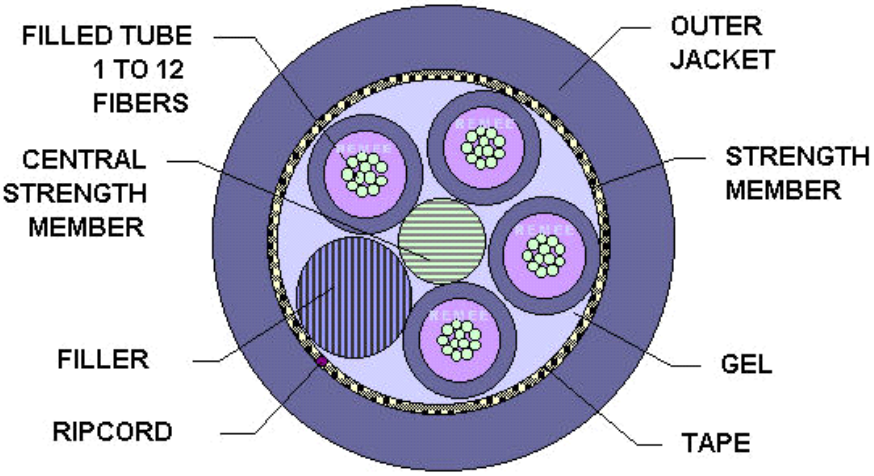
# OSP LOOSE TUBE ALL DIELECTRIC FIBER OPTIC CABLE
# PRODUCT SPECIFICATION
# 42XXX74EEBSXNN

This document establishes the specifications for an outdoor, all-dielectric, single mode, flooded fiber optic cable in a loose buffer tube design. It contains test values for all-important mechanical, optical, and environmental parameters and as such, is the basis for all-incoming inspection and acceptance.

## 1.0 CABLE CROSS SECTION




## 2.0 OVERALL CABLE CONSTRUCTION

**2.1** Buffer tube
High Modulus Polymeric material
Dimension: 2.8 mm., nominal.
Tube and fiber color code per EIA/TIA-598 or as specified by customer.
Filling compound: A non-toxic and dermatological safe antioxidant hydrocarbon based gel.

**2.2** Dielectric Central strength member
Epoxy glass rod with an up-coat of polymer (if necessary per construction).

**2.3** Cable Core
The cable elements are stranded around the CSM, using reverse oscillation.
Moisture Resistance: The interstices are flooded with a homogeneous, non-hygroscopic, non-conductive and non-toxic, dermal safe polyolefin based compound to prevent water ingress and migration of moisture through the cable core.
Then a non-wicking and non-hygroscopic polypropylene tape is applied longitudinally with a nominal 25% overlap.
Binder yarns are applied over the core tape.

**2.4** Cable strength
Circumferential strength members are placed over the cable core and under the outer sheath.

**2.5** Outer Sheath
UV Resistant Black Polyethylene (or color per customer request).
A ripcord is applied under the outer sheath.

**2.6** Cable Markings
Indent printed: CCT GROUP42, FIBER OPTIC CABLE, # of fibers-SM, TELEPHONE HANDSET SYMBOL (month and year of manufacture), sequentially meter marked. Special print as required by customer.

