

## WITNESS TESTING REPORT

Hardline Laboratory

Report No. : TH10326A/2022

Page : 1 of 7

Date : NOV. 15, 2023

### Frontline Fall Protection Inc

6 Lee Blvd, Malvern, PA 19355, USA (888) 523-1795

### The following merchandise was submitted and identified by the applicant as:

Product Description: Webbing Self-Retracting lifeline/Dual Webbing Self-Retracting lifeline

Style/Item No.: RPA12S, RPA12R

Site of Witness: No. 88-8, Sec. 2, Zhongtong W. Rd., Wufeng Dist., Taichung City 41355, Taiwan

Additional Information: Test Witness: James Tsai.

### We have tested the submitted sample(s) as requested and the following results were obtained:

Test Requested: Clause 3.1.5, 3.2.1, 3.2.3, 3.3.1, 3.3.2, 3.5.1, 3.6.1 & 3.6.2 of ANSI/ASSP Z359.14-2021, Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems.

Test Method: ANSI/ASSP Z359.14-2021, Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems.

Test of Samples: Device Classes: Class 1

Test Result: --See following sheet(s)--

Testing Period: FEB. 11, 2022 ~ FEB. 25, 2022

Conclusion: The submitted sample **complies with** clause 3.1.5, 3.2.1, 3.2.3, 3.3.1, 3.3.2, 3.5.1, 3.6.1 & 3.6.2 of ANSI/ASSP Z359.14-2021, Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems.

Testing Site: No. 9, 14th Rd., Taichung Ind. Park, Taichung City 40755, Taiwan

Signed for and on behalf of  
SGS Taiwan Ltd.



Luke Lee  
Supervisor



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### Test Method & Results:

Clauses	Test Item/Results	Compliance														
3.1.5	<p><u>Corrosion Protection</u> Corrosion protection shall be afforded to all elements (parts) of self-retracting devices. Protection shall, at a minimum, allow the device to operate as intended and show no signs of corrosion which, if left unchecked, could result in corrosion-related failure of the device after being salt spray (fog) tested for 96 hours in accordance with the method described in the reference in 7.4. After the salt spray test, the line shall pay out, retract and lock. Retraction tension shall be as specified in 3.5.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Test item</th> <th style="width: 50%;">Observation</th> </tr> </thead> <tbody> <tr> <td>Operate as intended:</td> <td>Yes</td> </tr> <tr> <td>Signs of corrosion (visual check):</td> <td>No</td> </tr> <tr> <td>Line pay out, retract and lock:</td> <td>Yes</td> </tr> <tr> <td>Retraction tension:</td> <td>1 foot: 2.01 lbf</td> </tr> <tr> <td>1.25~25 lbf</td> <td>50%: 3.81 lbf</td> </tr> <tr> <td></td> <td>100%: 7.38 lbf</td> </tr> </tbody> </table>	Test item	Observation	Operate as intended:	Yes	Signs of corrosion (visual check):	No	Line pay out, retract and lock:	Yes	Retraction tension:	1 foot: 2.01 lbf	1.25~25 lbf	50%: 3.81 lbf		100%: 7.38 lbf	Pass
Test item	Observation															
Operate as intended:	Yes															
Signs of corrosion (visual check):	No															
Line pay out, retract and lock:	Yes															
Retraction tension:	1 foot: 2.01 lbf															
1.25~25 lbf	50%: 3.81 lbf															
	100%: 7.38 lbf															
3.2.1	<p><u>Static Strength of Self-Retracting Devices (SRDs)</u> When tested in accordance with 4.2.1, SRDs shall withstand, without breaking, a load of 3,600 pounds (16kN) when statically applied.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Test item</th> <th style="width: 70%;">Observation</th> </tr> </thead> <tbody> <tr> <td>Static test:</td> <td>No breaking and withstand the load.</td> </tr> </tbody> </table>	Test item	Observation	Static test:	No breaking and withstand the load.	Pass										
Test item	Observation															
Static test:	No breaking and withstand the load.															
3.2.3	<p><u>Locking Strength</u> When tested in accordance with 4.2.3, devices not featuring a rotary brake energy management system, shall withstand, without breaking and releasing the load, a minimum static load of 1,800 pounds (8kN).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Test item</th> <th style="width: 70%;">Observation</th> </tr> </thead> <tbody> <tr> <td>Locking strength:</td> <td>No breaking and withstand the load.</td> </tr> </tbody> </table>	Test item	Observation	Locking strength:	No breaking and withstand the load.	Pass										
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Clauses	Test Item/Results	Compliance																																																							
3.3.1	<p><b>Dynamic Performance of SRDs</b>                      For all SRDs, when tested in accordance with 4.3.1:                      3.3.1.1 Locking function shall operate in accordance with 3.1.2.                      3.3.1.2 The device shall pay out and retract the line in accordance with 3.5 after each dynamic performance test. SRL-Ps and Class 2 SRDs are excluded from this requirement.                      3.3.1.3 The visual indicator shall activate when dynamic performance is tested, providing clear evidence that the device has been impact loaded.                      3.3.1.4 The maximum arrest force shall not exceed 1,800 pounds (8kN), the average arrest force shall not exceed 1,350 pounds (6kN) and the arrest distance shall not exceed 42 inches (1,067mm) under ambient conditions.                      3.3.1.5 The maximum arrest force shall not exceed 1,800 pounds (8kN), the average arrest force shall not exceed 1,575 pounds (7kN) and the arrest distance shall not exceed 42 inches (1,067mm) under hot, cold or wet conditions. New SRDs shall be used for each conditioning procedure.</p>	Pass																																																							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Test item</th> <th colspan="4">Observation</th> </tr> <tr> <th>Ambient</th> <th>Hot</th> <th>Cold</th> <th>Wet</th> </tr> </thead> <tbody> <tr> <td>Locking function:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Pay out and retract:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td rowspan="3">Retraction tension: 1.25~25 lbf</td> <td>1 foot:</td> <td>1.97 lbf</td> <td>1.80 lbf</td> <td>1.87 lbf</td> <td>1.87 lbf</td> </tr> <tr> <td>50%:</td> <td>3.26 lbf</td> <td>3.15 lbf</td> <td>3.30 lbf</td> <td>3.47 lbf</td> </tr> <tr> <td>100%:</td> <td>8.43 lbf</td> <td>7.52 lbf</td> <td>7.66 lbf</td> <td>7.95 lbf</td> </tr> <tr> <td>Visual indicator:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Maximum arrest force: ≤ 1800 lbf</td> <td>887.67 lbf</td> <td>857.49 lbf</td> <td>975.17 lbf</td> <td>874.63 lbf</td> </tr> <tr> <td>Average arrest force: Ambient ≤ 1350 lbf Hot/Cold/Wet ≤ 1575 lbf</td> <td>701.90 lbf</td> <td>696.50 lbf</td> <td>732.64 lbf</td> <td>725.79 lbf</td> </tr> <tr> <td>Arrest distance: ≤ 42 inches</td> <td>27.95 inches</td> <td>25.59 inches</td> <td>24.40 inches</td> <td>26.77 inches</td> </tr> </tbody> </table>		Test item	Observation				Ambient	Hot	Cold	Wet	Locking function:	Yes	Yes	Yes	Yes	Pay out and retract:	Yes	Yes	Yes	Yes	Retraction tension: 1.25~25 lbf	1 foot:	1.97 lbf	1.80 lbf	1.87 lbf	1.87 lbf	50%:	3.26 lbf	3.15 lbf	3.30 lbf	3.47 lbf	100%:	8.43 lbf	7.52 lbf	7.66 lbf	7.95 lbf	Visual indicator:	Yes	Yes	Yes	Yes	Maximum arrest force: ≤ 1800 lbf	887.67 lbf	857.49 lbf	975.17 lbf	874.63 lbf	Average arrest force: Ambient ≤ 1350 lbf Hot/Cold/Wet ≤ 1575 lbf	701.90 lbf	696.50 lbf	732.64 lbf	725.79 lbf	Arrest distance: ≤ 42 inches	27.95 inches	25.59 inches	24.40 inches	26.77 inches
	Test item			Observation																																																					
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3.3.2	<p><u>SRL-Ps when tested in accordance with 4.3.2:</u>            3.3.2.1 Locking function shall operate in accordance with 3.1.2.            3.3.2.2 The visual indicator shall activate when dynamic performance is tested, providing clear evidence that the device has been impact loaded.            3.3.2.3 The maximum arrest force shall not exceed 1,800 pounds (8kN), under ambient conditions.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Test item</th> <th style="width: 70%;">Observation</th> </tr> </thead> <tbody> <tr> <td>Locking function:</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>Visual indicator:</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>Maximum arrest force: ≤ 1800 lbf</td> <td style="text-align: center;">1002.16 lbf</td> </tr> </tbody> </table>	Test item	Observation	Locking function:	Yes	Visual indicator:	Yes	Maximum arrest force: ≤ 1800 lbf	1002.16 lbf	Pass
Test item	Observation									
Locking function:	Yes									
Visual indicator:	Yes									
Maximum arrest force: ≤ 1800 lbf	1002.16 lbf									
3.5.1	<p>Retraction tension of the self-retracting device line, in addition to that required to retract the weight of the line constituent, shall not be less than 1.25 pounds (5.55N) or more than 25 pounds (111.1N) at any point in the range of motion provided by the line constituent when tested in accordance with 4.5.1. Additionally, Class 2 devices shall retract without stopping when tested in a horizontal orientation in accordance with 4.5.2.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Test item</th> <th style="width: 70%;">Observation</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Retraction tension: 1.25~25 lbf</td> <td>1 foot: 2.15 lbf</td> </tr> <tr> <td>50%: 3.32 lbf</td> </tr> <tr> <td>100%: 7.23 lbf</td> </tr> <tr> <td>Retract without stopping in horizontal (Class 2):</td> <td style="text-align: center;">N/A</td> </tr> </tbody> </table>	Test item	Observation	Retraction tension: 1.25~25 lbf	1 foot: 2.15 lbf	50%: 3.32 lbf	100%: 7.23 lbf	Retract without stopping in horizontal (Class 2):	N/A	Pass
Test item	Observation									
Retraction tension: 1.25~25 lbf	1 foot: 2.15 lbf									
	50%: 3.32 lbf									
	100%: 7.23 lbf									
Retract without stopping in horizontal (Class 2):	N/A									
3.6.1	<p><u>Static Test, for Dual SRL-Ps</u>            Self-retracting lanyards, personal (SRL-Ps) featuring a dual configuration shall be tested in accordance with 4.6.1. Class 1 and 2 devices shall withstand, without breaking, a static load of 3,600 pounds (16kN). NOTE: Some self-retracting lanyard personal connectors contain sacrificial elements which facilitate energy absorber deployment. Breaking or cracking of the sacrificial element will not constitute a failure, provided that the energy absorber assembly can withstand the static load applied.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Test item</th> <th style="width: 70%;">Observation</th> </tr> </thead> <tbody> <tr> <td>Static test:</td> <td style="text-align: center;">Withstand the load and no breaking.</td> </tr> </tbody> </table>	Test item	Observation	Static test:	Withstand the load and no breaking.	Pass				
Test item	Observation									
Static test:	Withstand the load and no breaking.									

