

# Declaration of Conformity

In Accordance with ANSI/ISEA 125-2014 and ANSI/ASSP Z359.7-2019



Alexander Andrew, Inc. 1306 S. Alameda St Compton, CA 90221 (800) 719-4619

Declaration #

B0817124e

Declaration Date

8.11.17

Tested Item #

7047QCM

Arc Flash Standard Non-Belted FBH Medium

**Additional Items Conforming Under this Declaration:**

7047QCS 7047QCL 7047QCXL 7047CQC 7047CQCXL 7047CQC2X 7047CQC3X  
7047HQCXS 7047HQCS 7047HQCM 7047HQCL 7047HQCXL 7047HQC2X  
7047QC2X 7047QC3X

Alexander Andrew, Inc. declares that the product(s) listed above is in conformity with the requirements of the following product standard(s):

**ANSI Z359.11-2014 and ASTM F887-16**

**Conformity Assessment Method in accordance with ANSI/ISEA 125-2014**

Level 1

Level 2

X

Level 3

**Level 1:** FallTech Lab  
Outside the Scope of  
ISO/IEC Standard 17025:2005

**Level 2:** FallTech Lab  
Within the Scope of  
ISO/IEC Standard 17025:2005

**Level 3:** Independent 3rd Party Lab  
accredited to  
ISO/IEC Standard 17025:2005

Supporting  
Documentation

PC-1200 K-419969-1707H01-R00

Authorized Signature

Name

Mark Sasaki

Title

Director of Engineering

Date

8.27.19



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Testing. Advising. Assuring.

August 25, 2017

FallTech Testing Laboratory  
1306 S. Alameda Street  
Compton, CA 90221

Attention: Jay Sponholz  
Quality Manager

Subject: **Attestation of Witnessing Testing**  
**Exova OCM Job # 371174-8**  
**FallTech P.O.: OPEN**  
**Report No.: PC-1200**  
**Base Part No. 7047QCM**  
**Description: Full Body Harness**

Dear Mr. Sponholz:

The purpose of this attestation is to attest to the fact that a representative of Exova OCM was on site at FallTech's facilities to confirm suitability of the equipment used, calibration status of the equipment and to witness testing performed by FallTech employees. Details of this visit are included below:

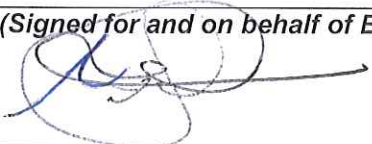
- Date of Testing:
  - August 8, 2017
- Exova OCM Test Witness:
  - 8/8/17 - Nolan Schatzle
- FallTech Test Operators:
  - Yesbet Sierra/Jay Sponholz
- Specification:

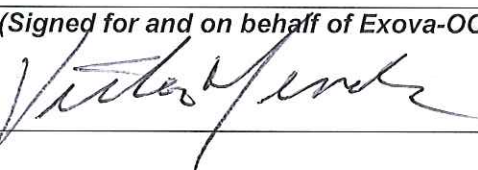
ANSI Z359.11-2014 Sections 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7

- Equipment Calibration Interval
  - 1 year, except weights which are 5 years

Attached to this attestation is the test report generated by FallTech Testing Laboratory. Exova OCM test witness certifies the report accurately presents the testing performed on the samples identified.

Test Report #	Date	Base Part #	Description	Sample ID's	Results
PC-1200	8/8/17	7047QCM	Full Body Harness	4018359 SBB SFB 4018360 DBB DFB 4018355 HBB HFB 4018358 IBB IFB	Pass

<b>Test Witness Signature:</b> Nolan Schatzle Technician Mechanical Laboratory	(Signed for and on behalf of Exova-OCM) 
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<b>Approval Signature:</b> Victor Mendez Production Manager	(Signed for and on behalf of Exova-OCM) 
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This attestation shall not be reproduced except in full, without the written approval of Exova-OCM. The laboratory has witnessed the testing the material / items supplied by the client as sampled by the client. The testing is not within Exova OCM's L.A.B scope of testing and was not performed at Exova OCM.



