

Test Report



Gravitec Systems Inc.
9453 Coppertop Loop NE
Bainbridge Island, WA 98110



Test Report #: 210006
Client Name: Representaciones Internacionales JYR, SA de CV
Client Address: Camino al Milagro 104, Col. el Milagro
Country: Mexico
Customer Contact: Ernesto Reyes
City: Apodaca **State:** Nuevo León **Zip:** 66634

Service Address: Gravitec Systems Inc., 9453 Coppertop Loop NE, Bainbridge Island, WA 98110

Test Sample Information

Manufacturer: Safe Step
Description: Full Body Harness Feet First Dynamic Performance Test
Model/Part #: SS-10A
Lot/Batch #: N/A
Serial #: N/A

Sample Receipt Date: 7/28/2010

Sampling Details/Deviations and Sample Condition:

Sample received in good working order. No tests previously performed on this sample.

Test Information

Testing Method (Applicable Standard and Clause): ANSI Z359.1-2007, 4.3.3.2, Dynamic Performance Testing

1. The drop test structure, test torso, test lanyard of four foot (1.2m) length, and quick release mechanism shall be in accordance with 4.1.1, 4.1.3, 4.1.4, and 4.1.6.
2. The harness shall be put on the test torso and adjusted snugly as though the torso were a person.
3. Attach one end of the test lanyard to the fall arrest attachment element and the other end to the anchorage on the test structure.
4. Harnesses, which incorporate integral lanyards must have such lanyards removed prior to the dynamic test.
5. Raise the test torso to a level, which will allow a 3.3-foot (1.0m) free fall upon release of the test torso.
6. The torso shall be lifted to a point no more than 12 inches (305mm) horizontally from the anchorage.
7. Release the torso using the quick release mechanism.
8. After the drop, the torso is to remain suspended by the harness for a period of five minutes.
9. During the post-fall suspension period, measure the angle at rest. See Figure 20.
10. The dynamic test is to be done twice, once feet-first and once head-first.
11. A new harness may be used for each test.
12. After each test, evaluate the harness according to 3.2.2.7.

Acceptance Criteria (Applicable Standard and Clause): ANSI Z359.1-2007, 3.2.2.7

1. The harness, when dynamically tested in accordance with 4.3.3.2, shall not release the test torso.
2. The test torso shall remain suspended for five minutes after drop testing.
3. No load-bearing element shall break or separate from the body support.
4. The angle at rest measured between the torso vertical center line and the vertical shall not exceed 30 degrees after the test torso comes to rest.

Gravitec Test Procedure ID: TP HAR-4.3.3.2-2007 DPT Dorsal D-Ring

Job #: 210006
Test Code: AHD
Test ID #: 2
File Name: 210007-AHD-2

Test Weight (lbs): 220
Free Fall (in): 39

Test Date: 8/2/2010
Time: 2:08 PM
Temp. (°F): 70
Humidity (%): 57

Test Instrumentation

ANSI Compliant Test Torso, ANSI Compliant Test Structure, ANSI Compliant Test Cable Lanyard, Portable Floor Scale, Digital Timer, Digital Protractor, 1/2" Chain Shackles, Zip Level, Misc. Connecting Hardware

Test Photo



Test Results and Comments

	Acceptance Criteria	Test Results	Exp. Uncertainty	Pass/Fail
Angle at Rest (°):	30	11.1	± 0.77	Pass

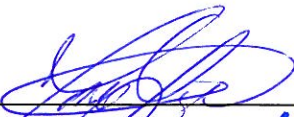
Test Comments/Notes:

The harness did not release the test torso. No load-bearing element broke or separated from the body support

Opinions and Interpretations:

None

Quality Manager Name: David Lough

Signature: 

Date: 1/5/11

Laboratory Manager Name: Stephen Ting

Signature: 

Date: 1-5-11

The results of this test only apply to the item tested.
All instrumentation used in testing is traceable to NIST.

Reported uncertainties represent expanded uncertainties expressed at approximately the 95% level of confidence using a coverage factor of $k=2$. Where limits of acceptability are applicable, false accept risk is limited to 2% or less by guard-banding the limit of acceptability with the expanded uncertainty value.

