

Test Report

This test report describes the test results of the below mentioned paragliding harness.

All the tests were carried out by:

Air Turquoise SA, official test laboratory of Switzerland.



Standards

Tests were carried out in conformity with the following standards:

- 2. DV LuftGerPV §1, Nr. 7 c (*note: in what follows this will be abbreviated by "LTF")
- European Standard EN1651 September 1999 (*note in what follows this will be abbreviated by "EN")
- European Standard EN12491 September 2001 (*note in what follows this will be abbreviated by "EN12491")

Harness details

Manufacturer:	Advance Thun SA		
Harness model:	Progress 2		
Size:	Medium		
Harness Weight:	3.5 kg		
Maximum certified pilot	120 kg		
Impact protection type:	Air Bag		
Harness type:	ABS		
Test responsible:	Alain Zoller		
Test place:	Villeneuve		
Test date:	December 13, 2013		
Test room temp & humidity:	21.1° C; 27 %rel		
Certification number EN:	PH 081.2013		

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Certification number LTF:

GZ 081.2013



Test summary

A. STRUCTURAL STRENGHT TESTS

A test plan was set up in order to execute the different tests in an efficient order. The table below summarizes this test plan together with the applicable standards and results.

	1	Standa	ard Ref.	٩	Anch	oring	For	ces	' Min.	
Test ID	TESTED ?	EN	LTF	TEST setup	Attach - ment points	Dummy	Req. Load in g	Min. force [N]	Test durat ion [sec]	Result
1		5.3.2.1	4.2.1.a	Default flying position	2 main attachment points	Hip fixated	6g 9g	6000 9000	10	ок
2	<u> </u>	5.3.2.2					15g	15000	5	ок
3	✓ I		4.2.1.b	Default, landing	2 main att.	Hip fixated,	6g	6000	10	ОК
4	<u> </u>	5.3.2.7		position	points	landing conf.	15g	15000	5	ок
5	✓		4.2.1.a rescue	Rescue		Hip fixated	9g	9000	10	ок
6	\mathbf{V}_{i}	5.3.2.4			2 rescue att. Pnts.	· · · · · · · · · · ·	15g	15000	5	ок
7	<u> </u>		4.2.1.b rescue	Rescue , landing		Hip fixated, landing conf.	6g	6000	10	ок
8	 Image: A second s	5.3.2.3		One riser	ONE main att.	1 central hip fixation	6g	6000	10	ок
9		5.3.2.5	4.2.1.d	Towing	2 main att. + 2 tow att.	None	3g 5g	3000 5000	10	n/a
10	 Image: A start of the start of	5.3.2.6		Default, Neqatif	One main att.	Head fix.	4.5g	4500	10	ок
11	✓ I		4.2.1.c	Upside down	2 main att. downw.		6g	6000	10	ок
12	✓ 		4.2.1.c rescue	Upside down rescue	2 rescue att. downw.	Head fix.	6g	6000	10	ок

B. HARNESS PROTECTION SHOCK TEST

Most paraglider harnesses are equipped with a protection device that damps the shock on the pilot's spine during a hard landing.

Shock impact tests have to be executed on these harnesses in order to prove the damping characteristics of it.

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est ID	ESTED ?	Standa rd Ref.: LTF	EST setup	Attach- ment	horing	Max. tolerated peak impact in g	Max Peak impact M measured ad	mpact duration of 38 g (if any) ecorded:	mpact duration of 20 g (if any) ecorded:	Result
PRO				points			2 5	_ + <u>c</u>	_ + <u>c</u>	Ľ.
TECT	✓	5.1.1	Default flying position	the harness	is attached to like a pilot in ight.		24.016	0	9 msec	ок

C. RESCUE DEPLOYMENT RESISTANCE TEST

The deployment of the rescue system has to be ensured in all circumstances of flight. This test is to verify whether the force needed to deploy is in between reasonable limits.

	ć	Standa rd Ref.		Ancl Attach-	horing	Force for sin Min.	ngle han I Iviax. I force	d deployment	
Test ID	TESTED	LTF	TEST se	points	Dumm	force [N]	[N]	Resistance measured [daN]	Result
Resc	~	6.1.5	Default flying	attached to like a pil	ponisble is o the harness ot in flight.	20 N	70 N	n/t	ок
depl		1 1 	position		ny required)	 -	 -		

D. RESCUE DEPLOYMENT STRAP STRENGHT TEST

The connection between handgrip and inner container has to have sufficient load capacity/structural strength in any situation that may arise during normal use. During this test is verified, whether this connection fulfill the requirements.

