

# 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 #

B0413153

Declaration Date

4/13/2021

**Tested Item # 7050FDM AF Nylon Nylon Construction Climbing Belted  
3D + FD QC Legs/QC Chest**

Additional Items Conforming Under this Declaration:

7050FDXS 7050FDXL

7050FDS 7050FD2X

7050FDL 7050FD3X

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 & ASTM F887**

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

Level 1

Level 2

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-2241 K-580521-2103H04-R00

Authorized Signature

Name

Zachary Winters

Title

Engineering Manager

Date

4/13/2021



ACCREDITED

International Accreditation Service, Inc  
3060 Saturn St, Ste 100  
Brea, CA 92821 +1 562-364-8201

FallTech Lab - TL-594  
ISO/IEC 17025:2017  
Alexander Andrew Inc dba FallTech

## FallTech Test Report

<b>Test Report No.</b>	PC-2241	<b>Rpt. Date</b>	4/13/2021	<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 ASTM F-887-18				
<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				
<b>Test Operator(s)</b>	Yesbet Sierra / Jay Sponholz						

### Material/Sample Identification

Sample ID	Description
5767848	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767845	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706844	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706833	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706838	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706837	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767846	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767847	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767839	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767854	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706829	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706842	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706832	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706841	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706846	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
DPTS1	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706843	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706840	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5767853	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
5706828	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest
DPT11	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest

### 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	3632.2 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



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<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 ASTM F-887-18				
<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### Test Summary (Continued)

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	3631.3 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	3644.0 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 (Sternal D-ring)	3600 Lbf $\geq$ 1 Minute	3644.8 Lbf	Pass
	Static Strength (Sternal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance	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 (Sternal D-ring)	3600 Lbf $\geq$ 1 Minute	3625.9 Lbf	Pass
	Static Strength (Sternal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance	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



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<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 ASTM F-887-18				
<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
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<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### Test Summary (Continued)

Test Specification	Test Criteria	Test Result	Pass/Fail	
ANSI Z359.11-2014 4.3.5	Static Strength (Sternal D-ring)	3600 Lbf $\geq$ 1 Minute	3638.9 Lbf	Pass
	Static Strength (Sternal D-ring)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Adjuster Slippage	Slippage $\leq$ 1"	0.0"	Pass
	Tear Distance	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 (Side D-rings)	3600 Lbf $\geq$ 1 Minute	3652.5 Lbf	Pass
	Static Strength (Side D-rings)	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 (Side D-rings)	3600 Lbf $\geq$ 1 Minute	3641.9 Lbf	Pass
	Static Strength (Side D-rings)	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 (Side D-rings)	3600 Lbf $\geq$ 1 Minute	3670.5 Lbf	Pass
	Static Strength (Side D-rings)	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



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<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 ASTM F-887-18				
<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### 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	3477.1 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 $\leq 30^\circ$	6.2°	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"	11.5"	Pass
ANSI Z359.11-2014 4.3.3	Dynamic Performance Dorsal D-ring (Feet First)	Peak Impact Load $\geq 3600$ Lbf	3511.3 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 $\leq 30^\circ$	4.4°	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"	11.3"	Pass
ANSI Z359.11-2014 4.3.3	Dynamic Performance Dorsal D-ring (Feet First)	Peak Impact Load $\geq 3600$ Lbf	3704.5 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 $\leq 30^\circ$	3.3°	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"	11.7"	Pass

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<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### 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 ≥ 3,600 Lbf	3297.7 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 ≥ 5 Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First)	Angle at Rest ≤ 30°	18.4°	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 ≥ 3,600 Lbf	2982.8 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 ≥ 5 Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First)	Angle at Rest ≤ 30°	20.2°	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 ≥ 3,600 Lbf	2643.5 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 ≥ 5 Minutes	5 Minutes	Pass
	Dynamic Performance Dorsal D-ring (Head First)	Angle at Rest ≤ 30°	8.3°	Pass
	Dynamic Performance Dorsal D-ring (Head First)	At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass

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<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 ASTM F-887-18				
<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### Test Summary (Continued)

