



ENGINEERING TEST REPORT

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

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

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ENGINEERING Test Report

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

1. Introduction

1.1 Purpose

Testing was performed on the AMPACT BAT Connector P/N 2376750-1 and P/N 1-2376750-2 to determine its' compliance to the ANSI C119 .4 – 2016, *Connectors for Use Between Aluminum to Aluminum and Aluminum to Copper Conductors Designed for Normal Operation at or Below 93°C and Copper to Copper Conductors Designed for Normal Operation at or Below 100°C*.

Testing was performed on AMPACT BAT Connector P/N 2376750-1 and P/N 1-2376750-2 with conductor mentioned in table 2 to determine its compliance to Class 3 (minimum tension), Pull Out test in accordance with ANSI C119.4 – 2016.

1.2 Scope

This report covers the mechanical performance of AMPACT BAT Connector P/N 2376750-1 and P/N 1-2376750-2

The testing was performed between 25th March, 2021 – 26th March, 2021.

1.3 Conclusion

The performance of the AMPACT BAT Connector P/N 2376750-1 and P/N 1-2376750-2 complied with the test requirements of ANSI C119.4-2016 Class 3 Mechanical Tensile Test.

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 (expanded – your choice). 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	3
Examination of Product	1,3	1,3	1,3
Mechanical Pull-Out Test	2	2	2

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

The following part number and quantities were used:

Table 2

Group	Part Number	Conductor	Quantity
1	2376750-1	556.5 AAC – 556.5 AAC	3
2	2376750-1	556.5 ACSR – 556.5 ACSR	3
3	1-2376750-2	336.4 AAC - #6 AAC	3

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2.0 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 Mechanical Pull-Out Test, Class 3 (Group 1,2,3)

The samples that were submitted to the test had to be able to withstand a minimum tensile load which was equal to 5% of the tensile rating of the conductors.

All specimens passed the test. Refer to Table 3 below for complete test results.

Table 3

S/N	Conductor	Pass/Fail	Mode of Failure	Required Minimum RTS (lbf)
1	556.5 AAC – 556.5 AAC	Pass	Cables slipped from connector	487.5
2				
3				
1	556.5 ACSR – 556.5 ACSR	Pass	Cables slipped from connector	1130
2				
3				
1	336.4 AAC - #6 AAC	Pass	#6 AAC cable broke off from connector	50
2				
3				

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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 Tyco Electronics Canada ULC.
They were examined visually and functionally.

3.2 Mechanical Tensile Test (Group 1,2,3)

Nine (9) AMPACT BAT Connectors with conductors mentioned in table 2 were tested using Instron Tensile Machine (Model 4206-5900R). The machine was calibrated and an axial upward force was applied until failure. The rate of the upward force was based on a cross-head speed of 0.25"/minute/foot of the total length of the assembly for all the samples. At the end, the machine was returned to initial conditions, the connectors were removed to identify the mode of failure.

