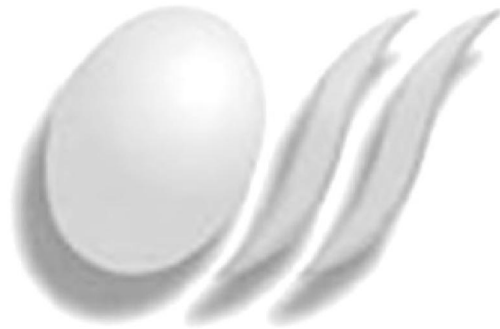


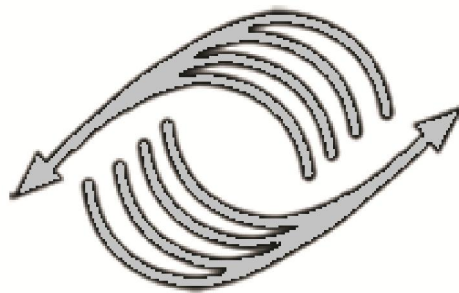
**SHAHID GHANDI COMMUNICATION CABLE CO.**

**CODE: 0203-012**

**TECHNICAL SPECIFICATION FOR  
OPTICAL CONDUIT FILLED CABLE  
(OCFC-MM 62.5/125)**



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## **SPECIFICATION FOR OPTICAL CONDUIT FILLED CABLE**

1. GENERAL
2. OPTICAL FIBER
3. CABLE CONSTRUCTION
4. CABLE SIZES AND GENERAL DATAS
5. MECHANICAL AND FUNCTIONAL TESTS



## 1. GENERAL

This specification covers in detail the optical, physical and mechanical characteristics of jelly filled conduit optical fiber cables.

## 2. OPTICAL Fiber

### 2-1. Optical Characteristics

The fibers will be MM Fiber 62.5/125 have the following table (1):

TABLE (1)

Parameters		Unit	Value
Attenuation	@ 850 nm	dB/km	Max 3
	@ 1300 nm	dB/km	Max 1
Bandwidth	@850 nm	MHz-km	Min 160
	@1300 nm	MHz-km	Min 400
Point Discontinuity		dB	Max 0.1
Numerical Aperture		---	0.275 ± 0.015

### 2-2. Fiber Dimensions

The fiber dimensions will be as following table (2):

TABLE (2)

PARAMETERS	UNIT	VALUE
Core Diameter	μm	62.5 ± 3.0
Cladding Diameter	μm	125.0 ± 1.0
Coating Diameter	μm	245 ± 10
Core Non-Circularity	%	Max 6
Cladding Non-Circularity	%	Max 2
Core/Cladding Eccentricity	μm	Max 3
Coating/Cladding Eccentricity	μm	Max 12.5

### 2-3. Fiber and loose tube identification

Fibers in each loose tube and tubes will be identified with the following table (3).

TABLE (3)

Fiber/Tube No.	Color	Fiber/Tube No.	Color
1	White	7	Brown
2	Red	8	Violet
3	Green	9	Orange
4	Blue	10	Pink
5	Yellow	11	Grey
6	Black	12	Natural

Note: For less than 12 core optical cables there should be first colors.



### 3. CABLE CONSTRUCTION

Cable constructions are in accordance with the following table (4) and FIG. (1)

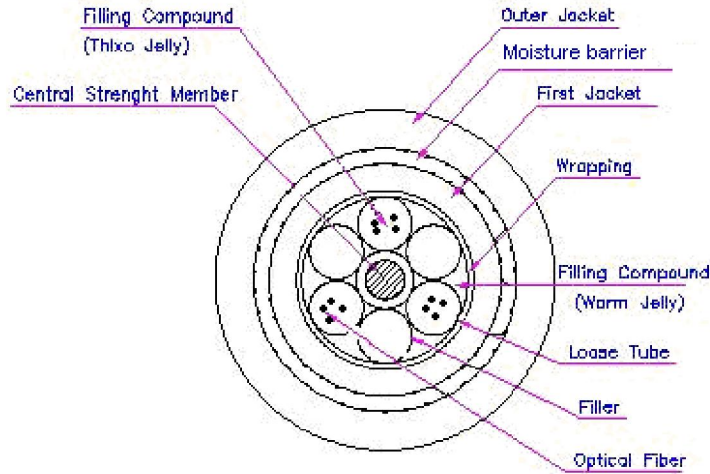
TABLE (4)