Test Specification	Test Criteria		Test Result	Pass/Fail
ANSI Z359.11-2014 4.3.3	Dynamic Performance Sternal D-ring (Feet First)	Peak Impact Load $\geq 3600$ Lbf	3070.0 Lbf	*
	Dynamic Performance Sternal D-ring (Feet First)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Angle at Rest $\leq 50^\circ$	27.8°	Pass
	Dynamic Performance Sternal D-ring (Feet First)	At Least One Fall Arrest Indicator Shall be Deployed Visibly and Permanently	Visibly and Permanently Deployed	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Harness Stretch Shall Not Exceed 18"	14.0"	Pass
ANSI Z359.11-2014 4.3.3	Dynamic Performance Sternal D-ring (Feet First)	Peak Impact Load $\geq 3600$ Lbf	3208.6 Lbf	*
	Dynamic Performance Sternal D-ring (Feet First)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Remain Suspended for $\geq 5$ Minutes	5 Minutes	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Angle at Rest $\leq 50^\circ$	26.8°	Pass
	Dynamic Performance Sternal D-ring (Feet First)	At Least One Fall Arrest Indicator Shall be Deployed Visibly and Permanently	Visibly and Permanently Deployed	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Harness Stretch Shall Not Exceed 18"	14.2"	Pass

## FallTech Test Report

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<b>Report Prepared For</b>	FallTech						
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<b>Part No.</b>	7050FDM	<b>Part No. Revision</b>	A				
<b>Part Description</b>	Arc Flash Nylon Construction Climbing Belted FBH M 3D + FD QC Legs/QC Chest						
<b>Test Request No.</b>	PC-2241	<b>Date Complete</b>	4/8/2021				

### Test Summary (Continued)

Test Specification	Test Criteria		Test Result	Pass/Fail
ANSI Z359.11-2014 4.3.3	Dynamic Performance Sternal D-ring (Feet First)	Peak Impact Load ≥ 3600 Lbf	2759.9 Lbf	*
	Dynamic Performance Sternal D-ring (Feet First)	Harness Shall Not Release Test Torso	Did Not Release	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Remain Suspended for ≥ 5 Minutes	5 Minutes	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Angle at Rest ≤ 50°	25.2°	Pass
	Dynamic Performance Sternal D-ring (Feet First)	At Least One Fall Arrest Indicator Shall be Deployed Visibly and Permanently	Visibly and Permanently Deployed	Pass
	Dynamic Performance Sternal D-ring (Feet First)	Harness Stretch Shall Not Exceed 18"	16.9"	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 4.3.6	Fall Arrest Indicator Test (Doral D-ring)	At Least One Fall Arrest Indicator Shall Deploy	Visibly and Permanently Deployed	Pass

### Conclusion


Based upon the samples provided to the Lab:

FallTech P/N 7050FDM Rev. A meets the requirements of ANSI Z359.11-2014 and \* ASTM F-887-18

### 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	4/13/2021
Witnessed by	Not Required	Date	N/A







## TESTING - EXPOSURE TO AN ELECTRIC ARC

### Test Specimen:

Harness, Style 7050FDM  
Webbing: Yellow Nylon

### Requested by:

FallTech  
1306 S Alameda St  
Compton, CA 90221

### Test Standard:

#### **ELECTRIC ARC TESTS: ASTM F887-20**

OBSERVATION OF PERSONAL CLIMBING EQUIPMENT EXPOSED TO AN ELECTRIC ARC

### Test Report:

K-580521-2103H04-R00

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Sample Received March 25, 2021	Test Date March 26, 2021	Report Date March 31, 2021
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Prepared by

Approved by

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Robert Ferraz  
Technologist, HCL  
TD Technologies, Kinectrics

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Claude Maurice  
Technical Specialist, HCL  
TD Technologies, Kinectrics

For questions about this test report, please contact [testing@arcwear.com](mailto:testing@arcwear.com)



## Revision History

Rev	Description		
00	Initial report creation		
	Issue Date	Prepared by	Approved by
	March 31, 2021	Robert Ferraz	Claude Maurice
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, 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 F887-20, Section 22

Standard Specifications for Personal Climbing Equipment, After Exposure to an Electric Arc Evaluation. Specimens are mounted on mannequins of panels having a distance of 30.5 cm (12 inches) from the centerline of the electrodes. 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>.

