Test Report
ANSI/ASSP Z359.14-2021

Pure Safety Group, Inc.
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Test Report Number: 202301104200200
Job Number: Qualification 754, Test 320, Test 508, 202303164200200
Product SKU#: 4200200
Product Type: Self Retracting Device
Product Description: SRL, CR3-Edge, Class 2, Single, 8ft, Galvanized Cable, Steel Snap Hook
Testing Standard: ANSI/ASSP Z359.14-2021 Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
Date(s) of Manufacture: 1/01/2022, 11/01/2022, 1/01/2023
Date(s) of Testing: 4/03/2020, 1/25/2022, 2/01/2022, 7/18/2022, 7/19/2022, 7/21/2022, 11/07/2022, 1/03/2023

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
Static Strength (SRD)	2/01/2022	4.2.1 Static Testing of Self-Retracting Devices	Pass
Locking Strength	2/01/2022	4.2.3 Locking Strength Testing of Self-Retracting Devices	Pass
Dynamic Performance (Ambient)	7/18/2022	4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs)	Pass
Dynamic Performance (Hot)	7/18/2022	4.3.1.7 Dynamic Performance of Self-Retracting Devices (SRDs, Hot)	Pass
Dynamic Performance (Cold)	7/18/2022	4.3.1.8 Dynamic Performance of Self-Retracting Devices (SRDs, Cold)	Pass
Dynamic Performance (Wet)	7/19/2022	4.3.1.9 Dynamic Performance of Self-Retracting Devices (SRDs, Wet)	Pass
Additional Dynamic Testing	7/19/2022	4.3.2 Additional Dynamic Performance Testing of Self-Retracting Lanyards, Personal (SRL-Ps)	Pass

Test Description	Test Date	Clause/Section	Result
Dynamic Performance (Class 2, Perpendicular, Ambient)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Perpendicular, Cold)	1/03/2023	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Perpendicular, Hot)	11/07/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Perpendicular, Wet)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Offset, Ambient)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Offset, Cold)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Offsent, Hot)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Dynamic Performance (Class 2, Offset, Wet)	7/21/2022	4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) Class 2	Pass
Retraction Testing	1/25/2022	4.5.1 Retraction Tension Testing of Self-Retracting Device Line	Pass
Horizontal Retraction (Class 2)	1/25/2022	4.5.2 Horizontal Orientation Retraction Testing of Class 2 Device Line	Pass
Wrap-Around Strength (SRL-P)	9/22/2022	4.6.3 Wrap-Around Strength for Self-Retracting Lanyard, Personal (SRL-Ps)	Pass
Corrosion	4/03/2020	7.4 Corrosion	See Appended Corrosion Test Report

This test report covers these additional products:

4200201, 4200202, 4200203, 4200204, 4200205, 4200206, 4200207, 4200208, 4200209

Please contact quality@guardianfall.com for signed report.

TEST EQUIPMENT		
EQUIPMENT	MODEL	SERIAL
Load Cell	1220ACK-25K-B	347989A
Load Cell	1210AF-10K-B	916507A
Load Cell	1210AF-10K-B	444522A
Test Weight	282 lb	GFP001
Test Weight	18 lb	GFP002
Test Weight	10 lb	7HME
Environmental Chamber	S-8-8200	46336
Environmental Chamber	SM-16-8200	49357
Scale	Totalcomp	02314063019

3.1	**General Requirements**	
3.1.1	Integral Connectors. Snaphooks or carabiners which are integral to self-retracting devices shall meet the requirements of the most recent version of ANSI/ASSP Z359.12. Integral rings or similar openings intended to accept a snaphook or carabiner 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 arresting) 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 Absorption. Self-retracting devices which perform an energy absorption function shall be designed such that the energy absorption 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	3.1.4 Visual Indicator. Self-retracting devices shall include a visual indicator that will activate in accordance with the requirements of 3.3.	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 after being salt spray (fog) tested for 96 hours in accordance with the method described in the reference in 7.4. After the salt spray test, the line shall pay out, retract and lock. Retraction tension shall be as specified in 3.5.	Meets or Exceeds
3.1.6	**Line Constituent of Self-Retracting Devices**	
3.1.6.1	Webbing and Synthetic Rope. Webbing and synthetic rope used as a line constituent of the self-retracting device shall be made of pure or non-recycled synthetic materials having strength, aging and abrasion resistance characteristics equivalent or superior to polyamides. Other synthetic materials than those stated herein are permitted for the line constituent of SRDs only when it can be demonstrated that all requirements of this standard are met and, additionally, that the durability, reliability and other properties pertinent to the intended uses have been evaluated and determined suitable by the manufacturer. Any restrictions on the use of such SRDs shall be marked on the SRD. Webbing shall have a minimum breaking strength of 4,500 pounds (20kN) for Class 1 devices and 5,000 pounds (22.2kN) for Class 2 devices, when tested in accordance with references in 7.1, 7.2 or 7.3 as appropriate.	Meets or Exceeds
3.1.6.2	Wire Rope. Wire rope used as a line constituent of a self-retracting device shall be constructed of stainless steel or galvanized steel strand. There is no required specification, provided that the SRD meets the minimum requirements of 3.2.1and 3.3.	Meets or Exceeds
3.1.6.3	Terminations of the constituent line shall be designed so as to meet the requirements of 3.2.1.	Meets or Exceeds
3.1.7	Class 2 Energy Absorber. The line constituent of Class 2 devices shall include an integral energy absorber element adjacent to the end of the line which connects to the body support. The energy absorber shall meet the requirements of ANSI/ASSP Z359.13. Alternative energy absorber designs are allowed provided all performance requirements for Class 2 devices are satisfied including 3.2.1 with the alternative energy absorber included during the static test. If the Class 2 device housing(s) is intended to be connected to the full body harness and can only be used in this orientation, then an energy absorber is not required as part of the line constituent although an energy management system is still required.	Meets or Exceeds

