GT-24-006

Glenair GS27500 Group 11 Commercial Equivalent Wire Test Summary (Ref. QTP-1418)

Revision	Description of Changes	Date	Author
1	Initial Release	1/5/24	JCR

1.0 Scope

This report summarizes the test results of Glenair's GS27500-22TE2T14 commercial equivalent wire to ANSI/NEME WC 27500 group 11. All tests were performed according to ANSI/NEME WC 27500 and QTP-1418.

2.0 Reference Documents

AS4373 Revision F	Test Methods for Insulated Electric Wire
ASTM D3032 Revision 21A	Standard Test Methods for Hookup Wire Insulation
ANSI/NEME WC 27500	Aerospace and Industrial Electrical Cable

3.0 Test Specimens

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

Table I

Part Number	Description
GS27500-22TE2T14	22AWG twisted pair of GS22759/16 with single Tin coated copper shield, white ETFE extruded outer jacket

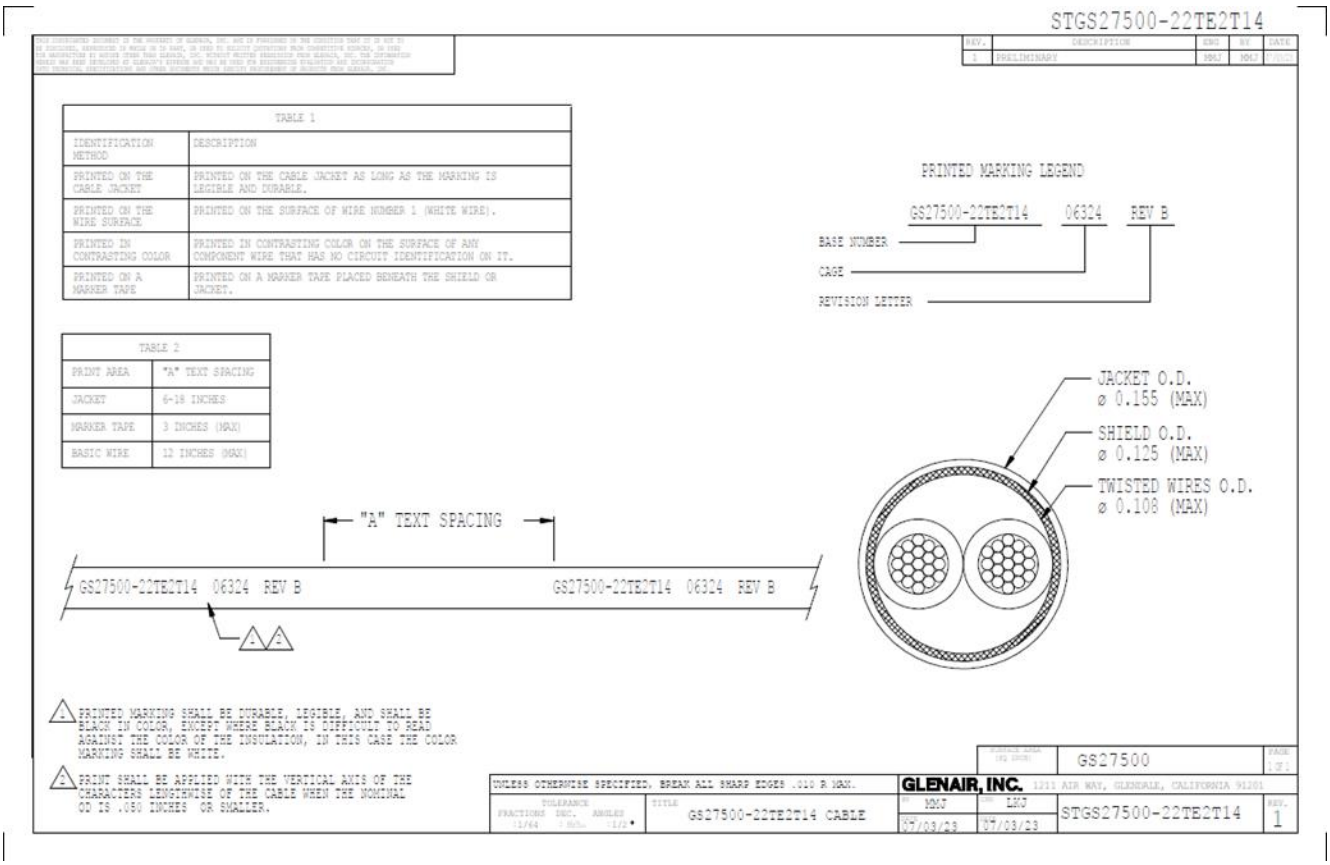

Figure 1 – Glenair GS27500-22TE2T14 Wire Drawing

4.0 Summary of Results

The test results are summarized in Table II.

