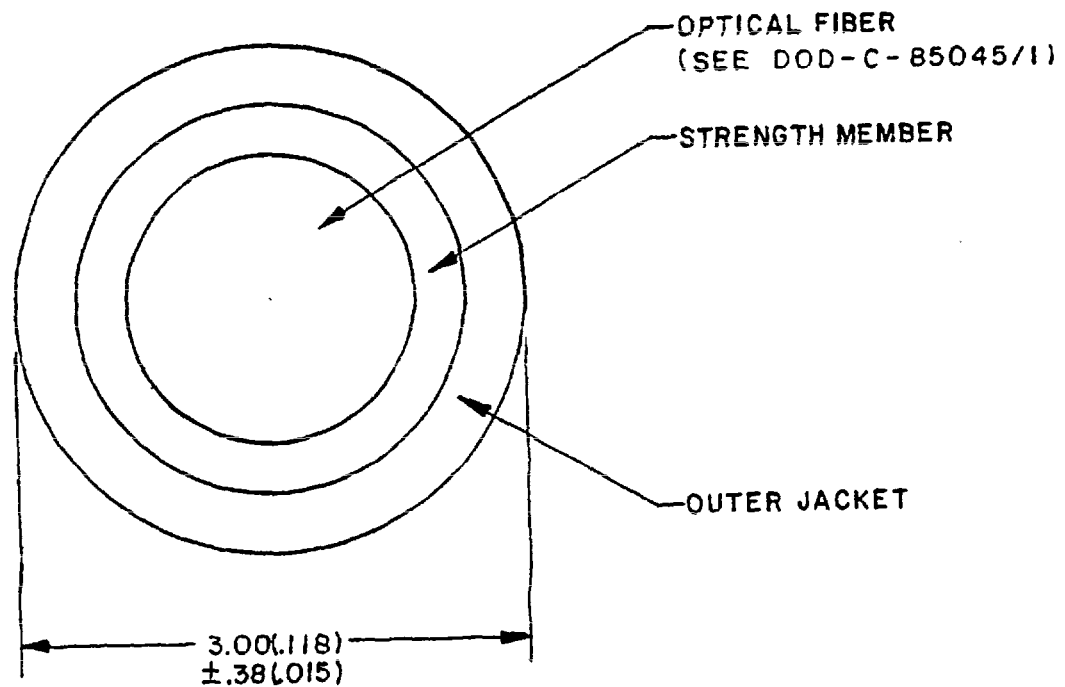


MILITARY SPECIFICATION SHEET

CABLES, FIBER OPTICS, ONE, TWO, FOUR, AND SIX FIBER,
HEAVY DUTY (METRIC)

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

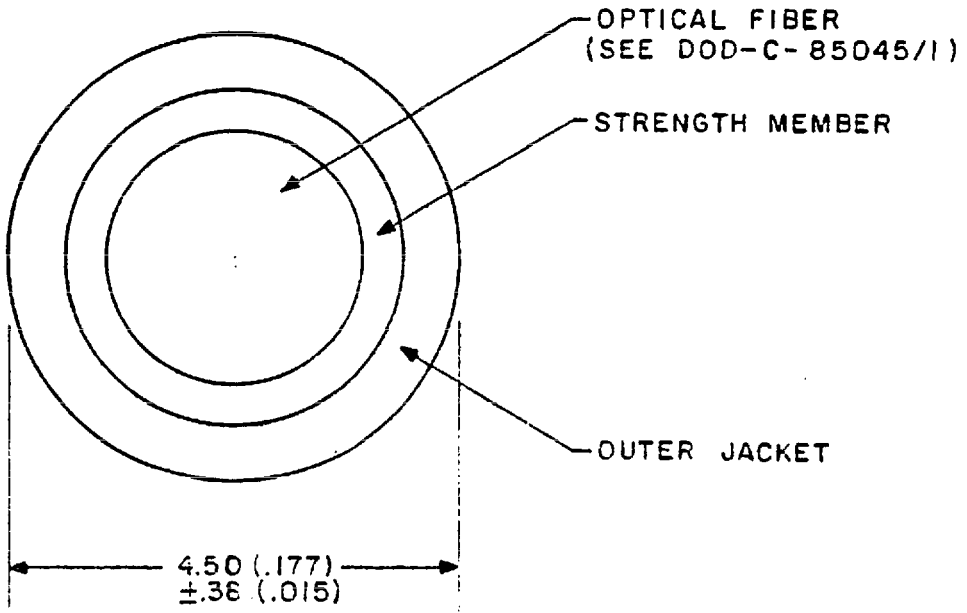
The requirements for acquiring the cables described herein shall consist of this specification and the latest issue of DOD-C-85045.