Notes

5	Instruction Requirements	
5.1	Marking Requirements	
5.1.1	Warnings shall be in English and shall meet the formatting requirements of the reference in 7.7. Non-warning markings shall be in English or pictorial format.	Meets or Exceeds
5.1.2	The legibility and attachment of required markings shall endure for the life of the component, subsystem or system being marked. When pressure-sensitive labels are used, they shall comply with the applicable provision of the reference in 7.6.	Meets or Exceeds
5.1.3	Self-Retracting Devices shall be marked with:	
	- part number and model designation	Meets or Exceeds
	- year of manufacture	Meets or Exceeds
	- manufacturer's name or logo	Meets or Exceeds
	- capacity range, including clothing, tools and equipment (130 lbs to 310 lbs);	Meets or Exceeds
	- unique ID number;	Meets or Exceeds
	- standard number (Z359.14-2021)	Meets or Exceeds
	- how to inspect visual indicator	Meets or Exceeds
	- warning to follow the manufacturer's instructions included with the equipment at time of shipment from the manufacturer	Meets or Exceeds
	- warning of the need for inspection in accordance with the manufacturer's instructions	Meets or Exceeds
	- the fiber or other materials used in the lanyard construction and any limitations of such materials	Meets or Exceeds
	- the lanyard working length	Meets or Exceeds
	- maximum arresting force	Meets or Exceeds
	- average arresting force	Meets or Exceeds
	- arrest distance	Meets or Exceeds
	- guidance with respect to clearance requirements	Meets or Exceeds
	- proper installation means	Meets or Exceeds
	- warning of the need for testing of the device for locking and retraction before each use	Meets or Exceeds
	- warning of the need to avoid lanyard contact with sharp edges and abrasive surfaces (not required for Class 2 SRDs)	Meets or Exceeds
	- suitability for use with horizontal lifelines	Meets or Exceeds
	- suitability for horizontal use	Meets or Exceeds
5.1.4	Class Designation Icon. In addition to the requirements of 5.1.3, the manufacturer shall include, in a conspicuous location on the device, the appropriate color-coded icon designating the class of the device. For SRLs and SRL-Rs, the icon shall be a minimum of 1-inch square (25mm). For SRL-Ps it shall be a minimum of .5-inch square (12.5mm).	Meets or Exceeds

5.1.5	Self-Retracting Lanyards with Integral Rescue Capability. In addition to the requirements in 5.1.3, self-retracting lanyards with integral rescue capability shall be marked to identify:	
	- direction to turn crank	Meets or Exceeds
	- warning against allowing slack line while in rescue mode	Meets or Exceeds
5.1.6	Class 2 Self-Retracting Devices.In addition to the requirements in 5.1.3, Class 2 self-retracting devices shall be marked to identify:	Meets or Exceeds
	- minimum installation setback distance	Meets or Exceeds
	- clearance required when falling over edge	Meets or Exceeds
	- a warning that exposure to a sharp or serrated structural edge could damage the device and that anchorage should be elevated to the extent possible to limit the risk of damage or failure	Meets or Exceeds
	- a warning to adhere to the hierarchy of controls as discussed in ANSI/ASSP Z359.2	Meets or Exceeds
5.1.7	Class 2 SRLs. In addition to the requirements of 5.1.6, Class 2 SRLs shall include labels illustrating a fall clearance table and a diagram of the axes shown on the table. These labels shall be affixed to the product, preferably at or near the point of attachment to the full body harness.	Meets or Exceeds
5.1.8	Class 2 SRL-Ps. In addition to the requirements of 5.1.6, Class 2 SRL-Ps shall include an illustration of clearance requirements on the label.	Meets or Exceeds
5.1.9	Warnings for Dual SRL-Ps. SRL-Ps shall be marked to include a warning that dual-connections shall only be made for the purposes of 100% tie-off transitions.	Meets or Exceeds