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4. Validation

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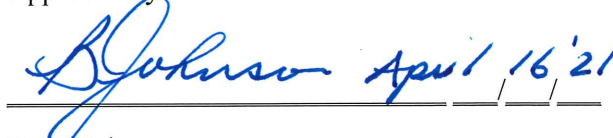
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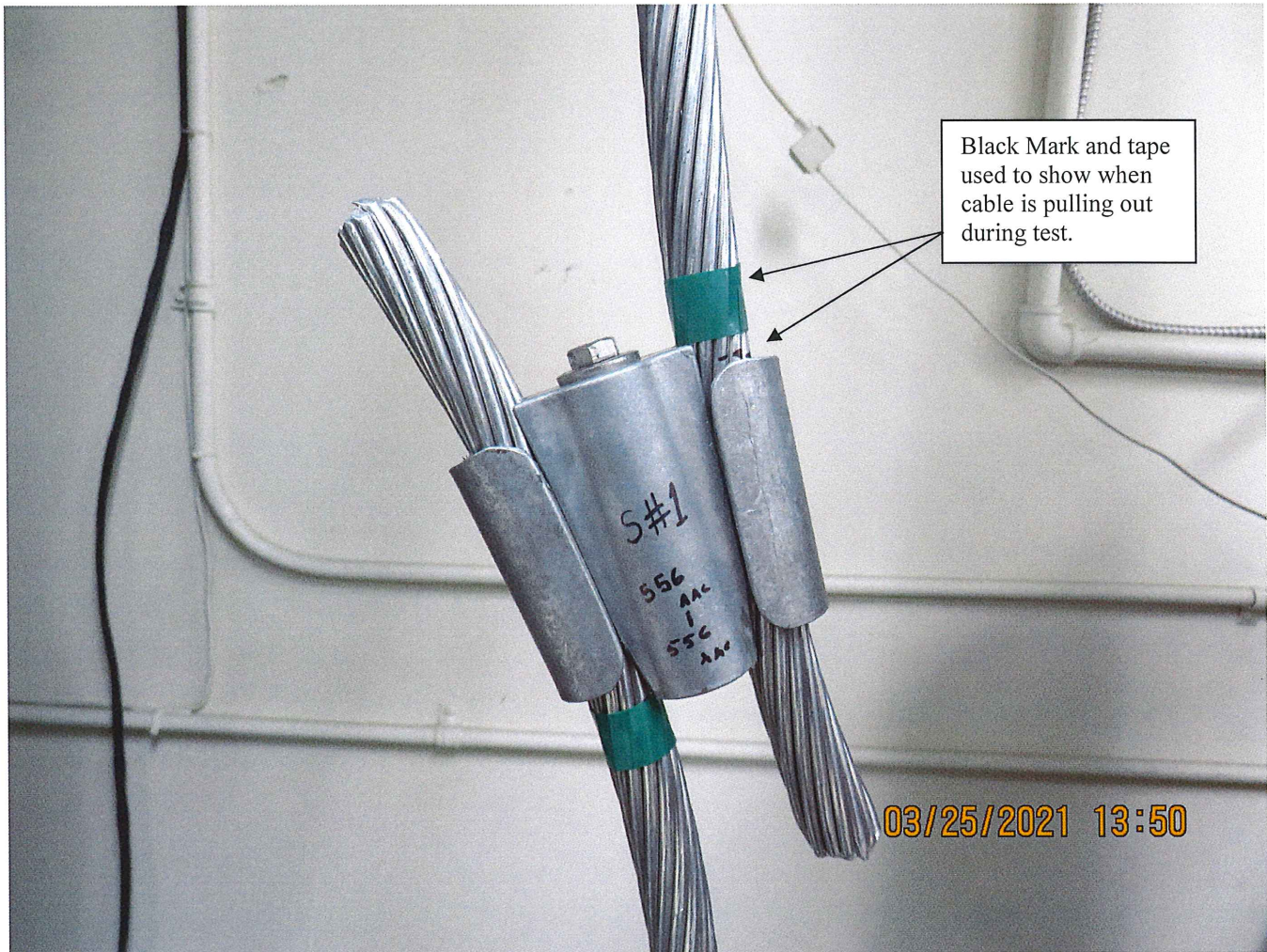
Fig. 1



Representative set-up photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 AAC conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 2



