FEDERAL SUPPLY CLASS
6145

RATIONALE

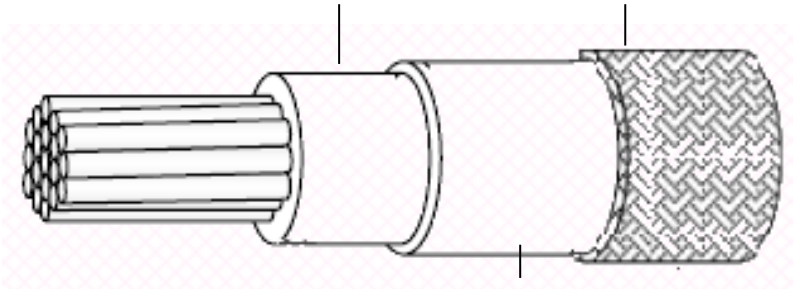
SPECIFICATION UPDATED TO INCLUDE AS29606 CONDUCTOR REQUIREMENTS, ROHS RESTRICTIONS, AND AS22759 MODIFICATIONS. THIS CHANGE ALSO INCREASES THE MAXIMUM WEIGHT REQUIREMENTS FOR WIRE SIZES 8 THROUGH 02 TO ACCOUNT FOR INCREASED CIRCULAR MIL AREA (CMA) ADOPTED IN AS29606. REMOVED REQUIREMENT FOR PROPELLANT RESISTANCE.

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

BRAID – AROMATIC POLYAMIDE TREATED TO PREVENT FRAYING (SIZE 2 AND LARGER) 1/



JACKET - CROSSLINKED, EXTRUDED, MODIFIED ETFE

ETFE – ETHYLENE TETRAFLUOROETHYLENE
CONDUCTOR – STRANDED SILVER COATED COPPER

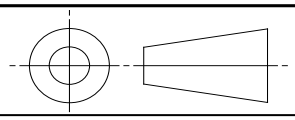
1/ BRAID: BRIGHT AROMATIC POLYAMIDE YARN, 200 DENIER, 100 FILAMENTS, TIGHTLY FORMED, UNIFORM IN APPEARANCE, TREATED WITH A CLEAR FINISHER COATING. THE FINISHER COATING SHALL BE COMPATIBLE WITH THE TEMPERATURE RATING AND PERFORMANCE REQUIREMENTS OF THE INSULATED WIRE.

FIGURE 1 –AS22759/43 CONFIGURATION

ISSUED 2000-04 REVISED 2016-06 REAFFIRMED 2021-06

For more information on this standard, visit
https://www.sae.org/standards/content/AS22759/43A

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS22759

SAE INTERNATIONAL

AEROSPACE STANDARD

(R) WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED, CROSS-LINKED MODIFIED ETFE, NORMAL WEIGHT, SILVER-COATED, COPPER, 200 °C, 600 VOLT, ROHS

TABLE 1 – CONSTRUCTION DETAILS FOR FINISHED WIRE

PART NO. 1/	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAUGE OF STRANDS) 3/	DIAMETER OF STRANDED CONDUCTOR (INCHES) 3/		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20 °C (68 °F) (OHMS/1000 FT) MAX	DIAMETER (INCHES)	WEIGHT (LB/1000 FT) (MAX)
M22759/43-26-*	26	19 X 38	.0175	.0194	38.4	.040 ± .002	1.70
M22759/43-24-*	24	19 X 36	.0225	.0244	24.3	.045 ± .002	2.30
M22759/43-22-*	22	19 X 34	.0285	.0304	15.1	.050 ± .002	3.30
M22759/43-20-*	20	19 X 32	.0365	.0384	9.19	.058 ± .002	4.70
M22759/43-18-*	18	19 X 30	.0455	.0484	5.79	.070 ± .003	7.20
M22759/43-16-*	16	19 X 29	.0515	.0544	4.52	.077 ± .003	9.00
M22759/43-14-*	14	19 X 27	.0645	.0684	2.88	.094 ± .003	13.8
M22759/43-12-*	12	37 X 28	.0835	.0874	1.90	.111 ± .003	20.5
M22759/43-10-*	10	37 X 26	.106	.112	1.19	.134 ± .004	32.4
M22759/43-8-*	8	133 X 29	.158	.169	.658	.195 ± .008	65.0
M22759/43-6-*	6	133 X 27	.198	.213	.418	.241 ± .010	99.2
M22759/43-4-*	4	133 X 25	.250	.268	.264	.310 ± .010	166.
M22759/43-2-*	2	665 X 30	.320	.340	.170	.405 ± .016	251.
M22759/43-1-*	1	817 X 30	.360	.380	.139	.445 ± .016	320.
M22759/43-01-*	0 2/	1045 X 30	.395	.425	.108	.485 ± .016	404.
M22759/43-02-*	00 2/	1330 X 30	.440	.475	.085	.545 ± .016	511.

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 EXCEPT THAT FOR SIZE 2 AND LARGER THE BRAID PREFERRED COLOR IS DARK GREEN WITH THE COLOR DESIGNATOR 5D. EXAMPLE: SIZE 2 DARK GREEN - AS22759/41-2-5D. WHITE IS AN ACCEPTABLE ALTERNATE WITH A COLOR DESIGNATOR 9. SIZE 20, WHITE WITH ORANGE STRIPE – M22759/43-20-93. PRINTING OF COLOR CODE DESIGNATOR ON SURFACE OF WIRE INSULATION IS NOT REQUIRED.

2/ WIRE SIZES 0 AND 00 HAVE BEEN SUPERSEDED BY -01 AND -02 RESPECTIVELY.

3/ CONDUCTOR SHALL CONFORM TO AS29606 TYPE SCC SMALL DIAMETER SILVER PLATED COPPER CONDUCTOR FOR SIZES 26 THROUGH 12. SIZE 10 THROUGH 02 SHALL CONFORM TO GENERAL PURPOSE SILVER PLATED COPPER 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, TABLE 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

   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

   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.