Notes

5.2	Instruction Requirements	
5.2.1	Instructions shall be provided to the user printed in English at the time of shipment from the manufacturer. Alternate media may be used for the dissemination of instructions, but only in addition to, not in lieu of printed instructions.	Meets or Exceeds
5.2.2	Instructions shall contain the following information:	
	- a statement that the manufacturer's instructions shall be provided to users	Meets or Exceeds
	- manufacturer's name, address and telephone number	Meets or Exceeds
	- manufacturer's part number or model designation for the equipment	Meets or Exceeds
	- intended use and purpose of the equipment	Meets or Exceeds
	- proper method of use and limitations on use of the equipment	Meets or Exceeds
	- illustrations showing locations of markings on the equipment	Meets or Exceeds
	- reproduction of printed information on all markings	Meets or Exceeds
	- inspection procedures required to assure the equipment is in serviceable condition and operating correctly	Meets or Exceeds
	- anchorage requirements	Meets or Exceeds
	- criteria for discarding equipment which fails inspection	Meets or Exceeds
	- procedures for cleaning, maintenance and storage	Meets or Exceeds
	- reference to the Z359 standards and applicable regulations governing occupational safety	Meets or Exceeds
	- proper installation means and limitations on the type of anchorage connectors used, if any	Meets or Exceeds
	- the diameter of rope or wire rope, and width and thickness of webbing used in the lanyard	Meets or Exceeds
	- the fiber or other materials used in the lanyard construction	Meets or Exceeds
	- the lanyard length	Meets or Exceeds
	- suitability for use with horizontal lifelines, deforming or flexible anchorages	Meets or Exceeds
	- the maximum and average arresting force when dynamically tested in ambient conditions, in accordance with the requirements of this standard	Meets or Exceeds
	- the arrest distance when dynamically tested in accordance with the requirements of this standard	Meets or Exceeds
	- how to determine fall clearance, which shall include a safety margin	Meets or Exceeds
	- 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 equipment.	Meets or Exceeds
5.2.4	Instructions shall require the user to remove equipment from field service if it has been subjected to the forces of arresting a fall or effecting a rescue.	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:	
	- altering the equipment	Meets or Exceeds
	- misusing the equipment	Meets or Exceeds
	- using combinations of components or subsystems, or both, which may affect or interfere with the safe function of each other	Meets or Exceeds
	- exposing the equipment to chemicals, high heat, severe cold or other harsh environments which may produce a harmful effect and to consult the manufacturer in cases of doubt	Meets or Exceeds
	- using the equipment around moving machinery and electrical hazards	Meets or Exceeds
	- using the equipment near sharp edges and abrasive surfaces	Meets or Exceeds
	- risk of striking an object or obstruction during a swing fall	Meets or Exceeds
	- avoiding the use of SRDs in applications where engulfment hazards exist	Meets or Exceeds
	- that the consequences of improperly using the device, not following instructions or markings may cause serious injury or death	Meets or Exceeds
5.2.7	Self-Retracting Lanyards with Integral Rescue Capability.In addition to the requirements of 5.2.1 through 5.2.6, instructions for self-retracting lanyards with integral rescue capability shall include:	
	- capacity when used for rescue, one or two persons	Meets or Exceeds
	- force required to operate rescue features when device is loaded to capacity	Meets or Exceeds
	- appropriate methods to receive the individual when retrieved to upper elevation	Meets or Exceeds
	- warning to prevent slack line while in rescue mode	Meets or Exceeds
	- maximum input RPM if equipped for powered operation	Meets or Exceeds
	Class 2 Self-Retracting Devices.In addition to the requirements of 5.2.1 through 5.2.6, instructions for self-retracting lanyards with integral leading-edge capability shall include:	Meets or Exceeds
	- advisory that the device was successfully tested for horizontal use and falls over a steel edge without burrs. As a result, the device may be used in situations where a fall may occur over similar edges, such as found on structural steel members or metal sheeting	Meets or Exceeds
	- a warning identifying known prohibited edge substrates	Meets or Exceeds
	- a warning that the allowable angle of redirection of the lanyard portion of the device at the edge over which a fall might occur (measured between the two sides formed by the redirected lanyard) shall be at least 90 degrees	Meets or Exceeds
	- a warning that the anchor point may only be situated at the same height as the edge at which a fall might occur or above the edge	Meets or Exceeds
	- any limitations to the allowable work area relative to the anchorage point, including factors such as swing fall and abrasion on the line at the edge, and the use of a single anchor point versus anchors that allow horizontal movement such as a horizontal lifeline or rail	Meets or Exceeds
	- indication whether the device may be used in combination with a horizontal lifeline or rail	Meets or Exceeds
	- a warning not to work on the far side of an opening, opposite the anchorage point	Meets or Exceeds
	- advise that in the event of a fall over the edge, special rescue measures may be required	Meets or Exceeds
	- a warning that use of this device in an orientation such that the constituent line may contact a sharp, jagged or abrasive structural edge is inherently dangerous, and such use should be a last resort	Meets or Exceeds

