

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 #

B0401152a

Declaration Date

4/1/2021

Tested Item #

7054FDM

Arc Flash Nylon Std Climbing Non-belted FBH 1D+FD
QC Legs/QC Chest

Additional Items Conforming Under this Declaration:

| | | | |
|----------|----------|--------|--------|
| 7054FDXS | 7054FDXL | 7049 | 7051XL |
| 7054FDS | 7054FD2X | 7049XL | 70512X |
| 7054FDL | 7054FD3X | 7051 | 8087 |

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-2207

K-580521-2102H05-R00

Authorized Signature

Name

Zachary Winters

Title

Engineering Manager

Date

4/1/2021



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

| | | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
| Test Report No. | PC-2207 | Rpt. Date | 3/29/2021 | Rpt. Rev | | Rev Date | |
| Report Prepared For | FallTech | | | | | | |
| Initiated By | Dan Redden | Test Specification(s) | ANSI Z359.11-2014: 4.3.5, 4.3.3, 4.3.4, 4.3.6 ASTM F-887-18 | | | | |
| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |
| Test Operator(s) | Yesbet Sierra / Jay Sponholz | | | | | | |

Material/Sample Identification

| Sample ID | Description |
|-----------|-----------------------------------------------------------------------------|
| 5706813 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706815 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706811 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706816 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706809 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706819 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5767856 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706821 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706818 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5767857 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706812 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706822 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5767858 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706820 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706814 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706825 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706826 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |
| 5706823 | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest |



FallTech Test Report

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| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 | 3618.3 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 | 3624.6 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 | 3618.2 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 |

FallTech Test Report

| | | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
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| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 | 3625.2 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 | 3623.6 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 | 3623.4 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 |

FallTech Test Report

| | | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
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| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 ≥ 3600 Lbf | 4424.2 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 ≥ 5 Minutes | 5 Minutes | Pass |
| | Dynamic Performance Dorsal D-ring (Feet First) | Angle at Rest $\leq 30^\circ$ | 1.9° | 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" | 8.8" | Pass |
| ANSI Z359.11-2014 4.3.3 | Dynamic Performance Dorsal D-ring (Feet First) | Peak Impact Load ≥ 3600 Lbf | 4460.3 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 ≥ 5 Minutes | 5 Minutes | Pass |
| | Dynamic Performance Dorsal D-ring (Feet First) | Angle at Rest $\leq 30^\circ$ | 0.8° | 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" | 9.5" | Pass |
| ANSI Z359.11-2014 4.3.3 | Dynamic Performance Dorsal D-ring (Feet First) | Peak Impact Load ≥ 3600 Lbf | 4253.4 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 ≥ 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" | 10.4" | Pass |

FallTech Test Report

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|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
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| Report Prepared For | FallTech | | | | | | |
| Initiated By | Dan Redden | Test Specification(s) | ANSI Z359.11-2014: 4.3.5, 4.3.3, 4.3.4, 4.3.6 ASTM F-887-18 | | | | |
| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 | 2980.4 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° | 8.2° | 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 | 2564.1 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° | 11.6° | 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 | 2131.9 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° | 13.4° | Pass |
| | Dynamic Performance Dorsal D-ring (Head First) | At Least One Fall Arrest Indicator Shall Deploy | Visibly and Permanently Deployed | Pass |

FallTech Test Report

| | | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
| Test Report No. | PC-2207 | Rpt. Date | 3/29/2021 | Rpt. Rev | | Rev Date | |
| Report Prepared For | FallTech | | | | | | |
| Initiated By | Dan Redden | Test Specification(s) | ANSI Z359.11-2014: 4.3.5, 4.3.3, 4.3.4, 4.3.6 ASTM F-887-18 | | | | |
| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 | 2818.3 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° | 26.1° | 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" | 12.5" | Pass |
| ANSI Z359.11-2014 4.3.3 | Dynamic Performance Sternal D-ring (Feet First) | Peak Impact Load ≥ 3600 Lbf | 2894.2 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° | 24.4° | 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" | 13.0" | Pass |

