

## WITNESS TESTING REPORT

Hardline Laboratory

Report No. : TH10297A/2022

Page : 1 of 7

Date : MAR. 20, 2023

**Frontline Fall Protection Inc**

2023 NW 84TH AVE, Miami, FL 33122, United States

**The following merchandise was submitted and identified by the applicant as:**Product Description: 6ft Webbing Self-Retracting lifeline / Dual 6ft Webbing Self-Retracting lifelineStyle/Item No.: RPA061R / RPA061S / RPA091TB /  
RPA062R / RPA062RA / RPA062S / RPA092TBSite of Witness: No. 88-8, Sec. 2, Zhongtou W. Rd., Wufeng Dist., Taichung City 41355, TaiwanAdditional 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 1Test Result: --See following sheet(s)--Testing Period: JAN. 07, 2022 ~ FEB. 18, 2022Conclusion: 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.

Note: This test report is extended from the original one TH10297/2022, issued on MAR. 10, 2022.

Signed for and on behalf of  
SGS Taiwan Ltd.Luke Lee  
Supervisor

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Hardline Laboratory

Report No. : TH10297A/2022

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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>	Pass																			
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Test item</td> <td style="width: 50%;">Observation</td> </tr> <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: 1.25~25 lbf</td> <td> <table border="1" style="width: 100%;"> <tr> <td style="width: 33%;">1 foot:</td> <td style="width: 33%;">2.42 lbf</td> <td style="width: 33%;"></td> </tr> <tr> <td>50%:</td> <td>4.54 lbf</td> <td></td> </tr> <tr> <td>100%:</td> <td>7.04 lbf</td> <td></td> </tr> </table> </td> </tr> </table>		Test item	Observation	Operate as intended:	Yes	Signs of corrosion (visual check):	No	Line pay out, retract and lock:	Yes	Retraction tension: 1.25~25 lbf	<table border="1" style="width: 100%;"> <tr> <td style="width: 33%;">1 foot:</td> <td style="width: 33%;">2.42 lbf</td> <td style="width: 33%;"></td> </tr> <tr> <td>50%:</td> <td>4.54 lbf</td> <td></td> </tr> <tr> <td>100%:</td> <td>7.04 lbf</td> <td></td> </tr> </table>	1 foot:	2.42 lbf		50%:	4.54 lbf		100%:	7.04 lbf	
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100%:	7.04 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>	Pass																			
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Test item</td> <td style="width: 50%;">Observation</td> </tr> <tr> <td>Static test:</td> <td>No breaking and withstand the load.</td> </tr> </table>		Test item	Observation	Static test:	No breaking and withstand the load.															
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>	Pass																			
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Test item</td> <td style="width: 50%;">Observation</td> </tr> <tr> <td>Locking strength:</td> <td>No breaking and withstand the load.</td> </tr> </table>		Test item	Observation	Locking strength:	No breaking and withstand the load.															
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This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com.tw/Terms-and-Conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com.tw/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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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 colspan="2" 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 colspan="2">Locking function:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td colspan="2">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>3.56 lbf</td> <td>2.55 lbf</td> <td>3.11 lbf</td> <td>3.77 lbf</td> </tr> <tr> <td>50%:</td> <td>4.54 lbf</td> <td>4.49 lbf</td> <td>3.97 lbf</td> <td>5.57 lbf</td> </tr> <tr> <td>100%:</td> <td>9.71 lbf</td> <td>7.69 lbf</td> <td>8.28 lbf</td> <td>8.51 lbf</td> </tr> <tr> <td colspan="2">Visual indicator:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td colspan="2">Maximum arrest force: ≤ 1800 lbf</td> <td>961.60 lbf</td> <td>870.31 lbf</td> <td>1045.72 lbf</td> <td>994.89 lbf</td> </tr> <tr> <td colspan="2">Average arrest force: Ambient ≤ 1350 lbf Hot/Cold/Wet ≤ 1575 lbf</td> <td>754.75 lbf</td> <td>676.06 lbf</td> <td>782.49 lbf</td> <td>749.20 lbf</td> </tr> <tr> <td colspan="2">Arrest distance: ≤ 42 inches</td> <td>20.0 inches</td> <td>22.0 inches</td> <td>17.7 inches</td> <td>12.2 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:	3.56 lbf	2.55 lbf	3.11 lbf	3.77 lbf	50%:	4.54 lbf	4.49 lbf	3.97 lbf	5.57 lbf	100%:	9.71 lbf	7.69 lbf	8.28 lbf	8.51 lbf	Visual indicator:		Yes	Yes	Yes	Yes	Maximum arrest force: ≤ 1800 lbf		961.60 lbf	870.31 lbf	1045.72 lbf	994.89 lbf	Average arrest force: Ambient ≤ 1350 lbf Hot/Cold/Wet ≤ 1575 lbf		754.75 lbf	676.06 lbf	782.49 lbf	749.20 lbf	Arrest distance: ≤ 42 inches		20.0 inches	22.0 inches	17.7 inches	12.2 inches