### FallTech Test Report

<b>Test Report No.</b>	PC-1200	<b>Rpt. Date</b>	8/11/2017	<b>Rpt. Rev</b>		<b>Rev Date</b>	
<b>Report Prepared For</b>	FallTech						
<b>Initiated By</b>	Dan Redden	<b>Test Specification(s)</b>	ANSI Z359.11-2014 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7				
<b>Part No.</b>	7047QCM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Full Body Harness						
<b>Test Request No.</b>	PC-1200	<b>Date Complete</b>	8/9/2017				
<b>Test Operator(s)</b>	Yesbet Sierra, Jay Sponholz						

### Material/Sample Identification

Sample ID	Description
4018359	Full Body Harness
SBB	Full Body Harness
SFB	Full Body Harness
4018360	Full Body Harness
DBB	Full Body Harness
DFB	Full Body Harness
4018355	Full Body Harness
HBB	Full Body Harness
HFB	Full Body Harness
4018358	Full Body Harness
IBB	Full Body Harness
IFB	Full Body Harness



## FallTech Test Report

<b>Test Report No.</b>	PC-1200	<b>Rpt. Date</b>	8/11/2017	<b>Rpt. Rev</b>		<b>Rev Date</b>	
<b>Report Prepared For</b>	FallTech						
<b>Initiated By</b>	Dan Redden	<b>Test Specification(s)</b>	ANSI Z359.11-2014 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7				
<b>Part No.</b>	7047QCM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Full Body Harness						
<b>Test Request No.</b>	PC-1200	<b>Date Complete</b>	8/9/2017				

### Test Summary

Test Specification	Test Criteria	Test Result	Pass/Fail	
ANSI Z359.11-2014 4.3.5	Static Strength (Dorsal D-ring)	3600 Lbf $\geq$ 1 Minute	3641.7 Lbf	Pass
	Static Strength (Dorsal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance (Buckle)	Shall Not Tear a Distance > 1" or Adjacent Eyelet	Did Not Tear Through	Pass
	Tearing	Straps Shall Not Show Any Signs of Tearing	Did Not Tear	Pass
ANSI Z359.11-2014 4.3.5	Static Strength (Dorsal D-ring)	3600 Lbf $\geq$ 1 Minute	3626.6 Lbf	Pass
	Static Strength (Dorsal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance (Buckle)	Shall Not Tear a Distance > 1" or Adjacent Eyelet	Did Not Tear Through	Pass
	Tearing	Straps Shall Not Show Any Signs of Tearing	Did Not Tear	Pass
ANSI Z359.11-2014 4.3.5	Static Strength (Dorsal D-ring)	3600 Lbf $\geq$ 1 Minute	3641.6 Lbf	Pass
	Static Strength (Dorsal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance (Buckle)	Shall Not Tear a Distance > 1" or Adjacent Eyelet	Did Not Tear Through	Pass
	Tearing	Straps Shall Not Show Any Signs of Tearing	Did Not Tear	Pass



## FallTech Test Report

<b>Test Report No.</b>	PC-1200	<b>Rpt. Date</b>	8/11/2017	<b>Rpt. Rev</b>		<b>Rev Date</b>	
<b>Report Prepared For</b>	FallTech						
<b>Initiated By</b>	Dan Redden	<b>Test Specification(s)</b>	ANSI Z359.11-2014 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7				
<b>Part No.</b>	7047QCM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Full Body Harness						
<b>Test Request No.</b>	PC-1200	<b>Date Complete</b>	8/9/2017				

### Test Summary (Continued)

Test Specification	Test Criteria	Test Result	Pass/Fail
ANSI Z359.11-2014 4.3.3	Dynamic Performance Dorsal D-ring (Feet First) Peak Impact Load $\geq 3600$ Lbf	5316.7 Lbf	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Angle at Rest $\leq 30^\circ$	0.9°	Pass
	Dynamic Performance Dorsal D-ring (Feet First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Stretch Shall Not Exceed 18"	9.6"	Pass
ANSI Z359.11-2014 4.3.3	Dynamic Performance Dorsal D-ring (Feet First) Peak Impact Load $\geq 3600$ Lbf	7572.2 Lbf	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Angle at Rest $\leq 30^\circ$	4.6°	Pass
	Dynamic Performance Dorsal D-ring (Feet First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Stretch Shall Not Exceed 18"	7.2"	Pass
ANSI Z359.11-2014 4.3.3	Dynamic Performance Dorsal D-ring (Feet First) Peak Impact Load $\geq 3600$ Lbf	5725.5 Lbf	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Angle at Rest $\leq 30^\circ$	5.0°	Pass
	Dynamic Performance Dorsal D-ring (Feet First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
	Dynamic Performance Dorsal D-ring (Feet First) Harness Stretch Shall Not Exceed 18"	4.8"	Pass



