

METRIC

MIL-C-85045/13A  
21 May 1992  
SUPERSEDING  
MIL-C-85045/13(SH)  
30 November 1988

MILITARY SPECIFICATION SHEET

CABLE, FIBER OPTIC, EIGHT FIBERS, CABLE CONFIGURATION TYPE 2 (OFCC),  
APPLICATION B (SHIPBOARD), CABLE CLASS SM AND MM, (METRIC)

This specification is approved for use by the Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of specifications and Standards (DODISS) specified in the solicitation: MIL-C-85045.

CLASSIFICATION:

Fiber optic cable configuration type: 2 (OFCC).

Fiber Cable Class: SM (dispersion-unshifted, glass core and glass cladding, single-mode)  
MM (graded-index, glass core and glass cladding multimode).

DESIGN AND CONSTRUCTION:

Fiber:

Type MM fibers shall be in accordance with MIL-F-49291/6.

Type SM fibers shall be in accordance with MIL-F-49291/7.

Buffer diameter:  $900 \pm 50 \mu\text{m}$ .

OFCC:

Dimensions and configuration: The tolerances on all dimensions shall be  $\pm 10$  percent. (See figure 2).

Mass per unit length:  $\leq 15$  kg/km.

Tensile loading:  $\geq 270$  N.

Dynamic bend tensile load: 90 N minimum.

FINISHED CABLE:

Dimensions and configuration: Eight OFCC units shall be helically laid over the central member with a maximum lay of 25 cm (see figure 1). The tolerance on the finished cable diameter shall be  $\pm 10$  percent.

Number of fibers: 8 (one per OFCC).

Concentricity:  $\geq 0.65$ .

Mass per unit length:  $\leq 175.0$  kg/km.

Change in optical transmittance: Measurements to be made at  $1300 \pm 20$  nm.

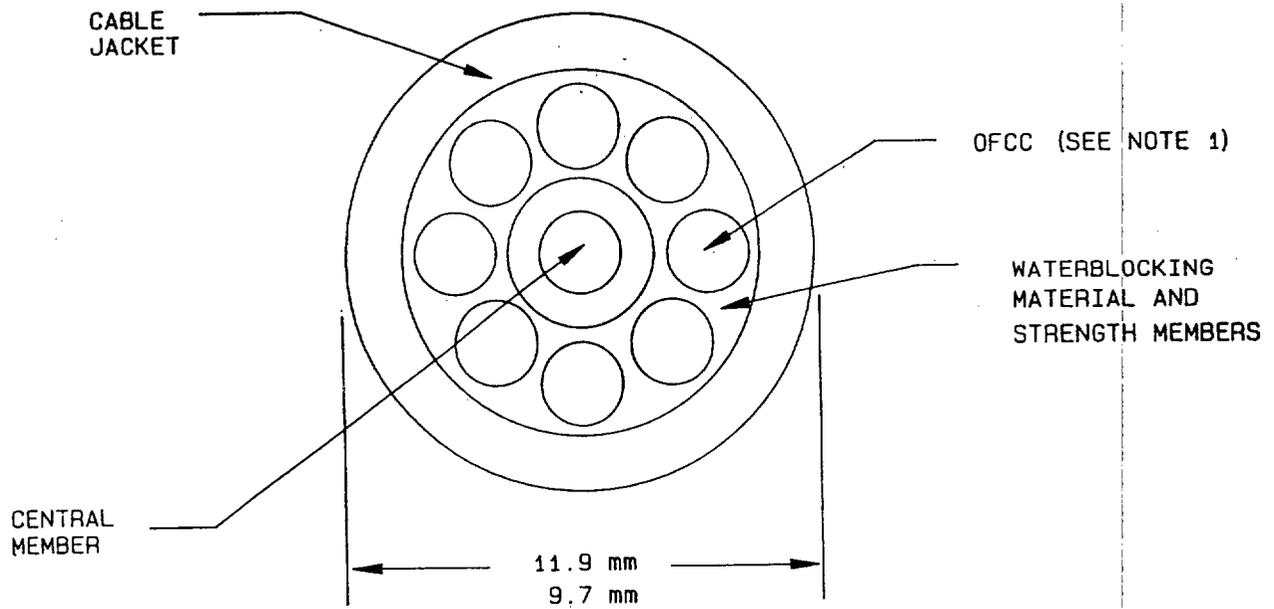
Maximum attenuation rate: 4.5 dB/km at  $850 \pm 20$  nm, 2.0 dB/km at  $1300 \pm 20$  nm for type MM fiber.  
1.0 dB/km at  $1310 \pm 20$  and  $1550 \pm 20$  nm for type SM fiber.

