Test Report
ANSI/ASSE Z359.14-14

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Test Report Number: 2019120310925
Job Number: G102702592CRT-001
Product SKU#: 10925
Product Type: SRL-LE
Product Description: Halo 30ft Steel Cable SRL-LE
Testing Standard: ANSI/ASSE Z359.14 Safety Requirements for Self-Retracting Devices
Date(s) of Testing: 10/27/2016, 10/28/2016

REQUIREMENT VERIFICATION

Requirement Description	Clause/Section	Result
General Requirements	3.1 General Requirements	Meets or Exceeds
Markings and Instructions	5. Markings and Instructions	Meets or Exceeds

QUALIFICATION TESTING

Test Description	Test Date	Clause/Section	Result
Dynamic Strength LE (Ambient)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE (Hot)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE (Cold)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE (Wet)	10/27/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE - Offset (Ambient)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE - Offset (Hot)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE - Offset (Cold)	10/28/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength LE - Offset (Wet)	10/27/2016	4.2.2 Dynamic Strength Testing SRD-LE	Pass
Dynamic Strength Edge LE	10/27/2016	4.2.4 Dynamic Strength Testing of SRD-LE Edge	Pass
Static Strength	10/27/2016	4.2.5 Static Stength Testing of SRDs	Pass

This test report covers these additional products:

10920, 10922

Test Equipment		
Equipment	**Model**	**Serial**
Load Cell	1220ACK-25K-B	347989A
Load Cell	1210AF-10K-B	916507A
Test Weight	282 lb	GFP007

3.1	General Requirements	
3.1.1	Integral Connectors. Snaphooks or carabiners which are integral to self-retracting devices shall meet the requirements of ANSI/ASSE Z359.12. Integral rings or similar openings intended to accept a snaphook or carbiner shall be designed to minimize the possibility of rollout of a mating snaphook or carabiner.	Meets or Exceeds
3.1.2	Locking Function. Self-retracting devices shall be automatic in their locking (fall stopping) function. It shall not be possible to override the self-locking feature of the device when in use. The design of working parts, their location and the protection afforded to them shall be such as to prevent the possibility of performance being impaired by casual interference.	Meets or Exceeds
3.1.3	Energy Absorbtion. Self-retracting devices which perform an energy absorbtion function shall be designed such that the energy absorbtion function is available throughout the usable working range of the device. The working range or length is defined as the amount of travel allowed by the device starting from full retraction to full extension under normal working tension.	Meets or Exceeds
3.1.4	Visual Indicator. Self-retracting devices shall include a visual indicator that will activate in accordance with the requirements of Section 3.1.9.	Meets or Exceeds
3.1.5	Corrosion Protection. Corrosion protection shall be afforded to all elements (parts) of self-retracting devices. Protection shall, at a minimum, allow the device to operate as intended and show no signs of corrosion which, if left unchecked, could result in corrosion-related failure of the device afer being salt spray (for) tested for 96 hours in accordance with 7.4. * See attached corrosion test report	Meets or Exceeds

Notes

5	**Instruction Requirements**	
5.1	**Marking Requirements**	
5.1.1	Markings shall be in English	Meets or Exceeds
5.1.2	Markings shall remain legible and ensure for the life of the component, subsystem, or system being marked. Pressure-sensitive labels must conform to UL 969-2001, Marking and Labeling Systems	Meets or Exceeds
5.1.3	**Self-Retracting Devices shall be marked with:**	
	a) part number and model designation	Meets or Exceeds
	b) year of manufacture	Meets or Exceeds
	c) manufacturer's name or logo	Meets or Exceeds
	d) capacity range	Meets or Exceeds
	e) unique ID number	Meets or Exceeds
	f) standard number (Z359.14)	Meets or Exceeds
	g) how to inspect visual indicator	Meets or Exceeds
	h) warning to follow the manufacturer's instructions included with the equipment at the time of shipment from manufacterer	Meets or Exceeds
	i) warning of the need for inspection in accordance with the manufacturer's instructions	Meets or Exceeds
	j) the fiber or other materials used in the lanyard construction	Meets or Exceeds
	k) the lanyards working length	Meets or Exceeds
	l) average arresting force for the SRD class	Meets or Exceeds
	m) proper installation means	Meets or Exceeds
	n) warning of the need to avoid lanyard contact with sharp edges and abrasive surfaces	Meets or Exceeds
	o) SRD class and arrest distance	Meets or Exceeds
	p) warning of the need to avoid lanyard contact with sharp edges and abrasive surfaces	Meets or Exceeds
	q) free fall limit	Meets or Exceeds
	r) suitability for use with horizontal lifelines	Meets or Exceeds
	s) suitability for horizontal use	Meets or Exceeds