Representative set-up photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 AAC conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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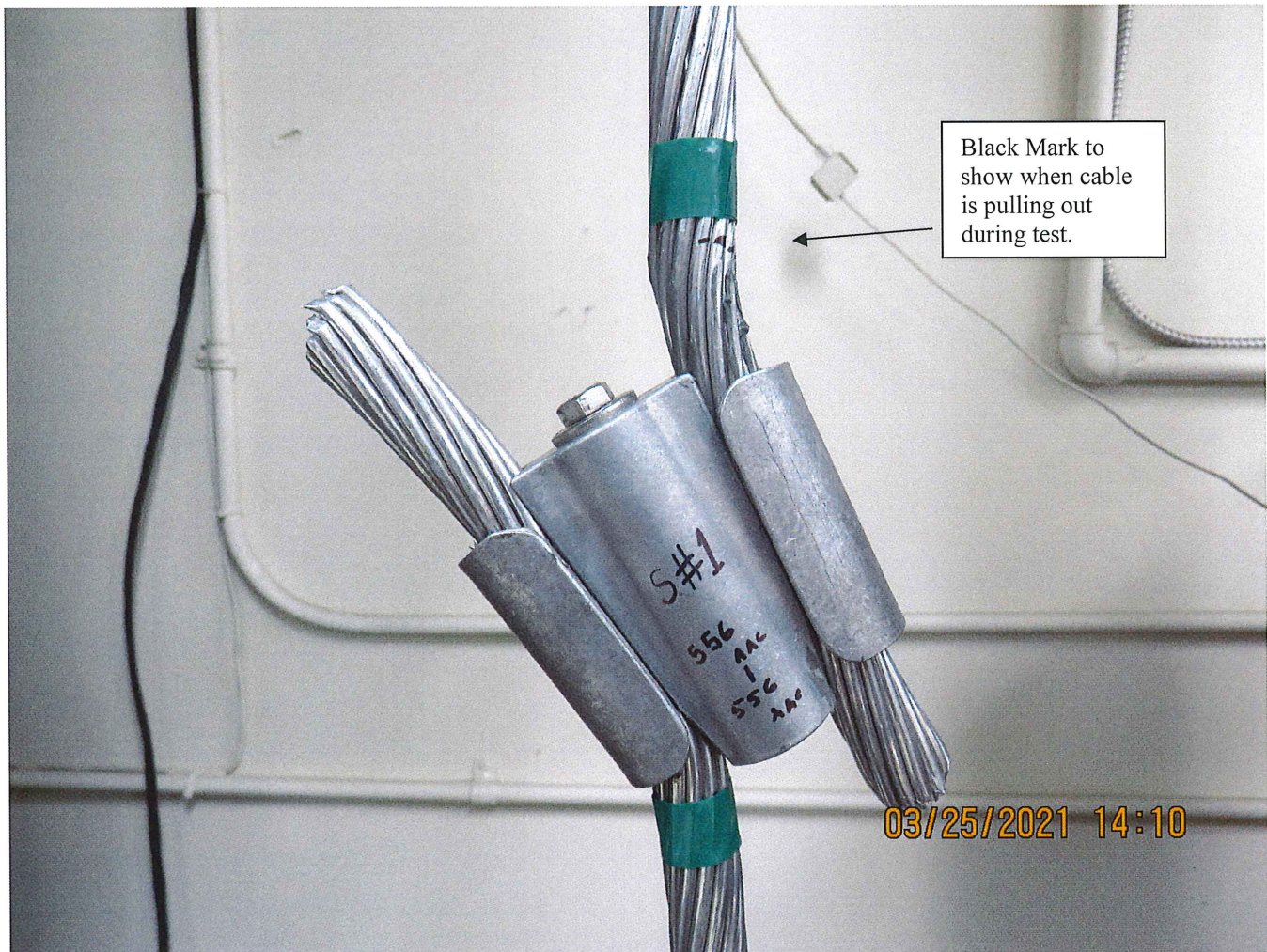
Fig. 3



Representative photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 AAC conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 4