## FallTech Test Report

<b>Test Report No.</b>	PC-1200	<b>Rpt. Date</b>	8/11/2017	<b>Rpt. Rev</b>		<b>Rev Date</b>	
<b>Report Prepared For</b>	FallTech						
<b>Initiated By</b>	Dan Redden	<b>Test Specification(s)</b>	ANSI Z359.11-2014 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7				
<b>Part No.</b>	7047QCM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Full Body Harness						
<b>Test Request No.</b>	PC-1200	<b>Date Complete</b>	8/9/2017				

### Test Summary (Continued)

Test Specification	Test Criteria	Test Result	Pass/Fail
ANSI Z359.11-2014 4.3.4	Dynamic Performance Dorsal D-ring (Head First) Peak Impact Load $\geq 3,600$ Lbf	3433.7 Lbf	Pass
	Dynamic Performance Dorsal D-ring (Head First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Head First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First) Angle at Rest $\leq 30^\circ$	1.7°	Pass
	Dynamic Performance Dorsal D-ring (Head First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
ANSI Z359.11-2014 4.3.4	Dynamic Performance Dorsal D-ring (Head First) Peak Impact Load $\geq 3,600$ Lbf	3387.3 Lbf	*
	Dynamic Performance Dorsal D-ring (Head First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Head First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First) Angle at Rest $\leq 30^\circ$	0.9°	Pass
	Dynamic Performance Dorsal D-ring (Head First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
ANSI Z359.11-2014 4.3.4	Dynamic Performance Dorsal D-ring (Head First) Peak Impact Load $\geq 3,600$ Lbf	4024.7 Lbf	Pass
	Dynamic Performance Dorsal D-ring (Head First) Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Dorsal D-ring (Head First) Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First) Angle at Rest $\leq 30^\circ$	1.2°	Pass
	Dynamic Performance Dorsal D-ring (Head First) At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass



### FallTech Test Report

<b>Test Report No.</b>	PC-1200	<b>Rpt. Date</b>	8/11/2017	<b>Rpt. Rev</b>		<b>Rev Date</b>	
<b>Report Prepared For</b>	FallTech						
<b>Initiated By</b>	Dan Redden	<b>Test Specification(s)</b>	ANSI Z359.11-2014 4.3.5, 4.3.3, 4.3.4, 4.3.6, 4.3.7				
<b>Part No.</b>	7047QCM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Full Body Harness						
<b>Test Request No.</b>	PC-1200	<b>Date Complete</b>	8/9/2017				

#### Test Summary (Continued)

Test Specification	Test Criteria		Test Result	Pass/Fail
ANSI Z359.11-2014 4.3.6	Fall Arrest Indicator Test (Doral D-ring)	At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
ANSI Z359.11-2014 4.3.6	Fall Arrest Indicator Test (Doral D-ring)	At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
ANSI Z359.11-2014 4.3.6	Fall Arrest Indicator Test (Doral D-ring)	At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass
ANSI Z359.11-2014 4.3.7	Lanyard Parking Attachment Element	Disengagement Load ≤ 120 Lbf	Previously Tested and Passed under PC-0722	Pass



#### Conclusion

FallTech P/N 7047QCM meets the requirements of ANSI Z359.11-2014, and ASTM F-887-13

#### Test Exceptions

\* Harness has been dynamically tested and subjected to forces of 5,000 Lbs. or more. Energy absorbing properties inherent to the harness prevented residual force readings equal to or greater than the 3,600 Lbs. required by the standard.