5.2	Instruction Requirements	
5.2.1	Instructions shall be provided to the user in English, and affixed to the equipment at the time of shipment fom the manufacturer	Meets or Exceeds
5.2.2	**Instructions shall contain the following information:**	
	a) a statement that the manufacturer's instructions shall be provided to users	Meets or Exceeds
	b) manufacturer's name, address, and telephone number	Meets or Exceeds
	c) manufacturer's part number or model designation for the equipment	Meets or Exceeds
	d) intended use and purpose of the equipment	Meets or Exceeds
	e) proper method of use and limitations on use of the equipment	Meets or Exceeds
	f) illustrations showing locations of markings on the equipment	Meets or Exceeds
	g) reproduction of printed information on all markings	Meets or Exceeds
	h) inspection procedures required to asure the equipment is in serviceable condition and operating correctly	Meets or Exceeds
	i) anchorage requirements	Meets or Exceeds
	j) criteria for discarding equipment which fails inspection	Meets or Exceeds
	k) procedures for cleaning, maintenance, and storage	Meets or Exceeds
	l) reference to the Z359 standards and applicable regulations governing occupational safety	Meets or Exceeds
	m) proper installation means and limitations on the type of anchorage connectors used, if any	Meets or Exceeds
	n) the diameter of rope or wire rope, and width and thickness of webbing use in the lanyard	Meets or Exceeds
	o) the fiber or other materials used in the lanyard construction	Meets or Exceeds
	p) SRD class and arrest distance when dynamically tested in accordance with the requirements of this standard	Meets or Exceeds
	q) how to determine fall clearance	Meets or Exceeds
	r) testing of the device for locking before each use	Meets or Exceeds
5.2.3	Instructions shall require that only the equipment manufacturer, or persons or entities authorized in writing by the manufacturer shall make repairs to the equipment	Meets or Exceeds
5.2.4	Instructions shall require the user to remove equipment manufacturer, or persons or entities authorized in writing by the manufacturer shall make repairs to the equipment	Meets or Exceeds
5.2.5	Instructions shall require the user to have a written rescue plan and the means at hand to implement it when using the equipment	Meets or Exceeds

5.2.6	Instructions shall provide warnings regarding:	
	a) altering the equipment	Meets or Exceeds
	b) misusing the equipment	Meets or Exceeds
	c) using combinations of components or subsystems, or both, which may affect or interfere with the safe function of each other	Meets or Exceeds
	d) exposing the equipment to chemicals, high heat, severe cold or other harsh environments which may prouce a harmful effect and to consult the manufacturer in cases of doubt	Meets or Exceeds
	e) using the equipment around moving machinery and electrical hazards	Meets or Exceeds
	f) using the equipment near sharp edges and abrasive surfaces	Meets or Exceeds
	g) risk of striking an object or obstruction during a swing fall	Meets or Exceeds
	h) that the consequences or improperly using the device, not following instructions or markings may cause serious injury or death	Meets or Exceeds

Notes

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test

Requirements per 3.1.9

a) Attach the SRL-LE to a rigid anchorage meeting the elastic deformation requirements of 4.1.1 in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. Two drop tests are to be performed. One with the line perpendicular to the edge and a second with a lateral offset of 5 feet (1.5m).

b) Attach the load cell (transducer) specified in 4.1.3 between the lanyard connector of the SRL-LE and the [300] pound (128kg) test weight. Attach the quick release mechanism specified in 4.1.4 to the test weight and attach the hoisting means to the quick release mechanism. Hoist the test weight to the prescribed level and location relative to the edge and the SRL-LE.

c) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 10 seconds following initial arrest.

d) Measure and record the maximum and average arresting force and the arrest distance, and check that the visual indicator has activated

e) Before removing the test weight, increase the static load as required by 3.1.9 (the applied load shall be within +2/-0%) and maintain the load for one minute. Alternatively, the SRD line may be removed from the device and terminated if necessary such that the entire affected portion of the lifeline may be installed into the tensile test equipment of 4.1.5. Apply a load of 1,000 pounds (4.44kn) for a period of 1 minute.

f) Compare the test results with the requirements set forth in 3.1.9.

