



TEST REPORT

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Glenair GS22759-33 Commercial Equivalent Wire Test Summary (Ref. QTP-1347)

Revision	Description of Changes	Date	Author
1	Initial Release	12/20/2023	JCR



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1.0 Scope

This report summarizes the test results of Glenair's GS22759-33 commercial equivalent wire to and AS22759/33. All tests were performed according to AS22759 and QTP-1347 except the ovens were not calibrated per ASTM Type II oven requirements, where applicable.

2.0 Reference Documents

AS22759 Revision D	Wire, Electrical, Fluoropolymer-Insulated, Copper or Copper Alloy
AS4373 Revision F	Test Methods for Insulated Electric Wire
ASTM D3032 Revision 21A	Standard Test Methods for Hookup Wire Insulation
AS29606 Revision B	General Specification for Wire, Electrical, Stranded, Uninsulated Copper, Copper Alloy, or Aluminum, or Thermocouple Extension
AS5768 Revision C	General Specification for Tool, Stripper, Electrical Insulation
GS22759-33 Revision 3	Wire, Electrical, Fluoropolymer-Insulated, Cross-linked Modified ETFE, Light Weight, Silver Coated High Strength Copper Alloy, 200°C, 600-Volt, RoHS



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3.0 Test Specimens

The part number and description of the wire tested are listed in Table I.

Table I

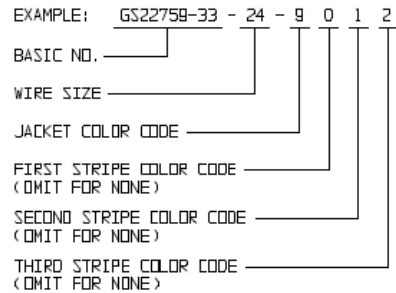
Part Number	Description
GS22759-33-24-9	Glenair AS22759/33 24 AWG Wire High Strength Silver-Coated Copper Alloy Conductor Cross-Linked ETFE-Insulated

GS22759-33

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	PRELIMINARY	02/01/22	LKJ
2	PRELIMINARY: ADDED STRIPES TO PART NUMBER.	09/12/22	HLJ
3	PRELIMINARY: TEMP RATING, FROM COND. TO WIRE.	09/26/22	HLJ

PART NUMBER DEVELOPMENT:



PART NUMBER	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAGE OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (INCHES)		FINISHED WIRE		
			(MIN)	(MAX)	RESISTANCE AT 20°C (68°F) (OHMS/1000 FEET) (MAX)	DIAMETER (INCHES)	WEIGHT (LB/1000 FEET) (MAX)
GS22759-33-30-+	30	7 X 38	.0105	.0124	117.4	.024 ± .002	.65
GS22759-33-28-+	28	7 X 36	.0135	.0164	74.4	.027 ± .002	.91
GS22759-33-26-+	26	19 X 36	.0175	.0204	44.8	.032 ± .002	1.4
GS22759-33-24-+	24	19 X 36	.0225	.0254	28.4	.037 ± .002	2.0
GS22759-33-22-+	22	19 X 34	.0285	.0314	17.5	.043 ± .002	2.9
GS22759-33-20-+	20	19 X 32	.0365	.0394	10.7	.050 ± .002	4.4

COLOR CODE	COLOR
0	BLACK
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GRAY
9	WHITE

NOTES:

1. WIRE IS MADE IN ACCORDANCE WITH AS22759/33.
2. CONDUCTOR IS SILVER COATED HIGH STRENGTH COPPER PER AS29606.
3. INSULATION IS CROSSLINKED MODIFIED ETFE (ETHYLENE-TETRAFLUOROETHYLENE).
4. WIRE MAXIMUM CONTINUOUS TEMPERATURE RATING IS 200°C (392°F).
5. VOLTAGE RATING IS 600 VOLTS (RMS) AT SEA LEVEL.
6. COLOR CODE PER MIL-STD-681. SEE MIL-STD-681 FOR ADDITIONAL WIRE COLOR CODES.
7. CONSULT FACTORY FOR CUSTOM STRIPE COLOR ORDER.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN LKJ 02/01/22	GLENAIR, INC. CAD 1000° 1211 AIR WAY - GLENDALE - CALIFORNIA 91201
TOLERANCES:	CHECK SF 02/01/22	
FRACTIONS ± 1/16	ENGR LKJ 02/01/22	AS22759/33 WIRE, SILVER COATED HIGH STRENGTH COPPER CONDUCTOR CROSSLINKED MODIFIED ETFE INSULATED, 600-VOLT, 200°C
DECIMALS .XXX ± .015		CODE IDENT. NO. SIZE
ANGLES ± 1°		06324 C GS22759-33
DO NOT SCALE THIS DRAWING	REVISE DATE	REV. 3
B/F 2145343 P/C	REVISE DATE	SCALE N/A WEIGHT N/A SHEET 1 OF 1
	NON REPAIRABLE COMMERCIAL ITEM	

Figure 1 – Glenair AS22759/33 Wire Drawing GS22759-33



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4.0 Summary of Results

The test results are summarized in Table II.

