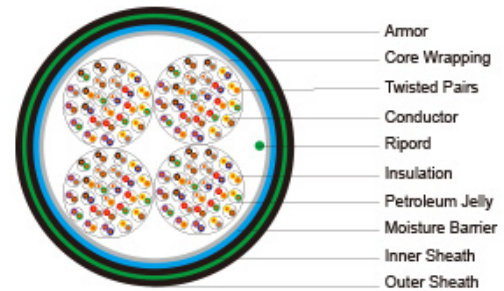
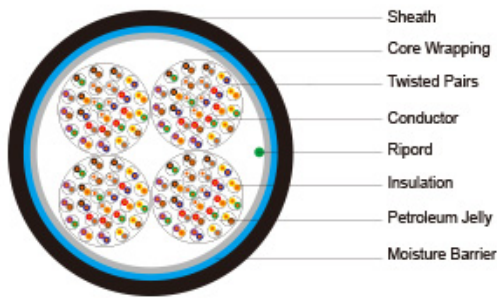


Foam Skin Insulated & AP Sheathed  
(ALPETH) Jelly Filled Cables to GR-421



<b>Application</b>	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.
<b>Standards</b>	Telcordia (Bellcore) GR-421
<b>Construction</b>	
<b>Conductors:</b>	Solid annealed bare copper, 0.4/0.5/0.63/0.9mm as per ASTM B-3/class 1 of IEC 60028
<b>Insulation:</b>	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
<b>Twisted Pairs:</b>	Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk
<b>Cabling Element:</b>	Twisted Pairs
<b>Cable Core Assembly:</b>	Cables with up to 400 pairs are composed of 25-pair units or 12/13-pair units; cables with over 400 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 GR-421 given in Cable Make Up Diagram
<b>Core Wrapping:</b>	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
<b>Moisture Barrier:</b>	A layer of 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. In cables with more than 200 pairs, the aluminum tape may be corrugated for improved cable flexibility
<b>Filling:</b>	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
<b>Sheath:</b>	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
<b>Ripcord:</b>	Ripcord may be provided for slitting the sheath longitudinally to facilitate its removal
<b>Spare Pairs (optional):</b>	Spare pairs may be incorporated for 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 applied over an optional inner polyethylene sheath. For steel tape version, the 0.15mm/6mil thick steel tape is coated with a copolymer and applied with an overlap. 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

**Electrical Properties**

<b>Nominal Conductor Diameter</b>	mm		0.4	0.5	0.63	0.9
<b>Conductor Gauge Size</b>	AWG		26	24	22	19
<b>Maximum Average DC Resistance</b>	$\Omega$ /km $\Omega$ /mile	/	140/225	87/140	55/88.6	27.0/43.4
<b>Maximum Individual DC Resistance</b>	$\Omega$ /km $\Omega$ /mile	/	144.2/232	89.5/144	56.5/91.0	28.0/45.0
<b>Minimum Insulation Resistance @500V DC</b>	M $\Omega$ .km M $\Omega$ .mile	/	1600/1000	1600/1000	1600/1000	1600/1000
<b>Maximum Average Resistance Unbalance</b>	%		1.5	1.5	1.5	1.5
<b>Maximum Individual Resistance Unbalance</b>	%		5	5	5	5
<b>Average Mutual Capacitance</b>	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
<b>Maximum Individual Mutual Capacitance</b>	nF/km nF/kft	/	57/17.4	57/17.4	57/17.4	57/17.4
<b>Maximum Individual Capacitance Unbalance pair-to-pair</b>	pF/km pF/kft	/	145/44	145/44	145/44	145/44
<b>Capacitance Unbalance RMS pair-to-pair</b>	pF/km pF/kft	/	45/13.7	45/13.7	45/13.7	45/13.7
<b>Maximum Individual Capacitance Unbalance pair-to-ground</b>	pF/km pF/kft	/	2625/800	2625/800	2625/800	2625/800
<b>Maximum Average Capacitance Unbalance pair-to-ground</b>	pF/km pF/kft	/	574/175	574/175	574/175	574/175
<b>Maximum Conductor Loop Resistance @20°C</b>	$\Omega$ /km $\Omega$ /mile	/	300/482	192/309	114/183.6	60/96.4
<b>Impedance @1KHz</b>	$\Omega$		994	796	660	445
<b>Impedance @100KHz</b>	$\Omega$		147	134	125	122

<b>Impedance @512KHz</b>	Ω	120	118	117	116
<b>Impedance @1MHz</b>	Ω	117	115	114	113
<b>Maximum Average Attenuation @0.8KHz</b>	dB/km dB/kft	/ 1.64/0.5	1.30/0.39	1.04/0.32	0.74/0.22
<b>Maximum Average Attenuation @1KHz</b>	dB/km dB/kft	/ 1.68/0.51	1.35/0.41	1.08/0.33	0.76/0.23
<b>Maximum Average Attenuation @3KHz</b>	dB/km dB/kft	/ 3.18/0.97	2.52/0.77	2.01/0.61	1.42/0.43
<b>Maximum Average Attenuation @150KHz</b>	dB/km dB/kft	/ 11.4/3.47	8.3/2.53	6.2/1.89	4.4/1.34
<b>Maximum Average Attenuation @772KHz</b>	dB/km dB/kft	/ 24.3/7.4	19.4/5.9	15.4/4.7	10.8/3.3
<b>Maximum Average Attenuation @1000KHz</b>	dB/km dB/kft	/ 27.1/8.25	21.4/6.52	17.5/5.33	12.8/3.89
<b>Dielectric Strength</b>					
<b>Conductor to Conductor (3secs)</b>	V DC	2400	3000	4000	5000
<b>Conductor to Screen (3secs)</b>	V DC	10000	10000	10000	10000