

## ► MULTI LOOSE TUBE CABLE

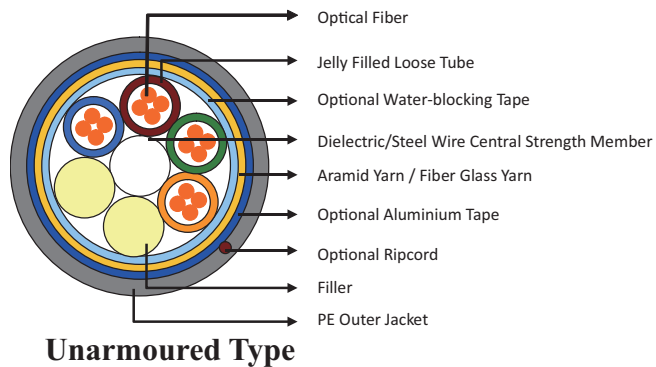
### ► Application

The multi loose tube non metallic cable is designed for outside plant, which is prone to electrical interference.

### ► Description

The cable consists of 5 to 36 fibers containing tubes or fillers stranded in up to 3 layers around a central strength member and bound under a PE jacket. Each tube contains 4 -12 fibers. Solid or stranded steel wire coated with polyethylene is usually used as central strength member. Fiber glass reinforced plastics (FRP) will be used as central strength member if non metallic construction is required. Either aramid yarn or fiber glass is wound around the tube to provide physical protection and tensile strength. The cable can be jacketed with either PE, PVC or LSZH though PE is the preferred option for water protection purpose. For direct burial, steel wire armour or corrugated steel tape armour is applied with an optional inner jacket of either PVC or PE. An Aluminium moisture tape can be incorporated under the jacket for water blocking and shielding purpose. A ripcord is located under the jacket to facilitate jacket removal.

### ► Construction



### ► Physical Properties

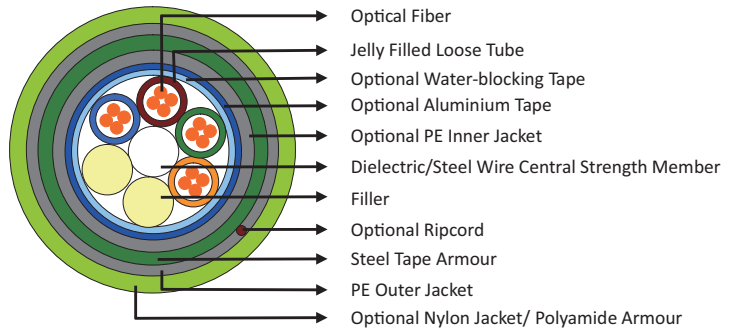
Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	110.0	73.83	12.0	0.472	2670/600	800/180
38-72	120.0	80.54	12.6	0.496	2670/600	800/180
74-84	135.0	90.60	13.5	0.531	2670/600	800/180
76-96	150.0	100.67	14.0	0.551	2670/600	800/180
98-108	170.0	114.09	15.0	0.590	2670/600	800/180
110-120	190.0	127.52	15.5	0.610	2670/600	800/180
122-132	210.0	140.94	16.5	0.649	2670/600	800/180
134-144	230.0	154.36	17.5	0.688	2670/600	800/180
146-216	250.0	167.79	18.0	0.708	2670/600	800/180
218-264	300.0	201.34	19.5	0.767	2670/600	800/180
266-312	350.0	234.90	21.0	0.826	2670/600	800/180
314-360	400.0	268.46	22.5	0.885	2670/600	800/180





# MULTI LOOSE TUBE CABLE

## Construction



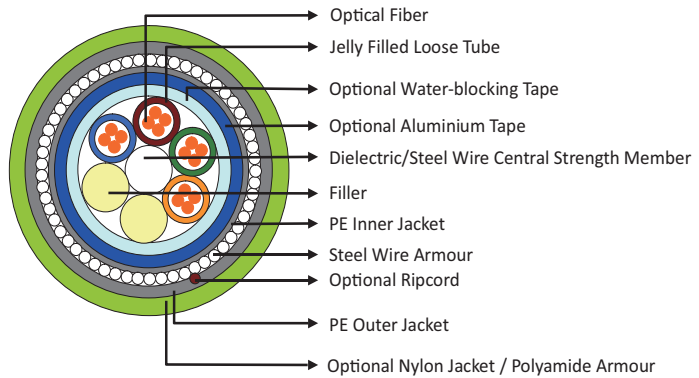
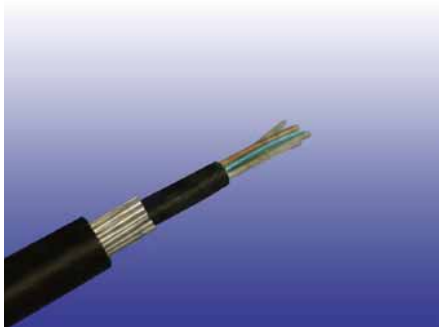
### Corrugated Steel Tape Armoured Type

## Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	210.0	140.94	15.0	0.590	2670/600	800/180
38-72	230.0	154.36	15.5	0.610	2670/600	800/180
74-84	250.0	167.79	16.5	0.649	2670/600	800/180
76-96	270.0	181.21	17.0	0.669	2670/600	800/180
98-108	295.0	197.98	17.5	0.688	2670/600	800/180
110-120	320.0	214.77	18.5	0.728	2670/600	800/180
122-132	355.0	238.26	19.0	0.748	2670/600	800/180
134-144	370.0	248.32	20.0	0.787	2670/600	800/180
146-216	390.0	261.74	21.0	0.826	2670/600	800/180
218-264	455.0	305.37	22.5	0.885	2670/600	800/180
266-312	515.0	345.64	24.0	0.944	2670/600	800/180
314-360	580.0	389.26	26.0	1.023	2670/600	800/180

## MULTI LOOSE TUBE CABLE

### Construction



Steel Wire Armoured Type

### Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	700.0	469.80	21.0	0.826	8000/1800	2650/595
38-72	830.0	557.05	23.5	0.925	8000/1800	2650/595
74-84	870.0	583.89	24.0	0.944	8000/1800	2650/595
76-96	900.0	604.03	24.5	0.964	8000/1800	2650/595
98-108	950.0	637.58	26.0	1.023	8000/1800	2650/595
110-120	1000.0	671.14	27.0	1.062	8000/1800	2650/595
122-132	1050.0	704.70	28.0	1.102	8000/1800	2650/595
134-144	1100.0	738.26	29.0	1.141	8000/1800	2650/595
146-216	1300.0	872.48	31.0	1.220	8000/1800	2650/595
218-264	1400.0	939.60	33.0	1.299	8000/1800	2650/595
266-312	1500.0	1006.71	35.0	1.377	8000/1800	2650/595
314-360	1600.0	1073.83	37.0	1.456	8000/1800	2650/595





# MULTI LOOSE TUBE CABLE

## ► Mechanical Properties

<b>Minimum Bending Radius:</b>		<b>Maximum Compressive Load:</b> 4000N for unarmoured cables;
Under installation:	20×OD	6000N for armoured cables
During operation:	10×OD for unarmoured cables;	<b>Repeated Impact:</b> 4.4 N.m (J)
	20×OD for armoured cables.	<b>Twist (Torsion):</b> 180×10 times, 125×OD
<b>Temperature Range:</b>		<b>Cyclic Flexing:</b> 25 cycles for armoured cables.;
Operating Temperature Range:	-40°C(-40°F) to +70°C(+158°F)	100 cycles for unarmoured cables.
Storage Temperature Range:	-50°C(-58°F) to +70°C(+158°F)	<b>Crush Resistance:</b> 220N/cm(125lb/in)

## ► Fiber Compliance

<b>Temperature Cycling</b>	IEC60794-1-2-F2
<b>Tensile Strength</b>	IEC60794-1-2-E1A
<b>Crush</b>	IEC60794-1-2-E3
<b>Impact</b>	IEC60794-1-2-E4
<b>Repeated Bending</b>	IEC60794-1-2-E6
<b>Torsion</b>	IEC60794-1-2-E7
<b>Kink</b>	IEC60794-1-2-E10
<b>Cable Bend</b>	IEC60794-1-2-E11
<b>Cool Bend</b>	IEC60794-1-2-E11

## ► Safety Compliance

<b>General Purpose Grade</b>	Flammability Test: OFN(UL1581)
<b>Riser Grade</b>	Flammability Test: OFNR/FT4 (UL1666)
<b>Plenum Grade</b>	Flammability Test: OFNP/FT6(UL 910)
<b>FRPVC Grade</b>	Flammability Test: IEC60332-1
<b>LSZH Grade</b>	Halogen Content Test: IEC 60754-1 Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2
<b>LSFROH Grade</b>	Halogen Content Test: IEC 60754-1 Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2
<b>FR Grade</b>	Flammability Test: IEC60332-1 & IEC 60332-3C/A Fire Resistance Test: IEC 60331 / BS 6387 CWZ

## ► Standard Compliance

Telcordia GR-20	RUS 7 CFR 1755.900 (REA PE-90)	ICEA S 87-640
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## ► Features

- Loose Tube construction provides environmental protection
- Loose tube jelly filled for superior fiber protection
- Colored coded fibers and binders for quick and easy identification during installation.
- UV resistant for outdoor application
- Dry water blocking core design for ease of handling
- Anti-termite and rodent protection as options
- Optional Aluminium moisture barrier for EMI protection and water protection