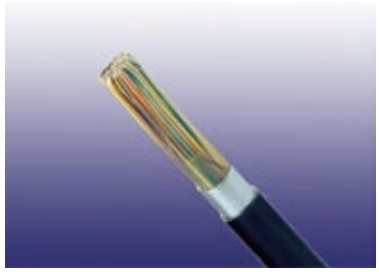
Foam Skin Insulated & AP Sheathed (ALPETH) Jelly Filled Cables to ICEA S-84-608

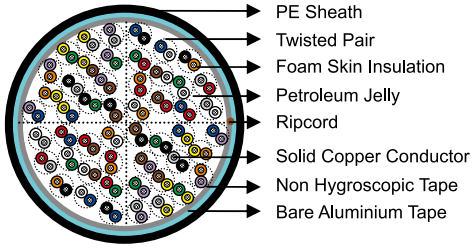
APPLICATION



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 option is for subscriber's cables installed underground or along the edge of pavement. An armoured option is offered for direct burial installations where additional mechanical or rodent protection is required. A figure-8 self support option is offered for aerial installation.

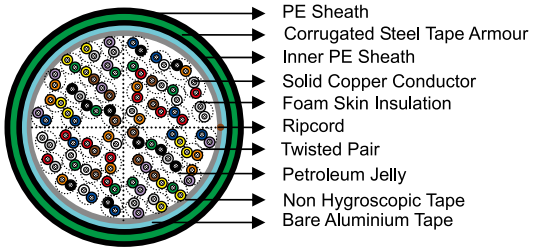
STANDARDS

• ANSI/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:** Foam skin which is a composite polyethylene insulation made of an inner cellular layer and an outer solid skin 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. Standard construction is per ICEA S-84-608 given 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 corrugated bare aluminium tape (0.2mm/8mil) is applied longitudinally with overlap over the cable core to provide 100% electrical shielding coverage and ensures a barrier against water vapor.
- **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 ASTM D 1248/IEC 60708, being able 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.
- **Spare pairs (optional):** Spare pairs may be incorporated for large pair cables.
- **Continuity Wire (optional):** One tinned copper drain wire may be longitudinally laid to ensure electrical continuity of the screen.



OPTIONAL CONSTRUCTION

- **Armoured Cable**: 0.15mm/6mil thick corrugated steel tape armour is applied with an overlap over an optional inner polyethylene sheath. An outer polyethylene sheath is applied over the armour.
- **Self-Support Cables:** A 7-strand galvanized steel strand is used as support wire. Black polyethylene sheath covers both core and support wire in a figure-8 construction.
- **Shield Options:** There are 8 different shield options which can be offered in this standard:
  1) 8 mil bare aluminium tape
  2) 8 mil coated aluminium tape
  3) 5 mil copper tape
  4) 5 mil copper clad alloy steel tape
  5) 5 mil copper clad stainless steel tape
  6) 6 mil & 7 mil 194 copper alloy tape
  7) 6 mil bare steel tape
  8) 6 mil coated steel tape.

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	Ω/km / Ω/mile	140/225	87/140	55/88.6	27.0/43.4
Maximum Individual DC Resistance	Ω/km / Ω/mile	144.2/232	89.5/144	56.5/91.0	28.0/45.0
Minimum Insulation Resistance @500V DC	MΩ·km / MΩ·mile	1600/1000	1600/1000	1600/1000	1600/1000
Maximum Average Resistance Unbalance	%	1.5	1.5	1.5	1.5
Maximum Individual Resistance Unbalance	%	5	5	5	5
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

(Continued from previous page)

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	0.175	0.2	0.26	0.3
Nominal Insulated Conductor Diameter	mm	0.75	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