### 1.1 Test Requirements

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.

Harness accessories, loops etc. - Three specimens of each accessory or loop are required to be exposed to the arc.

Energy Absorbing Lanyard - Three specimens of each lanyard are required to be exposed to the arc.

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.

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

The procedure outlined in ASTM F887-20 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. 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 F887-20**

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 are not ignited while dripping.

## 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)
- Deviations and abnormalities: None

Note: The measurement uncertainty, MU, for the measured values of this test method are well within the requirements of the test standard and are defined on a 95% confidence interval basis over the full test range, as follows:

- Temperature:  $\pm$  2 °C
- Arc Current:  $\pm$  2.5%
- Time zero reference:  $\pm$  3 ms
- Incident Energy:  $\pm$  1.5%
- Voltage:  $\pm$  2.2%

## 3 Test Specimen:

The following description of the test sample was provided by the client and confirmed by the identification tag shown in Figure 3.1.

<b>Sample description:</b>	Falltech, Harness
<b>Sample identification:</b>	Style 7050FDM
<b>Manufacturer:</b>	Falltech
<b>Material of webbing:</b>	Yellow Nylon
<b>Number of samples tested:</b>	12
<b>Harness Accessories:</b>	Black Nomex/Kevlar Ripstop Label Cover, Shoulder Pad, Waist Pad, and Leg Pads
<b>Notes:</b>	Product modified from as-received state. Suspension Trauma Safety Strap Packs removed from harness prior to testing, as requested by the manufacturer.



Figure 3.1: Identification Tag



#### 4 Test Results:

Arc exposures were performed on twelve samples as indicated. If the conditions and evaluation of the samples meet 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 F887-20. Photographs of the samples before and after the arc exposure are shown in Section 6.

**Table 4-1: Summary of Test Results**

<b>Trial # 21-1746</b>		
<b>Mannequin</b>	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706844	5706845
Incident Energy	39 Cal/cm <sup>2</sup>	41 Cal/cm <sup>2</sup>
After-flame	0	0
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets
<b>Trial # 21-1747</b>		
<b>Mannequin</b>	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706839	5706847
Incident Energy	37 Cal/cm <sup>2</sup>	43 Cal/cm <sup>2</sup>
After-flame	0	3
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets
<b>Trial # 21-1748</b>		
<b>Mannequin</b>	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706843	5706840
Incident Energy	41 Cal/cm <sup>2</sup>	41 Cal/cm <sup>2</sup>
After-flame	1	1
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets
<b>Trial # 21-1749</b>		
<b>Mannequin</b>	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706846	5706841
Incident Energy	40 Cal/cm <sup>2</sup>	40 Cal/cm <sup>2</sup>
After-flame	1	3
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets



<b>Trial # 21-1750</b>		
Mannequin	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706842	5706829
Incident Energy	41 Cal/cm <sup>2</sup>	45 Cal/cm <sup>2</sup>
After-flame	0	4
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets
<b>Trial # 21-1751</b>		
Mannequin	<b>A – Front</b>	<b>B – Back</b>
Item Serial #	5706828	1-27-2021
Incident Energy	39 Cal/cm <sup>2</sup>	41 Cal/cm <sup>2</sup>
After-flame	0	1
Ignition	N	N
Melting and Dripping	N	N
Acceptance Criteria	Meets	Meets

**4.1 Observations:**

Charring of the outer layer of webbing was observed on all samples tested. After flame was observed on the label cover and webbing and lasted for under 5 seconds as described in Table 4-1. There was no evidence of melting, dripping or ignition on any of the samples tested.

**5 Interpretation of Results:**

Based on the test results in Table 4-1 and observations, the product tested meets the requirements criteria of Table 1-1 as per ASTM F887-20 sections 22.1-22.4 and 22.6.1-22.6.2.

According to ASTM F887-20, Section 25, qualification of performance shall include a mechanical integrity (vertical drop test) as soon as possible following the arc exposure. This shall be arranged by the producer. If any accessories are to be added to the product, or the product undergoes modification from what has been reported, it must be re-tested.