5.2.8	Class 2 Self-Retracting Devices. In addition to the requirements of 5.2.1 through 5.2.6, instructions for self-retracting lanyards with integral leading-edge capability shall include:	
	- advisory that the device was successfully tested for horizontal use and falls over a steel edge without burrs. As a result, the device may be used in situations where a fall may occur over similar edges, such as found on structural steel members or metal sheeting	Meets or Exceeds
	- a warning identifying known prohibited edge substrates	Meets or Exceeds
	- a warning that the allowable angle of redirection of the lanyard portion of the device at the edge over which a fall might occur (measured between the two sides formed by the redirected lanyard) shall be at least 90 degrees	Meets or Exceeds
	- a warning that the anchor point may only be situated at the same height as the edge at which a fall might occur or above the edge	Meets or Exceeds
	- any limitations to the allowable work area relative to the anchorage point, including factors such as swing fall and abrasion on the line at the edge, and the use of a single anchor point versus anchors that allow horizontal movement such as a horizontal lifeline or rail	Meets or Exceeds
	- indication whether the device may be used in combination with a horizontal lifeline or rail	Meets or Exceeds
	- a warning not to work on the far side of an opening, opposite the anchorage point	Meets or Exceeds
	- advise that in the event of a fall over the edge, special rescue measures may be required	Meets or Exceeds
	- advise that in the event of a fall over the edge, special rescue measures may be required	Meets or Exceeds
5.2.9	Warnings for Class 2 SRDs.A printed card, minimum size of 3 inches by 5 inches (76mm by 127mm), shall be included by the manufacturer with each Class 2 SRD. The card shall be white font (Arial, 16 pt.) on an orange background and shall state as follows:	
	WARNING: This Class 2 self-retracting device, when attached to a foot-level anchorage, poses significant risk of injury. The user, the competent person and/or qualified person should all acknowledge that normal use of this device MAY NOT PREVENT A SERIOUS INJURY. Failure to follow all manufacturer's instructions and warnings may result in serious injury or death.	Meets or Exceeds
5.2.10	Warnings for Dual SRL-Ps. If the device produces a maximum arrest force greater than 1,800 pounds (8kN) when tested in accordance with 4.6.2, it shall be marked to include a warning that dual-connections shall only be made for the purposes of 100% tie-off transitions and that if a dual connection is made for any other purpose, anchorages of different elevations must be utilized.	NA

Notes

All measurements expressed at approximately 95% confidence level using coverage factor K=2

4.2.1 Static Testing of Self-Retracting Devices
Requirements per 3.2.1

a) Shorten the constituent line, if necessary, to allow installation in the static tensile test equipment specified in 4.1.2. With the SRD constituent fully extracted, install the device in the tensile test equipment.

b) Apply a minimum load of 3,600 pounds (16kN). Time to reach the load shall be no less than one minute to avoid dynamic effects. The load shall be maintained for a period of no less than one minute.

c) Compare the results with the requirements of 3.2.1.

4.2.1 Static Testing of Self-Retracting Devices
Requirements per 3.2.1

Samples	Sample # 01	Sample # 02	Sample # 03
Actual load applied (>3,600 lb) (lb)	3635.23	3601.35	3611.86
SRL withstands tensile load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.3 Locking Strength Testing of Self-Retracting Devices
Requirements per 3.2.3

a) Shorten the constituent line, if necessary, to allow installation in the static tensile test equipment specified in 4.1.2. With the SRD constituent fully extracted, install the device in the tensile test equipment.

b) Apply a minimum load of 3,600 pounds (16kN). Time to reach the load shall be no less than one minute to avoid dynamic effects. The load shall be maintained for a period of no less than one minute.

c) Compare the results with the requirements of 3.2.1.

