

TEST REPORT

5/21/2021	
GT-21-217	
Revision 1	
Page 1 of 36	

GT-21-217

ThermaRex™ Wire Validation Test Report (Ref. QTP-1017)

Revision Description of Changes		Date	Author	
1 Initial Release		5/21/2021	Micah Summers	

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TEST REPORT

5/21/2021
GT-21-217
Revision 1
Page 2 of 36

1. Scope

This test report summarizes the test results of ThermaRex™ wire after thermal aging up to 2000 hours at 300°C. All tests were performed according to AS4373 Revision E and QTP-1017 Revision B.

2. Test Specimens

The part number and full description of the ThermaRex™ wire tested is listed in Table I.

Table I

Part Number	Description
961-047-N-C-6	20 AWG ThermaRex™ Wire
	.015" Jacket Wall Thickness

961-047

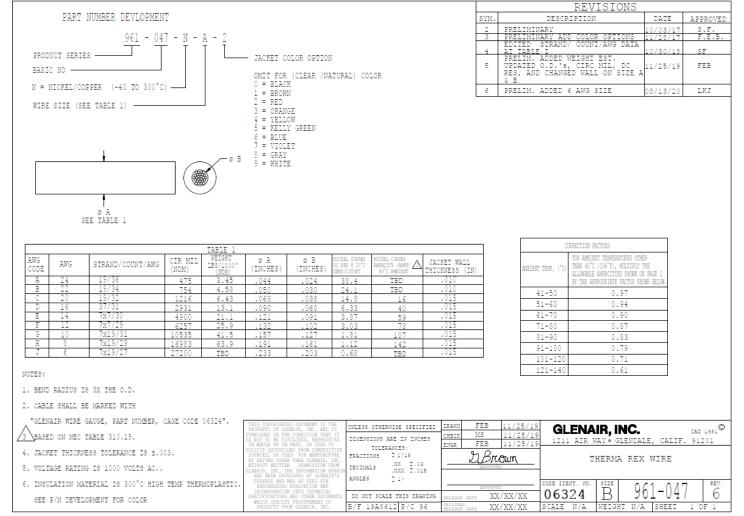


Figure 1: Glenair ThermaRex™ Wire drawing 961-047

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TEST REPORT

5/21/2021	
GT-21-217	
Revision 1	
Page 3 of 36	<u>5</u>

3. Summary of Results

The results of the tests are summarized in Table II.

Table II

Test Sequence	Specification	Test Requirements	Results	
Insulation Resistance	AS4373E, Method 504	500 VDC 60 seconds, 5000 M Ω min.	Pass	
Dielectric Withstanding Voltage	AS4373E, Method 510	2500 VDC 60 seconds, Leakage current 0.5 mA max.	Pass	
Multi-Day Heat Aging (Life Cycle)	AS4373E, Method 807	300°C for 1000 Hours, No cracks or damage to insulation	Pass	
Insulation Resistance	AS4373E, Method 504	500 VDC 60 seconds, 5000 MΩ min.	Pass	
Dielectric Withstanding Voltage	AS4373E, Method 510	2500 VDC 60 seconds, Leakage current 0.5 mA max.	Pass	
Multi-Day Heat Aging (Life Cycle)	AS4373E, Method 807	300°C for 2000 Hours, No cracks or damage to insulation	Pass	
Insulation Resistance	AS4373E, Method 504	500 VDC 60 seconds, 5000 MΩ min.	Pass	
Dielectric Withstanding Voltage	AS4373E, Method 510	0 2500 VDC 60 seconds, Leakage current 0.5 mA max.		
Bend Test	AS4373E, Method 712	300°C for 2000 Hours, No cracks or damage to insulation	Pass	

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ThermaRex Wire Testing at 300°C

QTP-1017 21112R1KLV2 Version 2 5/21/2021



Vertical Laboratories LLC

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QMS708-F3 v4.1 Page 1 of 33

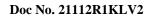




Table of Contents

Version History		3
Test Deviations		
Testing Summary		5
Test Sample Identification		7
Test Sequence		8
Test Parameters		10
Engineering Notes		16
Test Sample Conditions	,	20
Test Results		21
Test Plots	,	
Post-Test Photos	,	29
Deviation		32
Final Page		33



Version History

Version	Date	Comments	Prepared By	Reviewed By	Approved By
1	5/20/2021	Initial release	Kenneth Liberato	Brian Morales	Kane Liang
2 5/21/2021 Re-Tested Specimen 001 for Insulation Resistance per customer request		Kenneth Liberato	Brian Morales	Kane Liang	

QMS708-F3 v4.1 Page 3 of 33

VERTICALLABORATORIES

Test Deviations

Doc No. 21112R1KLV2

Deviation No.	Test Name	Description
21112DV1KLV1	Dielectric Withstanding Voltage	Test performed incorrectly due to software input error. Samples went through previously programmed IR profile instead of desired DWV test.

