FEDERAL SUPPLY CLASS
6145

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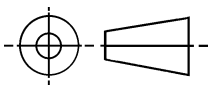

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PREPARED BY SAE SUBCOMMITTEE AE-8D

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
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400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

WIRE, ELECTRICAL, POLYTETRAFLUOROETHYLENE/POLYIMIDE INSULATED, NORMAL WEIGHT, SILVER COATED, COPPER CONDUCTOR, 200°C, 600-VOLT

AS22759/83
SHEET 1 OF 6

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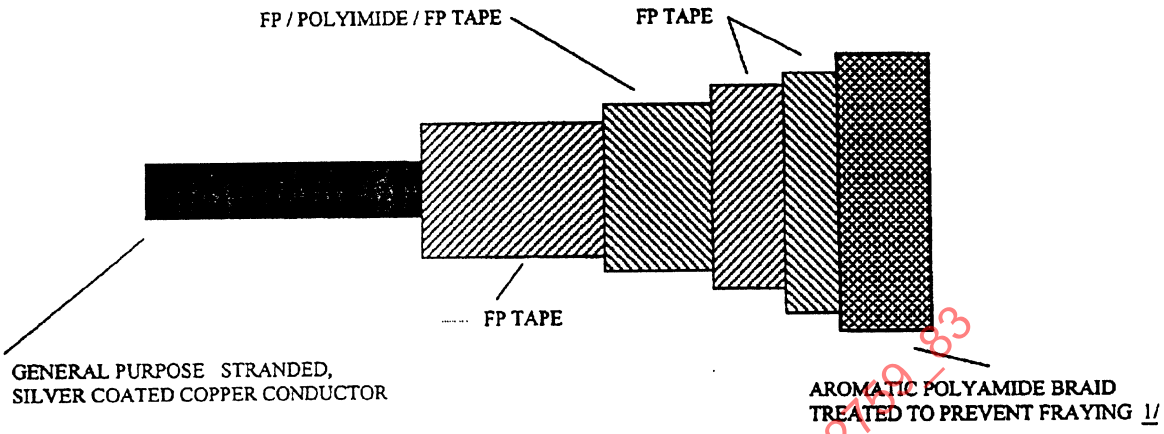
THE REQUIREMENTS FOR ACQUIRING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION: MIL-W-22759.



FP - Fluorocarbon Polymer, modified Polytetrafluoroethylene (PTFE)

1/ Braid: Bright aromatic polyamide yarn, 200 Denier, 100 filaments, tightly formed, uniform in appearance, treated with a clear finisher coating. The finisher coating shall be compatible with the temperature rating and performance requirements of the insulated wire.

FIGURE 1. GENERAL CONFIGURATION.

TABLE I. CONSTRUCTION DETAILS.

Tape Code	Thickness (Nom)	Material
1	0.0020	0.0005 (FP) / 0.0010 (Polyimide) / 0.0005 (FP)
2	0.0020	FP (Skived)
3	0.0030	FP (Unsintered)

1/ Physical properties of FP tapes (skived and unsintered) shall be in accordance with MIL-W-22759 requirements.

TABLE II. WIRE INSULATION MATERIALS. 1/

Tape code	Thickness Nominal	Material
1	0.0012	.00045 (FP) / .00065 (Polyimide) / .0001 (FP)
2	0.0020	FP Unsintered

1/ Physical properties of FP unsintered tapes shall be in accordance with MIL-W-22759 requirements.

TABLE III. PHYSICAL PROPERTIES OF FP/POLYIMIDE/FP TAPES.

Tensile Strength	19,000 lb/in sq. (average minimum)
Tensile Modulus	350,000 lb/in sq. (average minimum)
Elongation	40 percent (average minimum)
Dielectric Strength	4,000 volts/mil (average minimum)
0.0005 FP Layer (bottom)	Distinguishable color (next to conductor) May be used at manufacturer's option

TABLE IV. TAPE OVERLAP REQUIREMENTS.

Wire Size	Wrap 1			Wrap 2			Wrap 3			Wrap 4			Nominal Wall Thickness (mils) 2/
	Tape Code	Percent Overlap Min	Max	Tape Code	Percent Overlap Min	Max	Tape Code	Percent Overlap Min	Max	Tape Code	Percent Overlap Min	Max	
2	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2
1	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2
1/0	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2
2/0	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2
3/0	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2
4/0	2	20.5	35.0	1	50.5	55.0	3	50.5	54.0	3	50.5	54.0	16.2

1/ Wrap 1 is innermost tape which is in contact with the conductor . Wraps 2, 3 and 4 are progressively further away from the conductor core.
2/ Nominal wall thickness does not include the polyamide braid thickness.

TABLE V. FLUID TABLE.

Test Fluid	Test temperature (°C (°F))	Immersion time (hrs.)
A. MIL-A-8243 Anti - icing and Deicing Defrosting Fluid, undiluted	48 - 50 (118 - 122)	20
B. MIL-A-8243 Anti - icing and Deicing Defrosting Fluid, diluted 60/40 (fluid/water) ratio	48 - 50 (118 - 122)	20
C. MIL-C-43616, Cleaning Compound, Aircraft Surface, Type I	48 - 50 (118 - 122)	20
D. ASTM D1153, Methyl Isobutyl Ketone (For use in Organic Coatings)	20 - 25 (68 - 77)	168
E. SAE AS 1241, Fire Resistant Hydraulic Fluid for Aircraft	48 - 50 (118 - 122)	20
F. MIL-L-7808, Lubricating Oil, Aircraft Turbine Engine, Synthetic Base	118 - 121 (244 - 250)	30
G MIL-C-87937, Cleaning Compound, Aerospace Equipment., Type II or Type IV, undiluted	63 - 68 (145 - 154)	20
H. MIL-C-87937, Cleaning Compound, Aerospace Equipment, Type II or Type IV, diluted 25/75 (fluid/water) ratio	63 - 68 (145 - 154)	20
I. TT-S-735, Standard Test Fluids: Hydrocarbon, Type I	20 - 25 (68 - 77)	168
J. TT-S-735, Standard Test Fluids: Hydrocarbon, Type II	20 - 25 (68 - 77)	168
K. TT-S-735, Standard Test Fluids: Hydrocarbon, Type IV	20 - 25 (68 - 77)	168
L. Dielectric - coolant Fluid Synthetic Silicate Ester Base, Monsanto Coolanol 25 or approved equivalent.	20 - 25 (68 - 77)	168
M. MIL-G-3056, Gasoline, Automotive, Combat	20 - 25 (68 - 77)	168

RATINGS:

Temperature rating: 200°C (392°F) maximum continuous conductor temperature.
Voltage rating: 600 volts (rms.) at sea level

ADDITIONAL REQUIREMENTS:

Wet arc propagation resistance (Test required for initial qualification only): Qualification by similarity to MIL-W-22759/86-20.

Dry arc propagation resistance (Test required for initial qualification only): Qualification by similarity to MIL-W-22759/86-20.

Blocking: 200°C ± 2°C (392°F ± 3.6°F)

Color: For braided constructions, preferred color shall be dark green with the Munsell color limits of 5Y 3/2 and 5B 2/0.5. White is an acceptable alternative. Conformity of color to the limits of MIL-STD-104 shall not be required after oven exposure.

Color striping or banding durability: Not required.

Conductor strand adhesion: Required