



Test Report

ANSI/ASSP Z359.3-2019

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Test Report Number: 2021122101603
Job Number: 132457
Product SKU#: 01603
Product Type: Positioning Lanyard
Product Description: 24" swivel rebar positioning, chain assly, Grade 43 twisted chain, double locking snap hooks, clevis pin
Testing Standard: ANSI/ASSP Z359.3-2019 Safety Requirements for Lanyards and Positioning Lanyards
Dates of Manufacture: 4/01/2018
Date(s) of Testing: 5/07/2018

REQUIREMENT VERIFICATION

<u>Requirement Description</u>	<u>Clause/Section</u>	<u>Result</u>
General Requirements	3. Design Requirements	Meets or Exceeds
Markings and Instructions	5. Marking and Instructions	Meets or Exceeds

QUALIFICATION TESTING

<u>Test Description</u>	<u>Test Date</u>	<u>Clause/Section</u>	<u>Result</u>
Static Strength (Lanyard/Pos.)	5/07/2018	4.2.1 Lanyards and Positioning Lanyards Static Strength Testing	Pass
Dynamic Strength	5/07/2018	4.2.3 Adjustable Positioning Lanyards Static Strength and Slip Testing	Pass

This test report covers these additional products:

01605, 01609, 01610, 01611, 01615, 01616, 01617

Please contact quality@guardianfall.com for signed report.

Test Equipment		
Equipment	Model	Serial
Load Cell	1220ACK-25K-B	347989A
Load Cell	1210AF-10K-B	444522A
Test Weight	282 lb	GFP007

3	Design Requirements	
3.2	Component and Element Requirements	
3.2.1	Lanyard and positioning lanyard elements fabricated from synthetic fibers shall be made from pure or non-recycled materials having strength, aging, abrasion resistance and heat-resistance characteristics equivalent or superior to polyamides or polyester.	Meets or Exceeds
3.2.1.1	Other synthetic materials, than those stated herein, are permitted 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 use have been evaluated by the manufacturer and determined suitable. Any resulting restrictions on the use shall be marked on the lanyard.	Meets or Exceeds
3.2.2	Wire rope used in the construction of lanyards shall be constructed in accordance with Military Specification MIL-DTL-83420, Wire Rope, Flexible, for Aircraft Control, General Specification For.	Meets or Exceeds
3.2.3	All hardware elements used in the manufacture of lanyards and positioning lanyards shall:	
3.2.3.1	Meet the requirements of ANSI/ASSP Z359.12, Connecting Components for Personal Fall Arrest Systems.	Meets or Exceeds
3.2.3.2	Have additional material (i.e., wear piece, guard, extra loop, etc.) for abrasion protection when connected to synthetic material to protect the synthetic material from concentrated wear.	Meets or Exceeds
3.3	Lanyard and Positioning Lanyard Design Requirements	Meets or Exceeds
3.3.1	Lanyards and positioning lanyards can be manufactured to any length. Adjustable devices shall be measured when extended to the maximum length permitted by the design.	Meets or Exceeds
3.3.2	Lanyards and positioning lanyards with adjustment ability shall be redesigned in such a manner that the adjustment stops if the adjuster is released. See Figures 1 and 2.	Meets or Exceeds
3.3.3	Lanyards and positioning lanyards shall have end terminations that meet the following requirements	Meets or Exceeds
3.3.3.1	Formed eye terminations in rope (refer to 3.3.3.3 for wire rope terminations) shall be made in accordance with the rope manufacturer's recommendation, subject to the following requirements. Eye splices in twisted rope having three or more strands shall have a minimum of four tucks. A properly sized thimble or wear piece shall be seized, whipped, or otherwise internally finished to prevent the termination or splice from unraveling or unsplicing. Knots shall not be used to form lanyard end terminations.	Meets or Exceeds
3.3.3.2	Stitched eye terminations on sewn material (rope and webbing shall be sewn using lock stitches or backstitched. Thread shall be compatible with the sewn material and shall be of a contrasting color to facilitate inspection. A properly sized thimble shall be part of a formed eye termination. Sewn material ends shall be seared or otherwise prevented from unraveling.	Meets or Exceeds
3.3.3.3	Swaged terminations for forming eyes in wire rope may be made from a spliced or return eye with a swaged fitting. All formed eyes shall incorporate a properly sized thimble.	Meets or Exceeds
3.3.3.4	Chain fittings (i.e., midlinks, oblong master links, etc.) shall meet or exceed the breaking strength of the chain size selected. Terminations of chain used in lanyards shall not be made by knotting or welding of chain or chain fittings.	Meets or Exceeds

