

REV.
B

AS22759™/35

FEDERAL SUPPLY CLASS
6145

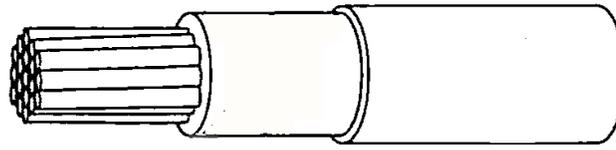
RATIONALE

CONDUCTOR SIZE CORRECTIONS TO MATCH WITH AS29606 IS REQUIRED.

NOTICE

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

PRIMARY INSULATION - CROSSLINKED, EXTRUDED, MODIFIED ETFE



JACKET - CROSSLINKED, EXTRUDED, MODIFIED ETFE

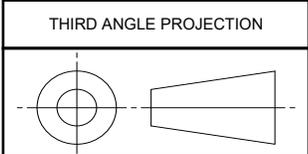
ETFE - ETHYLENE TETRAFLUOROETHYLENE

CONDUCTOR - STRANDED SILVER COATED HIGH STRENGTH COPPER ALLOY

FIGURE 1 - AS22759/35 CONFIGURATION

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For more information on this standard, visit
<https://www.sae.org/standards/content/AS22759/35b>



CUSTODIAN: AE-8

PROCUREMENT SPECIFICATION: AS22759



AEROSPACE STANDARD

WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED,
CROSS-LINKED MODIFIED ETFE, NORMAL WEIGHT,
SILVER-COATED, HIGH STRENGTH COPPER ALLOY,
200 °C, 600 VOLT, ROHS

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SHEET 1 OF 4

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ISSUED 2000-04 REAFFIRMED 2021-06 REVISED 2023-11

TABLE 1 - CONSTRUCTION DETAILS FOR FINISHED WIRE

PART NO. 1/	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAUGE OF STRANDS) 2/	DIAMETER OF STRADED CONDUCTOR (INCHES) 2/		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20 °C (68 °F) (OHMS/1000 FT) MAX	DIAMETER (INCHES)	WEIGHT (LB/1000 FT) (MAX)
M22759/35-26-*	26	19 X 38	.0175	.0194	44.8	.040 ± .002	1.70
M22759/35-24-*	24	19 X 36	.0225	.0244	28.4	.045 ± .002	2.30
M22759/35-22-*	22	19 X 34	.0285	.0304	17.5	.050 ± .002	3.30
M22759/35-20-*	20	19 X 32	.0365	.0395	10.7	.058 ± .002	4.80

1/ PART NUMBER: 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 - M22759/35-20-9; WHITE WITH ORANGE STRIPE - M22759/35-20-93. PRINTING OF COLOR CODE DESIGNATOR ON SURFACE OF WIRE INSULATION IS NOT REQUIRED.

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

REQUIREMENTS: 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, TABLES 1, 2, 3, AND 4.

2. WIRE PERFORMANCE RATING:

TEMPERATURE RATING: 200 °C (392 °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:

REFER TO 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:

PRIMARY INSULATION SHALL HAVE A CONTRASTING PIGMENTATION TO THAT OF THE JACKET.

PHYSICAL PROPERTIES OF INSULATION: PRIMARY INSULATION SHALL BE SEPARATED FROM THE OUTER JACKET FOR DETERMINATION OF PRIMARY INSULATION TENSILE STRENGTH AND ELONGATION.

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

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	AEROSPACE STANDARD	AS22759™/35 SHEET 2 OF 4	REV. B
	WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED, CROSS-LINKED MODIFIED ETFE, NORMAL WEIGHT, SILVER-COATED, HIGH STRENGTH COPPER ALLOY, 200 °C, 600 VOLT, ROHS		

TABLE 2 - FINISHED WIRE INSULATION PROPERTIES REQUIREMENTS

INSULATION PROPERTIES	
SPARK TEST VOLTAGE (PRIMARY INSULATION)	1500 VOLT (RMS) AT 60 HZ
IMPULSE TEST VOLTAGE (PRIMARY INSULATION)	6.0 KILOVOLTS (PEAK)
HIGH FREQUENCY TEST VOLTAGE (PRIMARY INSULATION)	4.2 KILOVOLTS (RMS)
IMPULSE TEST VOLTAGE	8.0 KILOVOLTS (PEAK)
HIGH FREQUENCY TEST VOLTAGE	5.7 KILOVOLTS (RMS)
CROSSLINK PROOF	300 °C ± 3 °C (572 °F ± 5.4 °F), 7 HOURS
INSULATION BLOCKING	230 °C ± 3 °C (446 °F ± 5.4 °F)
SHRINKAGE	230 °C ± 3 °C (446 °F ± 5.4 °F)
	MAXIMUM CHANGE .125 INCH
LAYER WICKING	2.25 INCHES (MAX)
	PROCEDURE: MULTI-LAYER WIRE
ELECTRICAL RESISTANCE (IR)	5000 MEGOHMS (MIN) - 1000 FEET
ELECTRICAL SURFACE RESISTANCE	500 MEGOHMS - INCHES (MIN)
WET DIELECTRIC VOLTAGE	2500 VOLTS (RMS), 60 HZ
WALL THICKNESS	.003 INCH (MIN) FOR PRIMARY INSULATION
	.004 INCH (MIN) FOR OUTER JACKET
	.008 INCH (MIN) FOR TOTAL INSULATION
INSULATION TENSILE STRENGTH	5000 LBF/IN ² (MIN) FOR PRIMARY INSULATION
	5000 LBF/IN ² (MIN) FOR TOTAL INSULATION
INSULATION ELONGATION	125% (MIN) FOR PRIMARY INSULATION
	75% (MIN) FOR TOTAL INSULATION
CONTINUOUS LENGTH SCHEDULE	B

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.

TABLE 3 - PERFORMANCE DETAILS

PART NO.	BEND TESTING			
	MANDREL DIAMETER (INCHES) 1/		TEST LOAD (POUNDS) 1/	
	CROSSLINKING PROOF, IMMERSION, AND LIFE CYCLE TESTS	COLD BEND TEST	CROSSLINKING PROOF, IMMERSION, AND LIFE CYCLE TESTS	COLD BEND TEST
M22759/35-26-*	.375	1.00	.500	3.00
M22759/35-24-*	.500	1.00	.750	3.00
M22759/35-22-*	.500	1.00	1.00	3.00
M22759/35-20-*	.500	1.00	1.50	4.00

1/ TOLERANCE SHALL BE ±3% OF THE GIVEN VALUES.

FINISHED WIRE PERFORMANCE CHARACTERISTICS SHALL BE IN ACCORDANCE WITH TABLE 4.

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	WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED, CROSS-LINKED MODIFIED ETFE, NORMAL WEIGHT, SILVER-COATED, HIGH STRENGTH COPPER ALLOY, 200 °C, 600 VOLT, ROHS		