FallTech Test Report

| | | | | | | | |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|-----------------|--|-----------------|--|
| Test Report No. | PC-2207 | Rpt. Date | 3/29/2021 | Rpt. Rev | | Rev Date | |
| Report Prepared For | FallTech | | | | | | |
| Initiated By | Dan Redden | Test Specification(s) | ANSI Z359.11-2014: 4.3.5, 4.3.3, 4.3.4, 4.3.6 ASTM F-887-18 | | | | |
| Part No. | 7054FD | Part No. Revision | A | | | | |
| Part Description | Arc Flash Nylon Standard Climbing Non-Belted FBH S 1D + FD QC Legs/QC Chest | | | | | | |
| Test Request No. | PC-2207 | Date Complete | 3/24/2021 | | | | |

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 | 3310.7 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° | 30.2° | 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" | 13.0" | 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 7054FD 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 | 3/29/2021 |
| Witnessed by | Not Required | Date | N/A |



TESTING - EXPOSURE TO AN ELECTRIC ARC

Test Specimen:

Harness, Style 7054FDM

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-580521-2102H05-R00

| | | |
|-------------------------------------|-------------------------------|------------------------------|
| Sample Received February-19-2021 | Test Date February-24-2021 | Report Date March-01-2021 |
|-------------------------------------|-------------------------------|------------------------------|

Prepared by

Approved by

Robert Ferraz
Technologist, HCL
TD Technologies, Kinectrics

Claude Maurice
Technical Specialist, HCL
TD Technologies, Kinectrics

For questions about this test report, please contact testing@arcwear.com



Revision History

| | | | |
|-----|-------------------------|---------------|----------------|
| Rev | Description | | |
| 00 | Initial report creation | | |
| | Issue Date | Prepared by | Approved by |
| | March-01-2021 | 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/cm² ± 5 cal/cm².

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 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 ² ± 5 cal/cm ² |
| 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/m² (50 cal/cm²·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)

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 | Incident Energy: | \pm 1.5% |
| - Arc Current: | \pm 2.5% | Voltage: | \pm 2.2% |
| - Time zero reference: | \pm 3 ms | | |

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.

Sample description: Falltech, Harness
Sample identification: Style 7054FDM
Manufacturer: Falltech
Material of webbing: Yellow Nylon with Nomex Kevlar Ripstop Leg and Shoulder Yoke Pads
Number of samples tested: 12
Deviations: None
Note: 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: Sample photo of 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

| Trial # 21-1154 | | |
|------------------------|--------------------------|--------------------------|
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706821 | 5706822 |
| Incident Energy | 37.4 Cal/cm ² | 39.8 Cal/cm ² |
| After-flame | 0 | 0 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Acceptance Criteria | Meets | Meets |
| Trial # 21-1155 | | |
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706823 | 5706841 |
| Incident Energy | 38.7 Cal/cm ² | 44.3 Cal/cm ² |
| After-flame | 0 | 0 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Acceptance Criteria | Meets | Meets |
| Trial # 21-1156 | | |
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706820 | 5706818 |
| Incident Energy | 37.7 Cal/cm ² | 40.1 Cal/cm ² |
| After-flame | 0 | 0 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Acceptance Criteria | Meets | Meets |
| Trial # 21-1157 | | |
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706809 | 5706815 |
| Incident Energy | 40.7 Cal/cm ² | 38.2 Cal/cm ² |
| After-flame | 0 | 0 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Acceptance Criteria | Meets | Meets |



| Trial # 21-1158 | | |
|------------------------|--------------------------|--------------------------|
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706812 | 5706811 |
| Incident Energy | 40.2 Cal/cm ² | 40.3 Cal/cm ² |
| After-flame | 0 | 0 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Trial # 21-1159 | | |
| Mannequin | A – Front | B – Back |
| Item Serial # | 5706819 | 5706810 |
| Incident Energy | 38.2 Cal/cm ² | 41.0 Cal/cm ² |
| After-flame | 0 | 7 |
| Ignition | N | N |
| Melting and Dripping | N | N |
| Acceptance Criteria | Meets | Meets |

4.1 Observations:

Light charring of the outer layer of webbing was observed on all samples tested. Afterflame was observed on the identification tag cover of one of the samples tested lasting less than 15 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.