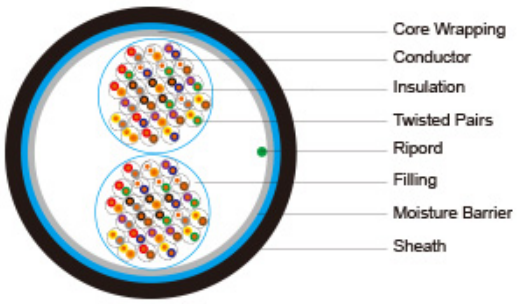
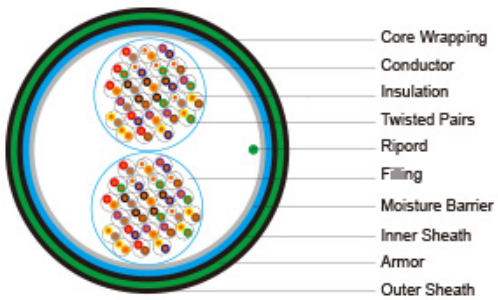
Foam Skin Insulated & LAP Sheathed Jelly Filled Cables to RUS(REA) PE-89





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	RUS(REA) PE-89 (RUS 7 CFR 1755.890)
Construction	
Conductors:	Solid annealed bare copper, 0.4/0.5/0.63/0.9mm as per ASTM B-3/class1 of IEC 60028
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 RUS(REA) PE-89 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 corrugated copolymer coated aluminium tape (0.2mm/8mil) is applied directly over the cable core to provide 100% electrical shielding coverage and ensure 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	Corrugated copolymer coated steel tape armour (0.15mm/6mil) 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

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
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