#### Report Signatories and Approval

Lab Quality Manager		Date	8/11/2017
Witnessed by	Nolan Schatzle 	Date	9-5-17





TEST SPECIMEN:

## HARNESS, MODEL7047QCM

TEST STANDARD:

### **ELECTRIC ARC TESTS: ASTM F887-16**

OBSERVATION OF PERSONAL CLIMBING EQUIPMENT EXPOSED TO AN ELECTRIC ARC

TEST REPORT: K-419969-1707H01 -R00

Client

ArcWear

3018 Eastpoint Parkway

Louisville, KY 40223

Producer

FallTech

1306 S Alameda St

Compton, CA 90221

800-719-4619

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Sample received

2017-Jul-20

Test Date

2017-Jul-20

Report Date

2017-Aug-04

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Prepared by

Andrew Haines  
2017.08.04  
10:57:00 -04'00'

Approved by

Andrew Haines  
Supervising Technologist, HCL  
TD Technologies, Kinectrics  
Ph: 416-207-6000 x 6544

Kenneth Cheng, P. Eng, MBA  
Project Manager, DAM  
TD Technologies, Kinectrics  
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For questions on these test records, please contact [HCL@Kinectrics.com](mailto:HCL@Kinectrics.com)



## Revision History

Rev 00	Description Initial report creation.		
	Issue Date 2017-Aug-04	Prepared by Andrew Haines	Approved by Kenneth Cheng
Rev	Description		
	Issue Date	Prepared by	Verified by

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### QUALITY MANAGEMENT

The arc testing performed to the above mentioned Standard is accredited by the Standards Council of Canada (SCC) to conform to the requirements of CAN-P-4E (ISO/IEC 17025:2005). Accreditation by the Standards Council of Canada (SCC) is a mark of competence and reliability

- The test performed does not apply to electrical contact or electrical shock hazard.
- The test result is applicable only to the Test Specimens delivered to Kinectrics, other material, garment design or color may have a different response.
- It is the clients' responsibility to provide full and accurate information about the items supplied.
- No test is done to validate the fiber content or composition of the test item.
- Photographs of the test specimens and waveforms of the arc current, voltage and calorimeters with the circuit and arc exposure calibration records are available from Kinectrics and provided to the client separately from this report.



# 1 Test Standard:

## Electrical arc test according to ASTM F887-16, Section 22

Standard Specifications for Personal Climbing Equipment, Electric Arc Performance Evaluation.

### 1.1 Test Description

Harnesses- The test program requires the specimens be placed on mannequins as normally worn. A minimum of eight samples are tested, four samples with the front facing the arc and four samples with the back side toward the arc. The mannequin is positioned as to have the arc centered on the chest for front facing exposure and centered on the fall arrest attachment for the back facing exposure.

Harness accessories, loops etc. - Three specimens of each accessory or loop are required to be exposed to the arc. These may be attached webbing or other suitable means to allow the item to be held against the mannequin or panel at a distance of 30.5 cm (12 inches).

Energy Absorbing Lanyard - Three specimens of each lanyard are required to be exposed to the arc. These are placed over the shoulder and held against the mannequin or panel at a distance of 30.5 cm (12 inches). Several lanyards may be tested at one time on the same mannequin. Other effects than the thermal effects of an electric arc like noise, light emissions, pressure rise, hot oil, electric shock, the consequences of physical and mental shock or toxic influences are not covered by this standard.

The test standard requires that the finished personal climbing equipment be exposed to a level of 40 cal/cm<sup>2</sup> ±5 cal/cm<sup>2</sup>. In the case where the arc exposure is out of range of the standard, extra samples may be performed if available.

### 1.2 Acceptance criteria for products exposed to electrical arc:

The procedure outlined in ASTM 887 is followed to verify the electric arc performance of the personal climbing equipment. The product is considered as having passed the visual inspection criteria if the parameters defined in Table 1-1 are met. As proof of performance following the arc exposure, the exposed test specimens shall be subjected to a drop test per ANSI Z359.1 or Z349.13 as applicable. This shall be done as soon as practically possible. The samples have been returned to the client as directed to perform the drop test.

**Table 1-1: Visual inspection Criteria for electric arc performance of ASTM F887**

Parameter	Criterion
Arc Energy	Electrical arc exposure of 40 cal/cm <sup>2</sup> ± 5 cal/cm <sup>2</sup>
Ignition	No electric arc ignition
After-flame Time	Less than 5 seconds on load bearing materials and less than 15 seconds for accessories or non-load bearing components.
Melting/Dripping	No melting and dripping of molten materials to the floor of any load bearing material. Accessories are allowed to exhibit melting and dripping provided they

## 2 Test Condition:

The following test circuit parameters and conditions were used.