4.2.3 Locking Strength Testing of Self-Retracting Devices
Requirements per 3.2.3

Samples	Sample # 07	Sample # 08	Sample # 09
Actual load applied (>1,800 lb) (lb)	1851.46	1870.45	1850.11
SRL withstands tensile load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

Notes

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Ambient

Requirements per 3.3.1

a) Attach the load cell (transducer) to the drop test structure specified in 4.1. Anchor the SRD to the load cell according to manufacturer's instructions. Connect the 310-pound (140kg) test weight specified in 4.1.1 to the attachment-end connector on the constituent line.

b) Attach the quick release mechanism specified in 4.1 to the test weight and attach the hoisting means to the quick release mechanism

c) Hoist the test weight to the level at which 36 inches ± 1.0 inch (914mm ± 25mm) of the device line is extended from the nozzle. The horizontal distance of the quick release mechanism from the device nozzle shall not exceed 12 inches (305mm).

d) Do not lock the device or inhibit retraction of the device.

e) Release the test weight by activating the quick release mechanism.

f) Measure and record the maximum arrest force, average arrest force and arrest distance.

g) Compare the test results with the requirements of 3.3.1.

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Ambient

Requirements per 3.3.1

Samples	Sample # 10	Sample # 11	Sample # 12
Locking function operates correctly?	Yes	Yes	Yes
Line pays out and retracts correctly?	Yes	Yes	Yes
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	997.79	985.18	898.51
Average Arrest Force (<1,350 lb) (lb)	670.20	689.19	678.19
Arrest Distance (<42 in.) (in.)	21	22	25.5
Result/Assessment	Pass	Pass	Pass

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Hot

Requirements per 3.3.1

a) Attach the load cell (transducer) to the drop test structure specified in 4.1. Anchor the SRD to the load cell according to manufacturer's instructions. Connect the 310-pound (140kg) test weight specified in 4.1.1 to the attachment-end connector on the constituent line.

b) Attach the quick release mechanism specified in 4.1 to the test weight and attach the hoisting means to the quick release mechanism

c) Hoist the test weight to the level at which 36 inches ± 1.0 inch (914mm ± 25mm) of the device line is extended from the nozzle. The horizontal distance of the quick release mechanism from the device nozzle shall not exceed 12 inches (305mm).

d) Do not lock the device or inhibit retraction of the device.

e) Release the test weight by activating the quick release mechanism.

f) Measure and record the maximum arrest force, average arrest force and arrest distance.

g) Compare the test results with the requirements of 3.3.1.

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Hot

Requirements per 3.3.1

Samples	Sample # 13	Sample # 14	Sample # 15
Locking function operates correctly?	Yes	Yes	Yes
Line pays out and retracts correctly?	Yes	Yes	Yes
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	899.21	895.01	902.06
Average Arrest Force (<1,575 lb) (lb)	658.15	646.46	648.89
Arrest Distance (<42 in.) (in.)	26.5	23.5	25.75
Result/Assessment	Pass	Pass	Pass

Notes

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Cold

Requirements per 3.3.1

a) Attach the load cell (transducer) to the drop test structure specified in 4.1. Anchor the SRD to the load cell according to manufacturer's instructions. Connect the 310-pound (140kg) test weight specified in 4.1.1 to the attachment-end connector on the constituent line

b) Attach the quick release mechanism specified in 4.1 to the test weight and attach the hoisting means to the quick release mechanism

c) Hoist the test weight to the level at which 36 inches ± 1.0 inch (914mm ± 25mm) of the device line is extended from the nozzle. The horizontal distance of the quick release mechanism from the device nozzle shall not exceed 12 inches (305mm)

d) Do not lock the device or inhibit retraction of the device.

e) Release the test weight by activating the quick release mechanism.

f) Measure and record the maximum arrest force, average arrest force and arrest distance.

g) Compare the test results with the requirements of 3.3.1.

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Cold

Requirements per 3.3.1

Samples	Sample # 16	Sample # 17	Sample # 18
Locking function operates correctly?	Yes	Yes	Yes
Line pays out and retracts correctly?	Yes	Yes	Yes
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	996.14	916.88	1174.27
Average Arrest Force (<1,575 lb) (lb)	722.47	764.78	745.58
Arrest Distance (<42 in.) (in.)	19.75	21	24.75
Result/Assessment	Pass	Pass	Pass

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Wet

Requirements per 3.3.1

a) Attach the load cell (transducer) to the drop test structure specified in 4.1. Anchor the SRD to the load cell according to manufacturer's instructions. Connect the 310-pound (140kg) test weight specified in 4.1.1 to the attachment-end connector on the constituent line.

b) Attach the quick release mechanism specified in 4.1 to the test weight and attach the hoisting means to the quick release mechanism

c) Hoist the test weight to the level at which 36 inches ± 1.0 inch (914mm ± 25mm) of the device line is extended from the nozzle. The horizontal distance of the quick release mechanism from the device nozzle shall not exceed 12 inches (305mm)

d) Do not lock the device or inhibit retraction of the device.

e) Release the test weight by activating the quick release mechanism.

f) Measure and record the maximum arrest force, average arrest force and arrest distance.

g) Compare the test results with the requirements of 3.3.1.