This laboratory is accredited to ISO 17025 by ACLASS ANSI-ASQ National Accreditation Board for tests conducted under its scope of accreditation.

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Service Address: Gravitec Systems Inc., 9453 Coppertop Loop NE, Bainbridge Island, WA 98110

Test Sample Information

Manufacturer: Safe Step
Description: Full Body Harness Head First Dynamic Performance Test
Model/Part #: SS-10A
Lot/Batch #: N/A
Serial #: N/A

Sample Receipt Date: 7/28/2010

Sampling Details/Deviations and Sample Condition:

Sample received in good working order. One feet first dynamic performance test was previously performed on this sample

Test Information

Testing Method (Applicable Standard and Clause): ANSI Z359.1-2007, 4.3.3.2, Dynamic Performance Testing

1. The drop test structure, test torso, test lanyard of four foot (1.2m) length, and quick release mechanism shall be in accordance with 4.1.1, 4.1.3, 4.1.4, and 4.1.6.
2. The harness shall be put on the test torso and adjusted snugly as though the torso were a person.
3. Attach one end of the test lanyard to the fall arrest attachment element and the other end to the anchorage on the test structure
4. Harnesses, which incorporate integral lanyards must have such lanyards removed prior to the dynamic test.
5. Raise the test torso to a level, which will allow a 3.3-foot (1.0m) free fall upon release of the test torso.
6. The torso shall be lifted to a point no more than 12 inches (305mm) horizontally from the anchorage.
7. Release the torso using the quick release mechanism.
8. After the drop, the torso is to remain suspended by the harness for a period of five minutes.
9. During the post-fall suspension period, measure the angle at rest. See Figure 20.
10. The dynamic test is to be done twice, once feet-first and once head-first.
11. A new harness may be used for each test.
12. After each test, evaluate the harness according to 3.2.2.7.

Acceptance Criteria (Applicable Standard and Clause): ANSI Z359.1-2007, 3.2.2.7

1. The harness, when dynamically tested in accordance with 4.3.3.2, shall not release the test torso.
2. The test torso shall remain suspended for five minutes after drop testing.
3. No load-bearing element shall break or separate from the body support
4. The angle at rest measured between the torso vertical center line and the vertical shall not exceed 30 degrees after the test torso comes to rest.

Gravitec Test Procedure ID: TP HAR-4.3.3.2-2007 DPT Dorsal D-Ring

Job #: 210006
Test Code: AHD
Test ID #: 6
File Name: 210007-AHD-6

Test Weight (lbs): 220
Free Fall (in): 39

Test Date: 8/2/2010
Time: 2:27 PM
Temp. (°F): 70
Humidity (%): 57

Test Instrumentation

ANSI Compliant Test Torso, ANSI Compliant Test Structure, ANSI Compliant Test Cable Lanyard, Portable Floor Scale, Digital Timer, Digital Protractor, 1/2" Chain Shackles, Zip Level, Misc. Connecting Hardware

Test Photo



Test Results and Comments

	Acceptance Criteria	Test Results	Exp. Uncertainty	Pass/Fail
Angle at Rest (°):	30	16.5	± 0.77	Pass

Test Comments/Notes:

The harness did not release the test torso. No load-bearing element broke or separated from the body support

Opinions and Interpretations:

None

Quality Manager Name: David Lough

Signature: 

Date: 1/5/11

Laboratory Manager Name: Stephen Ting

Signature: 

Date: 1-5-11

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Service Address: Gravitec Systems Inc., 9453 Coppertop Loop NE, Bainbridge Island, WA 98110

Test Sample Information

Manufacturer: Safe Step
Description: Full Body Harness Static Strength Test
Model/Part #: SS-10 A
Lot/Batch #: N/A
Serial #: N/A

Sample Receipt Date: 7/28/2010

Sampling Details/Deviations and Sample Condition:

Sample received in good working order. No tests previously performed on this sample.