Test ID	TESTED ?	Standa LTF	ard Ref. EN 12491	TEST setup	Minimum force [N]	Min. Test durati on [s]	Breaking resistance measured	Result
Resc strap	~	6.1.8	5.3.2	Connection strap in tensile testing machine	700N	10	n/t	ок

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After careful examination as explained in above mentioned test reports (from page 2 to page 18), the undersigned persons declare that the harness:

Advance Thun SA Progress 2 Medium

Complied with:

• European Standard EN 1651 September 1999

And / or (if tested)

• European Standard EN 12491 March 2001

And / or (if tested)

• 2. DV LuftGerPV §1, Nr. 7 c

Villeneuve, December 13, 2013



Test responsible

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Place, Date

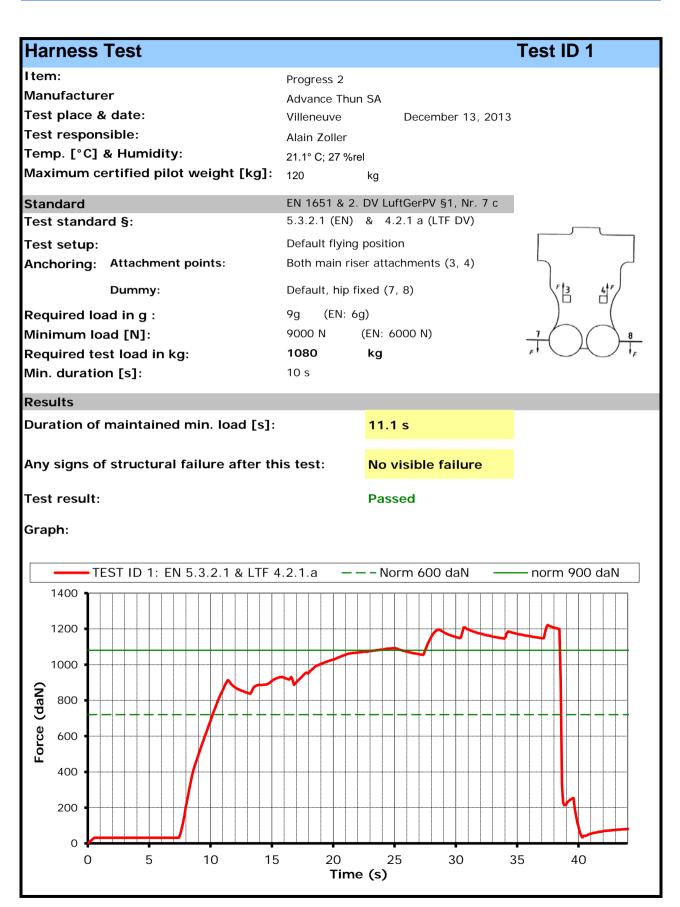


Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c

Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

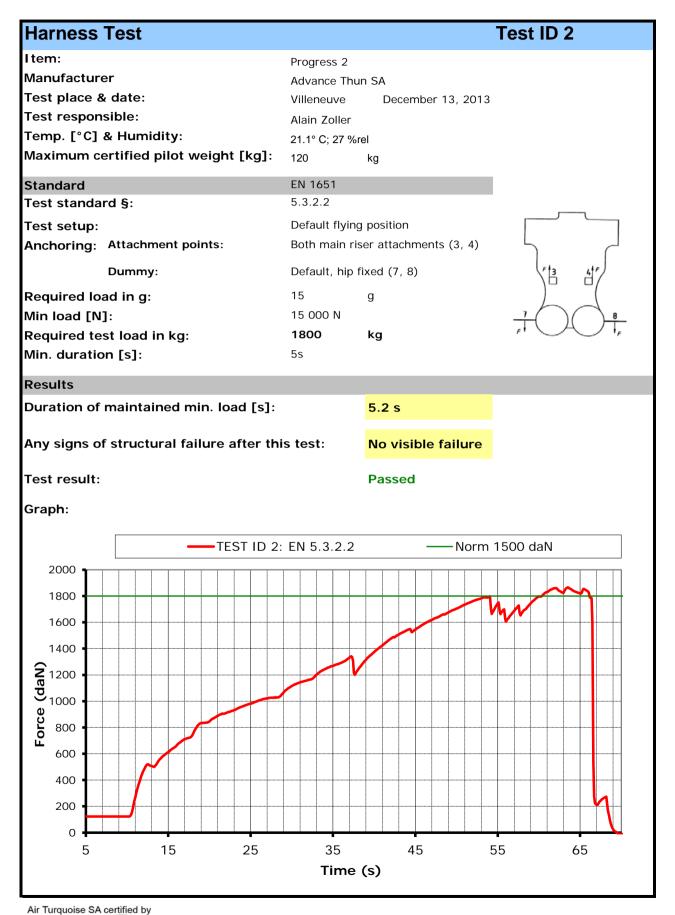
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Annex: detailed test reports





Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID 1 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3



ISO 9001 BUREAU VERITAS Certification

Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID 2 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Harness Test			Test ID 3
I tem: Manufacturer Test place & date: Test responsible: Temp. [°C] & Humidity: Maximum certified pilot weight [kg]: Standard Test standard §: Test setup: Anchoring: Attachment points:	Progress 2 Advance Thun SA Villeneuve Alain Zoller 21.1° C; 27 %rel 120 2. DV LuftGerPV § 4.2.1.b Flying position bet board (11) in land straps (10) closed Both of the main n attached (3 and 4	December 13, 2013 kg \$1, Nr. 7 c fore landing: seat ling position, leg l. riser attachments	3/4
Dummy: Required load in g: Min load [N]: Required test load in kg: Min. duration [s]:	Default, hip fixed 6 6000 N 720 10 s	(7, 8) g kg	
Results			
Duration of maintained min. load [s]:		10.2 s	
Any signs of structural failure after thi	s test:	No visible failure	
Test result: Graph:		Passed	
TEST ID 3: LT		Norm 600	D daN

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	Test			Test ID 4
Item:		Progress 2		
Manufacture	۲	Advance Th	un SA	
Test place &	date:	Villeneuve	December 13, 2013	
Test respons	sible:	Alain Zoller		
Temp. [°C] 8	& Humidity:	21.1° C; 27 %	brel	
Maximum ce	ertified pilot weight [kg]:	120	kg	
			0	
Standard		EN 1651		
Test standar	d §:	EN 5.3.2.7		
Test setup:			on before landing: seat in landing position, leg closed.	4
Anchoring:	Attachment points:	Both of the attached (3	main riser attachments and 4);	3/4
	Dummy:	Default, hip	fixed (7, 8)	
Required loa	ıd in g:	15	g	
Min load [N]	:	15 000 N		7/8 , 11
Required tes	st load in kg:	1800	kg	
Min. duratio	n [s]:	5 s		
Results				
Duration of	maintained min. load [s]:		5.9 s	
Any signs of	structural failure after this	s test:	No visible failure	
Test result:			Passed	
Graph:				
-	TEST ID 4: EN	↓ 5.3.2.7	Norm 150	0 daN
2000		J 5.3.2.7	Norm 150	0 daN
-	TEST ID 4: EN	V 5.3.2.7	Norm 150	0 daN
2000		1 5.3.2.7	Norm 150	0 daN
2000 1800 - 1600 -	TEST ID 4: EN	V 5.3.2.7	Norm 150	0 daN
1800 • 1600 • 1400 •		V 5.3.2.7	Norm 150	0 daN
2000 • 1800 • 1600 • 1400 •	TEST ID 4: EN	N 5.3.2.7	Norm 150	0 daN
2000 • 1800 • 1600 • 1400 •		N 5.3.2.7	Norm 150	0 daN
2000 • 1800 • 1600 • 1400 •		N 5.3.2.7	Norm 150	0 daN
2000 1800 1600 1400 1200 1000		N 5.3.2.7	Norm 150	0 daN
2000 1800 1600 1400 1200 1000 800 600		N 5.3.2.7	Norm 150	0 daN
2000 1800 1600 1400 1200 1000 800		N 5.3.2.7	Norm 150	0 daN
2000 1800 1600 1400 1200 1000 800 600 400		N 5.3.2.7	Norm 150	0 daN

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Harness Test			Test ID 5
tem:	Progress 2		
Manufacturer	Advance Thu	n SA	
Fest place & date:	Villeneuve	December 13, 2	2013
Fest responsible:	Alain Zoller		
Temp. [°C] & Humidity:	21.1° C; 27 %r	el	
Maximum certified pilot weight [kg]:	120	kg	
	120	Ng	
Standard		rPV §1, Nr. 7 c	
Test standard §:	4.2.1.a rescu	Ie	
Test setup:	Rescue attack	hments	
Anchoring: Attachment points:	Rescue riser	attachments (1,2)	
Dummy:	Hip fixed (7,	8)	\backslash /
Required load in g:	9	g) (
Min load [N]:	9 000 N	0	7 8
Required test load in kg:	1080	kg	
Min. duration [s]:	10 s	3	
	10 5		
Results			
		10.3 s	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Fest result:		10.3 s No visible failur Passed	re
Results Duration of maintained min. load [s]: Any signs of structural failure after th Fest result: Graph:	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Fest result: Graph: 	nis test:	<mark>No visible failu</mark> Passed	re -Norm 900 daN
Results Duration of maintained min. load [s]: Any signs of structural failure after th Fest result: Graph: TEST ID 5: LTF 4	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Fest result: Graph: 	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Test result: Graph: TEST ID 5: LTF 4 1400 1200 1000	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Test result: Graph: TEST ID 5: LTF 4 1400 1200 1000	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after th Test result: Graph: TEST ID 5: LTF 4 1400 1200 800 0 1000	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after the Test result: Graph: TEST ID 5: LTF 4 1400 1200 1000 800 600	nis test:	<mark>No visible failu</mark> Passed	
Results Duration of maintained min. load [s]: Any signs of structural failure after the Test result: Graph:	nis test:	<mark>No visible failu</mark> Passed	

