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FRONTLINE FALL PROTECTION
TEST REPORT

SCOPE OF WORKs
ANSI Z359.18 – 2017 Safety Requirements for Anchorage Connectors for Active Fall Protection Systems

REPORT NUMBER
105033245CRT-005

ISSUE DATE
May 23rd, 2022

PAGES
9

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TEST REPORT FOR FRONTLINE FALL PROTECTION

Report No.: 105033245CRT-005
Date: May 23rd, 2022

FRONTLINE FALL PROTECTION
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Report Number..... : 105033245CRT-005

Signed Quote Number..... : Qu-01259866-0

PO Number..... PO-00497

Name of Testing Laboratory
Preparing the Report ..... : Intertek Testing Services NA Inc.

Test Specification:

Standard..... : ANSI/ASSP Z359.18-2017

Date(s) of Testing..... : 4/27/22-4/29/22

Product Description:

Product Type: ..... : Type T Anchor

Brand Name: ..... : FRONTLINE FALL PROECTION

Model Number(s): ..... : RC18 (18”) (Concrete substrate)

Additional Models Covered : ..... : RC12 (12”)

Date(s) Samples Received ..... : 4/27/2022

SECTION 1

SUMMARY OF TESTING

TESTS COMPLETED	ANSI/ASSP Z359.18-2017 CLAUSE	STATUS
Dynamic Strength Test- Type T	4.2.2.1.4	PASS
Residual Dynamic Strength- Type T	4.2.3.1	PASS
Static Strength Test (Per loading direction)	4.2.1.1	PASS
Serviceability Static Load Test- Type T	4.2.4.2	PASS

SECTION 2

This test report concludes the work anticipated in the testing phase of your project. If there are any questions regarding this report please contact the undersigned at 607-753-6711.

COMPLETED BY:	Steven Morey	**REVIEWED BY:**	Matthew Stevens
TITLE:	Technician	**TITLE:**	Team Leader
SIGNATURE:		**SIGNATURE**	
DATE	4/29/2022	**DATE:**	5/23/2022

Please see attached test data for details.

SECTION 3
TESTING EQUIPMENT CALIBRATION INFORMATION

USED FOR TEST	DESCRIPTION	MANUFACTURER	CONTROL NO.	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE
X	Drop Test Structure	Intertek	NA	CAT. 3	-	N/A	N/A
X	Test Dead Weight	NA	15064	282 lbs	-	VBU	VBU
X	Load Cell	Interface	G139	-	-	7/6/21	7/6/22
X	Load Cell	Interface	L099	-	-	5/04/21	5/04/22
X	Tape Measure	Stanley	H339	25'	-	5/10/21	5/10/22

SECTION 3
SUPPLEMENTAL TEST DATA

<table>
<tr><th>SECTION (TEST)</th><th>REQUIREMENT</th><th>RESULTS</th><th>COMPLIANCE</th></tr>
<tr><td>3.2.2.2/4.2.2.2.4</td><td>
<u>Dynamic Strength (Type T Anchor)</u> :
A) Install anchorage connector, conditioned according the applicable requirements of 4.2.2.1.2 or 4.2.2.1.3 on the test anchorage in accordance with 4.1.2
B) Connect one end of the test lanyard to the connection point of the anchorage connector to be loaded or to the arrest force measuring instrumentation.
C) Connect the other end of the test lanyard to the test weight specified in 4.1.3
D) Raise the test weight to achieve a free-fall distance of 3' (+0.1/-0).
E) Release the test weight by means of quick release mechanism.
F) Evaluate the test results per 3.2.2.1
<table>
<tr><th>Dynamic Strength Test</th><th>SAMPLE: 1</th><th>SAMPLE: 2</th><th>SAMPLE: 3</th></tr>
<tr><td>Anchorage connector successfully arrest the test weight?</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>If deformation occurred did it create more than 1/8" (3mm) between gate and body?</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>MAF (Ref Only) Lbs.</td><td>3284</td><td>3522</td><td>3233</td></tr>
</table>
*Concrete Substrate used.
</td><td>PASS</td></tr>
</table>

<table>
<tr><th>SECTION (TEST)</th><th>REQUIREMENT</th><th colspan="3">RESULTS</th><th>COMPLIANCE</th></tr>
<tr><td rowspan="6">3.2.3.1/4.2.3.2</td><td colspan="4"><u>Residual Dynamic Strength Test:</u>
1. <u>Repetition of the test specified in 4.2.2.1 using same anchorage connector without further conditioning and the same test lanyard used in first test.</u>
2. <u>Must support the test weight an additional minute after the residual dynamic drop.</u>
3. <u>Evaluate the test results per 3.2.3.1</u></td><td rowspan="6">PASS</td></tr>
<tr><td>Residual Dynamic Strength</td><td>SAMPLE: 1</td><td>SAMPLE: 2</td><td>SAMPLE: 3</td></tr>
<tr><td>Anchorage connector successfully arrest the test weight?</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>Maintain the test weight for a period of at least 1 minute?</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>If deformation occurred did it create more than 1/8” (3mm) between gate and body?</td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
<tr><td>MAF (Ref Only) Lbs.</td><td>3699</td><td>3619</td><td>3774</td></tr>
<tr><td colspan="4">*Concrete Substrate used.</td></tr>
</table>