	Test item				Observation																																																											
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Clauses	Test Item/Results	Compliance								
3.3.2	<p><b>SRL-Ps when tested in accordance with 4.3.2:</b>            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: 50%;">Test item</th> <th style="width: 50%;">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;">953.84 lbf</td> </tr> </tbody> </table>	Test item	Observation	Locking function:	Yes	Visual indicator:	Yes	Maximum arrest force: ≤ 1800 lbf	953.84 lbf	Pass
Test item	Observation									
Locking function:	Yes									
Visual indicator:	Yes									
Maximum arrest force: ≤ 1800 lbf	953.84 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: 50%;">Test item</th> <th style="width: 50%;">Observation</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Retraction tension: 1.25~25 lbf</td> <td>1 foot: 3.78 lbf</td> </tr> <tr> <td>50%: 3.76 lbf</td> </tr> <tr> <td>100%: 8.96 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: 3.78 lbf	50%: 3.76 lbf	100%: 8.96 lbf	Retract without stopping in horizontal (Class 2):	N/A	Pass
Test item	Observation									
Retraction tension: 1.25~25 lbf	1 foot: 3.78 lbf									
	50%: 3.76 lbf									
	100%: 8.96 lbf									
Retract without stopping in horizontal (Class 2):	N/A									
3.6.1	<p><b>Static Test, for Dual SRL-Ps</b>            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: 50%;">Test item</th> <th style="width: 50%;">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>SRL-P Dual Connection</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" data-bbox="220 607 842 725"> <thead> <tr> <th data-bbox="220 607 603 647">Test item</th> <th data-bbox="603 607 842 647">Observation</th> </tr> </thead> <tbody> <tr> <td data-bbox="220 647 603 725">Maximum arrest force: ≤ 1800 lbf</td> <td data-bbox="603 647 842 725">1554.13 lbf</td> </tr> </tbody> </table>	Test item	Observation	Maximum arrest force: ≤ 1800 lbf	1554.13 lbf	Pass
Test item	Observation					
Maximum arrest force: ≤ 1800 lbf	1554.13 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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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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Clauses	Test Item/Results	Compliance														
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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										
Test item	Observation															
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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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Clauses	Test Item/Results	Compliance								
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: 50%;">Test item</th> <th style="width: 50%;">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: 50%;">Test item</th> <th style="width: 50%;">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: 50%;">Test item</th> <th style="width: 50%;">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				
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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="text-align: center;">Test item</th> <th style="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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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

Style/Item No.: RPA20, RPA20R

Site of Witness: No. 61, Ln.1265, Zhongzheng Rd., Jifeng Vil., Wufeng Dist., Taichung City, Taiwan

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

Test Requested: Clause 3.1.5, 3.2.1, 3.3.1, 3.4, 3.5.1 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: Jul. 06, 2023 ~ Jul. 07, 2023