4.3.1 Dynamic Performance of Self-Retracting Devices (SRDs), Wet

Requirements per 3.3.1

Samples	Sample # 19	Sample # 20	Sample # 21
Locking function operates correctly?	Yes	Yes	Yes
Line pays out and retracts correctly?	Yes	Yes	Yes
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1031.08	1013.65	958.42
Average Arrest Force (<1,575 lb) (lb)	687.52	709.73	665.04
Arrest Distance (<42 in.) (in.)	22.25	26.75	23
Result/Assessment	Pass	Pass	Pass

Notes

4.3.2 Additional Dynamic Performance Testing of Self-Retracting Lanyards, Personal (SRL-Ps)

Requirements per 3.3.2

a) Attach the load cell (transducer) to the drop test structure specified in 4.1. Anchor the SRL-P to the load cell according to manufacturer's instructions. Connect the 310-pound (140kg) test weight specified in 4.1.1 to the attachment-end connector on the SRL-P.

b) Attach the quick release mechanism specified in 4.1. to the test weight and attach the hoisting means to the quick release mechanism

c) Hoist the test weight to the level at which activation would begin (the point at which the device would have its first opportunity to engage) and measure the distance to a fixed point of reference (initial height). Elevate the test weight 72 inches + 1.0/-0 inch (1,829mm + 25mm/ -0mm) above the initial height. The horizontal distance of the quick release mechanism from the device nozzle shall not exceed 12 inches (305mm).

d) Do not lock the device or inhibit retraction of the device

e) Release the test weight by activating the quick release mechanism.

f) Measure and record the maximum arrest force.

g) Compare the test results with the requirements of 3.3.2.

4.3.2 Additional Dynamic Performance Testing of Self-Retracting Lanyards, Personal (SRL-Ps)

Requirements per 3.3.2

Samples	Sample # 52	Sample # 53	Sample # 54
Locking functions operates correctly?	Yes	Yes	Yes
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1048.90	1027.92	1037.38
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Ambient

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Ambient

Requirements per 3.3.3

Samples	Sample # 22	Sample # 23	Sample # 24
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1007.04	935.46	897.19
Average Arrest force (<1,575 lb) (lb)	739.38	762.79	730.42
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	700	698	694.26
Arrest Distance (in.)	105.75	105.50	108.25
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Hot

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Hot

Requirements per 3.3.3

Samples	Sample # 25	Sample # 26	Sample # 27
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1005.70	994.09	1018.97
Average Arrest force (<1,575 lb) (lb)	696.83	694.14	702.42
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	685.48	685.04	682.69
Arrest Distance (in.)	110.00	113.25	110.00
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Cold

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch 7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a ble test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Cold

Requirements per 3.3.3

Samples	Sample # 28	Sample # 29	Sample # 30
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1008.64	1018.49	983.94
Average Arrest force (<1,350 lb) (lb)	819.53	815.43	799.14
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	698.11	698.32	695.62
Arrest Distance (in.)	85.25	84.75	83.00
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Wet

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Perpendicular, Wet

Requirements per 3.3.3

Samples	Sample # 31	Sample # 32	Sample # 33
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	977.36	947.14	967.53
Average Arrest force (<1,575 lb) (lb)	800.38	766.23	792.01
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	696.19	692.90	693.63
Arrest Distance (in.)	97.50	87.50	94.00
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Ambient

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Ambient

Requirements per 3.3.3

Samples	Sample # 34	Sample # 35	Sample # 36
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1101.72	882.63	990.90
Average Arrest force (<1,575 lb) (lb)	761.04	730.19	738.53
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	921.60	696.84	705.43
Arrest Distance (in.)	115.75	120.25	119.25
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Hot

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Hot

Requirements per 3.3.3

Samples	Sample # 37	Sample # 38	Sample # 39
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1193.48	939.65	1243.87
Average Arrest force (<1,575 lb) (lb)	720.06	701.36	728.49
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	708.94	718.90	747.29
Arrest Distance (in.)	131.50	128.25	130.00
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Cold

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch 7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a ble test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Cold

Requirements per 3.3.3

Samples	Sample # 40	Sample # 41	Sample # 42
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	1109.34	1205.96	1157.90
Average Arrest force (<1,350 lb) (lb)	796.15	768.75	811.59
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	740.91	715.92	707.02
Arrest Distance (in.)	100.50	107.75	103.25
Result/Assessment	Pass	Pass	Pass

