Nett Warrior Connectors

1. SCOPE

1.1. Content

This specification defines performance, tests and quality requirements for the Nett Warrior Quick Disconnect Circular Plug and Receptacle Connectors.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has been completed between FEB/23/2015 and May/08/2015. The Qualification Test Report number for this testing is 502-134146.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- 502-134146: Nett Warrior Quick Disconnect Circular Plug and Receptacle Connectors Tobyhanna Army Depot Phase III Verification Testing
- 2226920: (Customer Drawing) Receptacle Connector Assembly Nett Warrior
- 2226910: (Customer Drawing) Plug Connector Assembly Nett Warrior

2.2. Industry Documents

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- MIL-STD-810G: Environmental Engineering Considerations and Laboratory Tests, 31 October 2008 (with all update notices)
- MIL-STD-461F: Requirements for Control of Electromagnetic Interference Characteristics of Subsystems and Equipment, 10 December 2007
- FED STD 595C, Colors Used in Government Procurement, 31 July 2008
- Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health.
- NFPA 70, National Electric Code 2008 Edition
- Specification For Nett Warrior Interface Cable Assembly Version 1.2 18 February 2015

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Ratings

Voltage	Current	Temperature
15 Volts	5A	-18°C to 71°C

3.3. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Test Description	Requirement	Procedure
Initial examination of product.	Meets requirements of product drawing and Application Specification	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
ELECTRICAL		
Voltage Drop at 1 Adc	Verify continuity	Four terminal measuring technique
Insulation Resistance at 500 Vdc	Minimum of 100 Megohms	All connector positions to be combined to form one series circuit. Voltage is to be applied for minimum of 1 second
MECHANICAL		
Breakaway Force	Must equal 13±3 lbf	Rate 15 inches per minute
Strength	See note	Pre-load overmolded cable assembly's to 80 lbf at a rate of 2 inches per minute then apply 100 lbf at a rate of 0.5 inches per minute hold for 30 seconds
Vibration – Procedure I	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 514.7, Procedure I
Shock	See note	MIL-STD-810G, Method 516.6, Procedure IV
Vibration – Procedure II	See note	MIL-STD-810G, Method 514.6, Category 5, Procedure II
ENVIRONMENTAL		
Altitude – Procedure I	See note	MIL-STD-810G, Method 500.5, Procedure I simulated altitude of 40,000 feet hold 1 hour
Altitude – Procedure II	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 500.5, Procedure II simulated altitude of 32,000 feet hold 1 hour
High Temperature – Procedure II	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 501.5, Procedure II
High Temperature – Procedure I	See note	MIL-STD-810G, Method 501.5, Procedure I
Low Temperature – Procedure II	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 502.5, Procedure II
Humidity – Induced Storage & Transit	See note	MIL-STD-810G, Method 507.5, Procedure I Three cycles with profile defined in Column B2 of Figure 26
Humidity – Natural Environment Operational	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 507.5, Procedure II Profile defined in Column B2 of Figure 28
Salt Atmosphere	See note	MIL-STD-810G, Method 509.5
Rain	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 506.5, Procedure II (Exaggerated).
Snow & Ice	No discontinuities of one microsecond or greater	MIL-STD-810G, Method 521.3
Solar Radiation	See note	MIL-STD-810G, Method 505.5, Procedure I, Cycle A1, for three continuous cycles
Dust	See note	MIL-STD-810G, Method 510.5, Procedure I

NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

3.4. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)				
	1	2	3	4	5
	Test Sequence (b)				
Examination of product	1,5	1,5,9,13,17,21	1,5,9,13	1,5,9,13,17	1,5,9,13,17
Voltage Drop at 1 Adc	2	2, 6, 10, 14, 18, 22	2, 6, 10, 14	2, 6, 10, 14,18	2, 6, 10, 14, 18
Insulation Resistance at 500 Vdc	3	3, 7, 11, 15, 19, 23	3, 7, 11, 15	3, 7, 11, 15,19	3, 7, 11, 15, 19
Breakaway Force	4				
Strength				16	
Altitude – Procedure I		4			
Altitude – Procedure II		8			
Vibration – Procedure I		12			
Shock		16			
Vibration – Procedure II		20			
High Temperature – Procedure II			4		
High Temperature – Procedure I			8		
Low Temperature – Procedure II			12		
Humidity – Induced Storage & Transit				4	
Humidity – Natural Environment Operational				8	
Salt Atmosphere				12	
Rain					4
Snow & Ice					8
Solar Radiation					12
Dust					16

NOTE

(a) Each test group contain 2 samples. Test groups 1, 3, 4 will be terminated with 8 inches of 6-condutor cable. Any “pig-tail’ specimens will be mated to double-ended production cable assemblies approximately 20 inches in length.

(b) Numbers indicate sequence in which tests are performed.