



ENGINEERING TEST REPORT

AMPACT BAT Connector
P/N 2376750-1, P/N 2376750-2

Report No.
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**Markham Energy/Utility
Product Test Laboratory**

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Engineering Test Report

AMPACT BAT CONNECTOR (P/N 2376750-1, 2376750--2)

1. Introduction

1.1 Purpose

Testing was performed on the AMPACT BAT connector P/N 2376750-1, P/N 2376750-2, 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 556.5 AAC to 500 Cu combination and 556.5 AAC to 350 Cu conductor with insert combination

1.2 Scope

This report covers the results from the environmental performance of the AMPACT BAT Connector P/N 2376750-1, P/N 2376750-2.

The testing was performed between 16th December 2020 – 25th January 2021.

1.3 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 556.5 AAC to 500 Cu combination and 556.5 AAC to 350 Cu conductor with insert combination. Results found to also to be generally in accordance with *ASTM B117, Salt Spray and Salt Fog Testing*.

1.4 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.

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1.5 Test Sequence & Specimens

The test specimens were supplied by Energy R&D/Product Development Engineering.

Table 1

Test or Examination	Group #	
	1	2
Examination of Product	1, 4	1, 4
Thermal Shock Test	2	2
Salt Spray Test	3	3

Note 1: Number indicates the sequence in which tests were performed.

The following part number and quantities were used:

Table 2

Group	Connector P/N	Quantity	Run Conductor	Tap Conductor
1	2376750-2	3	556.5 AAC	500 Cu
2	2376750-1	3	556.5 AAC	350 Cu

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2. Summary of Testing

2.1 Examination of Product

All Specimens were examined visually and functionally before and after tests and were considered to be in satisfactory condition.

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

There was no evidence of 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. All resistance measurements taken initially, during thermal shock and salt spray test, and after thermal shock and salt spray test met the specification requirement by not varying more than 250% from the initial measured value to the value taken at the end of both tests.

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3. Test Methods

3.1 Examination of Product

The specimens were supplied for testing by Energy R&D/Product Development Engineering at TE Connectivity.

They were examined visually and functionally.

3.2 Thermal Shock Test (Group 1, 2)

Assembled AMPACT BAT Connectors were subjected to 5 cycles 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 recorded after each cycle. The resistance measurements taken initially, during and after test has met the requirement by not varying more that 250% from the initial measured value to the final measured value.

3.3 Salt Spray Test (Group 1, 2)

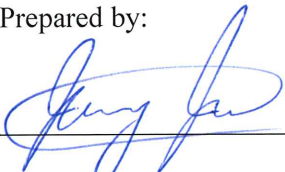
Assembled AMPACT BAT connectors were subjected to a 5% Salt Spray environment for 500 hours in accordance with EIA 364 - 26C; *Salt Spray Test Procedure for Electrical Connectors, Contacts and Sockets* and ASTM B117, *Salt Spray and Salt Fog Testing* after completing Thermal shock test. The temperature of the salt spray chamber was maintained at 35 +1/-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 0.5 ml to 3.0 ml per hour. Resistance measurements were taken once every week (every 167 hours) till completion. The samples were rinsed lightly and kept at room temperature for 24 hours before resistance measurements were taken. The resistance measurements taken initially, during and after test has met the requirement by not varying more that 250% from the initial measured value to the final measured value.

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4. Validation

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Fig. 1



Photograph of AMPACT BAT Connectors set-up with all specimens for Thermal Shock Test to AMP Specification 109-13009