QMS708-F3 v4.1 Page 4 of 33



Testing Summary

Job Name	hermaRex Wire Testing at 300°C	
Job No.	21112	
Client	Glenair	
Address	1211 Air Way, Glendale, CA 91201	
Contact Name	ah Summers	
Telephone No.	8) 247-6000	
Email	nsummers@glenair.com	
Controlling Document	QTP-1017 Rev. B	

Test Name	Serial No.	Start Date	End Date	Pass	Fail	Record
Dielectric Withstanding Voltage	001-010	2/4/2021	2/4/2021	-	-	X
Insulation Resistance	001-010	2/4/2021	2/4/2021	-	-	X
Multi-Day Heat Aging (1000hrs)	001-010	2/16/2021	3/30/2021	-	-	X
Dielectric Withstanding Voltage	001-010	3/30/2021	3/30/2021	-	-	X
Insulation Resistance	001-010	3/30/2021	3/30/2021	-	-	X
Multi-Day Heat Aging (2000hrs)	001-010	3/31/2021	5/19/2021	-	-	X
Dielectric Withstanding Voltage	001-010	5/19/2021	5/19/2021	-	-	X
Insulation Resistance	001-010	5/19/2021	5/19/2021	-	-	X

QMS708-F3 v4.1 Page 5 of 33



Testing Summary

Summary of Testing

Samples under test are 20 AWG ThermaRex Wire, 24" in length. The intent of this testing is to validate the performance of The ThermaRex wire after heat aging at 300°C. Specimens were subjected to the following test sequences: Examination of Product, Examination of Dimensions, Dielectric Withstanding Voltage, Insulation Resistance and Heat Aging.

For the Dielectric Withstanding Voltage test sequence, specimens were immersed in a water bath containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test specimens were within 2 inches of the water solution. An initial resistance measurement between the conductor and the water solution at 500Vdc ±10% was taken to detect any flaws. Test Specimens then underwent a 4-hour soak and then tested to a voltage of at least 2,500VDC increasing from zero to the specified value at a rate of 500V per second. Required voltage was held on the specimen for 1 minute. Measurements were within specification and specimens continued into the next test sequence.

For the Insulation Resistance test sequence, specimens were immersed in a water bath containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test specimens were within 6 inches of the water solution. An initial resistance measurement between the conductor and the water solution was taken to detect any nontypical values. Test Specimens then underwent a 4-hour soak which was maintained at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$. Specimens were then tested to a voltage of $500\text{VDC} \pm 10\%$. Required voltage was held on the specimen for 1 minute. Measurements were within specification and specimens continued into the next test sequence.

For the Heat Aging and Bend testing sequence, specimens were bent onto a 1/4-inch horizontal mandrel coated in PTFE from the central portion of the specimen. Each end of the test specimens were loaded with a 1 pound ±3% weight. Test Specimens were subjected to a temperature of 300°C for 1000 hours, then cooled to 20-25°C within 1 hour before DWV and I/R measurements were taken. Specimens then went back into heat aging for another 1000 hours. DWV and I/R measurements were taken once specimens were cooled down. Measurements were within specification and specimens completed all specified test sequences.

QMS708-F3 v4.1 Page 6 of 33



Test Sample Identification

Doc No. 21112R1KLV2

Date Received	1/25/2021
---------------	-----------

Test Group	Part Name	Part No.	Serial No.
	20 AWG ThermaRex Wire	961-047-N-C-9	001
			002
			003
1			004
			005
			006
			007
			008
			009
			010