NOTES:

1. Dimensions are in millimeters.
2. Inch equivalents are given for general information only.
3. Inches are in parentheses.

FIGURE 1. One fiber cable with 3.00 mm jacket.

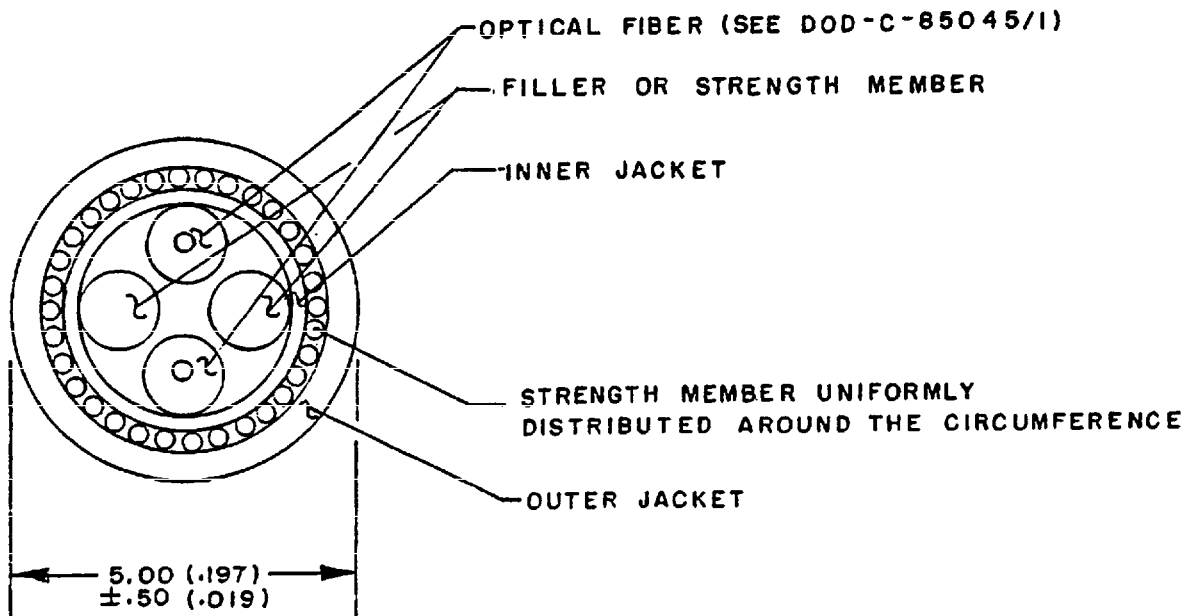


INACTIVE FOR NEW DESIGN

NOTES:

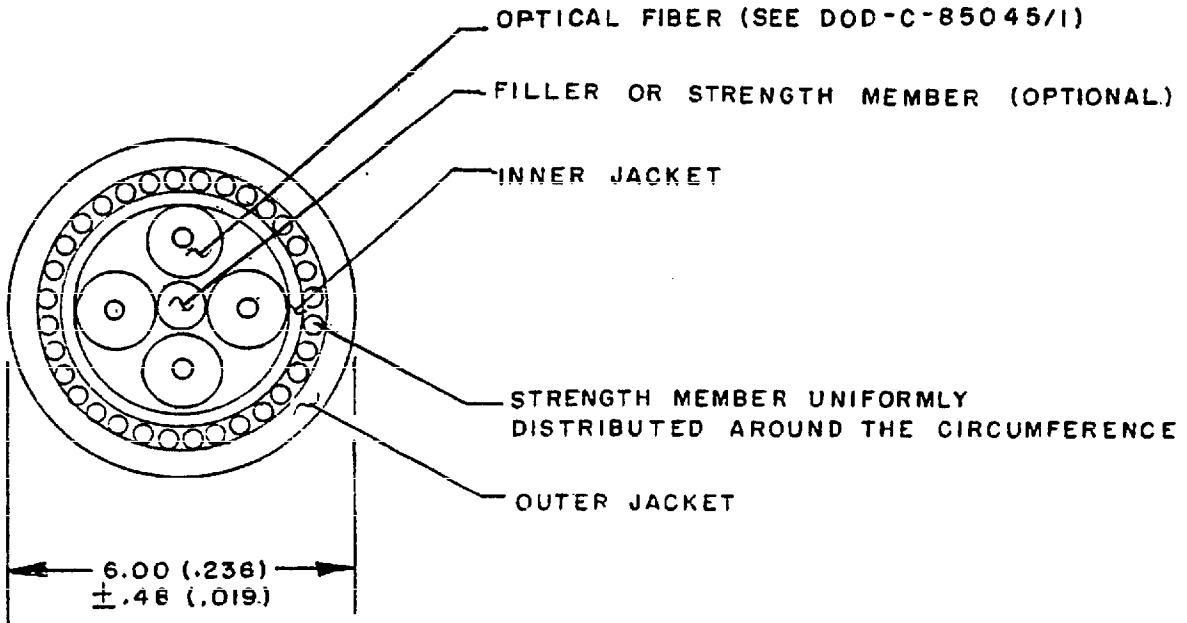
- 1. Dimensions are in millimeters.
- 2. Inch equivalents are given for general information only.
- 3. Inches are in parentheses.

FIGURE 2. One fiber cable with 4.50 mm jacket.



- NOTES:
1. Dimensions are in millimeters.
 2. Inch equivalents are given for general information only.
 3. Inches are in parentheses.
 4. Fibers are not required to be symmetrically spaced within the inner jacket.

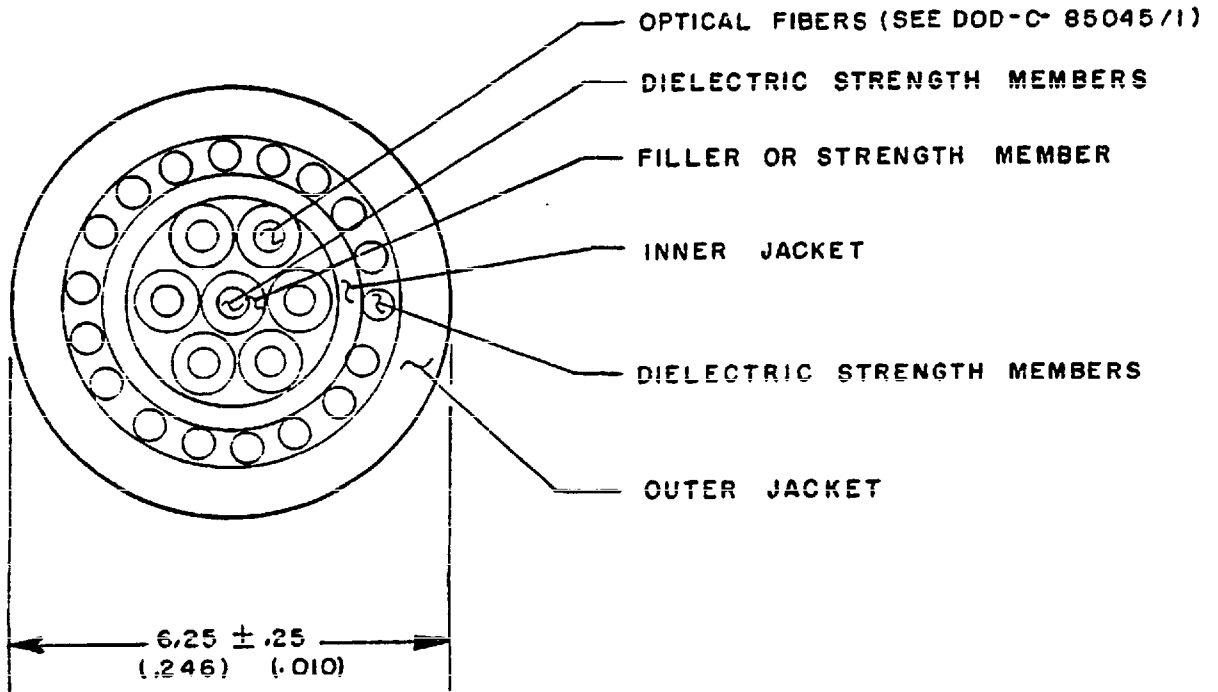
FIGURE 3. Two fiber cable.