Conclusion: The submitted sample **complies with** clause 3.1.5, 3.2.1, 3.3.1, 3.4, 3.5.1 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: 30%;">Test item</th> <th colspan="3">Observation</th> </tr> </thead> <tbody> <tr> <td>Sample No.:</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Operate as intended:</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>Signs of corrosion (visual check):</td> <td style="text-align: center;">No</td> <td style="text-align: center;">No</td> <td style="text-align: center;">No</td> </tr> <tr> <td>Line pay out, retract and lock:</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>Retraction tension:</td> <td>1 foot:</td> <td style="text-align: center;">1.86</td> <td style="text-align: center;">1.84</td> <td style="text-align: center;">1.83</td> </tr> <tr> <td>1.25~25 lbf</td> <td>50%:</td> <td style="text-align: center;">3.17</td> <td style="text-align: center;">3.01</td> <td style="text-align: center;">3.01</td> </tr> <tr> <td></td> <td>100%:</td> <td style="text-align: center;">5.55</td> <td style="text-align: center;">5.83</td> <td style="text-align: center;">5.82</td> </tr> </tbody> </table>	Test item	Observation			Sample No.:	1	2	3	Operate as intended:	Yes	Yes	Yes	Signs of corrosion (visual check):	No	No	No	Line pay out, retract and lock:	Yes	Yes	Yes	Retraction tension:	1 foot:	1.86	1.84	1.83	1.25~25 lbf	50%:	3.17	3.01	3.01		100%:	5.55	5.83	5.82	Pass
	Test item	Observation																																			
	Sample No.:	1	2	3																																	
	Operate as intended:	Yes	Yes	Yes																																	
	Signs of corrosion (visual check):	No	No	No																																	
	Line pay out, retract and lock:	Yes	Yes	Yes																																	
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Clauses	Test Item/Results	Compliance																																																
3.3.1	<p><b>Dynamic Performance of SRDs</b></p> <p>For all SRDs, when tested in accordance with 4.3.1:</p> <p>3.3.1.1 Locking function shall operate in accordance with 3.1.2.</p> <p>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.</p> <p>3.3.1.3 The visual indicator shall activate when dynamic performance is tested, providing clear evidence that the device has been impact loaded.</p> <p>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.</p> <p>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 colspan="2">Test item</th> <th colspan="3">Observation</th> </tr> <tr> <th colspan="2">Sample No.:</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td rowspan="8" style="text-align: center; vertical-align: middle;">Ambient</td> <td>Locking function:</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> </tr> <tr> <td rowspan="3">Retraction tension:</td> <td>1 foot:</td> <td>1.91</td> <td>2.02</td> <td>2.12</td> </tr> <tr> <td>50%:</td> <td>2.84</td> <td>2.87</td> <td>2.51</td> </tr> <tr> <td>1.25~25 lbf 100%:</td> <td>4.11</td> <td>4.05</td> <td>4.00</td> </tr> <tr> <td>Visual indicator:</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Maximum arrest force: ≤ 1800 lbf</td> <td>870.12</td> <td>921.14</td> <td>947.86</td> </tr> <tr> <td>Average arrest force: ≤ 1350 lbf</td> <td>706.79</td> <td>722.50</td> <td>757.87</td> </tr> <tr> <td>Arrest distance: ≤ 42 inches</td> <td>21.3</td> <td>20.0</td> <td>23.8</td> </tr> </tbody> </table>		Test item		Observation			Sample No.:		1	2	3	Ambient	Locking function:	Yes	Yes	Yes	Pay out and retract:	Yes	Yes	Yes	Retraction tension:	1 foot:	1.91	2.02	2.12	50%:	2.84	2.87	2.51	1.25~25 lbf 100%:	4.11	4.05	4.00	Visual indicator:	Yes	Yes	Yes	Maximum arrest force: ≤ 1800 lbf	870.12	921.14	947.86	Average arrest force: ≤ 1350 lbf	706.79	722.50	757.87	Arrest distance: ≤ 42 inches	21.3	20.0	23.8
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3.3.1	Hot	Locking function:		Yes	Yes	Yes
		Pay out and retract:		Yes	Yes	Yes
		Retraction tension:	1 foot:	2.28	2.06	2.08
			50%:	2.87	2.75	2.74
			1.25~25 lbf 100%:	3.09	3.88	4.02
		Visual indicator:		Yes	Yes	Yes
		Maximum arrest force: ≤ 1800 lbf		915.14	944.73	882.12
		Average arrest force: ≤ 1575 lbf		728.42	764.53	721.22
		Arrest distance: ≤ 42 inches		25.9	30.6	24.0
	Cold	Locking function:		Yes	Yes	Yes
		Pay out and retract:		Yes	Yes	Yes
		Retraction tension:	1 foot:	1.99	2.11	2.00
			50%:	2.28	2.58	2.94
			1.25~25 lbf 100%:	4.47	4.56	3.18
		Visual indicator:		Yes	Yes	Yes
		Maximum arrest force: ≤ 1800 lbf		884.89	882.40	927.86
		Average arrest force: ≤ 1575 lbf		738.40	745.27	769.51
		Arrest distance: ≤ 42 inches		22.2	24.3	26.9
	Wet	Locking function:		Yes	Yes	Yes
		Pay out and retract:		Yes	Yes	Yes
		Retraction tension:	1 foot:	2.09	2.11	2.09
			50%:	3.26	2.66	2.72
			1.25~25 lbf 100%:	4.38	3.99	4.11
		Visual indicator:		Yes	Yes	Yes
Maximum arrest force: ≤ 1800 lbf		1042.11	938.16	1069.65		
Average arrest force: ≤ 1575 lbf		758.11	745.63	751.39		
Arrest distance: ≤ 42 inches		26.5	27.4	27.0		
Pass						