3.4	Lanyards and Adjustable Lanyard Performance Requirements	
3.4.1	When tested in accordance with 4.2.1, lanyards shall have a breaking strength no less than 5,000 pounds (22kN)	Meets or Exceeds
3.4.2	When tested in accordance with 4.2.2, lanyards with adjustment ability shall maintain their adjusted length within 3 inches (76.2 mm) when loaded to no less than 1,000 pounds (4.4 kN) and shall have a breaking strength no less than 5,000 pounds (22kN)	Meets or Exceeds
3.4.3	When tested in accordance with 4.2.4, lanyards and adjustable lanyards shall not break and shall retain the test weight for a period no less than one minute.	Meets or Exceeds
3.5	Positioning Lanyard and Adjustable Positioning Lanyard Performance Requirements	
3.5.1	When tested in accordance with 4.2.1, positioning lanyards without adjustment ability shall have a breaking strength no less than 5,000 pounds (22kN)	Meets or Exceeds
3.5.2	When tested in accordance with 4.2.3, positioning lanyards with adjustment ability shall maintain their adjusted length within 3 inches (76.2 mm) when loaded to no less than 1,000 pounds (4.4 kN) and shall have a breaking strength no less than 5,000 pounds (22kN)	Meets or Exceeds
3.5.3	When tested in accordance with 4.2.4, positioning lanyards and adjustable positioning lanyards shall not break and shall retain the test weight for a period of no less than one minute.	Meets or Exceeds
3.5.4	When conditioning in accordance with the abrasion test in 4.2.5 and tested in accordance with 4.2.1 procedure, positioning lanyards shall have a breaking strength of not less than 3,600 pounds (16 kN) after being abraded. Positioning lanyards made of steel or stainless steel do not require abrasion conditioning and are not required to be tested to this section.	Meets or Exceeds
3.5.5	When conditioning in accordance with the abrasion test in 4.2.5 and tested in accordance with 4.2.3 procedure, adjustable positioning lanyards shall have a breaking strength of not less than 3,600 pounds (16 kN) after being abraded. Adjustable positioning lanyards made of steel or stainless steel do not require abrasion conditioning and are not required to be tested to this section.	Meets or Exceeds

Notes

5	Marking and Instructions	
5.1	General Marking Requirements	
5.1.1	All markings shall be in English	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 provisions of UL 969, <i>Marking and Labeling Systems</i> .	Meets or Exceeds
5.1.3	Except for connectors, lanyard and positioning lanyards shall be marked to identify:	
	year of manufacture	Meets or Exceeds
	manufacturer's identification	Meets or Exceeds
	part number	Meets or Exceeds
	model designation	Meets or Exceeds
	serial number	Meets or Exceeds
	standard number (ANSI Z359.3)	Meets or Exceeds
	capacity	Meets or Exceeds
	purpose (lanyard, positioning lanyard or both)	Meets or Exceeds
	length	Meets or Exceeds
	the material of construction	Meets or Exceeds
	the need to make only compatible connections	Meets or Exceeds
	warnings to follow manufacturer's instructions included with the equipment at time of shipment from the manufacturer	Meets or Exceeds
5.2	Specific Marking Requirements In addition to the marking requirements of 5.1, lanyards and positioning lanyards shall be marked according to the requirements of this section.	
5.2.1	Adjustable positioning lanyards shall be marked with:	Meets or Exceeds
	"DO NOT USE FOR FALL ARREST"	Meets or Exceeds
5.3	Instruction Requirements The manufacturer shall provide user instructions for lanyard and positioning lanyards before the product is shipped from the manufacturer.	
5.3.1	All instructions shall be in English	Meets or Exceeds
5.3.2	Instructions shall be affixed to lanyard and positioning lanyards before the product is shipped from the manufacturer	Meets or Exceeds