<table>
<tr><th>SECTION (TEST)</th><th>REQUIREMENT</th><th>RESULTS</th><th>COMPLIANCE</th></tr>
<tr><td>3.2.1.1/4.2.1.2</td><td>
<u>Static Strength Test for Type T Anchorage Connectors:</u>
A) <u>A new anchorage connector may be used for each test.</u>
B) <u>Test force shall be 5,000 pounds (+50/-0)</u>
C) <u>Install anchorage connector on the test anchorage in accordance with requirements of 4.1.2.</u>
D) <u>Apply load to the anchorage connector in the direction(s) of loading specified in 4.1.2.5.</u>
E) <u>Apply load at no greater than 2”/min and maintain 5,000 pound test load for at least 3 minutes.</u>
F) <u>Release load</u>
G) <u>Evaluate the test results per 3.2.1.1</u>
<table>
<tr><th>Static Strength Requirements</th><th>SAMPLE 3</th><th>SAMPLE 4</th><th>SAMPLE 5</th></tr>
<tr><td>Anchorage resist the test load?</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>If deformation occurred did it create more than 1/8” (3mm) between gate and body?</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>
*Concrete Substrate used.
</td><td>PASS</td></tr>
<tr><td>3.2.1.1/4.2.4.2</td><td>
<u>Serviceability Load for Type T Anchorage Connectors:</u>
<u>A new anchorage connector may be used for each test.</u>
<u>Test force shall be greater than twice the work load or 2,500 pounds (Whichever is Greater)</u>
<u>Install anchorage connector on the test anchorage in accordance with requirements of 4.1.2.</u>
<u>Apply load at no greater than 90lbs/min and maintain load for at least 3 minutes.</u>
<u>Release load</u>
<u>Evaluate the test results per 3.2.4.2</u>
<table>
<tr><th>Static Strength Requirements</th><th>SAMPLE 3</th><th>SAMPLE 4</th><th>SAMPLE 5</th></tr>
<tr><td>Anchorage resist the test load?</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>Cracking/Breaking or Deformation</td><td>NO</td><td>NO</td><td>NO</td></tr>
</table>
*Concrete Substrate used.
</td><td>PASS</td></tr>
</table>

SECTION (TEST)	REQUIREMENT	RESULTS	COMPLIANCE
5	Marking and Instruction Requirements		PASS
5.1.1	The following marking shall appear in English on the 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 manufacture's name or mark		PASS
	B) The year of manufacture		PASS
	C) Model number		PASS
	D) "ANSI Z359.18 and the type		PASS
	E) Marking to indicate restrictions on directions of loading, if applicable		PASS
	F) Where specified by the manufacturer, the working load.		PASS
	G) An individual serial number or a lot or batch number that provides traceability		PASS
	H) Minimum breaking strength followed by "MBS"		PASS
5.1.2	As required for the specific anchorage connector, the following marking 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.		PASS
5.1.2.1	Anchorage connector that incorporates a closed loop not intended for connection but may be mistake 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 application.		PASS
5.1.2.3	The minimum service temperature the anchorage connector according to 3.1.3.2		PASS
5.1.2.4	For tripods and davit systems, the maximum number of users permitted on the system.		PASS
5.2	Instruction Requirements		PASS
5.2.1	Instruction and information shall be provided in English with each anchorage connector.		PASS
5.2.1.1	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 and testing covers only the hardware and does not extend to the anchorage and substrate w=to which the anchorage connector is attached. B) Specifications for appropriate anchorage(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 manufactures specification and instructions that the anchorage connector shall only be connected to anchorages that: i) Can withstand 5,000 pounds without failure, except that lower strengths are acceptable when permitted by applicable legislation ii) Are certified by a professional engineer as having the required strength for fall arrest or travel restraint, as applicable iii) The manufacturer may provide specifications of allowable materials including the minim shapes, sizes and geometry of structural elements to which the anchors connector may be fastened 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 connector type		PASS

SECTION (TEST)	REQUIREMENT	RESULTS	COMPLIANCE
5.2.1.1	Overall: A) The permitted uses of the anchorage connector B) The connection point(s), working load limit C) The material used in the anchorage connectors construction D) The length of the anchorage connector and any other dimensions that may affect its compatibility with anchorages to which it may be connected. E) 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. F) A statement that only one fall protection system or positioning system may be attached to an individual connection point G) Specification providing the intended direction(s) of loading of the anchorage connector H) A complete list of the anchorage connector components provided by the manufacturer at the time of sale I) A warning against unauthorized alterations, relocations or additions to the anchorage connector		PASS
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. (Instructions to include the length of anchorage connector, manner of use and location relative to working surface in the calculation of fall clearance). D) Permitted and forbidden uses, including clear description of and the recommended ways of dealing with the applicable compatibility concerns E) A warning to remove any surface contamination such as concrete, stucco, roofing material, etc., that could accelerate the cutting or abrading of attached components F) Warnings concerning environments and conditions that may degrade the anchorage connector G) Training requirements		PASS

SECTION (TEST)	REQUIREMENT	RESULTS	COMPLIANCE
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 the retirement of the anchorage connector G) The action to be taken if an inspection of the 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		PASS

SECTION 5

REVISION HISTORY

REPORT NUMBER	DATE OF REVISION	DESCRIPTION OF CHANGE:	PROJECT OWNER	REVIEWED BY
105033245CRT-005	4/29/2022	Original Report	Steven Morey	Matthew Stevens
105033245CRT-005	5/23/2022	Added Model Share	Steven Morey	Matthew Stevens

SECTION 6

PHOTOGRAPHS