Test Sequence

#	Test Name	Serial No.	Group 1
1	Examination of Product QTP-1017 Rev. B, Section 7.1.1	001/002/003/004/005/006/007/008/009/010	X
2	Examination of Dimensions QTP-1017 Rev. B, Section 7.1.2	001/002/003/004/005/006/007/008/009/010	X
3	Dielectric Withstanding Voltage ASTM D3032, Section 8	001/002/003/004/005/006/007/008/009/010	X
4	Insulation Resistance ASTM D3032-21, Section 6	001/002/003/004/005/006/007/008/009/010	X
5	Multi-Day Heat Aging (Life Cycle)(1000hrs) SAE AS4373 Rev. E, Method 807, Section 4.8.7	001/002/003/004/005/006/007/008/009/010	X
6	Dielectic Withstanding Voltage ASTM D3032, Section 8	001/002/003/004/005/006/007/008/009/010	X
7	Insulation Resistance ASTM D3032-21, Section 6	001/002/003/004/005/006/007/008/009/010	X
8	Multi-Day Heat Aging (Life Cycle)(2000hrs) SAE AS4373 Rev. E, Method 807, Section 4.8.7	001/002/003/004/005/006/007/008/009/010	X
9	Dielectric Withstanding Voltage ASTM D3032, Section 8	001/002/003/004/005/006/007/008/009/010	X
10	Insulation Resistance ASTM D3032-21, Section 6	001/002/003/004/005/006/007/008/009/010	X
11	Examination of Product QTP-1017 Rev. B, Section 7.1.1	001/002/003/004/005/006/007/008/009/010	Х

QMS708-F3 v4.1 Page 8 of 33



Test Equipment List

ID No.	Equipment Name	Manufacturer	Model No.	Cal. Date	Cal. Due
MA019	SCALE (0 - 5,000 G)	OHAUS	CL 5000	6/22/2020	6/30/2021
CE040	CONVECTION OVEN	BLUE M ELECTRIC	DC-256-B-MP350	10/29/2020	10/31/2021
EM012	DIELECTRIC WITHSTAND TESTER	ASSOCIATED RESEARCH INC	3770	2/26/2021	2/28/2022
EM017	AC/DC/IR HIPOT TESTER	ASSOCIATED RESEARCH INC	3770	4/22/2021	4/30/2022
EM032	DIELECTRIC WITHSTAND TESTER	ASSOCIATED RESEARCH INC	3870	11/2/2020	11/30/2021
TC044	RESISTANCE PI MONITOR	AOSONG ELECTRONICS	DHT22	4/8/2021	4/30/2022

QMS708-F3 v4.1 Page 9 of 33

W VERTICAL LABORATORIES

Test Parameters

Doc No. 21112R1KLV2

Test Name	Dielectric Withstanding Voltage
Specification	SAE AS4373 Revision E / ASTM D3032
Method / Procedure	Method 510 / Section 8
Figure / Table	4.5.10 / 8.4

Test Requirements

Test Specimens will be immersed in a water bath containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test specimens will be within 2 inches of the water solution. An initial resistance measurement between the conductor and the water solution at $500\text{Vdc} \pm 10\%$ will be taken to detect any flaws. Test Specimens will then undergo a 4-hour soak and then be tested to voltage of at least 2,500VDC increasing from zero to the specified value at a rate of 500V per second. Required voltage will be held on the specimen for 1 minute.

QMS708-F3 v4.1 Page 10 of 33



Test Parameters

Doc No. 21112R1KLV2

Test Name	Insulation Resistance
Specification	SAE AS4373 Revision E / ASTM D3032
Method / Procedure	Method 504 / Section 6
Figure / Table	4.5.4 / 6.4

Test Requirements

Test Specimens will be immersed in a water bath containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test specimens will be within 6 inches of the water solution. An initial resistance measurement between the conductor and the water solution will be taken to detect any nontypical values. Test Specimens will then undergo a 4-hour soak which will be maintained at 23° C $\pm 5^{\circ}$ C. Specimens will then be tested to voltage of $500\text{VDC} \pm 10\%$. Required voltage will be held on the specimen for 1 minute.

QMS708-F3 v4.1 Page 11 of 33



Test Parameters

Test Name	Heat Aging
Specification	SAE AS4373 Revision E
Method / Procedure	Method 807
Figure / Table	4.8.7

Test Requirements

Test Specimens will be bent onto a 1/4-inch horizontal mandrel coated in PTFE from the central portion of the specimen. Each end of the test specimens will be loaded with a 1 pound $\pm 3\%$ weight. Test Specimens will be subjected to a temperature of 300° C for 1000 hours then cooled to $20\text{-}25^{\circ}$ C within 1 hour before DWV and I/R measurements can be taken. Specimens will then go back into heat aging for another 1000 hours and will have DWV and I/R measurements taken once specimens have cooled down.

QMS708-F3 v4.1 Page 12 of 33

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Test Parameters

Doc No. 21112R1KLV2

Test Name	Bend Test
Specification	AS4373 Revision E
Method / Procedure	Method 712
Figure / Table	Section 4.7.12

Test Requirements

Test Specimens will be bent onto a 1/4-inch horizontal mandrel coated in PTFE from the central portion of the specimen. Each end of the test specimens will be loaded with a 1 pound $\pm 3\%$ weight.