NOTES:

1. Dimensions are in millimeters.
2. Inch equivalents are given for general information only.
3. Inches are in parentheses.

FIGURE 4. Four fiber cable.



NOTES:

1. Dimensions are in millimeters.
2. Inch equivalents are given for general information only.
3. Inches are in parentheses.

FIGURE 5. Six fiber cable.

TABLE 1. Part number.

Part number D85045/02-	Number of fibers	Maximum weight (kg/km)
BIAS 1/	1	18
CIAS 1/	1	18
B1A 2/	1	20
C1A 2/	1	20
B2A	2	25
C2A	2	25
B4A	4	29
C4A	4	29
B6A	6	34
C6A	6	34

1/ "S" denotes 3.00 mm jacket diameter
 2/ Inactive for new design.

REQUIREMENTS:

Dimensions and configuration: See figures 1 through 5.

Weight: See table I.

Fiber: Shall be in accordance with DOD-C-85045/1

Number of fibers: See table I.

Jacket material: Polyurethane or equivalent.

Filler and strength member material: Aramid yarn or equivalent.

Color: Outer cable jacket shall be black.

Attenuation: 6 dB/km maximum at 820 to 890 nm; 3 dB/km maximum at 1100 to 1300 nm for each and every fiber in the cable.

Optical fiber bandwidth: 400 MHz-km minimum at 820 ±20 nm; 600 MHz-km minimum at 1300 ±20 nm.

Numerical aperture: 0.23 ±0.02.

Knot test: Applicable. With suitable clamps, a force of 90 newtons shall be applied within 5 seconds and held for a minimum of 5 minutes.

Life at elevated temperature: 240 hours at 110°C.

Temperature cycling (test to be done with cable on reel): After being subjected to 5 cycles of temperature cycling, the induced attenuation shall not exceed 0.5 dB. Temperatures are -46°C ±2°C and +71°C ±2°C. Soak times at temperature extremes and at +25°C ±2°C shall be four hours minimum.

Fluid immersion: Fluids, temperature and immersion time shall be as specified below:

<u>Fluid</u>	<u>Temperature (°C)</u>	<u>Immersion time (hours)</u>
Lubricating oil MIL-L-23699	48 - 50	20
Hydraulic fluid MIL-H-5605	48 - 50	20
Isopropyl alcohol TT-1-735	20 - 25	168
Turbine fuel MIL-T-5624	20 - 25	168
Automobile gas MIL-G-3056	20 - 25	168

Flammability: 60° angle procedure.

Jacket opacity: Shall be verified at 850 nm ±50 nm and at 1300 nm ±50 nm.

Parameter applicability: See table II.

