

ANSI Z359.18 Type A Test Report

6305 S 231st Street Kent, WA 98032 800-466-6385

| 207 | 279-00 | 20.00 | |
|------|--------|-------|------|
| Test | Report | Num | her. |

Job Number:

Product Type:

Product Model:

Dates of Manufacture:

Date(s) of Testing:

2018051100101

129484

Type A Anchorage Connector

00101, Beamer 2000

10/01/2017, 11/22/2017

02/19/2018

| Tests Completed | Test Date | ANSI/ASSE Z359.18-2017 | Pass/Fail |
|---------------------------|------------|------------------------|-----------|
| Design Requirements | | | Pass |
| Static Strength | 02/19/2018 | | Pass |
| Dynamic Strength | 02/19/2018 | | Pass |
| Residual Strength | 02/19/2018 | | Pass |
| Corrosion | | | Pass |
| Markings and Instructions | | | Pass |

Please see attached test data for details

| John Halas, Engineer: Halas | Date: _ | 5/17/18 |
|--|---------|---------|
| Craig Allen, Test Technician: | Date: _ | 5/17/18 |
| Darrell Blalock, Lab Manager: Manager: Dlamk | Date: _ | 5/17/18 |

129484

Engineer:

John Halas

Product:

Type A Anchorage Connector

Tested By:

Craig Allen

Model Number:

00101, Beamer 2000

Reviewed By:

Darrell Blalock

TEST EQUIPMENT

| Equipment | Model | Serial | |
|------------------|---------------|---------|--|
| 282 lb. weight | N/A | GFP001 | |
| Static load cell | 1220ACK-25K-B | 347989A | |
| | | | |
| | | | |

| 3.1 | Design Requirements | | | |
|-----------|---|------|--|--|
| 3.1.1 (a) | Connection points shall support only one user or system at a time | | | |
| (c) | Anchorage connectors shall not have closed loops that could be mistaken for a connection point | | | |
| (d) | Any operable gates, rings, buckles or other hardware covered by ANSI Z359.12-2012 shall comply with ANSI Z359.12-2012 | Pass | | |
| (e) | Multiple connections shall only be permitted on tripod or davit style anchorages | N/A | | |
| 3.1.2 | Surfaces shall be free from burrs, pits, sharp corners and roughness | Pass | | |
| 3.1.3.1 | Hot-dipped galvanized steel shall conform with ASTM A123/123M | Pass | | |
| 3.1.3.2.1 | Type A and Type T anchorage connectors shall maintain toughness at temps between -30 degrees F and +130 degrees F | Pass | | |

This test report covers these additional products:

| 00103 | | |
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129484

Product:

Type A Anchorage Connector

Model Number:

00101, Beamer 2000

Substrate/Fastener:

"I" or "H" structural beam

Engineer:

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Tested By:

Craig Allen

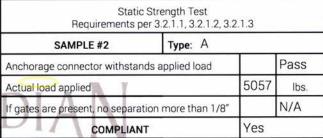
Reviewed By:

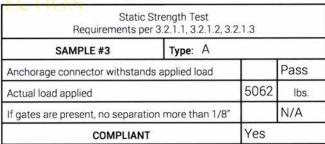
Darrell Balock

4.2.1 Static Strength Testing of Anchorage Connectors

- a) Attach anchorage on approved substrate per 4.1.2
- b) (Type A and T) Apply 5,000 lbs. load in permitted direction(s) at a rate no greater than 2 inches per minute for at least 3 minutes
- c) Release load
- d) Evaluate results per 3.2.1.1, 3.2.1.2, 3.2.1.3 as

| | c Strength Test per 3.2.1.1, 3.2.1.2, 3. | 2.1.3 | |
|---|---|-------|------|
| SAMPLE #1 | Туре: А | | |
| Anchorage connector withstands applied load | | | Pass |
| Actual load applied | | | lbs. |
| If gates are present, no separa | | N/A | |
| COMPLIAN | NT | Yes | |







| Notes: | | | | |
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"I" or "H" structural beam

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4.2.2 Dynamic Strength Testing of Anchorage Connectors

- a) Condition sample as necessary per 4.2.2.3.1
- b) Attach anchorage on approved substrate per 4.1.2
- c) Connect 282 lbs. test weight to anchorage connector via test lanyard
- d) (Type A and T) Raise weight to achieve 3 ft. free fall
- e) Release test weight and evaluate in accordance with 3.2.2.1, 3.2.2.2, 3.2.2.3 as required

| | mic Strength Test per 3.2.2.1, 3.2.2.2, 3.2. | 2.3 |
|--|---|------|
| SAMPLE #1 | Туре: А | |
| Anchorage connector arrests test weight | | Pass |
| If gates are present, no separation more than 1/8" | | N/A |
| COMPLIA | NT | Yes |