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test

Requirements per 3.1.9

Samples	Sample # 10	Sample # 11	Sample # 12
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test - Hot

Requirements per 3.1.9 & 4.2.8.1

Samples	Sample # 10	Sample # 11	Sample # 12
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test - Cold

Requirements per 3.1.9 & 4.2.8.2

Samples	Sample # 16	Sample # 17	Sample # 18
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test - Wet

Requirements per 3.1.9 & 4.2.8.3

Samples	Sample # 16	Sample # 17	Sample # 18
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test (Offset)

Requirements per 3.1.9

a) Attach the SRL-LE to a rigid anchorage meeting the elastic deformation requirements of 4.1.1 in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge.

b) Attach the load cell (transducer) specified in 4.1.3 between the lanyard connector of the SRL-LE and the [300] pound (128kg) test weight. Attach the quick release mechanism specified in 4.1.4 to the test weight and attach the hoisting means to the quick release mechanism. Hoist the test weight to the prescribed level and location relative to the edge and the SRL-LE.

c) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 10 seconds following initial arrest.

d) Measure and record the maximum and average arresting force and the arrest distance, and check that the visual indicator has activated

e) Before removing the test weight, increase the static load as required by 3.1.9 (the applied load shall be within +2/-0%) and maintain the load for one minute. Alternatively, the SRD line may be removed from the device and terminated if necessary such that the entire affected portion of the lifeline may be installed into the tensile test equipment of 4.1.5. Apply a load of 1,000 pounds (4.44kn) for a period of 1 minute.

f) Compare the test results with the requirements set forth in 3.1.9.

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test (Offset)

Requirements per 3.1.9

Samples	Sample # 10	Sample # 11	Sample # 12
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test (Offset) - Hot

Requirements per 3.1.9 & 4.2.8.1

Samples	Sample # 13	Sample # 14	Sample # 15
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test (Offset) - Cold

Requirements per 3.1.9 & 4.2.8.2

Samples	Sample # 19	Sample # 20	Sample # 21
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.2 Dynamic Performance Testing of SRL-LE Edge Test (Offset) - Wet

Requirements per 3.1.9 & 4.2.8.3

Samples	Sample # 19	Sample # 20	Sample # 21
Remained locked until released?	Yes	Yes	Yes
Test weight kept from striking ground?	Yes	Yes	Yes
Maintained additional static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.4 Dynamic Strength Testing of SRL-LE, Edge test

Requirements per 3.1.8

a) Two drop tests are to be performed in the same arrangements as used in 4.2.2 except the test weight shall be 300 pounds (136kg).

b) The weight shall be allowed to swing unrestrained for a period of not less than 2 minutes or until it comes to a complete stop whichever is less. Post fall static test is not required.

c) A new sample may be used for each test. Compare the results with the requirements of 3.1.8.

4.2.4 Dynamic Strength Testing of SRL-LE, Edge test

Requirements per 3.1.8

Samples	Sample # 04	Sample # 05	Sample # 06
Actual weight applied (lb)	300	300	300
SRL remains locked until released	Yes	Yes	Yes
Test weight shall not strike ground	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.4 Dynamic Strength Testing of SRL-LE, Edge test (Offset)

Requirements per 3.1.8

a) Two drop tests are to be performed in the same arrangements as used in 4.2.2 except the test weight shall be 300 pounds (136kg).

b) The weight shall be allowed to swing unrestrained for a period of not less than 2 minutes or until it comes to a complete stop whichever is less. Post fall static test is not required.

c) A new sample may be used for each test. Compare the results with the requirements of 3.1.8.

4.2.4 Dynamic Strength Testing of SRL-LE, Edge test (Offset)

Requirements per 3.1.8

Samples	Sample # 04	Sample # 05	Sample # 06
Actual weight applied (lb)	300	300	300
SRL remains locked until released	Yes	Yes	Yes
Test weight shall not strike ground	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.5 Static Strength Testing of Self-Retracting Devices

Requirements per 3.1.7

a) Shorten the lanyard constituent from the free end to allow installation in the static tensile test equipment specified in 4.1.5. See Figure 7.

b) With the lanyard constituent fully extracted, install the device in the tensile test equipment and apply a load of 3,000 +60/-0 pounds (13.3 +.26/-0kn) across the device. maintain the load for a period of one minute.

c) Compare the test results with the requirements set forth in 3.1.7.

4.2.5 Static Strength Testing of Self-Retracting Devices

Requirements per 3.1.7

Samples	Sample # 01	Sample # 02	Sample # 03
SRL Withstands tensile load	Yes	Yes	Yes
Actual load applied <3,000lb	3000	3000	3000
Result/Assessment	Pass	Pass	Pass