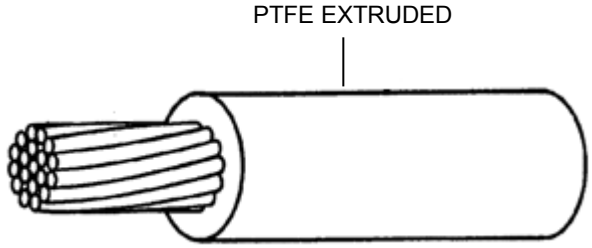
FEDERAL SUPPLY CLASS
6145

RATIONALE

SPECIFICATION UPDATED TO INCLUDE AS29606 CONDUCTOR REQUIREMENTS, ROHS RESTRICTIONS AND AS22759 MODIFICATIONS. REMOVED ACID RESISTANCE.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS22759.



PTFE – POLYTETRAFLUOROETHYLENE
CONDUCTOR – STRANDED NICKEL COATED HIGH STRENGTH COPPER ALLOY

FIGURE 1 - AS22759/21 CONFIGURATION

TABLE 1 - CONSTRUCTION DETAILS FOR FINISHED WIRE

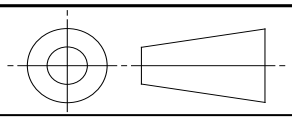
PART NO. 1/	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAGE OF STRANDS) 2/	DIAMETER OF STRANDED CONDUCTOR (INCHES)		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20 °C (68 °F) (OHMS/1,000 FEET) (MAX)	DIAMETER (INCHES)	WEIGHT (LB/1,000 FEET) (MAX)
M22759/21-28-*	28	7 X 36	.0135	.0164	79.0	.043 ± .002	1.93
M22759/21-26-*	26	19 X 38	.0175	.0204	49.4	.048 ± .002	2.60
M22759/21-24-*	24	19 X 36	.0225	.0254	30.1	.053 ± .002	3.38
M22759/21-22-*	22	19 X 34	.0285	.0314	18.6	.060 ± .002	4.61
M22759/21-20-*	20	19 X 32	.0365	.0404	11.4	.068 ± .002	6.43

1/ PART NO.: THE ASTERISKS IN THE PART NUMBER COLUMN, TABLES 1 AND 3, SHALL BE REPLACED BY COLOR CODE DESIGNATORS IN ACCORDANCE WITH MIL-STD-681. EXAMPLES: SIZE 20, WHITE - M22759/21-20-9; WHITE WITH ORANGE STRIPE - M22759/21-20-93. PRINTING OF COLOR CODE DESIGNATOR ON SURFACE OF WIRE INSULATION IS NOT REQUIRED.

2/ CONDUCTOR SHALL CONFORM TO AS29606 TYPE NCA SMALL DIAMETER NICKEL PLATED HIGH STRENGTH COPPER ALLOY CONDUCTOR.

For more information on this standard, visit
https://www.sae.org/standards/content/AS22759/21A

THIRD ANGLE PROJECTION



ISSUED 2001-07 REVISED 2015-12 REAFFIRMED 2020-09

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CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS22759

SAE INTERNATIONAL

AEROSPACE STANDARD

(R) WIRE, ELECTRIC, FLUOROPOLYMER-INSULATED, EXTRUDED TFE, NICKEL-COATED HIGH STRENGTH COPPER ALLOY CONDUCTOR, 1,000 VOLT, ROHS

AS22759™/21
SHEET 1 OF 3

REV. A

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Full document details: SAE AS22759_21A

REQUIREMENT: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS22759.

1. WIRE CONSTRUCTION:

   WIRE CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE 1 AND TABLES 1, 2, 3, AND 4.

2. WIRE PERFORMANCE RATING:

   TEMPERATURE RATING: 260 °C (500 °F) MAXIMUM CONDUCTOR CONTINUOUS TEMPERATURE.

   VOLTAGE RATING: 1,000 VOLTS (RMS) AT SEA LEVEL. THIS INSULATION SYSTEM HAS BEEN USED IN AEROSPACE APPLICATIONS USING 115 VOLTS (PHASE TO NEUTRAL), 400 HERTZ AC AND 28 VOLTS DC. VERIFICATION OF THE SUITABILITY OF THIS PRODUCT FOR USE IN OTHER ELECTRICAL SYSTEM CONFIGURATIONS IS THE RESPONSIBILITY OF THE USER.

3. MATERIALS AND PHYSICAL PROPERTIES:

   SEE AS22759 FOR MATERIAL REQUIREMENT. MATERIALS USED IN THE MANUFACTURE OF THESE PRODUCTS SHALL COMPLY WITH THE RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE 2002/95/EC.

4. FINISHED WIRE INSULATION PROPERTIES:

   FINISHED WIRE INSULATION PROPERTIES SHALL BE IN ACCORDANCE WITH TABLE 2.

TABLE 2 - FINISHED WIRE INSULATION PROPERTIES REQUIREMENTS

INSULATION PROPERTIES	
IMPULSE TEST VOLTAGE	9.5 KILOVOLTS (PEAK)
HIGH FREQUENCY TEST VOLTAGE	6.8 KILOVOLTS (RMS)
INSULATION BLOCKING	260 °C ± 2 °C (500 °F ± 3.6 °F)
SHRINKAGE	290 °C ± 2 °C (554 °F ± 3.6 °F)
	MAXIMUM CHANGE .03 INCHES
ELECTRICAL RESISTANCE (IR)	50,000 MEGOHMS (MIN) - 1,000 FEET
ELECTRICAL SURFACE RESISTANCE	500 MEGOHMS - INCHES (MIN)
WET DIELECTRIC VOLTAGE	5,000 VOLTS (RMS), 60 HERTZ
CONTINUOUS LENGTH SCHEDULE	A

5. FINISHED WIRE IDENTIFICATION:

   WIRE IDENTIFICATION EXCEPTIONS: NONE

   WIRE IDENTIFICATION DURABILITY: 125 CYCLES (250 STROKES) WITH 500 GRAMS WEIGHT

   STRIPE AND BAND DURABILITY: 250 CYCLES (500 STROKES) WITH 500 GRAMS WEIGHT

6. FINISHED WIRE PERFORMANCE:

   FINISHED WIRE FIXTURES APPLICABLE TO EACH WIRE SIZE SHALL BE IN ACCORDANCE WITH TABLE 3.

TABLE 3 - PERFORMANCE DETAILS

	BEND TESTING			
	MANDREL DIAMETER (INCHES) 2/		TEST LOAD (LB) 2/	
PART NO.	LIFE CYCLE (OVEN & BEND TESTS) 1/	COLD BEND TEST	LIFE CYCLE (OVEN & BEND TESTS) 1/	COLD BEND TEST
M22759/21-28-*	.125	.250	.500	
M22759/21-26-*	.125	.250	.500	
M22759/21-24-*	.125	.250	.500	
M22759/21-22-*	.250	.375	.750	
M22759/21-20-*	.250	.375	.750	

1/ ALSO FOR BEND TESTS AFTER IMMERSION.
2/ TOLERANCE SHALL BE ±3% OF THE GIVEN VALUES.

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