TABLE II. Parameter applicability. 1/ 2/

Inspection	Specimen quantity and length	Qualification	Quality assurance		
			group A	group B	group C
<u>Group I</u>					
Visual and mechanical	6 units 1 km each	X	X		
Attenuation rate	6 units 1 km each	X	X		
Optical fiber bandwidth	6 units 1 km each	X	X		
Crosstalk	6 units 1 km each	X	X		
Numerical aperture	6 units 2 m each (1 each from 6 cables)	X	X		
<u>Group II</u>					
Temperature cycling	6 units 1 km each (3 on reel, 3 off reel)	X		X	
Thermal shock	2 units 1 km each (1 on reel, 1 off reel)	X		X	
Humidity	2 units 1 km each	X		X	
Storage temperature	1 units 1 km each (1 on reel, 1 off reel)	X		X	
Barometric pressure (reduced)	1 unit 1 km	X		X	
Life at elevated ambient temperature	2 units 500 m each	X		X	
Tensile loading	6 units 150 m each (2 each from 3 cables)	X		X	
Operational tensile loading	2 units 150 m each (1 each from 2 cables)	X		X	
Freezing water immersion (ice crush)	2 units 30 m each (1 each from 2 cables)	X		X	
Fungus	2 units 2 m each (1 each from 2 cables)	X		X 3/	
<u>Group III</u> (Military environments)					
Low temperature flexibility (cold bend)	3 units 8 m each (1 each from 3 cables)	X			X

See footnotes at end of table.

TABLE II. Parameter applicability - Continued. 1/ 2/

Inspection	Specimen quantity and length	Qualification	Quality assurance		
			group A	group B	group C
Cyclic flexing	6 units 5 m each (3 each from 2 cables, 2 units for each temperature)	X			X
Crush	6 units 5 m each (3 each from 2 cables, 2 units for each temperature)	X			X
Cable twist-bending	6 units 5 m each (3 each from 2 cables, 2 units for each temperature)	X			X
Impact	9 units 5 m each (3 each from 3 cables)	X			X
Jacket self-adhesion or blocking	2 units >5 m each (1 each from 2 cables)	X			X
Wicking	2 units 2 m each (1 each from 2 cables)	X			X
Cable jacket opacity	3 units 2 m each (1 each from 2 cables)	X			X
Fluid immersion	2 units (for each test fluid required) 2 m each (1 each from 2 cables)	X			X
Corner bend	3 units 5 m each (1 each from 3 cables)	X			X
Knot	6 units 5 m each (3 each from 2 cables)	X			X
Ultraviolet radiation	3 units 2 m each (1 each from 3 cables)	X			X
Cable element removability	3 units 2 m each (1 each from 3 cables)	X			X
Durability of identification marking	3 units 2 m each (1 each from 3 cables)	X			X
Flammability	3 units .6 m each (1 each from 3 cables)	X			X

1/ Tolerance on 1 km lengths is $\pm 2\%$ provided results are normalized to 1 km.

2/ Tolerance on shorter lengths is $\pm 10\%$.

3/ Fungus resistance may be certified for quality assurance purposes.

Supersession data: See table III.

TABLE III. Supersession data.

Superseding part number	Superseded part number
D85045/02-B1AS	---
D85045/02-C1AS	---
D85045/02-B1A	D85045/2-1-C
D85045/02-C1A	D85045/2-1-D
D85045/02-B2A	D85045/2-2-C
D85045/02-C2A	D85045/2-2-D
D85045/02-B4A	D85045/2-4-C
D85045/02-C4A	D85045/2-4-D
D85045/02-B6A	D85045/2-6-C
D85045/02-C6A	D85045/2-6-D

Revision letters are not used to denote changes due to the extensiveness of the changes.

Custodians:
 Army - CR
 Navy - EC
 Air Force - 85

Preparing activity:
 Air Force - 85

Review activities:
 Army - MI, SC
 Navy - AS
 Air Force - 11, 80, 99
 DLA - ES

Agent:
 DLA - ES

(Project 6015-0013-1)

User activity:
 Air Force - 17