Foam Skin Insulated and AP Sheathed (Alpeth) Cable to 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, 0.75mm Insulated Wire				
TP608-02YSF(A)2Y-25P04	25	1.5/0.059	12.5/0.492	170/114
TP608-02YSF(A)2Y-50P04	50	1.5/0.059	16.0/0.629	280/188
TP608-02YSF(A)2Y-100P04	100	1.5/0.059	20.0/0.787	470/316
TP608-02YSF(A)2Y-200P04	200	1.5/0.059	25.0/0.984	850/571
TP608-02YSF(A)2Y-300P04	300	1.8/0.071	30.0/1.18	1230/827
TP608-02YSF(A)2Y-400P04	400	1.8/0.071	33.5/1.32	1580/1062
TP608-02YSF(A)2Y-600P04	600	2.0/0.079	40.0/1.57	2300/1546
TP608-02YSF(A)2Y-900P04	900	2.3/0.091	48.0/1.89	3380/2271
TP608-02YSF(A)2Y-1200P04	1200	2.3/0.091	54.0/2.13	4400/2957
TP608-02YSF(A)2Y-1500P04	1500	2.5/0.098	60.0/2.36	5440/3656
TP608-02YSF(A)2Y-1800P04	1800	2.8/0.110	65.5/2.58	6500/4368
TP608-02YSF(A)2Y-2100P04	2100	2.8/0.110	70.0/2.76	7500/5040
TP608-02YSF(A)2Y-2400P04	2400	2.8/0.110	74.5/2.93	8500/5712
TP608-02YSF(A)2Y-2700P04	2700	2.8/0.110	78.5/3.09	9500/6384
TP608-02YSF(A)2Y-3000P04	3000	2.8/0.110	82.0/3.23	10500/7056
0.5mm Conductor, 0.9mm Insulated Wire				
TP608-02YSF(A)2Y-25P05	25	1.5/0.059	15.0/0.591	240/161
TP608-02YSF(A)2Y-50P05	50	1.5/0.059	18.5/0.728	400/269
TP608-02YSF(A)2Y-100P05	100	1.5/0.059	23.5/0.925	720/484
TP608-02YSF(A)2Y-200P05	200	1.8/0.071	31.0/1.22	1310/880
TP608-02YSF(A)2Y-300P05	300	2.0/0.079	37.0/1.46	1890/1270
TP608-02YSF(A)2Y-400P05	400	2.0/0.079	41.5/1.63	2450/1646
TP608-02YSF(A)2Y-600P05	600	2.3/0.091	50.0/1.97	3620/2433
TP608-02YSF(A)2Y-900P05	900	2.5/0.098	59.5/2.34	5270/3541
TP608-02YSF(A)2Y-1200P05	1200	2.8/0.110	68.0/2.68	6940/4663
TP608-02YSF(A)2Y-1500P05	1500	2.8/0.110	75.0/2.95	8550/5745
TP608-02YSF(A)2Y-1800P05	1800	2.8/0.110	81.5/3.21	10160/6827
TP608-02YSF(A)2Y-2100P05	2100	2.8/0.110	87.5/3.44	11750/7896
0.63mm Conductor, 1.15mm Insulated Wire				
TP608-02YSF(A)2Y-10P063	10	1.5/0.059	12.5/0.492	110/74
TP608-02YSF(A)2Y-25P063	25	1.5/0.059	16.5/0.650	340/228
TP608-02YSF(A)2Y-50P063	50	1.5/0.059	21.0/0.827	580/390
TP608-02YSF(A)2Y-100P063	100	1.8/0.071	28.0/1.100	1090/732
TP608-02YSF(A)2Y-200P063	200	2.0/0.079	37.5/1.480	2020/1357
TP608-02YSF(A)2Y-300P063	300	2.3/0.091	45.5/1.790	2980/2002
TP608-02YSF(A)2Y-400P063	400	2.3/0.091	51.5/2.030	3870/2601
TP608-02YSF(A)2Y-600P063	600	2.5/0.098	61.5/2.420	5660/3803
TP608-02YSF(A)2Y-900P063	900	2.8/0.110	74.0/2.910	8320/5591
TP608-02YSF(A)2Y-1200P063	1200	2.8/0.110	84.0/3.310	10910/7331
0.9mm Conductor, 1.5mm Insulated Wire				
TP608-02YSF(A)2Y-10P09	10	1.5/0.059	15.5/0.610	290/195
TP608-02YSF(A)2Y-25P09	25	1.5/0.059	22.5/0.886	610/410
TP608-02YSF(A)2Y-50P09	50	1.8/0.071	29.5/1.160	1120/753
TP608-02YSF(A)2Y-100P09	100	2.0/0.079	39.0/1.540	2060/1384
TP608-02YSF(A)2Y-200P09	200	2.3/0.091	53.5/2.110	3930/2640
TP608-02YSF(A)2Y-300P09	300	2.5/0.098	63.5/2.500	5740/3857
TP608-02YSF(A)2Y-400P09	400	2.8/0.110	73.0/2.870	7560/5080
TP608-02YSF(A)2Y-600P09	600	2.8/0.110	87.5/3.440	11090/7452