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Clauses	Test Item/Results	Compliance																													
3.4	<b>Energy Capacity</b> SRDs featuring a rotary brake shall be tested in accordance with 4.4. The maximum arrest force shall not exceed 1,800 lbs (8kN).	Pass																													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Test item</th> <th colspan="3" style="text-align: center;">Observation</th> </tr> </thead> <tbody> <tr> <td>Sample No.:</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Maximum arrest force: ≤ 1800 lbf</td> <td style="text-align: center;">1304.72</td> <td style="text-align: center;">1483.82</td> <td style="text-align: center;">1350.89</td> </tr> </tbody> </table>		Test item	Observation			Sample No.:	1	2	3	Maximum arrest force: ≤ 1800 lbf	1304.72	1483.82	1350.89																	
	Test item		Observation																												
	Sample No.:		1	2	3																										
Maximum arrest force: ≤ 1800 lbf	1304.72	1483.82	1350.89																												
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.																															
3.5.1	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Test item</th> <th colspan="3" style="text-align: center;">Observation</th> </tr> </thead> <tbody> <tr> <td>Sample No.:</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Operate as intended:</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td>Line pay out, retract and lock:</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">Yes</td> </tr> <tr> <td rowspan="3">Retraction tension: 1.25~25 lbf</td> <td>1 foot:</td> <td style="text-align: center;">1.89</td> <td style="text-align: center;">1.81</td> <td style="text-align: center;">1.83</td> </tr> <tr> <td>50%:</td> <td style="text-align: center;">2.66</td> <td style="text-align: center;">2.78</td> <td style="text-align: center;">2.66</td> </tr> <tr> <td>100%:</td> <td style="text-align: center;">5.83</td> <td style="text-align: center;">5.71</td> <td style="text-align: center;">6.02</td> </tr> </tbody> </table>	Test item	Observation			Sample No.:	1	2	3	Operate as intended:	Yes	Yes	Yes	Line pay out, retract and lock:	Yes	Yes	Yes	Retraction tension: 1.25~25 lbf	1 foot:	1.89	1.81	1.83	50%:	2.66	2.78	2.66	100%:	5.83	5.71	6.02	Pass
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	100%:	5.83	5.71	6.02																											

