



Project No.:	PRJ-22-000902821	Request ID.:	BLTE-2024-005
Part No:	2445483-1 & 2445483-2	Tested date and lab	07-11-2023 till 07-12-2023
Description:	AMPACT BAT - SMALL	Environmental condition:	23 ± 5°C @ 45 to 70 %RH
Customer:	-	Date of report:	10-Dec-2023
Requested by:	Arjun K A	Specification:	AMP 109-13009 & EIA 364-26C
		Reason for testing:	Product Validation

Scope: This report covers the results from the environmental performance of the AMPACT BAT Connector P/N 2445483-1 with 4/0 AAC – 4/0 Cu combination & 2445483-2 with 4/0 AAC – 1/0 Cu combination.

Content:		Page
1. Introduction		2
2. Summary of Testing		3
3. Test Methods		3
4. Representative Photographs of test set-up & specimens		4
5. Customer Drawing C-2445483		8

Summary of test results:

	As per test request	
Thermal shock test and salt spray test	Test group 1	✓ Passed
Thermal shock test and salt spray test	Test group 2	✓ Passed

✓ Passed / ✗ Not passed / □ Test not performed / ■ Test performed without conclusion

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Prepared by: Arjun K A Date: 11-12-2023	Reviewed by / Supervisor: Lijith Sathyanathan Date: 11-03-2024	Authorized by / Manager: Supreet Banaji Date: 14-03-2024
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PRELIMINARY

1. Introduction

1.1 Purpose

Testing was performed on the AMPACT BAT Connector P/N 2445483-1 & 2445483-2 to determine its compliance to AMP specification 109-13009 test procedure for thermal shock and EIA 364-26C: *Salt Spray Test Procedure for Electrical Connectors, Contacts and Sockets* using 4/0 AAC to 4/0 Cu combination and 4/0 AAC to 1/0 Cu conductor combination.

1.2 Product Description

The AMPACT BAT Connectors are used for making connections between Aluminum to Aluminum or Aluminum to Copper Conductors on bare overhead applications. This assembly provides a method of making tap connections on primary and secondary distribution lines. To accomplish the installation, the wedge is driven between two opposing conductors by tightening the hex bolt with a battery operated or pneumatic impact tool until the C-body is fully extended. This ensures the C-body develops high clamping force on the conductors and the wedge is locked in place to provide a secure and reliable connection.

1.3 Test Sequence

Test or Examination	Group #	
	Group 1	Group 2
Examination of Product	1, 3	1, 3
Thermal Shock Test	2	2
Salt Spray Test	3	3

Table 1 Test Group

Note: Number indicates the sequence in which tests were performed.

The Following Part Numbers and Quantities were used.

GROUP #	CONNECTOR P/N	QUANTITY	RUN CONDUCTOR	TAP CONDUCTOR
1	2445483-1	3	4/0 AAC	4/0 Cu
2	2445483-2	3	4/0 AAC	1/0 Cu

Table 2 Test sample list

1.4 Conclusion

The AMPACT BAT Connector complies with the environmental performance criteria of AMP Specification 109-13009; Test Procedure for Thermal Shock and EIA 364-26C: Salt Spray Test Procedure for Electrical Connectors, Contacts and Sockets using 4/0 AAC to 4/0 Cu combination and 4/0 AAC to 1/0 Cu combination. Results found to also to be generally in accordance with ASTM B117, Salt Spray and Salt Fog Testing.

2. Summary of Testing

2.1 Examination of Product

All samples were examined visually and functionally before and after tests and were in satisfactory condition.

2.2 Thermal Shock & Salt Spray (Group 1, 2)

There was no physical damage to the test samples after the completion of 5 thermal shocks between the limits of 0°C and 150°C and 500 hours of 5% Salt Spray.

3. Test Methods

3.1 Examination of Product

The sampling was performed by the requester and received at the test location Bhaskara Lab Energy BU, Bengaluru India on 06-Nov-2023.

They were examined visually and functionally.

3.2 Thermal Shock Test

AMPACT BAT Connectors were subjected to 5 cycle of temperature extremes. Each cycle consisted of 2.5 hours at 150°C followed by immediate transfer to ice water at 0°C for 0.25 hour followed by 0.5 hour at 150°C. The test specimens were then stabilized at room ambient temperature for 20.75 hour before starting the next cycle. The transition time between temperature extremes was less than 1 minute. The 0°C was achieved using circulating water in a chiller tank. Resistance measurements were taken initially before the start of the test and after the test.

