
| Maximum Individual Capacitance Unbalance @800Hz pair-to-ground (for 95% cases) | pF/500m | 1000 | 1000 | 1000 | 1000 |
| Maximum Conductor Loop Resistance @20°C | Ω/km | 300 | 192 | 130 | 73 |
| Impedance @1KHz | Ω | 994 | 796 | 665 | 500 |
| Impedance @100KHz | Ω | 147 | 134 | 127 | 124 |
| Impedance @512KHz | Ω | 120 | 118 | 117.5 | 116.5 |
| Impedance @1MHz | Ω | 117 | 115 | 114.5 | 113.5 |
| Maximum Average Attenuation @0.8KHz | dB/km | 1.64 | 1.30 | 1.1 | 0.9 |
| Maximum Average Attenuation @1KHz | dB/km | 1.68 | 1.35 | 1.14 | 0.93 |
| Maximum Average Attenuation @3KHz | dB/km | 3.18 | 2.52 | 2.3 | 1.74 |
| Maximum Average Attenuation @150KHz | dB/km | 11.4 | 8.3 | 7.2 | 5.7 |
| Maximum Average Attenuation @772KHz | dB/km | 24.3 | 19.4 | 17.4 | 13.1 |
| Maximum Average Attenuation @1000KHz | dB/km | 27.1 | 21.4 | 18.5 | 13.7 |
| Dielectric Strength | | | | | |
| Conductor to Conductor (1min) | V DC | 500 | 500 | 500 | 500 |
| Conductor to Screen (1min) | V DC | 1000 | 1000 | 1000 | 1000 |
| Nominal Insulation Thickness | mm | 0.175 | 0.20 | 0.25 | 0.3 |
| Nominal Insulated Conductor Diameter | mm | 0.75 | 0.90 | 1.1 | 1.4 |

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 IEC 60708 given in Colour Code Chart.

DIMENSIONS AND WEIGHT

Solid PE Insulated & LAP Sheathed Air Core Cable to IEC 60708

| Cable Code | Number of Pairs | Nominal Sheath Thickness mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|--|-----------------|-----------------------------|-----------------------------|----------------------|
| 0.4mm Conductor, 0.75mm Insulated Wire | | | | |
| TP708-2Y(L)2Y-10P04 | 10 | 1.5 | 9 | 71 |
| TP708-2Y(L)2Y-20P04 | 20 | 1.5 | 10 | 107 |
| TP708-2Y(L)2Y-30P04 | 30 | 1.5 | 11 | 143 |
| TP708-2Y(L)2Y-50P04 | 50 | 1.5 | 13 | 211 |
| TP708-2Y(L)2Y-70P04 | 70 | 1.5 | 15 | 278 |
| TP708-2Y(L)2Y-100P04 | 100 | 1.5 | 17 | 380 |
| TP708-2Y(L)2Y-150P04 | 150 | 1.5 | 21 | 548 |
| TP708-2Y(L)2Y-200P04 | 200 | 1.8 | 23 | 708 |
| TP708-2Y(L)2Y-300P04 | 300 | 1.8 | 28 | 1034 |
| TP708-2Y(L)2Y-400P04 | 400 | 1.8 | 31 | 1358 |
| TP708-2Y(L)2Y-500P04 | 500 | 2.0 | 35 | 1703 |
| TP708-2Y(L)2Y-600P04 | 600 | 2.0 | 38 | 2016 |
| TP708-2Y(L)2Y-800P04 | 800 | 2.5 | 43 | 2639 |
| TP708-2Y(L)2Y-900P04 | 900 | 2.5 | 46 | 2961 |
| TP708-2Y(L)2Y-1000P04 | 1000 | 2.5 | 48 | 3264 |
| TP708-2Y(L)2Y-1200P04 | 1200 | 2.8 | 52 | 3873 |
| TP708-2Y(L)2Y-1500P04 | 1500 | 2.8 | 58 | 4819 |
| TP708-2Y(L)2Y-1800P04 | 1800 | 3.2 | 63 | 5777 |
| TP708-2Y(L)2Y-2100P04 | 2100 | 3.2 | 68 | 6731 |
| TP708-2Y(L)2Y-2400P04 | 2400 | 3.5 | 72 | 7645 |
| TP708-2Y(L)2Y-2700P04 | 2700 | 3.5 | 76 | 8556 |
| TP708-2Y(L)2Y-3000P04 | 3000 | 3.5 | 80 | 9466 |
| 0.5mm Conductor, 0.9mm Insulated Wire | | | | |
| TP708-2Y(L)2Y-10P05 | 10 | 1.5 | 10 | 94 |
| TP708-2Y(L)2Y-20P05 | 20 | 1.5 | 11 | 147 |
| TP708-2Y(L)2Y-30P05 | 30 | 1.5 | 13 | 201 |
| TP708-2Y(L)2Y-50P05 | 50 | 1.5 | 16 | 305 |
| TP708-2Y(L)2Y-70P05 | 70 | 1.5 | 18 | 406 |
| TP708-2Y(L)2Y-100P05 | 100 | 1.5 | 21 | 561 |
| TP708-2Y(L)2Y-150P05 | 150 | 1.8 | 25 | 829 |
| TP708-2Y(L)2Y-200P05 | 200 | 1.8 | 28 | 1074 |
| TP708-2Y(L)2Y-300P05 | 300 | 2.0 | 34 | 1582 |
| TP708-2Y(L)2Y-400P05 | 400 | 2.0 | 39 | 2093 |
| TP708-2Y(L)2Y-500P05 | 500 | 2.5 | 43 | 2577 |
| TP708-2Y(L)2Y-600P05 | 600 | 2.5 | 47 | 3073 |
| TP708-2Y(L)2Y-800P05 | 800 | 2.8 | 53 | 4033 |
| TP708-2Y(L)2Y-900P05 | 900 | 2.8 | 57 | 4541 |
| TP708-2Y(L)2Y-1000P05 | 1000 | 2.8 | 60 | 5015 |
| TP708-2Y(L)2Y-1200P05 | 1200 | 3.2 | 65 | 5959 |
| TP708-2Y(L)2Y-1500P05 | 1500 | 3.5 | 72 | 7414 |
| 0.6mm Conductor, 1.1mm Insulated Wire | | | | |
| TP708-2Y(L)2Y-10P06 | 10 | 1.5 | 11 | 119 |