QMS708-F3 v4.1 Page 13 of 33

W VERTICAL LABORATORIES

Test Parameters

Doc No. 21112R1KLV2

Test Name	Examination of Product
Specification	QTP-1017 Rev. B
Method / Procedure	Section 7.1.1
Figure / Table	-

Test Requirements

Test Specimens will be examined by the unaided eye and shall be free of defects detrimental to product performance. Specimens will be photographed before and after each performance test. All specimens will be tagged and numbered for identification purposes.

QMS708-F3 v4.1 Page 14 of 33



Test Parameters

Test Name	Examination of Dimensions
Specification	QTP-1017 Rev. B
Method / Procedure	Section 7.1.2
Figure / Table	-

Test Requirements	
Test Specimens will be measured in length before and after performance tests. All specimens will be tagget for identification purposes.	ged and numbered

QMS708-F3 v4.1 Page 15 of 33



Engineering Notes

Date	Time	Notes
1/25/2021	0930	Received Test Specimens
2/4/2021		7.1.3 Dielectric Withstanding Voltage: Test Specimens will be tested in accordance with
		specification ASTM D3032 Section 8. Test Specimens will be immersed in a water bath
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test
		specimens will be within 2 inches of the water solution. An initial resistance measurement
		between the conductor and the water solution at $500 \text{Vdc} \pm 10\%$ will be taken to detect
		any flaws. Test Specimens will then undergo a 4-hour soak and then be tested to
		voltage of at least 2,500VDC increasing from zero to the specified value at a rate of 500V
		per second. Required voltage will be held on the specimen for 1 minute.
	0838	Begin initial Dielectric Withstanding Voltage
	0849	Dielectric Withstanding Voltage complete (Test Specimen 010 fail)
	0852	Retest Specimen 010
	0853	Test complete (Specimen 010 pass)
		7.1.4 Insulation Resistance: Test Specimens will be tested in accordance with
		specification ASTM D3032 Section 6. Test Specimens will be immersed in a water bath
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test
		specimens will be within 6 inches of the water solution. An initial resistance measurement
		between the conductor and the water solution will be taken to detect any nontypical values.
		Test Specimens will then undergo a 4-hour soak which will be maintained at 23°C ±5°C.
		Specimens will then be tested to voltage of 500VDC ±10%. Required voltage
		will be held on the specimen for 1 minute.
	0000	
	0902	Begin initial Insulation Resistance
	0913	Insulation Resistance complete, Begin 4 hour soak
	1313	4 hour soak complete
	1313	Begin Post Soak Dielectric Withstanding Voltage
	1324	Post Soak Dielectric Withstanding Voltage complete
	1326	Begin Post Soak Insulation Resistance
	1336	Post Soak Insulation Resistance complete

Test Operator	V annath L'ibarata
Test Operator	Kenneth Liberato

 $[*]Ambient\ environmental\ data\ controlled\ and\ maintained\ by\ Vertical\ Laboratories.\ Specific\ data\ can\ be\ provided\ upon\ customer\ request.$

QMS708-F3 v4.1 Page 16 of 33



Engineering Notes

Date	Time	Notes
2/16/2021		8.1.1 Multi-Day Heat Aging/7.1.5 Bend Test: Test Specimens will be tested in accordance with
		SAE AS4373 Revision E, Section 4.8.7 and SAE AS4373E, Method 712, Section 4.7.12
		Test Specimens will be bent onto a 1/4-inch horizontal mandrel coated in PTFE
		from the central portion of the specimen. Each end of the test specimens will be loaded
		with a 1 pound $\pm 3\%$ weight. Test Specimens will be subjected to a temperature of 300°C for
		1000 hours then cooled to 20-25°C within 1 hour before DWV and I/R measurements can be
		taken. Specimens will then go back into heat aging for another 1000 hours and will have DWV
		and I/R measurements taken once specimens have cooled down.
	1400	Begin Heat Aging Sequence
	1400	Begin Heat Aging Sequence
3/30/2021	0745	Heat Aging complete
3/30/2021	0743	Treat Aging complete
		7.1.3 Dielectric Withstanding Voltage: Test Specimens will be tested in accordance with
		specification ASTM D3032 Section 8. Test Specimens will be immersed in a water bath
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test
		specimens will be within 2 inches of the water solution. An initial resistance measurement
		between the conductor and the water solution at 500Vdc ±10% will be taken to detect
		any flaws. Test Specimens will then undergo a 4 hour soak and then be tested to
		voltage of atleast 2,500VDC increasing from zero to the specified value at a rate of 500V
		per second. Required voltage will be held on the specimen for 1 minute.
	0010	Danis Bart 1000kg DWW
	0918	Begin Post 1000hr DWV
	0929	Dielectric Withstanding Voltage complete
		7.1.4 Insulation Resistance: Test Specimens will be tested in accordance with
		specification ASTM D3032 Section 6. Test Specimens will be immersed in a water bath
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test
		specimens will be within 6 inches of the water solution. An initial resistance measurement
		between the conductor and the water solution will be taken to detect any nontypical values.
		Test Specimens will then undergo a 4 hour soak which will be maintained at 23°C ±5°C
		Specimens will then be tested to voltage of 500VDC ±10%. Required voltage