Subject	Description
3-1. Optical fiber	Multi Mode fiber as 62.5/125. The fibers are color coded and properly operate at a wide range of temperature from -40 °C up to +80 °C.
3-2. Buffer	Loose tubes of PBTP materials, color coded, contains up to 12 optical fibers, filled with thixo tropic jelly. The jelly is free from dirt, metallic particles and would be non toxic and present no any dermal hazards.
3-3. Central strength member	Non-metal central strength member (FRP) with minimum nominal diameter 2.5mm.
3-4. Core	Loose tubes will be stranded around central strength member by S-Z stranding method. For adapting the loose tubes to central element the fillers of PP or HDPE may be used in cable construction.
3-5. Wrapping	A layer of Polyester tape with a sufficient thickness applied longitudinally over loose tubes. The core will be filled with a suitable filling compound
3-6. Rip cord	2 Diametrically opposed rip cords will be placed over the wrapping under the first jacket. The rip cord must be strong and flexible enough to be able to strip or the jackets easily.
3-7. First jacket	A black LDPE jacket in accordance to ASTM D-1248. The nominal thickness of the jacket is 1.5 mm.
3-8. Moisture barrier	An aluminum tape with copolymer coating on both sides will be applied longitudinally with an adequate overlap. The Aluminum thickness is 200 micron and the copolymer coating on each side has the thickness about 38 microns.
3-9. Outer jacket	A black HDPE jacket in according to ASTM-D1248 will be applied on aluminum tape. The nominal jacket thickness is 2 mm.



FIG. (1)

The figure normally shows the general structure



## 4. CABLE SIZES AND GENERAL DATA'S

### 4-1. CABLE SIZES AND GENERAL DATA

Cables size and general data are in accordance with the following table (5).

TABLE (5)

PARAMETERS		N 1×4	N 2×4	N 1×6	N 2×6	N 4×6	N 6×6
Number of tubes		1	2	1	2	4	6
Fiber per tubes		4	4	6	6	6	6
Number of fibers		4	8	6	12	24	36
Central Strength Member(mm)		2.5	2.5	2.5	2.5	2.5	2.5
Pulling tension (N)*	Operation	2100	2100	2100	2100	2100	2100
	Installation	3300	3300	3300	3300	3300	3300
Overall diameter Approx (mm)		16	16	16	16	16	16
Weight Approx (Kg/km)		265	265	265	265	265	270

### 4-2. IDENTIFICATION MARKING

Each length of the cable shall be permanently identified as to the manufacturer, year of manufacture, number of tubes, fiber per tubes and cable type. The marking will be printed on the outer jacket.

NOTE: Other method as request



## 5. Mechanical and Functional tests

Mechanical and functional tests are in accordance with the following table(6).

TABLE (6)

ITEM	CONDITIONED	REFERENCE
WATER PENETRATION	1 m Length / 1 m height / 1 hours / no drop	FOTP-82
COMPRESSION	220 N / on 10 mm section of cable	EIA/TIA 455-41
FLEXING	25 mechanical flexing / heave diameter 20 times the cable diameter	EIA/TIA 455-104
IMPACT	660 g weight / 1 m height / In 2 at 3 locations along cable	EIA/TIA 455-25
TENSILE & BENDING	Pulling force As technical spec	EIA/TIA 455-33
TWIST	2 m length / 10 cycles of mechanical twisting	EIA/TIA 455-85
LOW OR HIGH TEMPERATURE BEND	sheave diameter 20 times the cable diameter / 4 full turns / 4 hours / at temperatures -30°C & +60°C	EIA/TIA 455-37
KNOT	10 kg weight / in cross sectional diameter of the knot	EIA/TIA 455-87
TEMPERATURE CYCLING	2 hours from 0°C to -40°C / 8 hours in -40°C / 4 hours from -40°C to +85°C / 8 hours in +85°C / 2 hours from +85°C to 0°C / 5 cycles	IEC 794-1-F1

Note: The change in attenuation will not exceed 0.05 dB at 1550 nm.