

REV.
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SAE AS5382/2

RATIONALE

FEDERAL SUPPLY CLASS
6010

THIS DOCUMENT IS OVERDUE FOR ITS FIVE YEAR REVIEW AND REVIEW OF THE DOCUMENT NECESSITATES ELIMINATION OF ONE FLUID, 1,1,1 TRICHLOROETHANE, FROM THE LIST OF IMMERSION TEST FLUIDS SINCE IT IS NOW A BANNED SUBSTANCE FOR ENVIRONMENTAL PROTECTION.

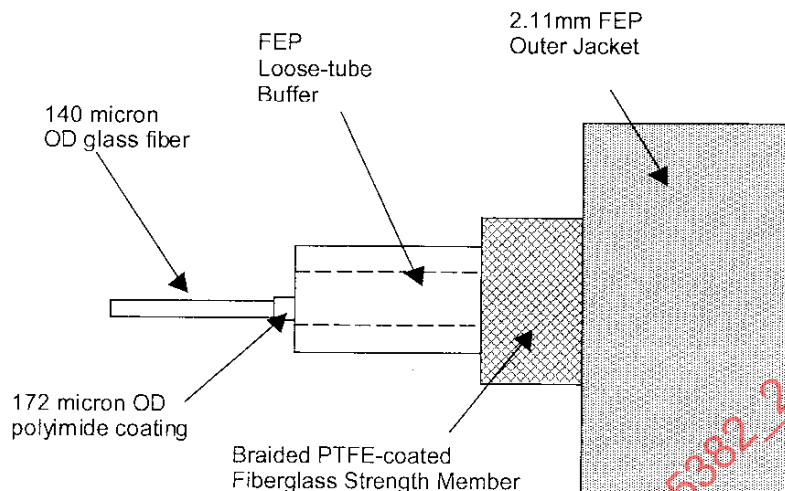


FIGURE 1 - CABLE CONFIGURATION

1. CONSTRUCTION DESCRIPTION

1.1 OPTICAL FIBER DIMENSIONS AND MATERIALS

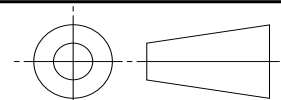
CORE DIAMETER:	100 ± 4µm (0.0039 ± 0.00016 IN.)
CORE MATERIAL:	GRADED INDEX SILICA GLASS
CLADDING DIAMETER:	140 ± 3µm (0.0055 ± 0.00012 IN.)
CLADDING MATERIAL:	SILICA GLASS
CORE/CLADDING CONCENTRICITY:	0.94 MINIMUM
HERMETIC COATED:	NO
COATING DIAMETER:	172 ± 2µm (0.00677 ± 0.00008 IN.)
COATING MATERIAL:	POLYIMIDE
CLADDING/COATING CONCENTRICITY:	0.82 MINIMUM

1.2 CABLE DIMENSIONS AND MATERIALS

BUFFER:	LOOSE TUBE
INNER DIAMETER:	0.38 ± 0.025 MM (0.0150 ± 0.001 IN.)
OUTER DIAMETER:	0.76 ± 0.025 MM (0.0300 ± 0.001 IN.)
BUFFER MATERIAL:	FEP
STRENGTH MEMBER:	BRAIDED PTFE-COATED FIBERGLASS
COVERAGE:	90% MINIMUM
OUTER DIAMETER:	1.60 ± .051 MM (.0630 ± .002 IN.)
OUTER JACKET DIAMETER:	2.11 ± 0.05 MM (0.083 ± 0.002 IN.)
OUTER JACKET MATERIAL:	EXTRUDED FLUORINATED ETHYLENE PROPYLENE (FEP)

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THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: NONE

SAE Aerospace
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AEROSPACE STANDARD

CABLE, FIBER OPTIC, MULTIMODE,
100/140/172 µm GRADED INDEX,
NONHERMETIC, LOOSE TUBE

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1.3 CABLE PERFORMANCE

OPERATIONAL MODE:	MULTIMODE
TEMPERATURE RATING:	-65 °C TO +200 °C
STORAGE TEMPERATURE:	-55 °C TO +200 °C
OUTER JACKET COLOR:	VIOLET (NON-STANDARD COLOR)
BRAID BREAK FORCE:	80 LBS. MINIMUM
FINISHED CABLE WEIGHT:	5.95 KG/KM (4.0 LBS./1000 FEET) MAXIMUM
MINIMUM BEND RADIUS:	0.85 IN. (10X OD)

2. OPTICAL FIBER REQUIREMENTS

MAXIMUM ATTENUATION:	≤10DB/KM @ 760 - 992 NM
NUMERICAL APERTURE:	0.29 ± 0.020
FIBER TENSILE PROOF TEST:	200 000 PSI MINIMUM
BANDWIDTH:	100 MHZ-KM MIN. @ 850NM & 1300NM

3. ENVIRONMENTAL

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

4. MECHANICAL

COLD BEND:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
CYCLIC FLEX:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE DURING & AFTER TEST TEST TEMPS: -55 °C, +25 °C, +150 °C
IMPACT RESISTANCE:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
CRUSH RESISTANCE:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE DURING & AFTER TEST
CORNER BEND:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE AFTER TEST
CABLE TENSILE LOAD AND BENDING:	≤0.5DB CHANGE IN OPTICAL TRANSMITTANCE DURING & AFTER TEST MAXIMUM TENSILE LOAD 35 000 PSI.
JACKET MATERIAL TENSILE AND ELONGATION:	TENSILE STRENGTH: 5,000 PSI MINIMUM ELONGATION: 200% MINIMUM
DURABILITY OF MANUFACTURER'S IDENTIFICATION:	REQUIRED UNLESS IDENTIFICATION MARKING IS UNDER A CLEAR JACKET
JACKET STRIPPABILITY:	EASILY REMOVED, NO DAMAGE TO STRENGTH MEMBER.

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