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AS22759™/13

FEDERAL SUPPLY CLASS  
6145

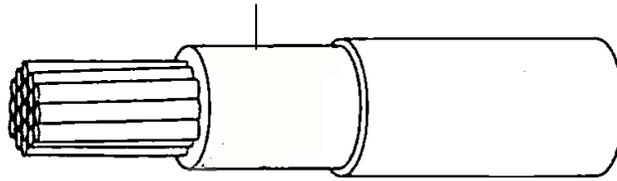
RATIONALE

SPECIFICATION UPDATED TO INCLUDE AS29606 CONDUCTOR REQUIREMENTS, ROHS RESTRICTIONS AND AS22759 MODIFICATIONS. THIS CHANGE ALSO INCREASES THE MAXIMUM WEIGHT REQUIREMENTS FOR WIRE SIZES 8 TO 01 TO ACCOUNT FOR INCREASED CIRCULAR MIL AREA (CMA) ADOPTED IN AS29606. REMOVED ABRASION RESISTANCE REQUIREMENT BECAUSE TEST METHOD DOES NOT EXIST.

NOTICE

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

PRIMARY INSULATION – EXTRUDED FEP



JACKET – EXTRUDED PVF<sub>2</sub>

FEP – FLUORINATED ETHYLENE-PROPYLENE  
PVF<sub>2</sub> – POLYVINYLIDENE FLUORIDE  
CONDUCTOR – STRANDED TIN COATED COPPER

FIGURE 1 - AS22759/13 CONFIGURATION

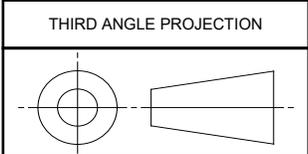
TABLE 1 - CONSTRUCTION DETAILS FOR FINISHED WIRE

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)
M22759/13-24-*	24	19 X 36	.0225	.0244	26.2	.049 ± .002	2.90
M22759/13-22-*	22	19 X 34	.0285	.0314	16.2	.051 ± .003	3.90
M22759/13-20-*	20	19 X 32	.0365	.0394	9.88	.061 ± .003	5.50
M22759/13-18-*	18	19 X 30	.0455	.0494	6.23	.071 ± .003	8.00
M22759/13-16-*	16	19 X 29	.0515	.0554	4.81	.077 ± .004	10.1
M22759/13-14-*	14	19 X 27	.0645	.0694	3.06	.091 ± .004	15.5
M22759/13-12-*	12	37 X 28	.0815	.0894	2.02	.111 ± .004	23.0
M22759/13-10-*	10	37 X 26	.106	.112	1.26	.138 ± .004	35.7
M22759/13-8-*	8	133 X 29	.158	.169	.701	.196 ± .006	65.9
M22759/13-6-*	6	133 X 27	.198	.212	.445	.246 ± .007	104.
M22759/13-4-*	4	133 X 25	.250	.268	.280	.300 ± .008	161.
M22759/13-2-*	2	665 X 30	.320	.340	.183	.374 ± .012	259.
M22759/13-1-*	1	817 X 30	.360	.380	.149	.412 ± .014	327.
M22759/13-01-*	0	1,045 X 30	.405	.425	.116	.458 ± .016	406.

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 - M22759/13-20-9; WHITE WITH ORANGE STRIPE - M22759/13-20-93. PRINTING OF COLOR CODE DESIGNATOR ON SURFACE OF WIRE INSULATION IS NOT REQUIRED.

2/ CONDUCTOR SHALL CONFORM TO AS29606 TYPE TCC SMALL DIAMETER TIN PLATED COPPER CONDUCTOR FOR SIZES 24 THROUGH 12. SIZE 10 THROUGH 01 SHALL CONFORM TO GENERAL PURPOSE TIN PLATED COPPER CONDUCTOR.

For more information on this standard, visit  
<https://www.sae.org/standards/content/AS22759/13A>



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS22759



AEROSPACE STANDARD

(R) WIRE, ELECTRIC, FLUOROPOLYMER-INSULATED, FEP-PVF<sub>2</sub>, MEDIUM WEIGHT, TIN-COATED COPPER CONDUCTOR, 600 VOLT, ROHS

AS22759™/13  
SHEET 1 OF 3

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ISSUED 2000-09 REVISED 2015-12 REAFFIRMED 2020-09

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: 135 °C (275 °F) MAXIMUM CONDUCTOR CONTINUOUS TEMPERATURE.

VOLTAGE RATING: 600 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	
SPARK TEST VOLTAGE	1,500 VOLT (RMS) AT 60 HERTZ OR 3,000 HERTZ ON PRIMARY INSULATION
IMPULSE TEST VOLTAGE	8.0 KILOVOLTS (PEAK)
HIGH FREQUENCY TEST VOLTAGE	5.7 KILOVOLTS (RMS)
INSULATION BLOCKING	135 °C ± 2 °C (275 °F ± 3.6 °F)
SHRINKAGE	150 °C ± 2 °C (302 °F ± 3.6 °F) MAXIMUM CHANGE .125 INCHES
ELECTRICAL RESISTANCE (IR)	5,000 MEGOHMS (MIN) - 1,000 FEET
ELECTRICAL SURFACE RESISTANCE	WIRE SIZES 24 - 12: 500 MEGOHMS - INCHES (MIN) WIRE SIZE 10 - 01: NO REQUIREMENT
WET DIELECTRIC VOLTAGE	2,500 VOLTS (RMS), 60 HERTZ
WALL THICKNESS	.005 ± .001 INCH FOR OUTER JACKET
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: 125 CYCLES (250 STROKES) WITH 500 GRAMS WEIGHT

6. FINISHED WIRE PERFORMANCE:

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

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