Representative photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 AAC conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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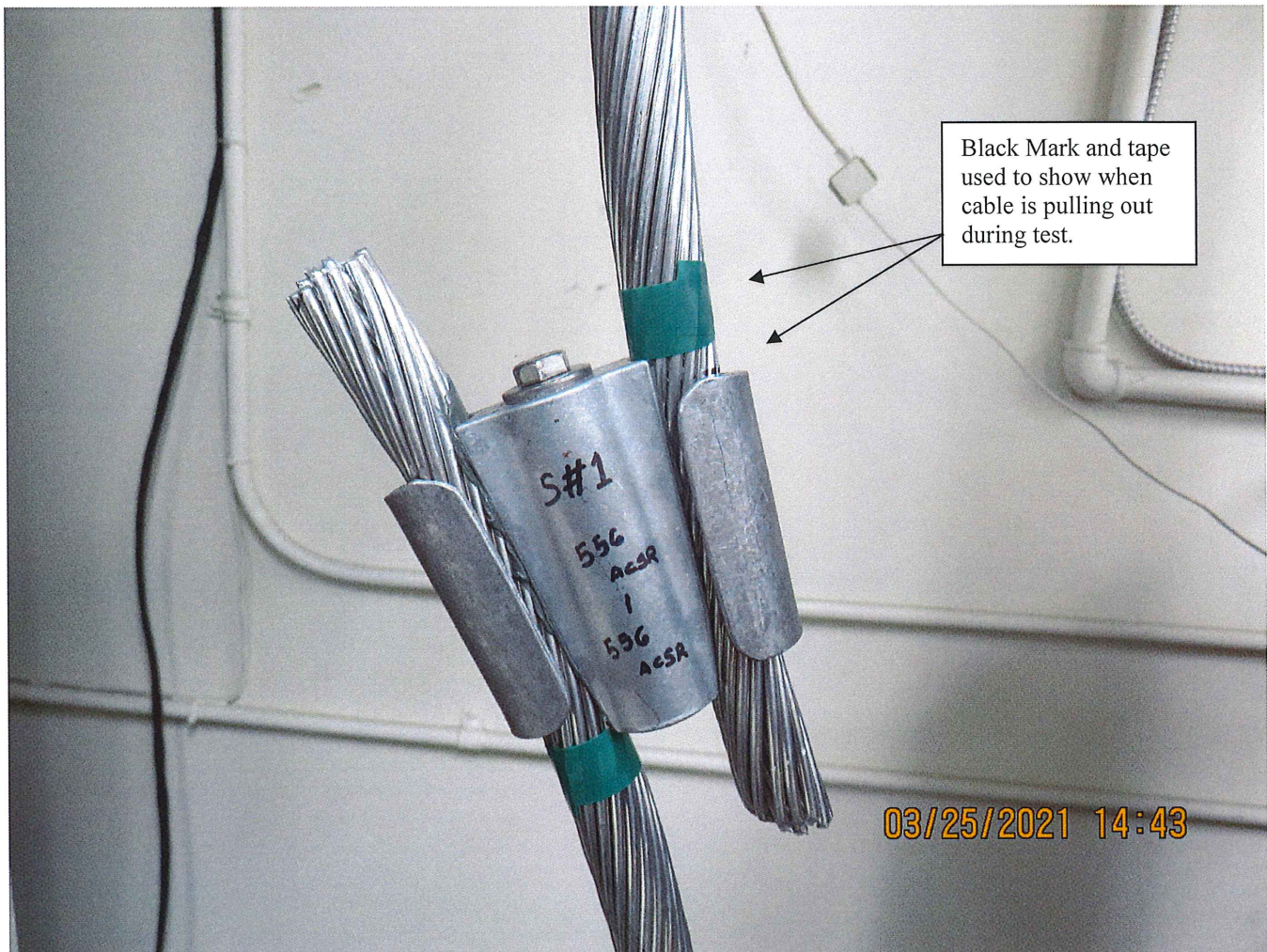
Fig. 5



Representative set-up photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 ACSR conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 6