5.3.3	Instructions shall contain the following information:	
	a statement that the manufacturer's instructions shall be provided and available to authorized persons	Meets or Exceeds
	manufacturer's name, address, website and telephone number	Meets or Exceeds
	part number	Meets or Exceeds
	model designation	Meets or Exceeds
	intended use and purpose of the product	Meets or Exceeds
	proper method of use and limitations on use of the product	Meets or Exceeds
	illustrations showing locations of markings on the product	Meets or Exceeds
	reproduction of printed information on all markings	Meets or Exceeds
	inspection procedures required to assure the product is in serviceable condition and operating correctly	Meets or Exceeds
	anchorage requirements as set forth in ANSI/ASSP Z359.2	Meets or Exceeds
	criteria for removing product from service if it fails inspection	Meets or Exceeds
	procedures for cleaning, maintenance and storage	Meets or Exceeds
	capacity	Meets or Exceeds
	space or recording inspection dates	Meets or Exceeds
	who is allowed or how repairs or alterations are made to the product	Meets or Exceeds
	require that the authorized person be provided a rescue plan and appropriate training before using the equipment where suspension could occur	Meets or Exceeds

Notes

5.3.4	Instructions shall contain warnings regarding:	
	not to use the lanyards or positioning lanyards for material handling	Meets or Exceeds
	altering the product	Meets or Exceeds
	misusing the product	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 product to chemicals which may produce a harmful effect and to consult with the manufacturer in cases of doubt	Meets or Exceeds
	using the product around moving machiner and electrical hazards	Meets or Exceeds
	using the product near sharp edges and abrasive surfaces	Meets or Exceeds
	the need to make only compatible connections and limitations of compatibility	Meets or Exceeds
	proper method of coupling the connector and checking that it is closed and locked	Meets or Exceeds
	reading instructions and labels before use	Meets or Exceeds
	not removing or altering labels	Meets or Exceeds

Notes

4.2.1 Lanyards and Positioning Lanyards Static Strength Testing requirements per 3.4.1, 3.5.1

- Connect the lanyard test specimen between connectors of the tensile test equipment specified in 4.1 by means of the connectors at each end of the specimen. If the test specimen is a constituent of a subsystem or system that does not have an integral connector at its end, simulate as exactly as possible the intended means of assembling it into its subsystem or system
- Subject the specimen to a force no less than 5,000 pounds (22 kN) for a period of no less than one minute. The time to reach this force shall be no less than three minutes to avoid dynamic effects
- Compare the test results to the requirements set forth in 3.4.1 and 3.5.1 accordingly.

4.2.1 Lanyards and Positioning Lanyards Static Strength Testing requirements per 3.4.1, 3.5.1

Samples	Sample # 01	Sample # 02	Sample # 03
Actual force applied >5,000lb (lb)	5154.06	5075.69	5920.37
Specimen maintained load >1 Minute	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

4.2.4 Lanyard and Positioning Lanyard Dynamic Strength Testing requirements per 3.4.3, 3.5.3

- If the specimen includes an adjustment mechanism, adjust the specimen to its longest length. Attach one end of the specimen to the anchor point attachment of the test structure and the other end to the test weight. If the specimen design has three connections, attach the connector intended for the anchorage to the test weight and the remaining connectors to the load cell.
- Attach the quick release device to the upper attachment point of the test weight. A test lanyard may be used on either the test weight or anchorage point of the test structure as needed.
- Raise the weight to a height necessary to apply a peak impact load not less than 3,600 pounds (16 kN) or a maximum distance of 4 feet (1.2m) whichever is less.
- Release the test mass by means of the quick release.
- Compare the test results to the requirements set forth in 3.4.3 and 3.5.3 accordingly.

4.2.4 Lanyard and Positioning Lanyard Dynamic Strength Testing requirements per 3.4.3, 3.5.3

Samples	Sample # 04	Sample # 05	Sample # 06
Maximum Arresting Force >3600 lb	4103.77	4221.65	3845.99
Specimen maintained load for >1 min	Yes	Yes	Yes
Result/Assessment	Pass	Pass	Pass

Notes