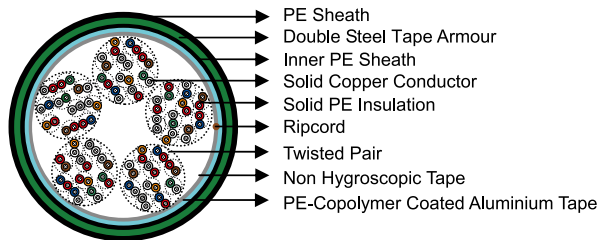
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| Cable Code | Number of Pairs | Nominal Sheath Thickness mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|---------------------------------------|-----------------|-----------------------------|-----------------------------|----------------------|
| TP708-2Y(L)2Y-20P06 | 20 | 1.5 | 13 | 194 |
| TP708-2Y(L)2Y-30P06 | 30 | 1.5 | 15 | 269 |
| TP708-2Y(L)2Y-50P06 | 50 | 1.5 | 18 | 416 |
| TP708-2Y(L)2Y-70P06 | 70 | 1.5 | 21 | 558 |
| TP708-2Y(L)2Y-100P06 | 100 | 1.8 | 25 | 782 |
| TP708-2Y(L)2Y-150P06 | 150 | 1.8 | 29 | 1143 |
| TP708-2Y(L)2Y-200P06 | 200 | 2.0 | 33 | 1505 |
| TP708-2Y(L)2Y-300P06 | 300 | 2.0 | 40 | 2238 |
| TP708-2Y(L)2Y-400P06 | 400 | 2.5 | 46 | 2944 |
| TP708-2Y(L)2Y-500P06 | 500 | 2.5 | 51 | 3633 |
| TP708-2Y(L)2Y-600P06 | 600 | 2.8 | 55 | 4353 |
| TP708-2Y(L)2Y-800P06 | 800 | 3.2 | 63 | 5722 |
| TP708-2Y(L)2Y-900P06 | 900 | 3.2 | 67 | 6438 |
| TP708-2Y(L)2Y-1000P06 | 1000 | 3.2 | 70 | 7115 |
| TP708-2Y(L)2Y-1200P06 | 1200 | 3.5 | 76 | 8462 |
| 0.8mm Conductor, 1.4mm Insulated Wire | | | | |
| TP708-2Y(L)2Y-10P08 | 10 | 1.5 | 13 | 178 |
| TP708-2Y(L)2Y-20P08 | 20 | 1.5 | 16 | 305 |
| TP708-2Y(L)2Y-30P08 | 30 | 1.5 | 19 | 431 |
| TP708-2Y(L)2Y-50P08 | 50 | 1.5 | 23 | 678 |
| TP708-2Y(L)2Y-70P08 | 70 | 1.8 | 27 | 929 |
| TP708-2Y(L)2Y-100P08 | 100 | 1.8 | 31 | 1313 |
| TP708-2Y(L)2Y-150P08 | 150 | 2.0 | 38 | 1963 |
| TP708-2Y(L)2Y-200P08 | 200 | 2.5 | 43 | 2574 |
| TP708-2Y(L)2Y-300P08 | 300 | 2.8 | 52 | 3790 |
| TP708-2Y(L)2Y-400P08 | 400 | 2.8 | 60 | 5019 |
| TP708-2Y(L)2Y-500P08 | 500 | 3.2 | 67 | 6249 |
| TP708-2Y(L)2Y-600P08 | 600 | 3.5 | 73 | 7437 |