Test Operator	Kenneth Liberato
F	

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QMS708-F3 v4.1 Page 17 of 33



Engineering Notes

Date	Time	Notes
3/30/2021		will be held on the specimen for 1 minute.
	0935	Begin Post 1000hr Insulation Resistance
	0945	Insulation Resistance complete, Begin 4 hour soak
	1345	4 hour soak complete
	1345	Begin Post Soak Dielectric Withstanding Voltage
	1356	Post Soak Dielectric Withstanding Voltage complete
	1357	Begin Post Soak Insulation Resistance
	1408	Post Soak Insulation Resistance complete
3/31/2021		8.1.1 Multi-Day Heat Aging/7.1.5 Bend Test: Test Specimens will be tested in accordance with
		SAE AS4373 Revision E, Section 4.8.7 and SAE AS4373E, Method 712, Section 4.7.12
		Test Specimens will be bent onto a 1/4 inch horizontal mandrel coated in PTFE from
		the central portion of the specimen. Each endof the test specimens will be loaded with
		a 1 pound ±3% weight. Test Specimens will be subjected to a temperature of 300°C for 1000
		hours then cooled to 20-25°C within 1 hour before DWV and I/R measurements can be taken.
	1450	Begin second Heat Aging Sequence
4/12/2021	1603	Heat Aging paused due to deviation
4/14/2021	0846	Begin retest DWV and I/R on original specimens along with control group for comparison
	1045	Testing complete
04/19/2021	1434	Continue Heat Aging sequence
5/19/2021	0615	Heat Aging complete

Test Operator	Kenneth Liberato
F	

 $[*]Ambient\ environmental\ data\ controlled\ and\ maintained\ by\ Vertical\ Laboratories.\ Specific\ data\ can\ be\ provided\ upon\ customer\ request.$

QMS708-F3 v4.1 Page 18 of 33



Engineering Notes

Date	Time	Notes							
5/19/2021		7.1.3 Dielectric Withstanding Voltage: Test Specimens will be tested in accordance with							
		specification ASTM D3032 Section 8. Test Specimens will be immersed in a water bath							
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test							
		specimens will be within 2 inches of the water solution. An initial resistance measurement							
		between the conductor and the water solution at $500 \text{Vdc} \pm 10\%$ will be taken to detect							
		any flaws. Test Specimens will then undergo a 4 hour soak and then be tested to							
		voltage of atleast 2,500VDC increasing from zero to the specified value at a rate of 500V							
		per second. Required voltage will be held on the specimen for 1 minute.							
	0820	Begin 4 hour soak							
	1221	4 hour soak complete							
	1233	Begin Post Soak Dielectric Withstanding Voltage							
	1252	Post Soak Dielectric Withstanding Voltage complete							
		7.1.4 Insulation Resistance: Test Specimens will be tested in accordance with							
		specification ASTM D3032 Section 6. Test Specimens will be immersed in a water bath							
		containing 5% sodium chloride and 0.5 to .10% wetting agent. The ends of the test							
		specimens will be within 6 inches of the water solution. An initial resistance measurement							
		between the conductor and the water solution will be taken to detect any nontypical values.							
		Test Specimens will then undergo a 4-hour soak which will be maintained at 23°C ±5°C.							
		Specimens will then be tested to voltage of 500VDC ±10%. Required voltage							
		will be held on the specimen for 1 minute.							
	1255	Begin Post Soak Insulation Resistance							
	1326	Post Soak Insulation Resistance complete							
	1320	Tool Boak Insulation resistance complete							
5/21/2021	0743	Re-Test Specimen 001 for Insulation Resistance per customer request							
	0744	Insulation Resistance complete							
		All Test Sequences Complete							

Test Operator	V annath L'ibarata
Test Operator	Kenneth Liberato

 $[*]Ambient\ environmental\ data\ controlled\ and\ maintained\ by\ Vertical\ Laboratories.\ Specific\ data\ can\ be\ provided\ upon\ customer\ request.$

QMS708-F3 v4.1 Page 19 of 33



Test Sample Conditions

Pre-test sample conditions
Test Samples were received in good condition. No damage or irregularities noted.
Post-test sample conditions
No unexpected damage or irregularities noted.