| | mic Strength Test per 3.2.2.1, 3.2.2.2, 3.2. | 2.3 |
|--------------------------------|---|-----|
| SAMPLE #2 | Туре: А | |
| Anchorage connector arrests | Pass | |
| If gates are present, no separ | ation more than 1/8" | N/A |
| COMPLIA | INT | Yes |



| | nic Strength Test per 3.2.2.1, 3.2.2.2, 3.2 | .2.3 |
|--------------------------------|--|------|
| SAMPLE #3 | Туре: А | |
| Anchorage connector arrests | Pass | |
| If gates are present, no separ | N/A | |
| COMPLIA | NT | Yes |

| Notes: | | | |
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Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3 SAMPLE #1 Type: A Anchorage connector arrests test weight Anchorage connector supports test weight for min 1 minute If gates are present, no separation more than 1/8" COMPLIANT Pass N/A Yes

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Tested By:

| | Dynamic Strength Test per 3.2.3.1, 3.2.3.2, 3.2. | 3.3 |
|---|--|------|
| SAMPLE #2 | Туре: А | |
| Anchorage connector arrests test weight | | Pass |
| Anchorage connector supports test weight for min 1 minute | | Pass |
| If gates are present, no separ | ation more than 1/8" | N/A |
| COMPLIA | INT | Yes |

4.2.3 Residual Dynamic Strength Testing of Anchorage Connectors

a) Repeat dynamic test as specified in 4.2.2 b) Evaluate results in accordance with 3.2.2.1,

3.2.2.2, 3.2.2.3 as required

| G | u | A | R |
|---|-----|---|---|
| U | FAL | | |

| | ynamic Strength Test per 3.2.3.1, 3.2.3.2, 3.2. | .3.3 |
|---|--|------|
| SAMPLE #3 | Туре: А | |
| Anchorage connector arrests | test weight | Pass |
| Anchorage connector supports test weight for min 1 minute | | Pass |
| If gates are present, no separa | ation more than 1/8" | N/A |
| COMPLIA | NT | Yes |

| Notes: | | |
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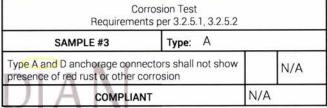
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4.2.5 Corrosion Testing of Anchorage Connectors

- a) (Type A and D) Expose anchorage connector to
 (2) 24-hour salt spray exposures separated by a one-hour drying period
- b) Evaluate results in accordance with 3.2.5.1, 3.2.5.2 as required

| 252 | orrosion Test nts per 3.2.5.1, 3.2.5.2 | |
|---|---|-----|
| SAMPLE #1 | Туре: А | |
| Type A and D anchorage conr presence of red rust or other of | | N/A |
| COMPLIA | NT | N/A |

| 273 | orrosion Test onts per 3.2.5.1, 3.2.5.2 | | |
|---|--|-----|-----|
| SAMPLE #2 | Туре: А | | |
| Type A and D anchorage conn presence of red rust or other c | | | N/A |
| COMPLIA | NT | N/A | 7 |





| Notes: | | | |
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| 5 | Markings and Instructions | |
|---------|--|-----|
| 5.1 | Marking Requirements | |
| 5.1.1 | General: The following markings shall appear in English on a label, marking or tag that is designed to last for the lifetime of the anchorage connector and is permanently affixed to the anchorage connector. | |
| | a) The manufacturer's name and mark | Yes |
| | b) The year of manufacture | Yes |
| | c) Model number | Yes |
| | d) "ANSI Z359.18" and the type | Yes |
| | e) Markings to indicate restrictions on directions of loading, if applicable | N/A |
| | f) Where specified by the manufacturer, the working load | Yes |
| | g) An individual serial number or a lot or batch number that provides traceability | Yes |
| | h) Minimum Breaking Strength, followed by "MBS." | Yes |
| 5.1.2 | Specific: As required for the specific anchorage connector, the following markings shall appear in English on a label, marking or tag that is designed to last for the lifetime of the anchorage connector and is permanently affixed to the anchorage connector | Yes |
| 5.1.2.1 | An anchorage connector that incorporates a closed loop not intended for connection, but may be mistaken for a connection point shall be permanently labeled with a warning not to connect a fall protection system or suspended component to the closed loop when used in a cinching operation | N/A |
| 5.1.2.3 | The minimum service temperature for the anchorage connector according 3.1.3.2 | Yes |
| 5.1.2.4 | For tripods and davit systems, the maximum number of users permitted on the system | N/A |