Solid PE Insulated, Double Steel Tape Armoured & LAP Sheathed Air Core Cable to IEC 60708

| Cable Code | Number of Pairs | Nominal Inner Sheath Thickness mm | Nominal Outer Sheath Thickness mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|--|-----------------|-----------------------------------|-----------------------------------|-----------------------------|----------------------|
| 0.4mm Conductor, 0.75mm Insulated Wire | | | | | |
| TP708-2Y(L)2Y(DSTA)2Y-10P04 | 10 | 1.5 | 1.5 | 12 | 177 |
| TP708-2Y(L)2Y(DSTA)2Y-20P04 | 20 | 1.5 | 1.5 | 14 | 227 |
| TP708-2Y(L)2Y(DSTA)2Y-30P04 | 30 | 1.5 | 1.5 | 15 | 277 |
| TP708-2Y(L)2Y(DSTA)2Y-50P04 | 50 | 1.5 | 1.5 | 18 | 380 |
| TP708-2Y(L)2Y(DSTA)2Y-70P04 | 70 | 1.5 | 1.5 | 19 | 467 |
| TP708-2Y(L)2Y(DSTA)2Y-100P04 | 100 | 1.5 | 1.5 | 22 | 594 |
| TP708-2Y(L)2Y(DSTA)2Y-150P04 | 150 | 1.5 | 1.8 | 25 | 805 |
| TP708-2Y(L)2Y(DSTA)2Y-200P04 | 200 | 1.8 | 1.8 | 27 | 995 |