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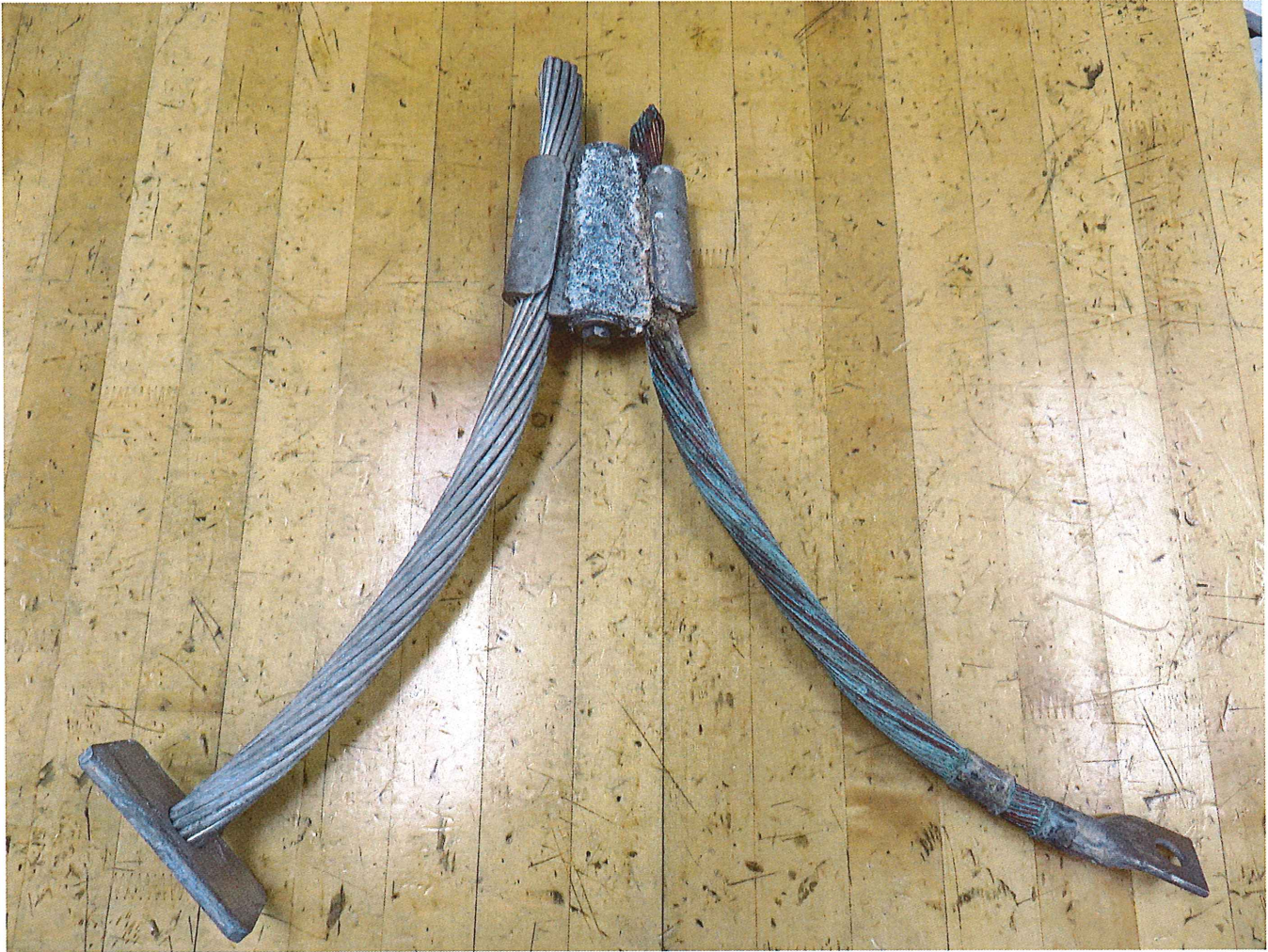
Fig.2



Representative photograph of AMPACT BAT Connector set-up during Salt Spray Test to EIA 364 – 26C