QMS708-F3 v4.1 Page 20 of 33



Test Results

	Insulation Resistance: Initial									
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes			
	500VDC	1 / Ground	60.0s	>10G	X		-			
	500VDC	2 / Ground	60.0s	>10G	X		-			
	500VDC	3 / Ground	60.0s	>10G	X		-			
	500VDC	4 / Ground	60.0s	>10G	X		-			
Group 1	500VDC	5 / Ground	60.0s	>10G	X		-			
Group 1	500VDC	6 / Ground	60.0s	>10G	X		-			
	500VDC	7 / Ground	60.0s	>10G	X		-			
	500VDC	8 / Ground	60.0s	>10G	X		-			
	500VDC	9 / Ground	60.0s	>10G	X		-			
	500VDC	10 / Ground	60.0s	>10G	X		-			

	Insulation Resistance: Post 1000hrs									
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes			
	500VDC	1 / Ground	60.0s	>10G	X		-			
	500VDC	2 / Ground	60.0s	>10G	X		-			
	500VDC	3 / Ground	60.0s	>10G	X		-			
	500VDC	4 / Ground	60.0s	>10G	X		-			
Crown 1	500VDC	5 / Ground	60.0s	>10G	X		-			
Group 1	500VDC	6 / Ground	60.0s	>10G	X		-			
	500VDC	7 / Ground	60.0s	>10G	X		-			
	500VDC	8 / Ground	60.0s	>10G	X		-			
	500VDC	9 / Ground	60.0s	>10G	X		-			
	500VDC	10 / Ground	60.0s	>10G	X		-			

QMS708-F3 v4.1 Page 21 of 33



Test Results

	DWV / Deviation: Units pulled during 2nd Heat Aging sequence									
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes			
	2.50kV	1 / Ground	60.0s	0.0uA	X		-			
	2.50kV	2 / Ground	60.0s	0.0uA	X		-			
	2.50kV	3 / Ground	60.0s	0.0uA	X		-			
	2.50kV	4 / Ground	60.0s	0.0uA	X		-			
Croup 1	2.50kV	5 / Ground	60.0s	0.0uA	X		-			
Group 1	2.50kV	6 / Ground	60.0s	0.0uA	X		-			
	2.50kV	7 / Ground	60.0s	0.0uA	X		-			
	2.50kV	8 / Ground	60.0s	0.0uA	X		-			
	2.50kV	9 / Ground	60.0s	0.0uA	X		-			
	2.50kV	10 / Ground	60.0s	0.0uA	X		-			

	Insulation Resistance / Deviation: Units pulled during 2nd Heat Aging sequence									
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes			
	500VDC	1 / Ground	60.0s	>10G	X		-			
	500VDC	2 / Ground	60.0s	>10G	X		-			
	500VDC	3 / Ground	60.0s	>10G	X		-			
	500VDC	4 / Ground	60.0s	>10G	X		-			
Crown 1	500VDC	5 / Ground	60.0s	>10G	X		-			
Group 1	500VDC	6 / Ground	60.0s	>10G	X		-			
	500VDC	7 / Ground	60.0s	>10G	X		-			
	500VDC	8 / Ground	60.0s	>10G	X		-			
	500VDC	9 / Ground	60.0s	>10G	X		-			
	500VDC	10 / Ground	60.0s	>10G	X		-			

QMS708-F3 v4.1 Page 22 of 33



Test Results

	DWV / Post 2nd 1000hr Heat Aging									
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes			
	2.50kV	1 / Ground	60.0s	0.0uA	X		-			
	2.50kV	2 / Ground	60.0s	0.0uA	X		-			
	2.50kV	3 / Ground	60.0s	0.0uA	X		-			
	2.50kV	4 / Ground	60.0s	0.0uA	X		-			
Cmoun 1	2.50kV	5 / Ground	60.0s	0.0uA	X		-			
Group 1	2.50kV	6 / Ground	60.0s	0.0uA	X		-			
	2.50kV	7 / Ground	60.0s	0.0uA	X		-			
	2.50kV	8 / Ground	60.0s	0.0uA	X		-			
	2.50kV	9 / Ground	60.0s	0.0uA	X		-			
	2.50kV	10 / Ground	60.0s	0.0uA	X		-			