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Clauses	Test Item/Results	Compliance				
3.6.2	<p><b><u>SRL-P Dual Connection</u></b>                      SRL-Ps in dual configurations shall be tested according to 4.6.2. If the maximum arrest force exceeds 1,800 pounds (8kN), the markings and instructions must include warnings in accordance with 5.1.9. and 5.2.10.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Test item</th> <th style="width: 50%; text-align: center;">Observation</th> </tr> </thead> <tbody> <tr> <td>Maximum arrest force: ≤ 1800 lbf</td> <td style="text-align: center;">1576.5 lbf</td> </tr> </tbody> </table>	Test item	Observation	Maximum arrest force: ≤ 1800 lbf	1576.5 lbf	Pass
Test item	Observation					
Maximum arrest force: ≤ 1800 lbf	1576.5 lbf					

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**Test equipment:**

Description	Manufacturer	Model No.	Serial No.	Cal. Date
Laser distance meter	BOSCH	GLM40	122213512	2021/11/22
Environmental testing equipment	TERCHY	HEMB-120L	1080911	2021/3/24
Environmental testing equipment	TERCHY	HEMB-120L	1060910	2021/8/9
Universal Machine	NTS	LCX-100kN	18038	2021/3/24
Force guage	AIKOH	RX-10	D02639	2021/4/21
Load cell	JIHSENSE	LM-3T	90508	2021/7/14
Salt spray tester	-	DR-90	B-03-01	2021/8/9
PH meter	Lutron	PH-211	AJ.92507(B-03-02)	2020/9/25

**Note :**

1. The content of this report is invalid if it is not presented as the entire report.
2. The statement of conformity is based on the test results, but does not include the measurement uncertainty.
3. N/A = Not applicable; "--" = blank.

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– Picture(s) –



Photo "A" Appearance of sample



Photo "B" Appearance of sample

--- End of Report ---

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