



# 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](mailto: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 |

|              |                                                                                                                                                                                                                                                                                                                                                                                                   |                  |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>3.4</b>   | Lanyards and Adjustable Lanyard Performance Requirements                                                                                                                                                                                                                                                                                                                                          |                  |
| <b>3.4.1</b> | When tested in accordance with 4.2.1, lanyards shall have a breaking strength no less than 5,000 pounds (22kN)                                                                                                                                                                                                                                                                                    | Meets or Exceeds |
| <b>3.4.2</b> | 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 |
| <b>3.4.3</b> | 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 |
| <b>3.5</b>   | Positioning Lanyard and Adjustable Positioning Lanyard Performance Requirements                                                                                                                                                                                                                                                                                                                   |                  |
| <b>3.5.1</b> | 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 |
| <b>3.5.2</b> | 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 |
| <b>3.5.3</b> | 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 |
| <b>3.5.4</b> | 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 |
| <b>3.5.5</b> | 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   | <b>Specific Marking Requirements</b><br>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   | <b>Instruction Requirements</b><br>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 |

|              |                                                                                                                                               |                  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>5.3.3</b> | 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

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|--------------|-----------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>5.3.4</b> | 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