Foam Skin Insulated, PE Inner Sheathed, Corrugated Steel Tape Armoured and AP Sheathed (Alpeth) Cables to 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, 0.75mm Insulated Wire				
TP608-02YSF(A)2Y(STA)2Y-50P04	50	1.5/0.059	17.0/0.669	350/235
TP608-02YSF(A)2Y(STA)2Y-100P04	100	1.5/0.059	20.5/0.807	570/383
TP608-02YSF(A)2Y(STA)2Y-300P04	300	1.8/0.071	31.0/1.22	1400/941
TP608-02YSF(A)2Y(STA)2Y-600P04	600	2.0/0.079	40.5/1.59	2530/1700
TP608-02YSF(A)2Y(STA)2Y-900P04	900	2.3/0.091	49.5/1.95	3690/2480
TP608-02YSF(A)2Y(STA)2Y-1200P04	1200	2.3/0.091	55.5/2.19	4750/3192
TP608-02YSF(A)2Y(STA)2Y-1500P04	1500	2.5/0.098	61.5/2.42	5830/3918
TP608-02YSF(A)2Y(STA)2Y-1800P04	1800	2.8/0.110	67.0/2.64	6920/4650
TP608-02YSF(A)2Y(STA)2Y-2100P04	2100	2.8/0.110	71.5/2.81	7960/5349
TP608-02YSF(A)2Y(STA)2Y-2400P04	2400	2.8/0.110	75.5/2.97	9000/6048
TP608-02YSF(A)2Y(STA)2Y-2700P04	2700	2.8/0.110	79.5/3.13	10020/6733
TP608-02YSF(A)2Y(STA)2Y-3000P04	3000	2.8/0.110	83.0/3.27	11050/7425
0.5mm Conductor, 0.9mm Insulated Wire				
TP608-02YSF(A)2Y(STA)2Y-15P05	15	1.5/0.059	14.0/0.551	240/161
TP608-02YSF(A)2Y(STA)2Y-25P05	25	1.5/0.059	16.0/0.629	310/208
TP608-02YSF(A)2Y(STA)2Y-50P05	50	1.5/0.059	19.5/0.768	490/329
TP608-02YSF(A)2Y(STA)2Y-100P05	100	1.5/0.059	24.5/0.965	840/564
TP608-02YSF(A)2Y(STA)2Y-300P05	300	2.0/0.079	37.5/1.48	2100/1411
TP608-02YSF(A)2Y(STA)2Y-600P05	600	2.3/0.091	51.5/2.03	3930/2641
TP608-02YSF(A)2Y(STA)2Y-900P05	900	2.5/0.098	61.0/2.40	5660/3803
TP608-02YSF(A)2Y(STA)2Y-1200P05	1200	2.8/0.110	69.5/2.74	7380/4959
TP608-02YSF(A)2Y(STA)2Y-1500P05	1500	2.8/0.110	76.5/3.01	9050/6081
TP608-02YSF(A)2Y(STA)2Y-1800P05	1800	2.8/0.110	82.5/3.25	10690/7183
0.63mm Conductor, 1.15mm Insulated Wire				
TP608-02YSF(A)2Y(STA)2Y-10P063	10	1.5/0.059	14.5/0.571	240/161
TP608-02YSF(A)2Y(STA)2Y-50P063	50	1.5/0.059	23.0/0.906	700/470
TP608-02YSF(A)2Y(STA)2Y-100P063	100	1.8/0.071	30.0/1.18	1260/847
TP608-02YSF(A)2Y(STA)2Y-300P063	300	2.3/0.091	48.0/1.89	3290/2211
TP608-02YSF(A)2Y(STA)2Y-400P063	400	2.3/0.091	54.0/2.13	4220/2836
TP608-02YSF(A)2Y(STA)2Y-600P063	600	2.5/0.098	64.0/2.52	6090/4092
TP608-02YSF(A)2Y(STA)2Y-900P063	900	2.8/0.110	76.5/3.01	8840/5940
TP608-02YSF(A)2Y(STA)2Y-1200P063	1200	2.8/0.110	86.5/3.41	11500/7728
0.9mm Conductor, 1.5mm Insulated Wire				
TP608-02YSF(A)2Y(STA)2Y-10P09	10	1.5/0.059	17.5/0.689	380/255
TP608-02YSF(A)2Y(STA)2Y-50P09	50	1.8/0.071	31.5/1.24	1300/874
TP608-02YSF(A)2Y(STA)2Y-100P09	100	2.0/0.079	41.0/1.61	2310/1552
TP608-02YSF(A)2Y(STA)2Y-300P09	300	2.5/0.098	66.0/2.60	6180/4153
TP608-02YSF(A)2Y(STA)2Y-600P09	600	2.8/0.110	90.0/3.54	11700/7862