FEDERAL SUPPLY CLASS
6145

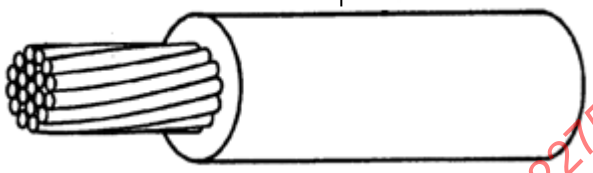
RATIONALE

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 EXTRUDED



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

***FIGURE 1 - AS22759/23 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) |
| M22759/23-28-* | 28 | 7 X 36 | .0135 | .0164 | 79.0 | .033 ± .002 | 1.34 |
| M22759/23-26-* | 26 | 19 X 38 | .0175 | .0204 | 49.4 | .038 ± .002 | 1.92 |
| M22759/23-24-* | 24 | 19 X 36 | .0225 | .0254 | 30.1 | .043 ± .002 | 2.63 |
| M22759/23-22-* | 22 | 19 X 34 | .0285 | .0314 | 18.6 | .049 ± .002 | 3.73 |
| M22759/23-20-* | 20 | 19 X 32 | .0365 | .0404 | 11.4 | .058 ± .002 | 5.44 |

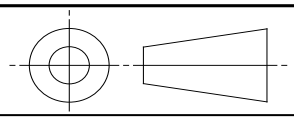
1/ PART NO.: THE ASTERISKS IN THE PART NUMBER COLUMN, TABLES 1 AND 3, SHALL BE REPLACED BY COLOR CODE DESIGNATORS IN ACCORDANCE WITH MIL-STD-681. EXAMPLES: SIZE 20, WHITE - M22759/23-20-9; WHITE WITH ORANGE STRIPE - M22759/23-20-93. PRINTING OF COLOR CODE DESIGNATOR ON SURFACE OF WIRE INSULATION IS NOT 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/AS22759/23A

THIRD ANGLE PROJECTION



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



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, 600 VOLT, ROHS

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: 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 | |
|---|---|
| IMPULSE TEST VOLTAGE | 8.0 KILOVOLTS (PEAK) |
| HIGH FREQUENCY TEST VOLTAGE | 5.7 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 | 3,000 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***

| PART NO. | BEND TESTING | | | |
|---|---|---|---|---|
| | MANDREL DIAMETER (INCHES) 2/ | | TEST LOAD (LB) 2/ | |
| | LIFE CYCLE (OVEN & BEND TESTS) 1/ | COLD BEND TEST | LIFE CYCLE (OVEN & BEND TESTS) 1/ | COLD BEND TEST |
| M22759/23-28-* | .125 | .250 | .500 | |
| M22759/23-26-* | .125 | .250 | .500 | |
| M22759/23-24-* | .125 | .250 | .500 | |
| M22759/23-22-* | .250 | .375 | .750 | |
| M22759/23-20-* | .250 | .375 | .750 | |

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