Table II

Test	Specification	Test Requirements	Results	Pass/Fail
Insulated Conductor Tin Solderability	AS4373 Method 105	95%, min.	N/A	N/A
Insulated Conductor Geometric Characteristics (Diameter)	AS29606 AS22759/33	24 AWG: 0.0225-0.0254"	0.02327"	Pass
Insulated Conductor Elongation	AS29606 AS4373 Method 402	24 AWG: 6%, min.	7.59%	Pass
Insulation Construction (Material Type)	AS22759/33	Cross-linked Modified ETFE	Pass	Pass
Insulation Tensile Strength and Elongation	AS4373 Method 705	5000 psi tensile strength, min. 75% elongation, min.	6097 psi 147%	Pass
Short-Term Thermal Stability	AS4373 Method 811	7 hours at 300°C ± 2°C DWV 2500 VDC, 60 seconds	Pass	Pass
Insulation Blocking	AS4373 Method 808	24 hours at 230°C ± 3°C	Pass	Pass
Insulation Shrinkage	AS4373 Method 104	6 hours at 230°C ± 2°C 0.125" max. shrinkage	0.065"	Pass



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Test	Specification	Test Requirements	Results	Results
Wire Conductor Electrical Resistance	AS4373 Method 403	24 AWG: 28.4 Ω/1000 ft., max.	24.5 Ω/1000 ft	Pass
Wire Electrical Insulation Resistance	AS4373 Method 504	24 AWG: 5000 MΩ-1000 ft., min.	136,000 MΩ-1000 ft	Pass
Wire Electrical Surface Resistance	AS4373 Method 506	24 AWG: 500 MΩ-inches, min. at 500 VDC	Pass	Pass
Electrical Dielectric Resistance – Wet Dielectric Voltage	AS4373 Method 510	2500 V (RMS) at 60Hz, min.	Pass	Pass
Wire Diameter	AS4373 Method 901	24 AWG: 0.037 ± 0.002"	0.036"	Pass
Wire Weight	AS4373 Method 902	24 AWG: 2.0 lbs./1000 ft., max.	1.88 lbs./1000 ft	Pass
Wire Insulation Stripping	AS5768/1 AS5768/2	Insulation readily removable without damage to conductor	Pass	Pass
Wire Insulation Concentricity and Wall Thickness	AS4373 Method 101	70 %, min.	84%	Pass
Wire Identification Printed Marking and Location	AS22759	Marking intervals of 6 to 60 inches	N/A	N/A



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Test	Specification	Test Requirements	Results	Results
Workmanship	AS22759	No cracks, splits, irregularities, or embedded foreign material	Pass	Pass
Wire Color Designators and Munsell Limits	EIA-359-A	Visual inspection against Munsell color chart	Pass	Pass
Wire Identification Mark, Stripe, and Band Durability	AS4373 Method 710	125 cycles (250 strokes) with 500 gram weight	N/A	N/A
Wrap Back Bend Mechanical Resistance for Extruded Insulation	AS4373 Method 708	2 hours at 313°C ± 3°C No cracking or splitting	Pass	Pass
Insulation Low Temperature Mechanical Resistance/Cold Bend	AS4373 Method 702	4 hours at -65°C ± 3°C DWV 2000 V (rms) at 60 Hz	Pass	Pass
Insulation Thermal Shock Mechanical Resistance	AS4373 Method 805	-55°C ± 3°C to 200°C ± 3°C 0.060" max. shrinkage	0.019"	Pass
Thermal Mechanical Resistance – Life Cycle	AS4373 Method 807	500 hours at 230°C ± 2°C DWV 2000 V (rms) at 60 Hz	Pass	Pass
Fluid Resistance – Immersion	AS4373 Method 601	Diameter increase 5% max. DWV 2000 V (rms) at 60 Hz	Pass	Pass
Humidity Resistance	AS4373 Method 603	5000 MΩ-1000 ft., min.	Pass	Pass



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Test	Specification	Test Requirements	Results	Results
Smoke Resistance	AS4373 Method 513	250°C ± 5°C No visible smoke	Pass	Pass
Flammability	AS4373 Method 801	Self-extinguishing flame within 3 seconds max. Flame travel 3" min.	Pass	Pass

5.0 Conclusion

Glenair's GS22759-33 wire meets all performance requirements of AS22759. In some instances, the oven calibration was performed in accordance with ISO instead of ASTM Type II.