Representative set-up photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 ACSR conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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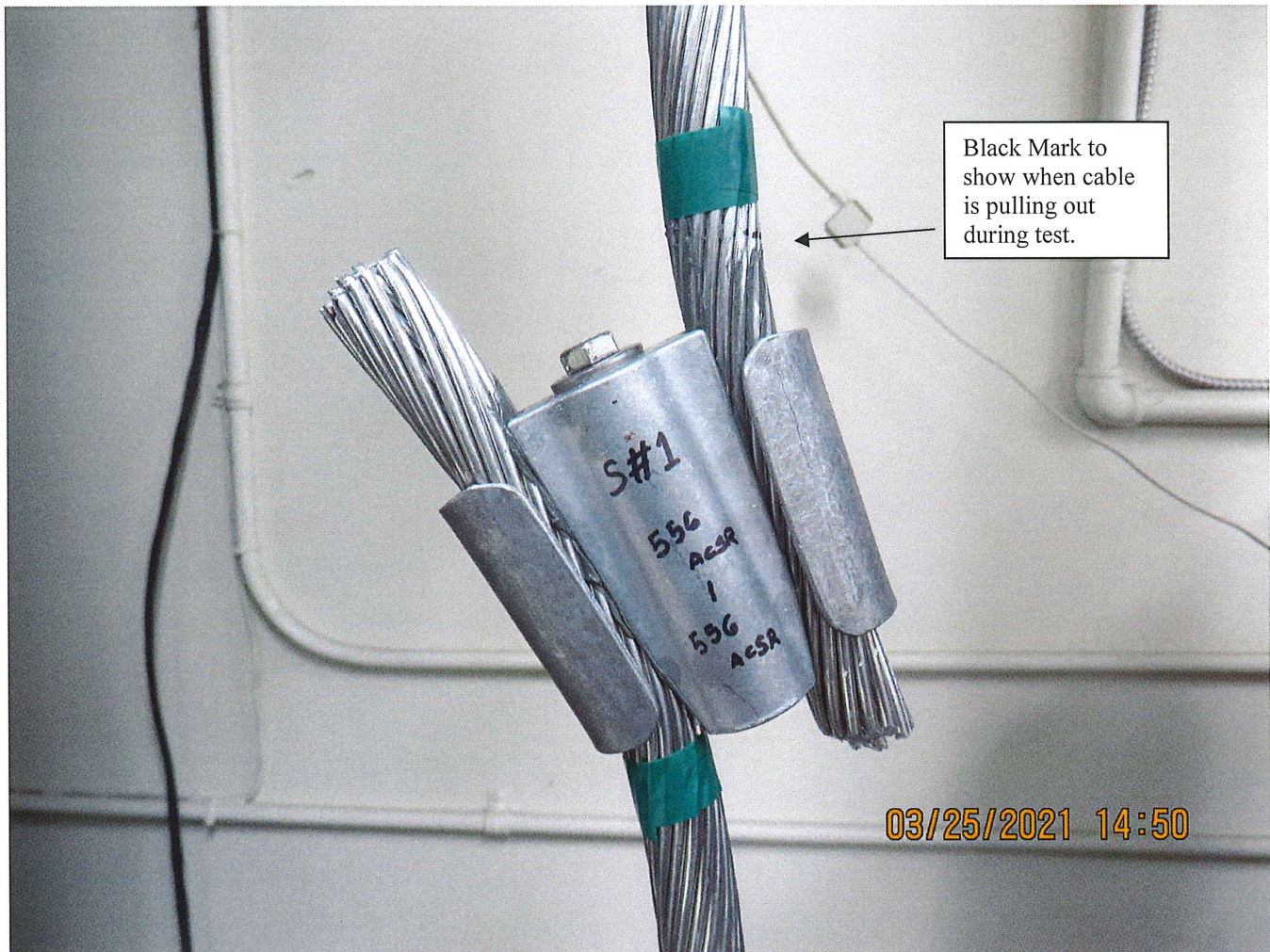
Fig. 7



Representative photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 ACSR conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 8