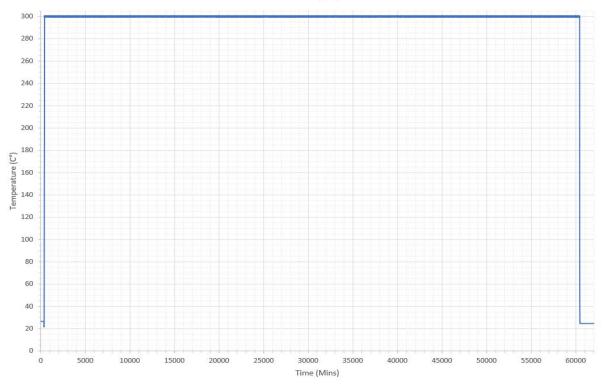
Insulation Resistance: Post 2nd 1000hr Heat Aging							
Test Group	Test Level	Active Pin / Ground	Duration	Value	Pass	Fail	Notes
	500VDC	1 / Ground	60.0s	>50GΩ	X		-
	500VDC	2 / Ground	60.0s	>50GΩ	X		-
	500VDC	3 / Ground	60.0s	>50GΩ	X		-
	500VDC	4 / Ground	60.0s	>50GΩ	X		-
Crown 1	500VDC	5 / Ground	60.0s	>50GΩ	X		-
Group 1	500VDC	6 / Ground	60.0s	>50GΩ	X		-
	500VDC	7 / Ground	60.0s	>50GΩ	X		-
	500VDC	8 / Ground	60.0s	>50GΩ	X		-
	500VDC	9 / Ground	60.0s	>50GΩ	X		-
	500VDC	10 / Ground	60.0s	>50GΩ	X		-

QMS708-F3 v4.1 Page 23 of 33



Test Plots





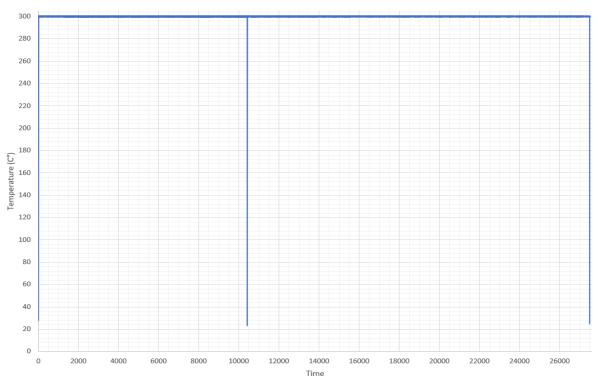
Description	1st Cycle of 1000 hour heat aging
Test Name	Heat Aging
Part Name	ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001 - 010

QMS708-F3 v4.1 Page 24 of 33



Test Plots

ThermaRex Heat Aging 2000hrs



Description	2nd Cycle of 1000 hour heat aging
Test Name	Heat Aging
Part Name	ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001 - 010

QMS708-F3 v4.1 Page 25 of 33



Pre-Test Photos



Description	Samples being prepped for testing
Test Name ThermaRex Wire Testing at 300°C	
Part Name	20 AWG ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001-010

QMS708-F3 v4.1 Page 26 of 33



Pre-Test Photos



Description	Specimens being prepped for DWV & IR
Test Name	Dielectric Withstanding Voltage & Insulation Resistance
Part Name	20 AWG ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001-010

QMS708-F3 v4.1 Page 27 of 33



Pre-Test Photos

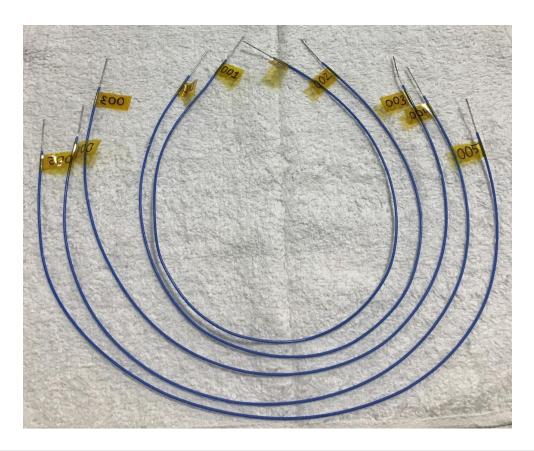


Description Specimens prepped for Heat Aging	
Test Name	Heat Aging
Part Name	20 AWG ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001-010

