FEDERAL SUPPLY CLASS
6010

RATIONALE

THIS DOCUMENT HAS BEEN DETERMINED TO CONTAIN BASIC AND STABLE TECHNOLOGY WHICH IS NOT DYNAMIC IN NATURE.

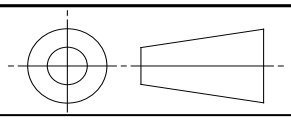
STABILIZED NOTICE

THIS DOCUMENT HAS BEEN DECLARED "STABILIZED" BY THE SAE AS-3 FIBER OPTICS AND APPLIED PHOTONICS COMMITTEE AND WILL NO LONGER BE SUBJECTED TO PERIODIC REVIEWS FOR CURRENCY. USERS ARE RESPONSIBLE FOR VERIFYING REFERENCES AND CONTINUED SUITABILITY OF TECHNICAL REQUIREMENTS. NEWER TECHNOLOGY MAY EXIST.

ISSUED 2004-04 REVISED 2011-10 STABILIZED 2021-09

For more information on this standard, visit
https://www.sae.org/standards/content/AS5382/6B/

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: NONE

SAE INTERNATIONAL

AEROSPACE STANDARD

CABLE, FIBER OPTIC, MULTI-MODE,
200/230/500 µm,
STEP INDEX, TIGHT BUFFER

AS5382™/6

REV. B

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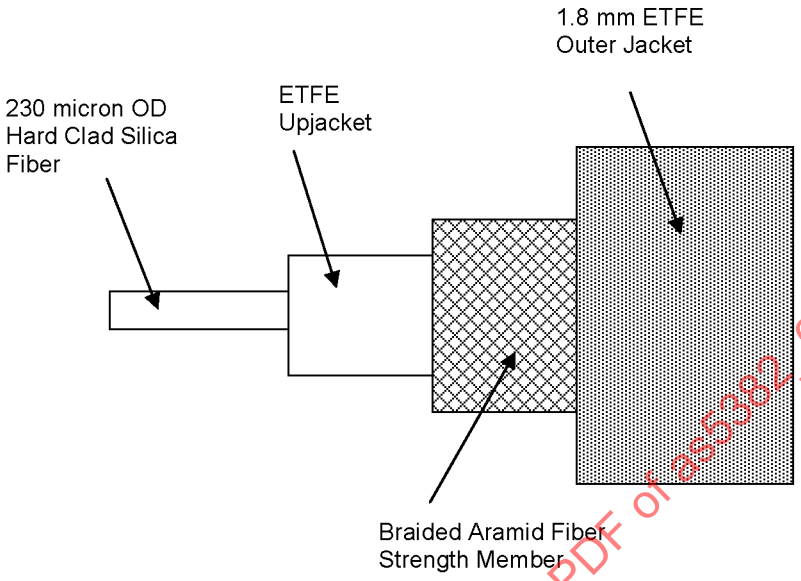

FIGURE 1 - CABLE CONFIGURATION

1. CONSTRUCTION DESCRIPTION

1.1 OPTICAL FIBER DIMENSIONS AND MATERIALS

CORE DIAMETER:	200 µM ± 4.0 µm (0.0078 IN ± 0.00016 IN)
CORE MATERIAL:	STEP INDEX SILICA GLASS
CLADDING DIAMETER:	230 +0, -10 µm (0.0091 +0, -0.0004 IN)
CLADDING MATERIAL:	HARD POLYMER (HCS)
CORE TO CLADDING ELLIPTICITY:	3% MAXIMUM
CORE TO CLADDING OFFSET:	5 µm MAXIMUM
HERMETIC COATED:	NO
PRIMARY COATING::	NO

