MULTI LOOSE TUBE RIBBON FIBER CABLE

Application
This cable can provide excellent transmission performance and protection of fibers in a variety of field environments. It is usually used in long haul communication system, subscriber network system, distribution, feeder network system and local area network system.

Description
The cable consists of 12 to 648 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 ribbon 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 optional Aluminium moisture tape can be incorporated under the jacket for water blocking and shielding purpose. An optional ripcord is located under the jacket to facilitate jacket removal.

Construction

Unarmoured Type
## Physical Properties

<table>
<thead>
<tr>
<th>Fiber Count</th>
<th>Nominal Weight (kg/km)</th>
<th>Nominal Weight (lb/kft)</th>
<th>Nominal Outer Diameter (mm)</th>
<th>Nominal Outer Diameter (in)</th>
<th>Maximum Pulling/Tensile Load</th>
</tr>
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<tbody>
<tr>
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<td>Installation</td>
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<td></td>
<td></td>
<td></td>
<td>(N/lb)</td>
</tr>
<tr>
<td>12-96</td>
<td>195.0</td>
<td>130.87</td>
<td>18.5</td>
<td>0.727</td>
<td>2670/600</td>
</tr>
<tr>
<td>108-288</td>
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<td>214.77</td>
<td>22.0</td>
<td>0.865</td>
<td>2670/600</td>
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<tr>
<td>288-648</td>
<td>400.0</td>
<td>268.46</td>
<td>24.5</td>
<td>0.963</td>
<td>2670/600</td>
</tr>
</tbody>
</table>

## Construction

### Armoured Type

- Optical Fiber Ribbon
- Jelly Filled Loose Tube
- Optional Water-blocking Tape
- Dielectric Central Strength Member
- Filler
- Glass Yarn
- Optional Water-blocking Tape
- Optional Ripcord
- Optional PE Inner Jacket
- Corrugated Steel Tape Armour
- PE Outer Jacket
- Optional Nylon Outer Jacket/ Polyamide Armour

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<tr>
<td>108-288</td>
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<td>268.46</td>
<td>25.0</td>
<td>0.983</td>
<td>2670/600</td>
</tr>
<tr>
<td>288-648</td>
<td>500.0</td>
<td>335.57</td>
<td>29.0</td>
<td>1.141</td>
<td>2670/600</td>
</tr>
</tbody>
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MULTI LOOSE TUBE RIBBON FIBER CABLE

- **Mechanical Properties**

  **Minimum Bending Radius:**
  - Under installation: 20×OD
  - During operation: 10×OD for unarmoured cables; 20×OD for armoured cables

  **Maximum Compressive Load:**
  - 4000N for unarmoured cables; 6000N for armoured cables

  **Repeated Impact:** 4.4 N.m (J)

  **Twist (Torsion):** 180×10 times, 125×OD

  **Cyclic Flexing:** 25 cycles for armoured cables;
  - Operating Temperature Range: -40°C (-40°F) to +70°C (+158°F)
  - Storage Temperature Range: -50°C (-58°F) to +70°C (+158°F)
  - Crush Resistance: 220N/cm (125lb/in)

- **Fiber Compliance**

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

- **Safety Compliance**

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

- **Standard Compliance**

  - Telcordia GR-20
  - RUS 7 CFR 1755.900 (REA PE-90)
  - CEA S 87-640

- **Features**

  - Large fiber counts with small cable diameter
  - Highly adaptable to mass splicing
  - Suitable for installation in pipeline
  - High quality jelly filled loose tube provides the ribbon fiber satisfactory mechanical and environmental protection.
  - Ripcord allows easy jacket removal
  - UV or moisture resistant for outdoor application
  - Dry water blocking core design for ease of handling