### Test equipment:

Description	Manufacturer	Model No.	Serial No.	Cal. Date
Laser distance meter	BOSCH	GLM40	122213512	2022/11/23
Environmental testing equipment	TERCHY	HEMB-120L	1080911	2022/09/06
Environmental testing equipment	TERCHY	HEMB-120L	1060910	2022/09/06
Universal Machine	NTS	LCX-100kN	018038	2022/08/30
Force gauge	OLY	RX-200N	4111506136	2023/05/24
Load cell	JHSENSE	LM-3T	110921	2022/11/14
Salt spray tester	--	DR-90	B-03-01	2022/08/30
PH meter	Lutron	PH-211	AJ.92507(B-03-02)	2022/09/28

### Note :

1. The content of this report is invalid if it is not presented as the entire report.
2. The decision rule of the statements of conformity is following the ILAC G8:09/2019 by using the simple acceptance decision rule.
3. N/A = Not applicable; "--" = Blank.

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– Picture(s) –



Photo "A" Appearance of sample



Photo "B" Static Strength – Sample No.1

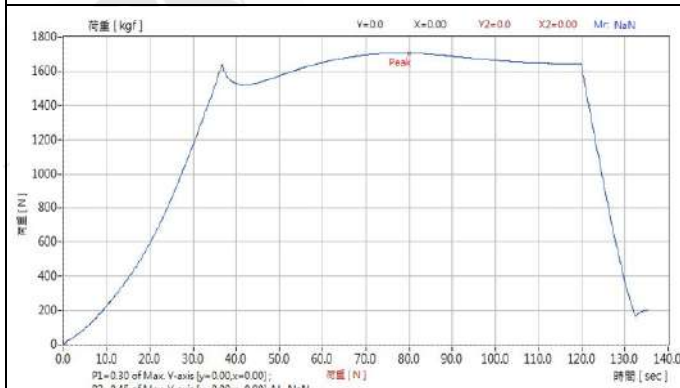


Photo "C" Static Strength – Sample No.2

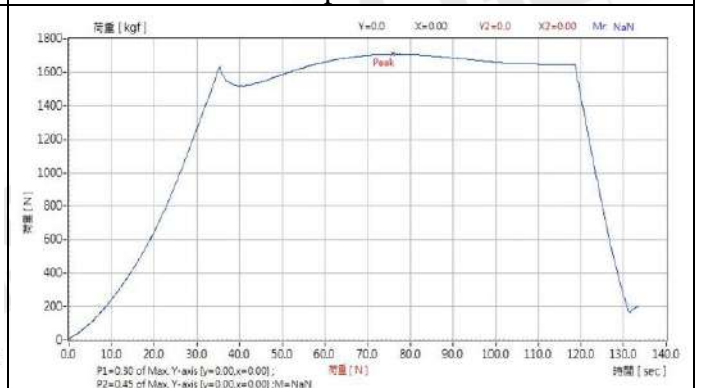


Photo "D" Static Strength – Sample No.3

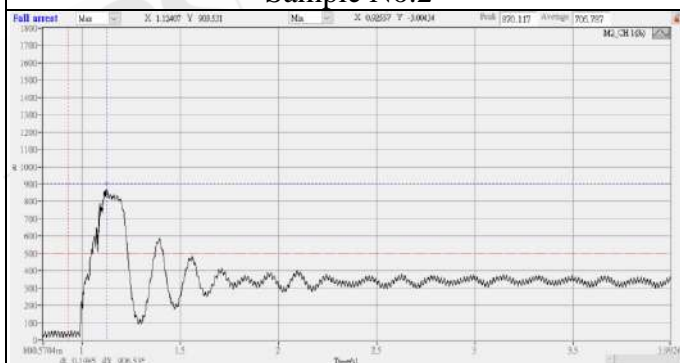


Photo "E" Dynamic Performance (Class 1) – Ambient: Sample No.1