1.2 CABLE DIMENSIONS AND MATERIALS

UPJACKET DIAMETER:	500 µm ± 30 µm (0.0195 IN ± 0.00117 IN)
UPJACKET MATERIAL:	ETHYLENE-TETRAFLUOROETHYLENE COPOLYMER (ETFE)
STRENGTH MEMBER:	BRAIDED ARAMID FIBER
YARN SIZE:	380 DENIER
NUMBER OF ENDS:	16
BRAID PICKS/INCH:	9
OUTER JACKET DIAMETER:	1800 µm ± 100 µm (0.0709 IN MAX ± 0.039 IN MAX)
OUTER JACKET MATERIAL:	ETHYLENE-TETRAFLUOROETHYLENE COPOLYMER (ETFE)
OUTER JACKET CONCENTRICITY:	6% OF JACKET OUTER DIAMETER

1.3 CABLE PERFORMANCE

OPERATIONAL MODE:	MULTI-MODE
TEMPERATURE RATING:	-55 TO +125 °C
STORAGE TEMPERATURE:	-55 TO +85 °C
OUTER JACKET COLOR:	PURPLE
FINISHED CABLE WEIGHT:	4.0 KG/KM MAXIMUM

2. OPTICAL FIBER REQUIREMENTS

MAXIMUM ATTENUATION:	≤8 DB/KM @ 850 NM
NUMERICAL APERTURE:	0.37 ± 0.02
FIBER TENSILE PROOF TEST:	150,000 PSI MINIMUM
BANDWIDTH	≥20 MHZ-KM @ 850 NM

3. ENVIRONMENTAL

FLUID IMMERSION:	SEE TABLE 1 FOR TEST FLUID LISTING.
FREEZING WATER IMMERSION:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
HUMIDITY RESISTANCE:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
WICKING:	WATER PENETRATION OF 88.5 MM MAXIMUM
FUNGUS RESISTANCE:	FUNGUS INERT PER MIL-HDBK-454 GUIDELINE 4
BLOCKING:	NO AREAS OF LOCALIZED ADHESION

4. MECHANICAL

COLD BEND:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
CYCLIC FLEX:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST TEST TEMPS: -55 °C, +25 °C, +125 °C
IMPACT RESISTANCE:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
CRUSH RESISTANCE:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
CORNER BEND:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
CABLE TENSILE LOAD AND BENDING:	≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST MAXIMUM TENSILE LOAD 132 N
JACKET MATERIAL TENSILE AND ELONGATION:	TENSILE STRENGTH: 900 N/CM^2 MINIMUM ELONGATION: 125% MINIMUM
DURABILITY OF MANUFACTURER'S IDENTIFICATION:	REQUIRED UNLESS IDENTIFICATION MARKING IS UNDER A CLEAR JACKET
JACKET STRIPPABILITY:	EASILY REMOVED, NO DAMAGE TO FIBER AT 10X

5. THERMAL

FLAMMABILITY:	AFTER FLAME: 30 SECONDS MAXIMUM FLAME TRAVEL: 3 INCHES MAXIMUM TISSUE FLAMING: NONE
THERMAL SHOCK:	TEMPERATURE RANGE: -55 TO +125 °C MAXIMUM CABLE DIAMETER CHANGE OF ±10% ≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
PROPERTY RETENTION AFTER THERMAL AGING:	750 H AT 125 °C 300 H AT 130 °C 100 H AT 150 °C MAXIMUM CABLE DIAMETER CHANGE OF ±10% ≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST JACKET TENSILE AND ELONGATION: 75% OF INITIAL VALUE
STORAGE LIFE:	TEMPERATURE RANGE: -55 TO +85 °C NO VISUAL DAMAGE AT 10X MAGNIFICATION ≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
TEMPERATURE CYCLING:	5 CYCLES, TEMPERATURE RANGE: -55 TO +125 °C MAXIMUM CABLE DIAMETER CHANGE OF ±10% ≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
TEMPERATURE CYCLING WITH MANDREL:	5 CYCLES, TEMPERATURE RANGE: -55 TO +125 °C WRAPPED 5 TIMES AROUND A 0.75 INCH MANDREL MAXIMUM CABLE DIAMETER CHANGE OF ±10% ≤0.5 DB CHANGE IN OPTICAL TRANSMITTANCE DURING THE TEST WITH ≤0.5 DB PERMANENT CHANGE AFTER TEST
JACKET SHRINKAGE:	2.3 MM MAXIMUM IN A 360 MM SAMPLE