AMSC N/A

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FSC 6015

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.



NOTES:

1. OFCC = Optical Fiber Cable Component.
2. Buffered fiber includes the core, cladding, coating and additional buffer material.

FIGURE 1. Eight OFCC fiber optic cable.

Tensile loading and elongation: Applicable.

Tensile loading:  $\geq 2700$  N.

Operating tensile load: Applicable.

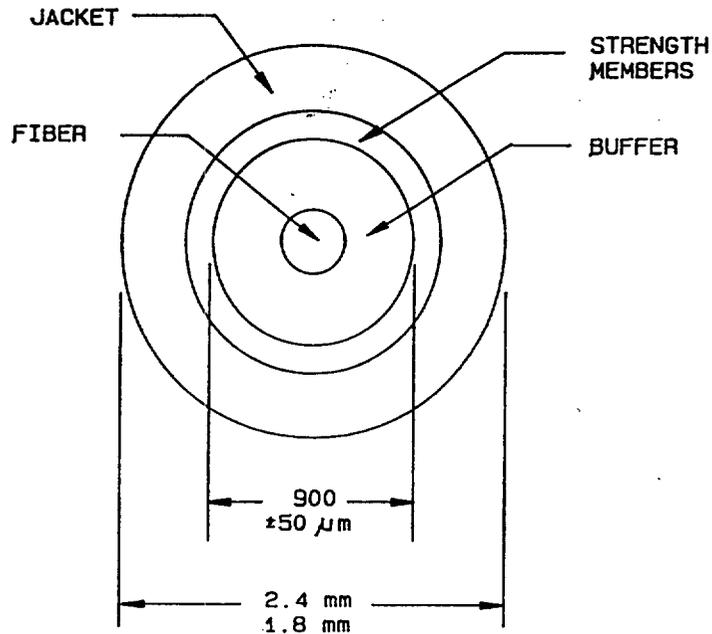


FIGURE 2. Optical fiber cable component.

Fluid immersion: Applicable, the following fluids and conditions apply:

TABLE I. Fluid immersion fluids and conditions.

Fluids	Specification	Test temperature(°C)	Time (hours)
Fuel oil	MIL-F-16884	33-37	24
Turbine fuel (JP-4) Turbine fuel (JP-5)	MIL-T-5624	20-25	24
Isopropyl alcohol	TT-I-735	20-25	24
Hydraulic fluids	MIL-H-5606 MIL-H-17672	48-50	24
Lubricating oils	MIL-L-17331 MIL-L-23699	73-77	24
Coolant	1/	20-25	24
Seawater	ASTM-D-1141	20-25	24

1/ Monsanto Coolanol 25 or equivalent.

Crush: Applicable, but crosstalk measurement not required.

ENVIRONMENTAL:

Temperature range:

Operating: -28°C to 65°C.

Storage: -62°C to 71°C.

Radial compression: Applicable.

Hosing: Both low pressure and hydrostatic pressure applicable.

Dripping: Applicable.

Storage temperature: Applicable.

Weathering: Applicable.

Flame extinguishing: Applicable.

Halogen content: < 0.2%.

Smoke generation and flame propagation: Applicable, except the pass/fail criteria shall be as follows: The peak optical density and the average optical density of smoke produced shall be not greater than 0.5 and 0.15, respectively. In addition, the flame spread-time product at the 10 minute point shall be not greater than 27.5 meters-minutes when calculated in accordance with ASTM-E-84.

Shock: Applicable.

Paint susceptibility: Applicable.

Tempest: Applicable for M85045/13-01T and M85045/13-02T.

Part Identifying Number: M85045/13-01 (Multimode).  
M85045/13-01T.  
M85045/13-02 (Single mode).  
M85045/13-02T.

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - SH  
Air Force - 85

Review activities:

Army - MI, AR, AV  
Navy - EC, YD  
Air Force - 13, 17, 19, 80, 90, 99  
DLA - ES  
NASA - NA

User activities:

Navy - OS

Preparing activity:

Navy - SH

Agent:

DLA - ES

(Project 6015-0025-01)