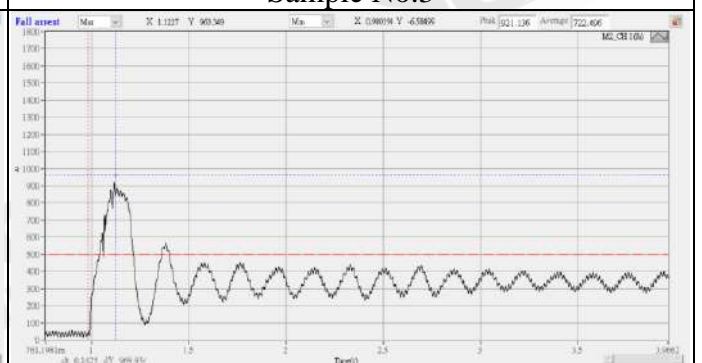


Photo "F" Dynamic Performance (Class 1) – Ambient: Sample No.2

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– Picture(s) –

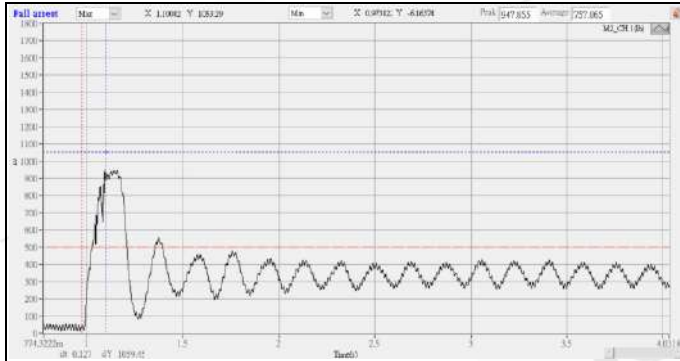


Photo “G” Dynamic Performance (Class 1) – Ambient: Sample No.3

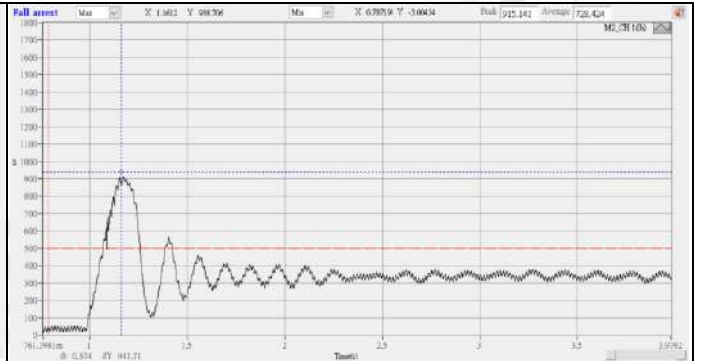


Photo “H” Dynamic Performance (Class 1) – Hot: Sample No.1

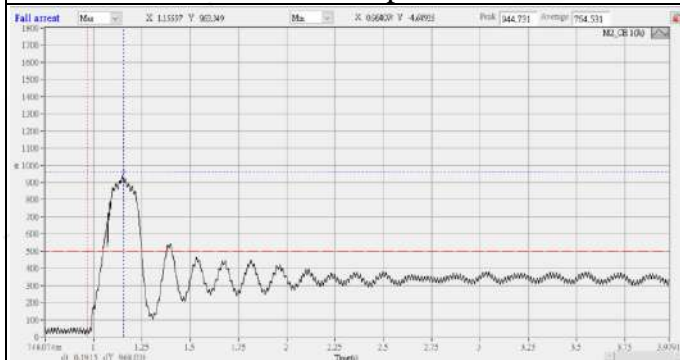


Photo “I” Dynamic Performance (Class 1) – Hot: Sample No.2

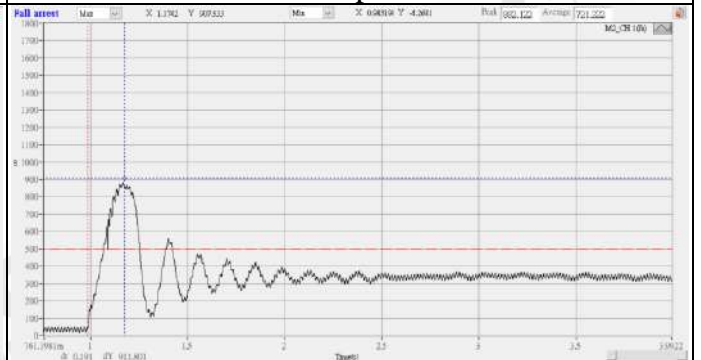


Photo “J” Dynamic Performance (Class 1) – Hot: Sample No.3