Notes

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Wet

Requirements per 3.3.3

a) Attach the SRD to a rigid anchorage on the Class 2 drop test structure, in accordance with the manufacturer's instructions for anchoring the device on the same level as the edge. SRL-Ps shall be attached to the test weight, with the integral connector on the constituent line attached directly to the test anchorage.

b) 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). A new device may be used for each test. Drop the test weight from a level 5 feet ± 1.0 inch (1.5m ± 25mm) above and at a horizontal distance of 20 inches (0.5m) ± 1.0 inch (± 25mm) measured perpendicular from the edge, or in accordance with the following as necessary. Clamp the line so that it cannot retract.

c) The horizontal distance of the test weight from the edge shall be increased beyond 20 inches (.5m) as needed to ensure the line element (webbing, rope, wire rope, etc.) of the SRD makes the initial contact with the edge during the tests. Other elements of the line constituent (snaphooks, energy absorbers, end fittings, etc.) shall be positioned away from the edge.

d) The tests shall be conducted with the SRD fully extended (maximum of its working range). The SRD may need to be shortened or lengthened to accommodate the test site geometry. A 9/32 inch (7.1mm) nominal size grade 80 chain may be connected between the anchorage point and the SRD to lengthen the unit. Alternatively, a cable test lanyard of appropriate length and meeting the requirements of ANSI/ASSP Z359.7 may be used.

e) Attach the load cell specified in 4.1 between the harness connector of the SRD and the 310-pound (141kg) 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 SRD. Ensure the line is clamped, so that it cannot retract.

f) Release the test weight by activating the quick release mechanism. Allow the test weight to swing unrestrained for a period of not less than 60 seconds following initial arrest.

g) For each test, measure and record the maximum and average arresting force and the arrest distance and check that the visual indicator has activated.

h) The portion of the line having contacted the edge material shall be cut from the device and terminated at each end according to the requirements of 3.1.6.3. This artifact must then be subjected to a static load for a period of not less than one minute in accordance with 3.3.3.4.

4.3.3 Additional Dynamic Performance Testing of Self-Retracting Devices (SRDs) – Class 2, Offset, Wet

Requirements per 3.3.3

Samples	Sample # 43	Sample # 44	Sample # 45
Visual Indicator activated?	Yes	Yes	Yes
Max. Arrest Force (<1,800 lb) (lb)	996.94	995.05	1015.79
Average Arrest force (<1,575 lb) (lb)	763.87	776.24	776.18
Residual Static Force applied: (lb) Synthetic constituent line: >1,000 lb Wire Rope constituent line: >675 lb	703.62	694.35	692.93
Arrest Distance (in.)	112.5	995.05	113.5
Result/Assessment	Pass	Pass	Pass

Notes

4.5.1 Retraction Tension Testing of SRD Line
Requirements per 3.5

a) Suspend the SRD from a rigid anchorage in the manner prescribed by the manufacturer's instructions. When the SRD line is in the fully retracted position, extract 1.0 foot (305mm) of line. Attach a non-slip clamp to the extracted line segment at a point approximately 1.0 foot (305mm) from the line outlet on the SRD housing. The weight of the clamp shall not exceed 2 ounces (57g).

b) Connect the tension test gauge specified in 4.1.3 to the clamp and allow the line retraction tension to be borne by the gauge while the gauge is held stationary and unsupported by the line.

c) Align the test gauge load axis with the vertical. Record the gauge reading within 90 seconds. Disconnect the gauge and clamp and allow the line to retract back onto the SRD drum under only the SRD's power.

d) Repeat this procedure at 50% and 100% extraction of the manufacturer's specified line length.

e) Compare the results to the requirements set forth in 3.5.

4.5.1 Retraction Tension Testing of SRD Line
Requirements per 3.5

Samples	Sample# 46	Sample# 47	Sample# 48
Force @ 1 ft extraction (>1.25, <25 lb) (lb)	4.1	3.7	3.5
Force @ 50% extraction (>1.25, <25 lb) (lb)	4.1	4.0	4.6
Force @ 100% extraction (>1.25, <25 lb) (lb)	5.6	6.4	6.7
Line remaining extended after full retraction (<24 in.) (in.)	<24	<24	<24
Result/Assessment	Pass	Pass	Pass

4.5.2 Horizontal Orientation Retraction Testing of Class 2 Device Line
Requirements per 3.5

a) Anchor the SRD line in the fully retracted position and by means of the connector provided at the end of the line constituent, extract the line from the device by moving away from the device at an approximately constant rate below the rate required to cause the device to lock until the line is fully extended.

b) Allow the device to retract the line by moving towards it at a constant walking speed, observing that at no time does retraction stop.

c) Repeat the test for each anchoring method allowed by the manufacturer.

d) Compare the results to the requirements set forth in 3.5.