Table II

Test	Method	Test Requirements	Results	Results
Identification of Cable Wire	ANSI/NEME WC 27500 section 4.3.1	The basic wire insulation for single or multi-conductor cables shall provide a method of determining the wire number.	Pass	Pass
Stripe, Band, or Print Durability	ANSI/NEME WC 27500 section 4.3.22	125 cycles, 500 grams	Pass	Pass
Cable Lay-up	ANSI/NEME WC 27500 section 4.3.1	Lay Direction: Left Hand Lay Lay Length: 6-16 times outer major axis diameter.	Left Hand 1.15”	Pass
Shield Coverage	ANSI/NEME WC 27500 section 4.3.5	85% Minimum	85%	Pass
Braid Angle	ANSI/NEME WC 27500 section 4.3.5	18°-40°	21°	Pass
Identification of Product	ANSI/NEME WC 27500 section 4.3.1	The wire product identification shall appear on all individual basic wires when required by the basic wire specification	Pass	Pass
Jacket Wall Thickness and Concentricity	ANSI/NEME WC 27500 section 4.3.12	Concentricity 70% Minimum	92%	Pass
Strippabillity	ANSI/NEME WC 27500 section 4.3.1	No adherence to the underlying shield or cable	Pass	Pass
Cable Diameter	ANSI/NEME WC 27500 section 4.4	0.1558” Maximum	0.1340”	Pass
Cable Weight	ANSI/NEME WC 27500 section 4.5	17.42 lb/1000ft Maximum	16.70 lb/1000ft	Pass

Cold Bend	ANSI/NEME WC 27500 section 4.3.6	No cracks in the jacket	Pass	Pass
Thermal Shock	ANSI/NEME WC 27500 section 4.3.9	No cracking in the jacket	Pass	Pass
Jacket, Tensile Strength, and Elongation	ANSI/NEME WC 27500 section 4.3.13	Tensile Strength: 5,000 psi minimum Elongation: 150% minimum	5324 psi 238%	Pass
Blocking	ANSI/NEME WC 27500 section 4.3.15	No Adhesion or Sticking	Pass	Pass
Copper shield round strand material	ANSI/NEME WC 27500 section 4.3.1	Conform to ASTM B3	Pass	Pass
Thickness of shield strand coating	ANSI/NEME WC 27500 section 4.3.2.2.1	Electronic Determination Method of ASTM B296 or B355	Pass	Pass
Continuity of shield strand coating	ANSI/NEME WC 27500 section 4.3.2.2.2	No exposed copper	Pass	Pass
Shield strand elongation	ANSI/NEME WC 27500 section 4.3.2.1	Elongation: 6% Minimum	Pass	Pass
Dielectric withstand--component wire (100%)	ANSI/NEME WC 27500 section 4.3.3.1	No electrical breakdown or arcing	Pass	Pass
Jacket flaws (100%)	ANSI/NEME WC 27500 section 4.3.4	No Flaws	Pass	Pass

Conductor continuity (100%)	ANSI/NEME WC 27500 section 4.3.8	No Discontinuity	Pass	Pass
Basic wire acceptance	Basic Wire Specification	Review basic wire specification	Pass	Pass
Continuous lengths (100%)	ANSI/NEME WC 27500 section 4.6	85% of lengths shall be greater than 100ft 100% of lengths shall be greater than 50ft	Pass	Pass
Workmanship	ANSI/NEME WC 27500 section 4.3.1	No visible irregularities when viewed with the unaided eye	Pass	Pass
Flammability	ANSI/NEME WC 27500 section 4.3.19	Sample shall not burn more than 30 seconds or more than 3 inches	<3.0 sec 1.3”	Pass

5.0 Conclusion

Glenair’s GS27500-22TE2T14 wire meets all performance requirements of ANSI/NEME WC 27500. In some instances, the oven calibration was performed in accordance with ISO instead of ASTM Type II.