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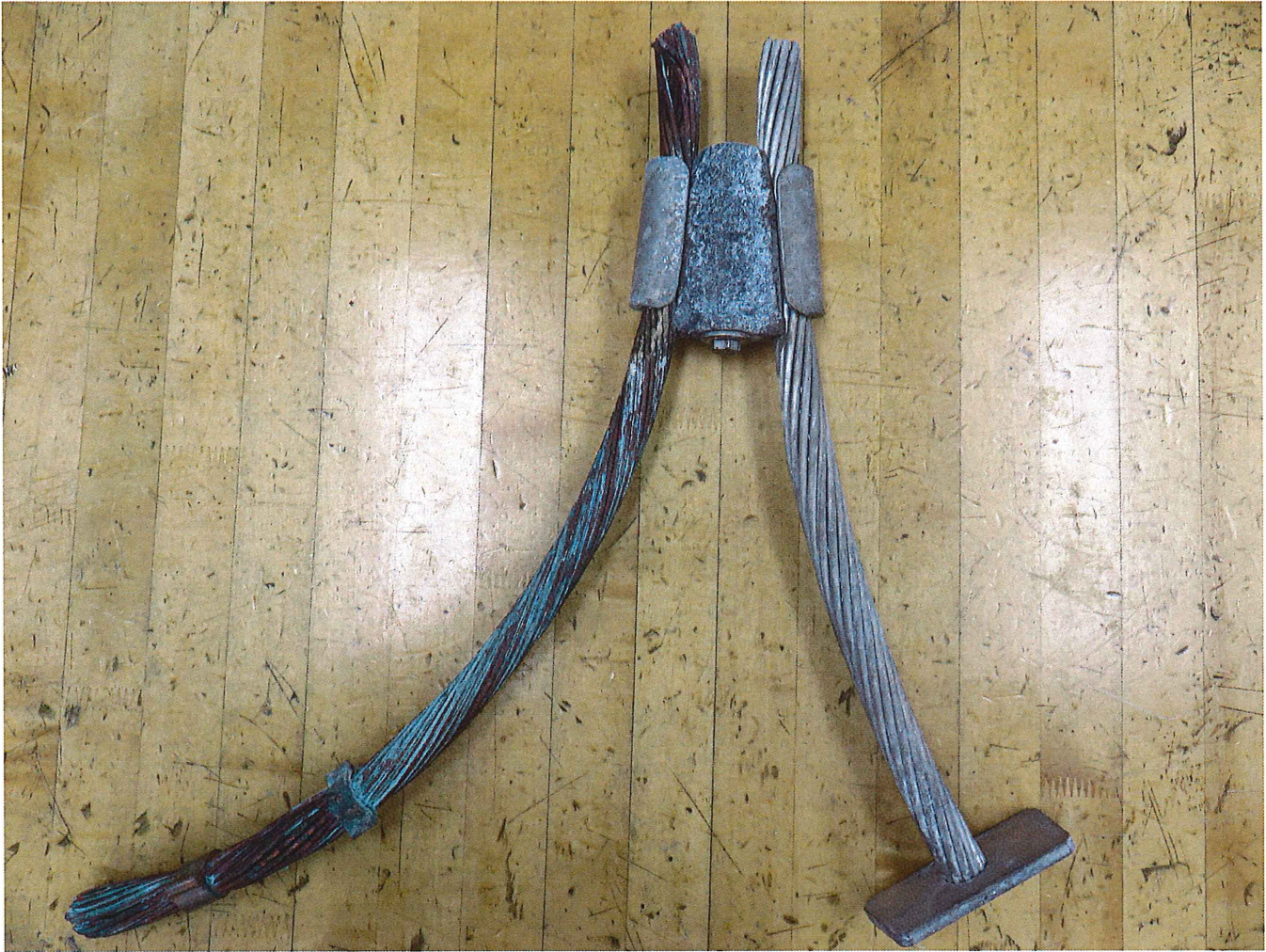
Fig.3



Representative photograph of AMPACT BAT Connector P/N 2376750-1 using 556.5 AAC and 350 Cu conductors after Salt Spray Test to EIA 364 – 26C

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Fig.4



Representative photograph of AMPACT BAT Connector P/N 2376750-2 using 556.5 AAC and 500 Cu conductors after Salt Spray Test to EIA 364 – 26C

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