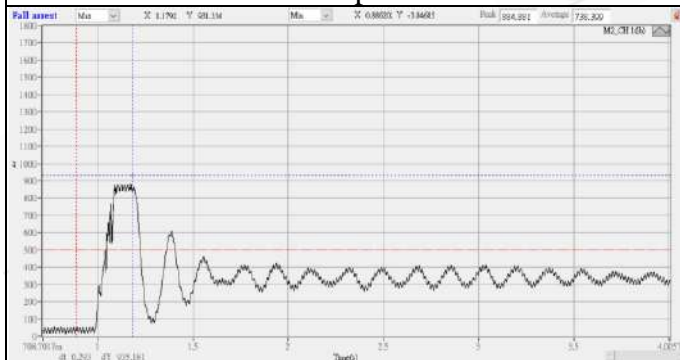


Photo “K” Dynamic Performance (Class 1) – Cold: Sample No.1

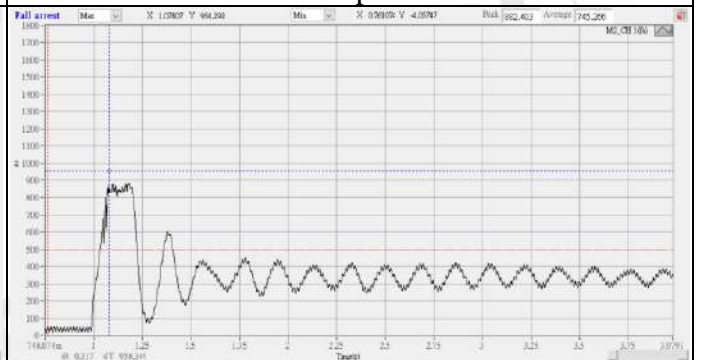


Photo “L” Dynamic Performance (Class 1) – Cold: Sample No.2

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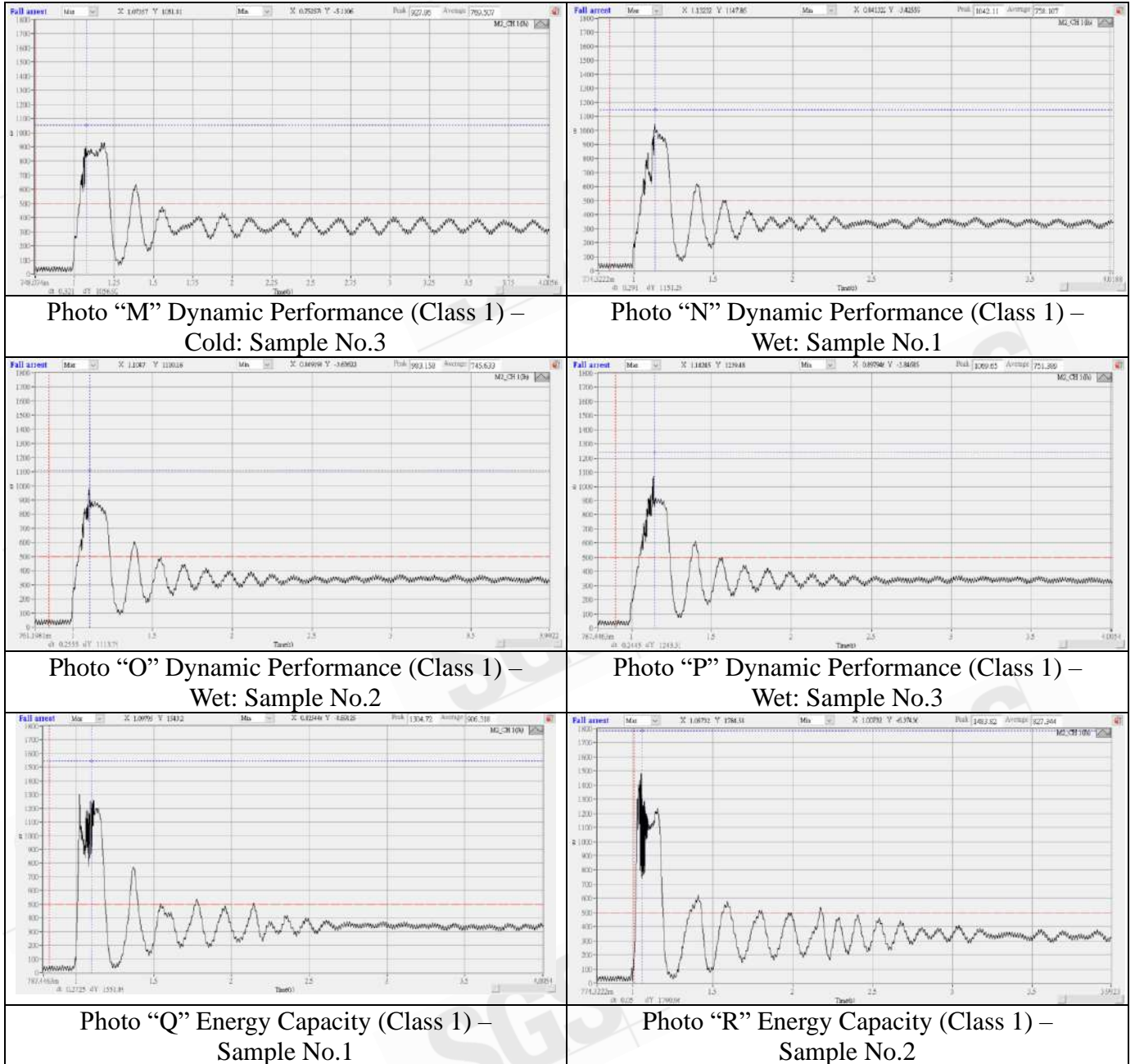
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– Picture(s) –

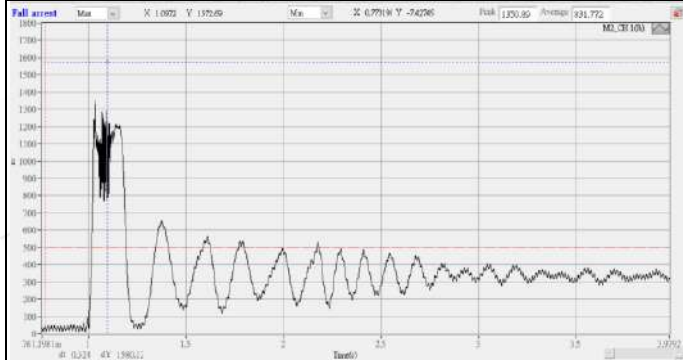


Photo “S” Energy Capacity (Class 1) –  
Sample No.3

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---End of Report---

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