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| 5.2 | Instruction Requirements | |
|---------|---|-----|
| 5.2.1 | General: Provide the following instructions and information in English with each anchorage connector. | |
| 5.2.1.1 | Overall: | |
| | a) A statement that the anchorage connector has been tested in compliance with the requirements of ANSI/ASSE Z359.7, and caution that the ANSI compliance testing covers only the hardware and does not extend to the anchorage and substrate to which the anchorage connected is attached | Yes |
| | b) Specifications for appropriate anchorages(s) to which the anchorage connector can be attached, including instructions on how to proceed when the user is unable to determine whether the anchorage meets the manufacturer's specification and instructions that the anchorage connector shall only be connected to anchorages that: | Yes |
| | i) Can withstand 5,000 lbs. (22.2 kN) without failure, except that lower strengths are acceptable when permitted by applicable legislation; or | Yes |
| | ii) Are certified by a professional engineer as having the required strength for fall arrest or travel restraint, as applicable, or; | N/A |
| | iii) The manufacturer may provide specifications of allowable materials including the minimum shapes, sizes and geometry of structural elements to which the anchorage connector may be fastened. A qualified person shall approve these specifications. | N/A |
| | c) The manufacturer shall clearly label the minimum service temperature for the anchorage connector according to 3.1.3.2 | Yes |
| | d) The manufacturer shall supply complete specifications for fasteners | N/A |
| | e) The anchorage type | Yes |
| | f) The permitted uses of the anchorage connector | Yes |
| | g) The connection point(s), working load limit | Yes |
| | h) The material used in the anchorage connector's construction | Yes |
| | i) The length of the anchorage connector and any other dimensions that may affect its compatibility with anchorage to which it may be connected | Yes |
| | j) The manufacturer shall make available upon request information for the design of systems, such as AAF and/or force vs. displacement curve(s) for the device | N/A |
| | k) A statement that only one fall protection system or positioning system may be attached to an individual connection point | Yes |
| | I) Specification providing the intended directions(s) of loading of the anchorage connector | Yes |
| | m) A complete list of the anchorage connector components provided by the manufacturer at the time of sale | Yes |
| | n) A warning against unauthorized alterations, relocations or additions to the anchorage connector | Yes |

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| 5.2.1.2 | Use: | |
|---------|---|-----|
| | a) Instructions on proper installation and use, including, but not limited to, compatibility with other fall protection components | Yes |
| _ | b) The length of the anchorage connector and any other dimensions that may affect its compatibility with anchorages to which it may be connected | Yes |
| | c) Where applicable, directions regarding the appropriate length of lanyard to use with the anchorage connector to compensate for the additional length that it may add to the lanyard | N/A |
| | d) Permitted and forbidden uses, including clear description of and the recommended ways of dealing with applicable compatibility concerns | Yes |
| | e) A warning to remove any surface contamination such as concrete, stucco, roofing material, etc., that could accelerate cutting or abrading of attached components | N/A |
| | f) Warnings concerning environments and conditions that may degrade the anchorage connector | Yes |
| | g) Training requirements | Yes |
| 5.2.1.3 | Inspection and Field Testing: | |
| | a) Instructions on testing, if needed | N/A |
| | b) Where applicable, directions for the installer to perform and document proof testing upon installation. Directions shall include proof load forces and acceptable methods | N/A |
| | c) Field serviceability testing: The manufacturer shall provide guidelines for how often field load testing must be undertaken to prove that the anchorage connector continues to be adequately secured to the structure. These guidelines shall include recommend- ed methods for testing, including the direction and point of application of test loads | N/A |
| | d) The recommended frequencies and procedures for inspection, maintenance, and when applicable, testing. | Yes |
| | e) Instructions for inspecting and servicing an anchorage connector after it is subjected to a fall or an inspection reveals an unsafe condition | Yes |
| | f) If applicable, guidelines for retirement of the anchorage connector | Yes |
| | g) The action to be taken if an inspection of and anchorage connector reveals an unsafe condition | Yes |
| | h) The action to be taken after the anchorage connector is subjected to a fall | Yes |
| | i) Criteria for removal of an anchorage connector from service if deformed from its original installed configuration | Yes |

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d) Minimum distance from each leg to opening

which may results in dislodging the tripod

f) The minimum overhead clearance required to erect the tripod

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Engineer:

John Halas

Tested By: Reviewed By:

Craig Allen Darrell Blalock

5.2.1.4 Cinching and Non-Cinching Style Anchorage Connectors: a) Where the anchorage connector includes an abrasion pad, provide directions that the N/A abrasion pad shall be installed between the anchorage and the load bearing strap b) The proper method of installing the anchorage connector including, as applicable for N/A non-cinching anchorage connectors, the maximum angle permitted between connecting legs Tripod and Davit Style Anchorage Connectors 5.2.1.5 Instructions and Information: a) For a tripod or davit, the maximum number of fall protection systems allowed to be N/A attached to the anchorage connector and where applicable, a warning against simultaneously attaching more then the number of systems permitted N/A b) The characteristics of the surface on which the tripod may be installed c) The maximum slope of the surface under any leg and of the plane supporting the N/A three or more legs

> e) Instructions regarding maintenance of adequate clearance around and within the tripod to provide clearance around and within the tripod to provide unrestricted move-

ments in, through, and around the tripod and minimizing tripping or other events

N/A

N/A

N/A