4.5.2 Horizontal Orientation Retraction Testing of Class 2 Device Line
Requirements per 3.5

Samples	Sample # 49	Sample # 50	Sample # 51
Force @ 1 ft extraction (>1.25, <25 lb) (lb)	>1.25 <25.00	>1.25 <25.00	>1.25 <25.00
Force @ 50% extraction (>1.25, <25 lb) (lb)	>1.25 <25.00	>1.25 <25.00	>1.25 <25.00
Force @ 100% extraction (>1.25, <25 lb) (lb)	>1.25 <25.00	>1.25 <25.00	>1.25 <25.00
Line remaining extended after full retraction (<48 in.) (in.)	<48	<48	<48
Constitutent line retracted without stopping?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.6.3 Wrap-Around Strength for Self-Retracting Lanyard, Personal (SRL-Ps)
Requirements per 3.6.3

a) Subject the test specimen to 2,500 cycles of abrasion conditioning utilizing the equipment and procedure described in 4.1.8

b) Install the fixture specified in 4.1.7 in the tensile testing equipment

c) Anchor the wrap-around segment of the constituent line from a device previously tested according to 4.3.1, 4.3.2 or 4.3.3 to the I-beam fixture according to manufacturer's instructions. Ensure that the abraded section of the constituent line is in contact with the top two edges of the test beam at the beginning of the test. Contact must be maintained with the abraded section of the constituent line with at least one top edge of the test beam throughout the duration of the test

d) Attach the opposite end of the device to the tensile testing equipment

e) Apply and maintain a static load of 3,600 pounds (16kN) for both class 1 and 2 devices for a period of not less than one minute. Time to reach the load shall be no less than one minute to avoid dynamic effects

f) Compare the results with the requirements of 3.6.3.

4.6.3 Wrap-Around Strength for Self-Retracting Lanyard, Personal (SRL-Ps)
Requirements per 3.6.3

Samples	Sample # 55	Sample # 56	Sample # 57
Max. Force Applied (>3,600 lb) (lb)	3635.43	3630.40	3634.25
Sample maintained static load?	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

Pictured: 4200200
Represents 4200200 - 4200204

Pictured: 4200205
Represents 4200205 - 4200209

Labels
Applicable to all part #s

Test Report
ASTM B117-2019

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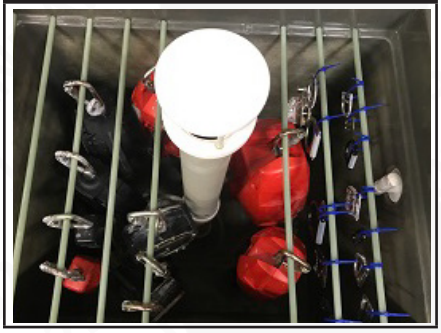
Suite 800, Houston, TX 77053
800-466-6385

Test Type:	96 Hour Neutral Salt Spray Test (NSS)	**Test Description:**	96 Hour Neutral Salt spray Test
Lab Technician:	Sutton Harper	**Testing on Behalf of:**	Guardian Fall
Start of Test:	3/31/2020	**End of Test:**	4/03/2020
Part Number:	4200200	**Number of Sample(s):**	01
Part Description:	SRL, CR3-Edge, Class 2, Single, 8ft, Galvanized Cable, Steel Snap Hook		
Salt Purity (Percent):	>97.7%	**Water Type:**	Type IV Deionized Water

Interval				Quantity	Specific Gravity		PH
Exposure Time	Actual Time Log	Water Jacket Temperature	Bubble Tower Temperature	Measurement *mL/h/80cm²*	Collection Temperature	Density g/cm³	Measurement 6.5-7.2
Start	325.38	95°F	116.6°F	42/33 *mL/h/80cm²*	84.5°F	1.034 g/cm³	6.74
24 Hours	349.38	95°F	116.6°F	*41/33 mL/h/80cm²*	82.8°F	1.034 g/cm³	6.74
48 Hours	373.38	95°F	116.6°F	*42/31 mL/h/80cm²*	86.5°F	1.034 g/cm³	6.72
96 Hours	421.38	95°F	116.6°F	*72/63 mL/h/80cm²*	87.0°F	1.034 g/cm³	6.63

Before Test



Post Test

Please contact quality@guardianfall.com for signed report.

Test Equipment		
Equipment	**Model**	**Serial**
pH Meter	H18424	03370090101
Salinity Tester	HI998319	LA02500060
Salt Spray Chamber	SS600e	2018052202