- Electric arc current: 8 kA rms  $\pm$  10%, 60 Hz
- Open circuit voltage: 2500 V rms  $\pm$  10%, 60 Hz
- Nominal Heat Flux Density: 2100 kW/m<sup>2</sup> (50 cal/cm<sup>2</sup>·s)
- Arc duration: 0.85 seconds  $\pm$  0.1 s to obtain required incident energy
- Electrode gap: 305 mm (12 inches)
- Distance from mannequin to electrode: 305 mm (12 inches)

## 3 Test Specimen:

The following description of the test sample was provided of obtained from the identification tag shown Figure 3-1.

Sample description: Harness  
Sample identification: Model 7047QCM  
Manufacturer: FallTech  
Material of webbing: Black Kevlar/Nomex  
Deviations and abnormalities: None.

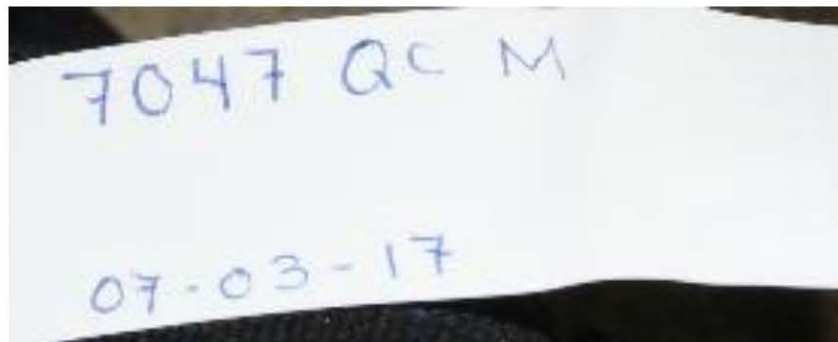


Figure 3-1: Sample Identification Tag

## 4 Test Results:

An arc exposure is performed on the samples as indicated in the test description, Section 1. The observations are performed by a qualified observer that has knowledge of behavior of materials in an arc exposure and in depth knowledge of arc testing specifications and requirements. Additional samples may be tested when the incident energy is out of range. If the conditions and evaluation of the sample meets the criteria in Table 1-1, the product has passed the electrical arc exposure and is candidate for the mechanical drop test to fully meet the arc performance requirements of ASTM F887. Photograph of the samples before and after the arc exposure is shown in Figures 6-1, 6-2 and 6-3.



Table 4-1: Summary of Test Results

Trial # 17-4245		
Mannequin	A – front exposure	B – back exposure
Item Serial #	N/A	N/A
Ei, cal/cm <sup>2</sup>	42.1	40.4
After-flame	0	0
Ignition	N	N
Melting and dripping	N	N
Acceptance Criteria	Pass	Pass
Trial # 17-4246		
Mannequin	A – front exposure	B – back exposure
Item Serial #	N/A	N/A
Ei, cal/cm <sup>2</sup>	41.9	39.8
After-flame	0	0
Ignition	N	N
Melting and dripping	N	N
Acceptance Criteria	Pass	Pass
Trial # 17-4247		
Mannequin	A – front exposure	B – back exposure
Item Serial #	N/A	N/A
Ei, cal/cm <sup>2</sup>	41.	39.8
After-flame	0	0
Ignition	N	N
Melting and dripping	N	N
Acceptance Criteria	Pass	Pass
Trial # 17-4248		
Mannequin	A – front exposure	B – back exposure
Item Serial #	N/A	N/A
Ei, cal/cm <sup>2</sup>	41.	41.5
After-flame	0	0
Ignition	N	N
Melting and dripping	N	N
Acceptance Criteria	Pass	Pass

**4.1 Observations:**

Charring and some embrittlement of the webbing.

**5 Interpretation of Results:**

Based on the test results in Table 4-1 and Observations in 4.1, the Model 7047QCM Harness has met the reporting requirements criteria of ASTM F887-16 section 22. In order to satisfy the Electric Arc Performance requirements, the test specimens must pass a drop test per ANSI Z359.1 or Z349.13 as soon as practical. This is to be arranged by the client or producer.

