

ANSI Z359.18 Type A Test Report

Test Report Number:

Job Number:

Product Type:

Product Model:

Dates of Manufacture:

Date(s) of Testing:

<u>Tests Completed</u>	<u>Test Date</u>	<u>ANSI/ASSE Z359.18-2017</u>	<u>Pass/Fail</u>
Design Requirements			
Static Strength			
Dynamic Strength			
Residual Strength			
Corrosion			
Markings and Instructions			

Please see attached test data for details

John Halas
Engineer



Date: 8/21/18

Craig Allen
Test Technician



Date: 08/23/2018

Andre Pelland
Compliance and
Quality Manager



Date: 08/22/2018

Job Number:
 Product:
 Model Number:

Engineer:
 Tested By:
 Reviewed By:

TEST EQUIPMENT

Equipment	Model	Serial	

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	
(e)	Multiple connections shall only be permitted on tripod or davit style anchorages	
3.1.2	Surfaces shall be free from burrs, pits, sharp corners and roughness	
3.1.3.1	Hot-dipped galvanized steel shall conform with ASTM A123/123M	
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	

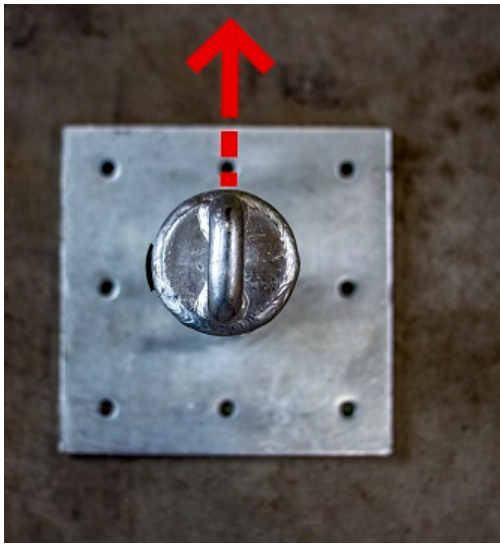
This test report covers these additional products:

Job Number:
 Product:
 Model Number:
 Substrate/Fastener:

Engineer:
 Tested By:
 Reviewed By:

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 required



Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #1	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		

Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #2	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		

Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #3	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		

Notes:

Job Number:
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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

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #1	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #2	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #3	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		



Notes:

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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

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #1	Type:	
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		

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #2	Type:	
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		

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #3	Type:	
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		



Notes:

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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 required

Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #1	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		

Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #2	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		

Static Strength Test Requirements per 3.2.1.1, 3.2.1.2, 3.2.1.3		
SAMPLE #3	Type:	
Anchorage connector withstands applied load		
Actual load applied		lbs.
If gates are present, no separation more than 1/8"		
COMPLIANT		



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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

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #1	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #2	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		

Dynamic Strength Test Requirements per 3.2.2.1, 3.2.2.2, 3.2.2.3		
SAMPLE #3	Type:	
Anchorage connector arrests test weight		
If gates are present, no separation more than 1/8"		
COMPLIANT		



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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

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #1	Type:	
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		

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #2	Type:	
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		

Residual Dynamic Strength Test Requirements per 3.2.3.1, 3.2.3.2, 3.2.3.3		
SAMPLE #3	Type:	
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		



Notes:

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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

Corrosion Test Requirements per 3.2.5.1, 3.2.5.2		
SAMPLE #1	Type:	
Type A and D anchorage connectors shall not show presence of red rust or other corrosion		
COMPLIANT		

Corrosion Test Requirements per 3.2.5.1, 3.2.5.2		
SAMPLE #2	Type:	
Type A and D anchorage connectors shall not show presence of red rust or other corrosion		
COMPLIANT		

Corrosion Test Requirements per 3.2.5.1, 3.2.5.2		
SAMPLE #3	Type:	
Type A and D anchorage connectors shall not show presence of red rust or other corrosion		
COMPLIANT		



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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	
	b) The year of manufacture	
	c) Model number	
	d) "ANSI Z359.18" and the type	
	e) Markings to indicate restrictions on directions of loading, if applicable	
	f) Where specified by the manufacturer, the working load	
	g) An individual serial number or a lot or batch number that provides traceability	
	h) Minimum Breaking Strength, followed by "MBS."	
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	
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	
5.1.2.3	The minimum service temperature for the anchorage connector according to 3.1.3.2	
5.1.2.4	For tripods and davit systems, the maximum number of users permitted on the system	

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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	
	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:	
	i) Can withstand 5,000 lbs. (22.2 kN) without failure, except that lower strengths are acceptable when permitted by applicable legislation; or	
	ii) Are certified by a professional engineer as having the required strength for fall arrest or travel restraint, as applicable, or;	
	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.	
	c) The manufacturer shall clearly label the minimum service temperature for the anchorage connector according to 3.1.3.2	
	d) The manufacturer shall supply complete specifications for fasteners	
	e) The anchorage type	
	f) The permitted uses of the anchorage connector	
	g) The connection point(s), working load limit	
	h) The material used in the anchorage connector’s construction	
	i) The length of the anchorage connector and any other dimensions that may affect its compatibility with anchorage to which it may be connected	
	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	
	k) A statement that only one fall protection system or positioning system may be attached to an individual connection point	
	l) Specification providing the intended directions(s) of loading of the anchorage connector	
	m) A complete list of the anchorage connector components provided by the manufacturer at the time of sale	
	n) A warning against unauthorized alterations, relocations or additions to the anchorage connector	

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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	
	b) The length of the anchorage connector and any other dimensions that may affect its compatibility with anchorages to which it may be connected	
	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	
	d) Permitted and forbidden uses, including clear description of and the recommended ways of dealing with applicable compatibility concerns	
	e) A warning to remove any surface contamination such as concrete, stucco, roofing material, etc., that could accelerate cutting or abrading of attached components	
	f) Warnings concerning environments and conditions that may degrade the anchorage connector	
	g) Training requirements	
5.2.1.3	Inspection and Field Testing:	
	a) Instructions on testing, if needed	
	b) Where applicable, directions for the installer to perform and document proof testing upon installation. Directions shall include proof load forces and acceptable methods	
	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 recommended methods for testing, including the direction and point of application of test loads	
	d) The recommended frequencies and procedures for inspection, maintenance, and when applicable, testing.	
	e) Instructions for inspecting and servicing an anchorage connector after it is subjected to a fall or an inspection reveals an unsafe condition	
	f) If applicable, guidelines for retirement of the anchorage connector	
	g) The action to be taken if an inspection of and anchorage connector reveals an unsafe condition	
	h) The action to be taken after the anchorage connector is subjected to a fall	
	i) Criteria for removal of an anchorage connector from service if deformed from its original installed configuration	

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5.2.1.4	Cinching and Non-Cinching Style Anchorage Connectors:	
	a) Where the anchorage connector includes an abrasion pad, provide directions that the 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 non-cinching anchorage connectors, the maximum angle permitted between connecting legs	
5.2.1.5	Tripod and Davit Style Anchorage Connectors Instructions and Information:	
	a) For a tripod or davit, the maximum number of fall protection systems allowed to be attached to the anchorage connector and where applicable, a warning against simultaneously attaching more than the number of systems permitted	
	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 three or more legs	
	d) Minimum distance from each leg to opening	
	e) Instructions regarding maintenance of adequate clearance around and within the tripod to provide clearance around and within the tripod to provide unrestricted movements in, through, and around the tripod and minimizing tripping or other events which may results in dislodging the tripod	
	f) The minimum overhead clearance required to erect the tripod	