Representative photograph of AMPACT BAT Connector P/N 2376750-1 with 556.5 ACSR conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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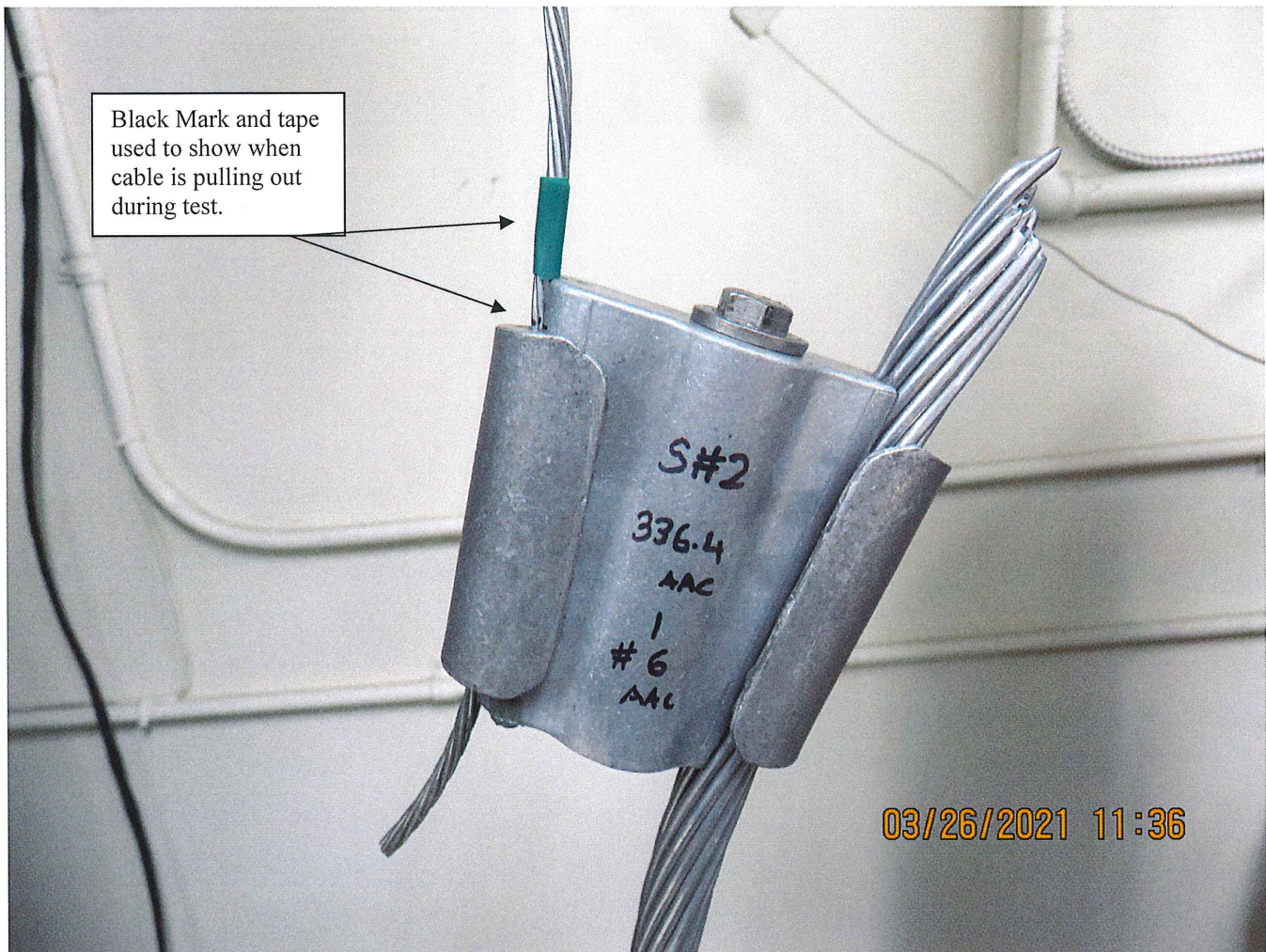
Fig. 9



Representative set-up photograph of AMPACT BAT Connector P/N 1-2376750-2 with 336.4 AAC and #6 AAC conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 10



Representative set-up photograph of AMPACT BAT Connector P/N 1-2376750-2 with 336.4 AAC and #6 AAC conductors set-up for Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 11



Representative photograph of AMPACT BAT Connector P/N 1-2376750-2 with 336.4 AAC and #6 AAC conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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Fig. 12



Representative photograph of AMPACT BAT Connector P/N 1-2376750-2 with 336.4 AAC and #6 AAC conductors after Mechanical Pull-Out, Class 3 Test to ANSI C119.4:2016

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