QMS708-F3 v4.1 Page 28 of 33



Post-Test Photos

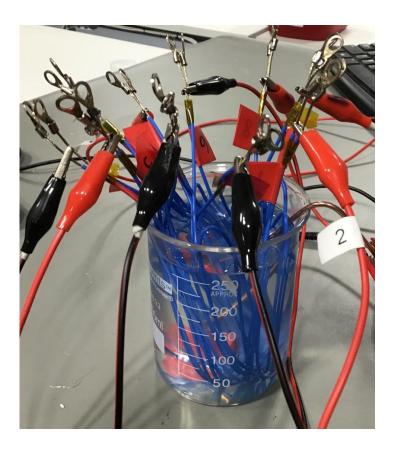


Description	Post DWV & I/R			
Test Name	Dielectric Withstanding Voltage & Insulation Resistance			
Part Name	20 AWG ThermaRex Wire			
Test Group	1			
Part No.	961-047-N-C-9			
Serial No.	001-010			

QMS708-F3 v4.1 Page 29 of 33



Post-Test Photos

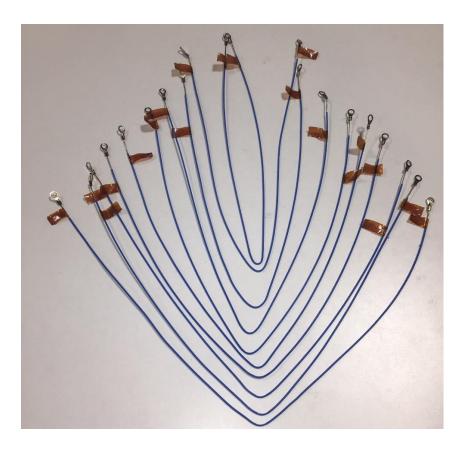


Description	Specimens under test		
Test Name	Dielectric Withstanding Voltage & Insulation Resistance		
Part Name	20 AWG ThermaRex Wire		
Test Group	1		
Part No.	961-047-N-C-9		
Serial No.	001-010		

QMS708-F3 v4.1 Page 30 of 33



Post-Test Photos



Description	Specimens post test
Test Name	Heat Aging
Part Name	20 AWG ThermaRex Wire
Test Group	1
Part No.	961-047-N-C-9
Serial No.	001-010

QMS708-F3 v4.1 Page 31 of 33



Quality Manager

Deviation

W /// LD	TICAL	Test Deviation Form				
VER	TICAL	Doc. No.	21112DV1KLV1	Version	1	
LABOR	AIORIES	Test Type	Dielectric W	ithstanding Voltage		
Test Name	QTP-1017					
Part Name	ThermaRex Wire					
Part No.		961-047-N-C-9				
Serial No.	001-010					
		Test Requirem	ents			
Specification	ASTM D3032	ASTM D3032				
1. - 10.10.00.00.00.00.00						
Method / Procedure	Section 8					
		est Deviation Des				
Test performed incorre	ectly due to software		es went through previou	isly programmed IR	profile	
	ectly due to software	input error. Sample stead of desired D	es went through previou WV test.	isly programmed IR	profile	
Test Operator	ectly due to software in	input error. Sample istead of desired D	es went through previou		profile	
Test performed incorre Test Operator Reported To	ectly due to software ir Kenneth Liberate	input error. Sample istead of desired D	es went through previou WV test. Deviation Date Date	4/12/2021	profile	
Test Operator Reported To Test Specimens were pr	Kenneth Liberate Micah Summers ulled from chamber a	input error. Sample stead of desired D Resolution and the Heat Aging erformed on the ori croups passed DWV specified.	Deviation Date Date Sequence was put on he ginal the original specin	4/12/2021 4/12/2021 old. Dielectric Withsmens along with a co	tandin	
Test Operator Reported To Test Specimens were pu Voltage and Insulation group that was made for	Kenneth Liberate Micah Summers ulled from chamber a	input error. Sample istead of desired Distead of desired Distead of desired Distead on the desired DWV specified. Approval	Deviation Date Date Date Sequence was put on he ginal the original specing and I/R. Customer app	4/12/2021 4/12/2021 old. Dielectric Withsmens along with a co	tandin	
Test Operator Reported To Test Specimens were provoltage and Insulation	Kenneth Liberate Micah Summers ulled from chamber a	input error. Sample istead of desired Distead of desired Distead of desired Distead on the desired DWV specified. Approval	Deviation Date Date Sequence was put on he ginal the original specin	4/12/2021 4/12/2021 old. Dielectric Withsmens along with a co	tandii	

QMS708-F9 v1.0 Page 32 of 33

Date

5/17/2021



End of Report	

QMS708-F3 v4.1 Page 33 of 33