Test Information

Testing Method (Applicable Standard and Clause): ANSI Z359.1-2007, 4.3.3.1, Static Strength Testing

1. The test torso and static tensile test equipment shall be as specified in 4.1.3 and 4.1.7.
2. The harness shall be put on the test torso as though the torso were a person and adjusted for a snug fit.
3. Prior to loading the harness, mark the buckles or adjusters to allow for evaluation of slippage.
4. The test torso shall be anchored by its crotch ring, and a load of 5,000 pounds (22.2kN) shall be applied to the harness dorsal D-Ring in a direction simulating a feet-first fall.
5. Maintain the load for a period of one minute.
6. Release the load and evaluate the harness in accordance with 3.2.2.6 before removing it from the torso

Acceptance Criteria (Applicable Standard and Clause): ANSI Z359.1-2007, 3.2.2.6, Static Strength Testing

1. The harness, when statically tested in accordance with 4.3.3.1, shall not release the test torso.
2. Slippage through any adjustable connector shall not exceed one inch (25mm)
3. Buckle and eyelet type of construction shall not tear a distance greater than that to the adjacent eyelet.

Gravitec Test Procedure ID: TP HAR-4.3.3.1-2007 SST Dorsal D-Ring

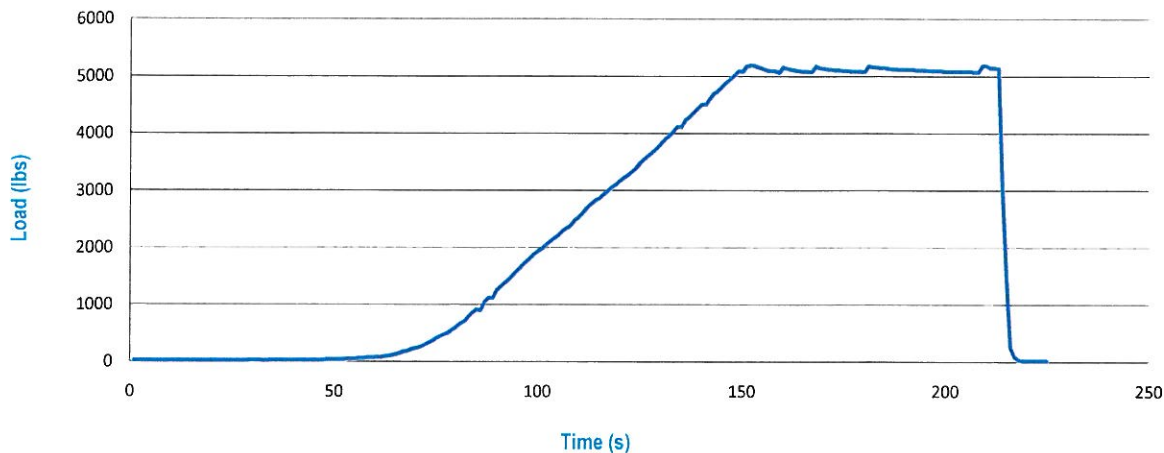
Job #: 210007	Test Date: 8/3/2010
Test Code: AHS	Time: 3:03 PM
Test ID #: 2	Temp. (°F): 72
File Name: 210007-AHS-2	Humidity (%): 59

Test Instrumentation

ANSI Compliant Static Test Cables, ANSI Compliant Test Torso, ANSI Compliant Test Structure, 10k Load Cell/Data Acquisition System, Digital Timer, 12" Steel Rule, Misc. Connecting Hardware

Test Data Graph

Load vs. Time



Test Results and Comments

	Acceptance Criteria	Test Results	Exp. Uncertainty	Pass/Fail
Slippage (in):	2	0	± 0.032 in	Pass

Test Comments/Notes:

The harness did not release the test torso. The buckle and eyelet type of construction did not tear a distance greater than that to the adjacent eyelet.

Opinions and Interpretations:

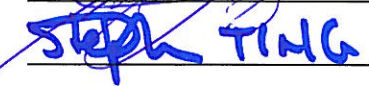
None

Quality Manager Name: David Lough

Signature: 

Date: 1/5/11

Laboratory Manager Name: Stephen Ting

Signature: 

Date: 1-5-11

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