

REV.
A

AS22759/83

NOTICE

FEDERAL SUPPLY CLASS
6145

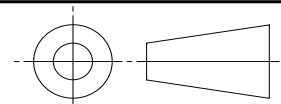
THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MIL-DTL-22759/83A AND CONTAINS ONLY MINOR EDITORIAL AND FORMAT CHANGES REQUIRED TO BRING IT INTO CONFORMANCE WITH THE PUBLISHING REQUIREMENTS OF SAE TECHNICAL STANDARDS. THE INITIAL RELEASE OF THIS DOCUMENT IS INTENDED TO REPLACE MIL-DTL-22759/83A. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.

THE ORIGINAL MILITARY SPECIFICATION WAS ADOPTED AS AN SAE STANDARD UNDER THE PROVISIONS OF THE SAE TECHNICAL STANDARDS BOARD (TSB) RULES AND REGULATIONS (TSB 001) PERTAINING TO ACCELERATED ADOPTION OF GOVERNMENT SPECIFICATIONS AND STANDARDS. TSB RULES PROVIDE FOR (A) THE PUBLICATION OF PORTIONS OF UNREVISED GOVERNMENT SPECIFICATIONS AND STANDARDS WITHOUT CONSENSUS VOTING AT THE SAE COMMITTEE LEVEL, AND (B) THE USE OF THE EXISTING GOVERNMENT SPECIFICATION OR STANDARD FORMAT.

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS SAE TECHNICAL DOCUMENT.

SAENORM.COM : Click to view the full PDF of as22759_83a

THIRD ANGLE PROJECTION



CUSTODIAN: SAE AE-8/AE-8D

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

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

AS22759/83
SHEET 1 OF 6

**REV.
A**

Copyright 2004 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Fax: 724-776-0790

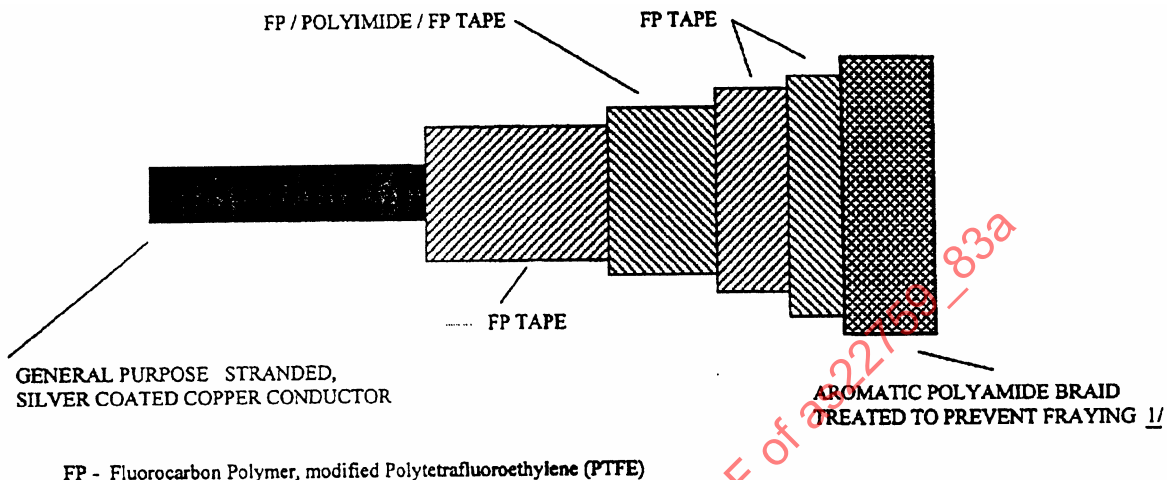
Tel: 724-776-4970 (outside USA)
Email: custsvc@sae.org

SAE WEB ADDRESS: <http://www.sae.org>

ISSUED 2000-06 REVISED 2004-10

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.

REVISION A IS EDITORIAL ONLY, FOR INSERTION OF THE FOLLOWING STATEMENT. "THIS SPECIFICATION IS NOT INTENDED FOR USE IN NAVAL AIRCRAFT OR NAVAL AIR SYSTEMS APPLICATIONS."



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.

Part No. ^{1/}	Wire Size	Conductor			Finished Wire			
		Stranding (number of strands x AWG gauge of strands)	Diameter (in.)		Resistance at 20° C (68°F) (ohms/ 1000 ft max.)	Diameter (in.)		Weight (lb/1000 Ft) (Max.)
			MIN.	MAX.		Min.	Max.	
M22759/83-2 -*	2	665 x 30	0.320	0.340	0.170	0.360	0.380	227.0
M22759/83-1 -*	1	817 x 30	0.366	0.380	0.139	0.400	0.420	295.0
M22759/83-01 -*	0	1045 x 30	0.395	0.425	0.108	0.442	0.462	351.0
M22759/83-02 -*	00	1330 x 30	0.440	0.475	0.085	0.498	0.528	432.0
M22759/83-03 -*	000	1665 x 30	0.500	0.540	0.068	0.554	0.584	542.0
M22759/83-04 -*	0000	2109 x 30	0.565	0.605	0.054	0.615	0.655	689.0

^{1/} Part Number: The preferred color is dark green with the color designator 5D. Example: Size 2 dark green M22759/83-2-5D. White is an acceptable alternate with a color designator of 9.

TABLE II. WIRE INSULATION MATERIALS. ^{1/}

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 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		Tape Code	Percent Overlap		Tape Code	Percent Overlap		Tape Code	Percent Overlap		
		Min	Max		Min	Max		Min	Max		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