## 6 Photographs

The following photographs are representative of test results observed.



Figure 6-1: Sample before arc exposure

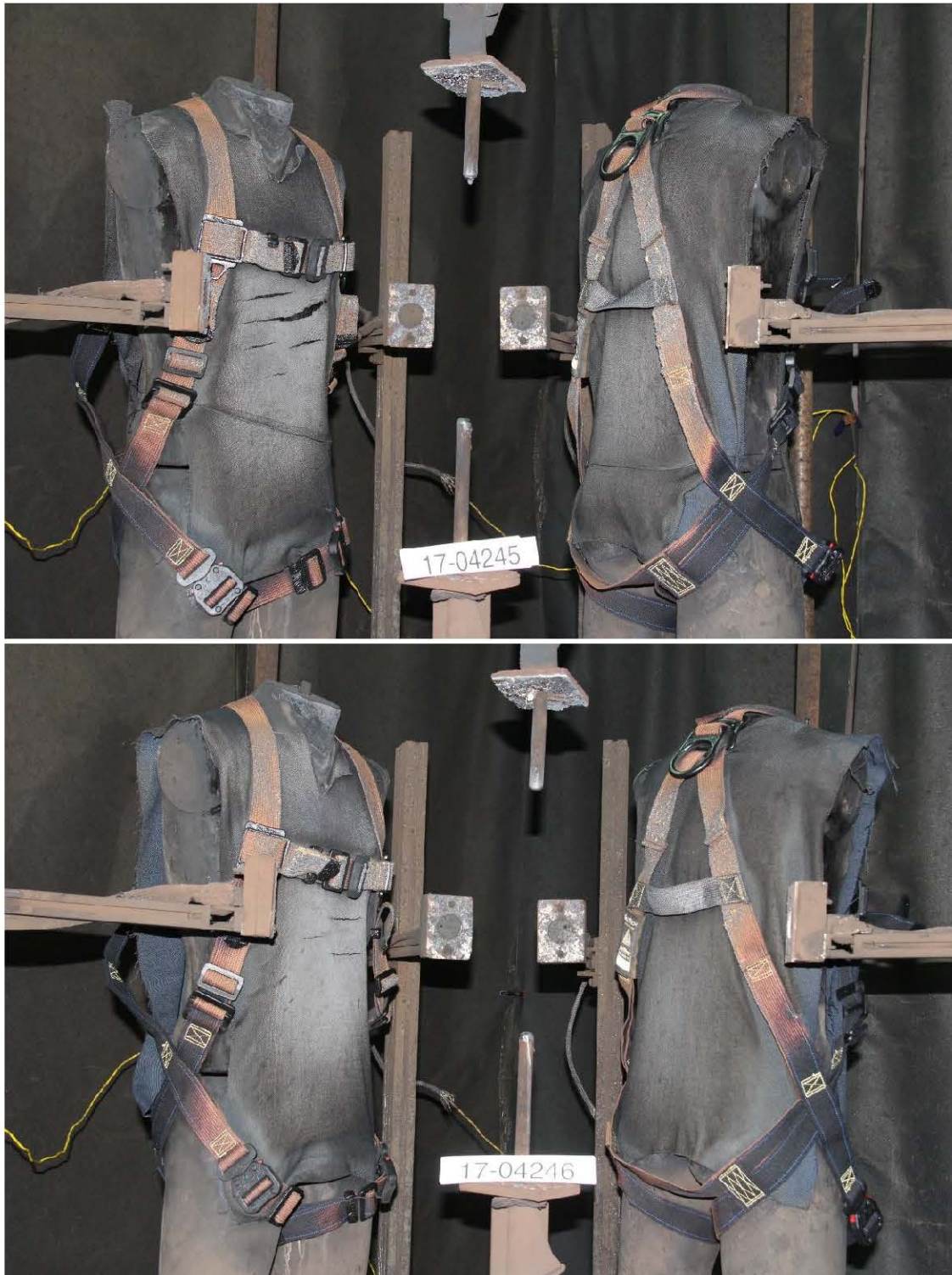


Figure 6.2: Samples after arc exposure



Figure 6.3: Samples after arc exposure