**2.7** Nominal Cable Dimensions & Weights

| CCT Part Number | No. of Fibers | No. of Fibers per Tube | Cable OD (mm) | Cable OD (in.) | Weight KG/KM | Weight LB/1000ft |
|---|---|---|---|---|---|---|
| 4200676EEBSFNN | 6 | 6 | 10.8 | .425 | 93 | 62 |
| 4200876EEBSHNN | 8 | 8 | 10.8 | .425 | 93 | 62 |
| 4201076EEBSJNN | 10 | 10 | 10.8 | .425 | 94 | 63 |
| 4201276EEBSFNN | 12 | 6 | 10.8 | .425 | 94 | 63 |
| 4201276EEBSLNN | 12 | 12 | 10.8 | .425 | 94 | 63 |
| 4201676EEBSJNN | 16 | 8 | 10.8 | .425 | 94 | 63 |
| 4201876EEBSFNN | 18 | 6 | 10.8 | .425 | 94 | 63 |
| 4202476EEBSFNN | 24 | 6 | 10.8 | .425 | 95 | 64 |
| 4202476EEBSLNN | 24 | 12 | 10.8 | .425 | 93 | 63 |
| 4203076EEBSFNN | 30 | 6 | 10.8 | .425 | 96 | 64 |
| 4203676EEBSFNN | 36 | 6 | 11.6 | .473 | 113 | 76 |
| 4203676EEBSLNN | 36 | 12 | 10.8 | .425 | 94 | 63 |
| 4204876EEBSLNN | 48 | 12 | 10.8 | .425 | 96 | 64 |
| 4206076EEBSLNN | 60 | 12 | 10.8 | .425 | 96 | 64 |
| 4207276EEBSLNN | 72 | 12 | 11.6 | .455 | 113 | 76 |
| 4208476EEBSLNN | 84 | 12 | 12.6 | .495 | 131 | 88 |
| 4209676EEBSLNN | 96 | 12 | 13.5 | .530 | 148 | 100 |
| 4210876EEBSLNN | 108 | 12 | 14.6 | .575 | 168 | 113 |
| 4212076EEBSLNN | 120 | 12 | 15.5 | .610 | 192 | 129 |
| 4214476EEBSLNN | 144 | 12 | 16.4 | .645 | 239 | 161 |
| 4221676EEBSLNN | 216 | 12 | 17.7 | .698 | 247 | 166 |
| 4228876EEBSLNN | 288 | 12 | 20.5 | .808 | 335 | 225 |

## 3.0 FIBER CHARACTERISTICS

| | |
|---|---|
| Fiber Type | Single mode* |
| Maximum Attenuation @ 1310/1550nm | 0.35/0.25 dB/km |
| Core Diameter | 8.2 µm |
| Cladding Diameter | 125.0 ± 0.7 µm |
| Maximum Core/Clad Concentricity Error | 0.5 µm |
| Maximum Cladding Non-circularity | 0.7% |
| Primary Coating Diameter | 245 ± 7 µm |
| Cabled Cutoff Wavelength | <1260nm |
| Mode Field Diameter | 9.0 ± 0.4µm @1310nm<br>10.1 ± 0.5µm @1550nm |
| Temperature Dependence | ≤0.05dB/km (-60°C to 85°C) |
| Zero Dispersion Slope | 0.090ps/nm$^2$-km |
| Maximum PMD Link Design Value | 0.06ps/√km |
| Group Refractive Index @ 1310/1550 | 1.467 / 1.468 |
| Proof Test | 100 kpsi |

**According to ITU G.652.d*

## 4.0 MECHANICAL & ENVIRONMENTAL PERFORMANCE

Maximum Tensile Load for:
- Installation: 2700N / 607lbf
- Long Term: 890N / 200lbf

Minimum bending radius:
- Loaded: 20 x diameter
- Unloaded: 10 x diameter

Crush Resistance: 220N/cm

Impact Resistance: 25 Impacts (min.)
Flexing, ±90°: 25 Cycles (min.)
Temperature Rating:
- Operation: -40°C to +70°C
- Installation: -40°C to +55°C

Storage: -50°C to +70°C
Twist Test: 25 Cycles (min.)

## 5.0 PREPARATION FOR DELIVERY

The cable shall be packaged to preclude the inducement of damage due to handling and transportation, and shall be in accordance with the best commercial practices available.

## 6.0 APPLICABLE DOCUMENTS

Reference Documents: TIA/EIA FOTP Standards 455
Color Coding of Fiber Optic Cables TIA/EIA-598
RUS 1755.900
GR-20-CORE