3.3 Salt Spray Test

AMPACT BAT connectors previously tested with thermal shock test were further subjected to a 5% Salt Spray environment for 500 hours in accordance with EIA 364-26C: Salt Spray Test Procedure for Electrical Connectors, Contacts and Sockets and ASTM B117, Salt Spray and Salt Fog Testing after completing Thermal Shock Test. The temperature of the salt spray chamber was maintained at 35 +/-2°C, and the pH of the salt solution was between 6.5 and 7.2. The collection rate in the chamber satisfied the requirement of 0.5ml to 3.0 ml per hour. Resistance measurements were taken once every week (167 hours) till completion. The Samples were rinsed lightly and kept at room temperature for 24 hours before resistance measurements were taken.

4. Representative Photographs of test set-up & specimens

4.1 Thermal shock test setup

Representative photograph of Bolted Ampact Tap Connector (Small) P/N 2445483-1 with 4/0 AAC and 4/0 Cu and P/N 2445483-2 with 4/0 AAC and 1/0 Cu setup during thermal shock test.

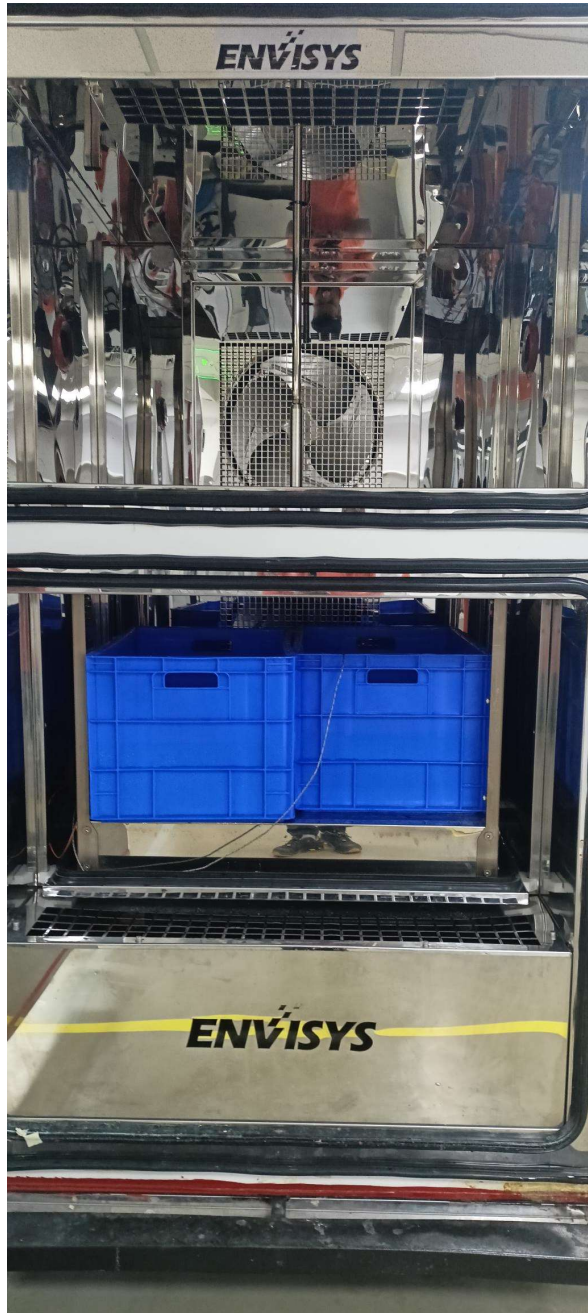


Fig. 1: Samples setup during thermal shock test

4.2 Salt spray test setup

Representative photograph of Bolted Ampact Tap Connector (Small) P/N 2445483-1 with 4/0 AAC and 4/0 Cu and P/N 2445483-2 with 4/0 AAC and 1/0 Cu setup during salt spray test.