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| Cable Code | Number of Pairs | Nominal Inner Sheath Thickness mm | Nominal Outer Sheath Thickness mm | Nominal Overall Diameter mm | Nominal Weight kg/km |
|---------------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------------------|----------------------|
| TP708-2Y(L)2Y(DSTA)2Y-300P04 | 300 | 1.8 | 1.8 | 32 | 1382 |
| TP708-2Y(L)2Y(DSTA)2Y-400P04 | 400 | 1.8 | 1.8 | 37 | 1809 |
| TP708-2Y(L)2Y(DSTA)2Y-500P04 | 500 | 2.0 | 2.0 | 43 | 2704 |
| TP708-2Y(L)2Y(DSTA)2Y-600P04 | 600 | 2.0 | 2.0 | 46 | 3092 |
| TP708-2Y(L)2Y(DSTA)2Y-800P04 | 800 | 2.5 | 2.5 | 51 | 3846 |
| TP708-2Y(L)2Y(DSTA)2Y-900P04 | 900 | 2.5 | 2.5 | 54 | 4250 |
| TP708-2Y(L)2Y(DSTA)2Y-1000P04 | 1000 | 2.5 | 2.5 | 56 | 4612 |
| TP708-2Y(L)2Y(DSTA)2Y-1200P04 | 1200 | 2.8 | 2.8 | 61 | 5369 |
| 0.5mm Conductor, 0.9mm Insulated Wire | | | | | |
| TP708-2Y(L)2Y(DSTA)2Y-10P05 | 10 | 1.5 | 1.5 | 13 | 213 |
| TP708-2Y(L)2Y(DSTA)2Y-20P05 | 20 | 1.5 | 1.5 | 15 | 283 |
| TP708-2Y(L)2Y(DSTA)2Y-30P05 | 30 | 1.5 | 1.5 | 17 | 356 |
| TP708-2Y(L)2Y(DSTA)2Y-50P05 | 50 | 1.5 | 1.5 | 20 | 503 |
| TP708-2Y(L)2Y(DSTA)2Y-70P05 | 70 | 1.5 | 1.5 | 22 | 629 |
| TP708-2Y(L)2Y(DSTA)2Y-100P05 | 100 | 1.5 | 1.8 | 25 | 822 |
| TP708-2Y(L)2Y(DSTA)2Y-150P05 | 150 | 1.8 | 1.8 | 30 | 1145 |
| TP708-2Y(L)2Y(DSTA)2Y-200P05 | 200 | 1.8 | 1.8 | 33 | 1428 |
| TP708-2Y(L)2Y(DSTA)2Y-300P05 | 300 | 2.0 | 2.0 | 42 | 2542 |
| TP708-2Y(L)2Y(DSTA)2Y-400P05 | 400 | 2.0 | 2.5 | 47 | 3191 |
| TP708-2Y(L)2Y(DSTA)2Y-500P05 | 500 | 2.5 | 2.5 | 51 | 3778 |
| TP708-2Y(L)2Y(DSTA)2Y-600P05 | 600 | 2.5 | 2.8 | 55 | 4392 |
| TP708-2Y(L)2Y(DSTA)2Y-800P05 | 800 | 2.8 | 3.2 | 62 | 5563 |
| TP708-2Y(L)2Y(DSTA)2Y-900P05 | 900 | 2.8 | 3.2 | 65 | 6135 |
| TP708-2Y(L)2Y(DSTA)2Y-1000P05 | 1000 | 2.8 | 3.5 | 68 | 6682 |
| 0.6mm Conductor, 1.1mm Insulated Wire | | | | | |
| TP708-2Y(L)2Y(DSTA)2Y-10P06 | 10 | 1.5 | 1.5 | 15 | 250 |
| TP708-2Y(L)2Y(DSTA)2Y-20P06 | 20 | 1.5 | 1.5 | 17 | 347 |
| TP708-2Y(L)2Y(DSTA)2Y-30P06 | 30 | 1.5 | 1.5 | 19 | 456 |
| TP708-2Y(L)2Y(DSTA)2Y-50P06 | 50 | 1.5 | 1.5 | 22 | 639 |
| TP708-2Y(L)2Y(DSTA)2Y-70P06 | 70 | 1.5 | 1.8 | 25 | 818 |
| TP708-2Y(L)2Y(DSTA)2Y-100P06 | 100 | 1.8 | 1.8 | 29 | 1093 |
| TP708-2Y(L)2Y(DSTA)2Y-150P06 | 150 | 1.8 | 2.0 | 34 | 1504 |
| TP708-2Y(L)2Y(DSTA)2Y-200P06 | 200 | 2.0 | 2.0 | 41 | 2457 |
| TP708-2Y(L)2Y(DSTA)2Y-300P06 | 300 | 2.0 | 2.5 | 48 | 3367 |
| TP708-2Y(L)2Y(DSTA)2Y-400P06 | 400 | 2.5 | 2.8 | 54 | 4238 |
| TP708-2Y(L)2Y(DSTA)2Y-500P06 | 500 | 2.5 | 2.8 | 59 | 5091 |
| TP708-2Y(L)2Y(DSTA)2Y-600P06 | 600 | 2.8 | 3.2 | 64 | 5913 |
| TP708-2Y(L)2Y(DSTA)2Y-800P06 | 800 | 3.2 | 3.5 | 72 | 7536 |
| 0.8mm Conductor, 1.4mm Insulated Wire | | | | | |
| TP708-2Y(L)2Y(DSTA)2Y-10P08 | 10 | 1.5 | 1.5 | 17 | 332 |
| TP708-2Y(L)2Y(DSTA)2Y-20P08 | 20 | 1.5 | 1.5 | 20 | 503 |
| TP708-2Y(L)2Y(DSTA)2Y-30P08 | 30 | 1.5 | 1.5 | 23 | 660 |
| TP708-2Y(L)2Y(DSTA)2Y-50P08 | 50 | 1.5 | 1.8 | 27 | 963 |
| TP708-2Y(L)2Y(DSTA)2Y-70P08 | 70 | 1.8 | 1.8 | 31 | 1267 |
| TP708-2Y(L)2Y(DSTA)2Y-100P08 | 100 | 1.8 | 2.0 | 37 | 1766 |
| TP708-2Y(L)2Y(DSTA)2Y-150P08 | 150 | 2.0 | 2.5 | 46 | 3038 |
| TP708-2Y(L)2Y(DSTA)2Y-200P08 | 200 | 2.5 | 2.5 | 51 | 3786 |
| TP708-2Y(L)2Y(DSTA)2Y-300P08 | 300 | 2.8 | 2.8 | 61 | 5290 |
| TP708-2Y(L)2Y(DSTA)2Y-400P08 | 400 | 2.8 | 3.2 | 68 | 6701 |
| TP708-2Y(L)2Y(DSTA)2Y-500P08 | 500 | 3.2 | 3.5 | 75 | 8108 |