



TEST REPORT

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Glenair GS22759-43 Commercial Equivalent Wire Test Summary (Ref. QTP-1359)

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 GS22759-43 commercial equivalent wire to AS22759/43. All tests were performed according to AS22759 and QTP-1359 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
GS22759-43 Revision 3	Wire, Electrical, Fluoropolymer-Insulated, Cross-linked Modified ETFE, Normal Weight, Silver-Coated Copper, 200°C, 600-Volt



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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
GS22759-43-24-9	Glenair AS22759/43 Wire, Silver Coated Copper, Cross-linked Modified ETFE, Normal Weight, 600-Volt, 200°C

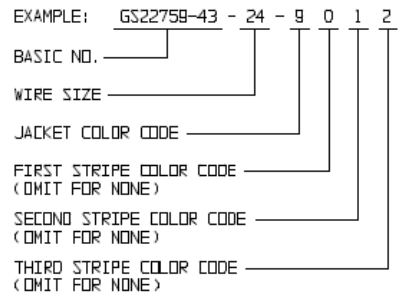
GS22759-43

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	PRELIMINARY	03/31/23	NHJ

PART NUMBER	WIRE SIZE	STRANDING (NUMBER OF STRANDS X SIZE GAGE OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (INCHES)		RESISTANCE AT 20°C (68°F) (OHMS/1000 FEET) (MAX)	FINISHED WIRE	
			(MIN)	(MAX)		DIAMETER (INCHES)	WEIGHT (LB/1000 FEET) (MAX)
GS22759-43-26-*	26	19 X 36	.0175	.0194	36.4	.040 ± .002	1.7
GS22759-43-24-*	24	19 X 36	.0225	.0244	24.3	.045 ± .002	2.3
GS22759-43-22-*	22	19 X 34	.0285	.0304	15.1	.050 ± .002	3.3
GS22759-43-20-*	20	19 X 32	.0365	.0384	9.19	.058 ± .002	4.7
GS22759-43-18-*	18	19 X 30	.0455	.0484	5.79	.070 ± .003	7.2
GS22759-43-16-*	16	19 X 29	.0515	.0544	4.52	.077 ± .003	9.0
GS22759-43-14-*	14	19 X 27	.0645	.0684	2.88	.094 ± .003	13.8
GS22759-43-12-*	12	37 X 28	.0835	.0874	1.90	.111 ± .003	20.5
GS22759-43-10-*	10	37 X 26	.106	.112	1.19	.134 ± .004	32.4
GS22759-43-8-*	8	133 X 29	.158	.169	.658	.195 ± .008	65.0

PART NUMBER DEVELOPMENT:



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 AS22759/43.
2. CONDUCTOR IS SILVER COATED 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 NHJ 03/31/23	CHECK L.K.J. 03/31/23	ENG'G NHJ 03/31/23	GLENAIR, INC. <small>EST. 1967</small> 1211 AIR WAY - GLENDALE - CALIFORNIA 91201	
TOLERANCES: FRACTIONS ± 1/16 DECIMALS .XX ± .030 .XXX ± .015 ANGLES ± 1°	<i>D. Brown</i> <small>DATE</small> <small>DATE</small>				AS22759/43 WIRE, SILVER COATED COPPER CONDUCTOR CROSSLINKED MODIFIED ETFE INSULATED, NORMAL WEIGHT, 600-VOLT, 200°C
DO NOT SCALE THIS DRAWING	REVISE DATE 06324	REVISE DATE 06324	CODE IDENT. NO. GS22759-43	REV. 1	
B/F	P/C	NON REPAIRABLE COMMERCIAL ITEM	SCALE N/A	WEIGHT N/A	SHEET 1 OF 1

Figure 1 – Glenair AS22759/43 Wire Drawing GS22759-43



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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 Solderability	AS4373 Method 105	95%, min.	Pass	Pass
Insulated Conductor Geometric Characteristics (Diameter)	AS29606 AS22759/43	24 AWG: 0.0225-0.0244"	0.0227'	Pass
Insulated Conductor Elongation	AS29606 AS4373 Method 402	24 AWG: 6%, min.	16.45%	Pass
Insulation Construction (Material Type)	AS22759/43	Cross-linked Modified ETFE	Pass	Pass
Insulation Tensile Strength and Elongation	AS4373 Method 705	5000 psi tensile strength, min. 125% for primary, 75% for total elongation, min.	7769 psi 206%/136%	Pass
Short-Term Thermal Stability	AS4373 Method 811	7 hours at 300°C ± 3°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 ± 3°C 0.125" max. shrinkage	0.011"	Pass

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Test	Specification	Test Requirements	Results	Pass/Fail
Wire Conductor Electrical Resistance	AS4373 Method 403	24 AWG: 24.3 Ω/1000 ft., max.	22.0 Ω/1000 ft., max	Pass
Wire Electrical Insulation Resistance	AS4373 Method 504	24 AWG: 5000 MΩ-1000 ft., min.	25,900 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: 0.045 ± 0.002"	0.044"	Pass
Wire Weight	AS4373 Method 902	24 AWG: 2.30 lbs./1000 ft., max.	2.23 lbs./1000 ft	Pass
Wire Insulation Stripping	AS5768/1 AS5768/2	Insulation readily removable without damage to the conductor	Pass	Pass
Wire Insulation Concentricity and Wall Thickness	AS4373 Method 101	Concentricity: 70 %, min. Primary wall thickness: 0.003" min. Outer wall thickness: 0.004" min. Total wall thickness 0.008" min.	79% 0.004" 0.005" 0.001"	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	Pass/Fail
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 a 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 2500 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	Pass	Pass
Thermal Mechanical Resistance – Life Cycle	AS4373 Method 807	500 hours at 230°C ± 3°C DWV 2500 V (rms) at 60 Hz	Pass	Pass
Fluid Resistance – Immersion	AS4373 Method 601	Diameter increase 5% max. DWV 2500 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	Pass/Fail
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
Wicking	AS4374 Method 607	2.25" distance traveled Max.	0.0"	Pass

5.0 Conclusion

Glenair's GS22759-43 wire meets all performance requirements of AS22759. In some instances, the oven calibration was performed in accordance with ISO instead of ASTM Type II.