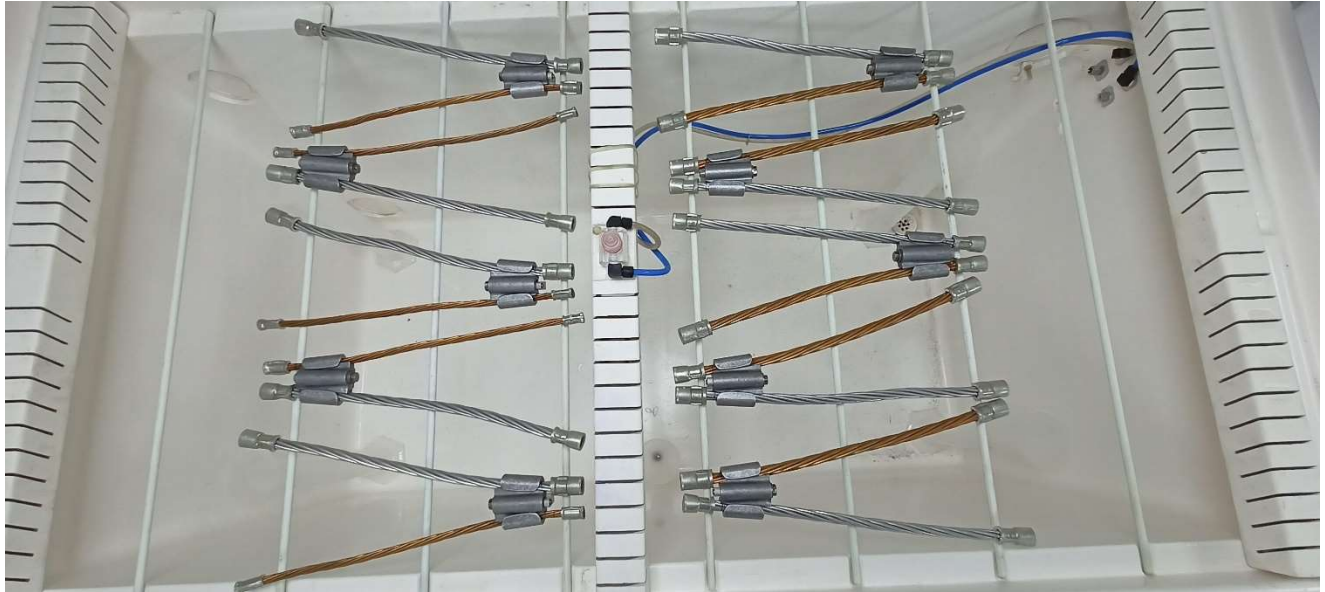


Fig 2: Samples setup during salt spray test

4.3 Group 1 – After Salt spray test

Representative photograph of Bolted Ampact Tap Connector (Small) P/N 2445483-1 with 4/0 AAC and 4/0 Cu after salt spray test.



Fig 3: Samples after the salt spray test



Fig 4: Samples after the salt spray test

4.4 Group 2 – After Salt spray test

Representative photograph of Bolted Ampact Tap Connector (Small) P/N 2445483-2 with 4/0 AAC and 1/0 Cu after salt spray test.



Fig 5: Samples after the salt spray test

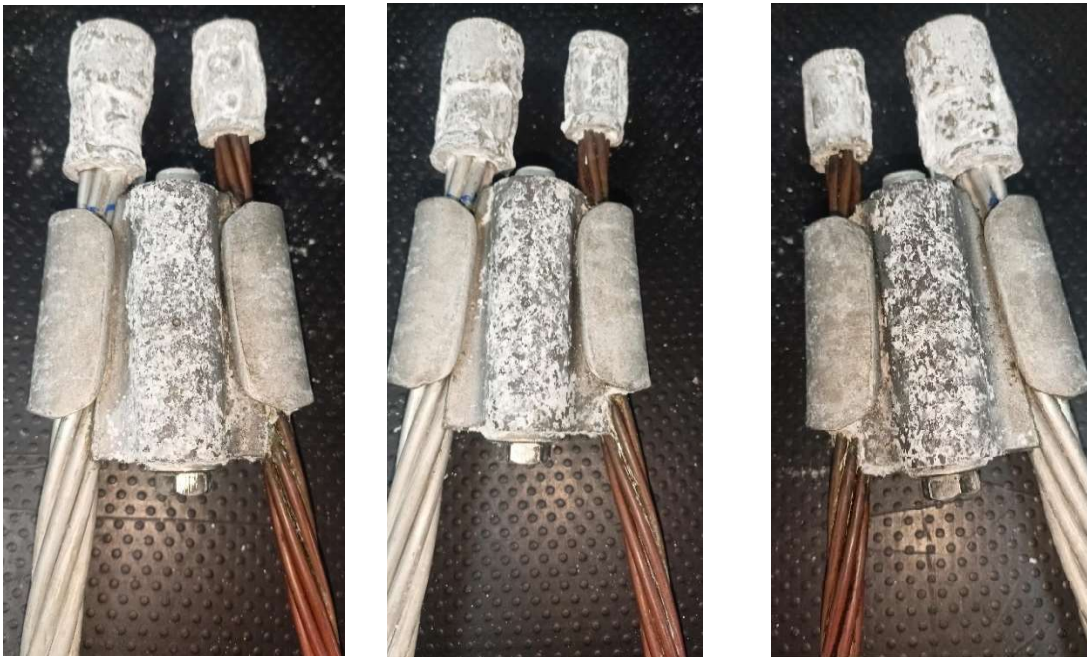


Fig 6: Samples after the salt spray test



Document History

Change Date	Rev.	Page	Main Changes (short description)	Name
14 Mar 2024	A	-	First release – Product Validation	Lijith Sathyanathan

End of test report