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Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID 5 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Harness Test			Test ID 6
Item:	Progress 2		
Manufacturer	Advance Thun S	SA	
Test place & date:	Villeneuve	December 13, 207	13
Test responsible:	Alain Zoller		
Temp. [°C] & Humidity:	21.1° C; 27 %rel		
Maximum certified pilot weight [k	g]: 120 k	g	
Standard	EN 1651		
Test standard §:	5.3.2.4		
Test setup:	Rescue attachm	ents	
Anchoring: Attachment points:	Rescue riser att	achments (1,2)	
Dummy:	Hip fixed (7, 8)		
Required load in g:	15 g) (
Min load [N]:	15 000 N		7 6 8
Required test load in kg:	1800 k	g	FT A T
Min. duration [s]:	5 s		
Results			
Duration of maintained min. load [s]: 5	5.2 s.	
Any signs of structural failure afte	r this test:	Structural failure !	
Test result:	F	Passed	
Graph:			
	ID 6: EN 5.3.2.4	Norm	1500 daN
2000 -			
2000			
1800			
1800 •			
1800 • 1600 • 1400 •			
1800 • 1600 • 1400 •			
1800 • 1600 • 1400 •			
1800 • 1600 • 1400 • 1200 • 1000 • 800 •			
1800 • 1600 • 1400 •			
1800 • 1600 • 1400 • 1200 • 1000 • 800 •			
1800 1600 1400 1200 1000 800 600			
1800 1600 1400 1200 1000 800 600 400 200			
1800 1600 1400 1200 1000 300 600 400	40	60 80	
1800 1600 1400 1200 1000 0 800 400 0			100



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Harness Test		Test ID	7
Item:	Progress 2		
Manufacturer	Advance Thun SA		
Test place & date:		ber 13, 2013	
Test responsible:	Alain Zoller		
Temp. [°C] & Humidity:	21.1° C; 27 %rel		
Maximum certified pilot weight [kg]			
	120 kg		
Standard	2. DV LuftGerPV §1, Nr.	7 с	F
Test standard §:	4.2.1.b rescue		1/2
Test setup: Anchoring: Attachment points:	Flying position before lar board (11) in landing pos straps (10) closed. Both of the rescue riser a	ition, leg	A
Dummy:	attached (1 and 2); Default, hip fixed (7, 8)		
Required load in g:		\bigwedge	10
Min load [N]:	6 g 6 000 N	/	·
Required test load in kg:	720 kg		1/8 F 11
Min. duration [s]:	10 s		
win. duration [s]:	10.5		
Results			
Duration of maintained min. load [s]	: <u>10.8 s.</u>		
Duration of maintained min. load [s]	: 10.8 s.		
Duration of maintained min. load [s] Any signs of structural failure after t		e failure	
		e failure	
Any signs of structural failure after t	his test: No visib	e failure	
Any signs of structural failure after t Test result: Graph:	his test: No visib	e failure —— Norm 600 daN	J
Any signs of structural failure after t Test result: Graph:	his test: No visib Passed		1
Any signs of structural failure after t Test result: Graph: 800	his test: No visib Passed		J
Any signs of structural failure after t Test result: Graph: 800 700	his test: No visib Passed		
Any signs of structural failure after t Test result: Graph: 800 700 600	his test: No visib Passed		
Any signs of structural failure after t Test result: Graph: 800 700 600	his test: No visib Passed		
Any signs of structural failure after t Test result: Graph:	his test: No visib Passed		
Any signs of structural failure after t Test result: Graph: 800 700 600	his test: No visib Passed		J
Any signs of structural failure after t Test result: Graph:	his test: No visib Passed		
Any signs of structural failure after t Test result: Graph:	his test: No visible Passed	Norm 600 daN	J
Any signs of structural failure after t Test result: Graph:	his test: No visib Passed		

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Harness Test			Test ID 8
I tem: Manufacturer Test place & date: Test responsible: Temp. [°C] & Humidity: Maximum certified pilot weight [kg]:	Progress 2 Advance Thun Villeneuve Alain Zoller 21.1° C; 27 %rel 120	December 13, 201	13
Standard	EN 1651		
Test standard §:	5.3.2.3		-
Test setup:	Only one riser	attached	\frown
Anchoring: Attachment points:	One main rise	r attachments (3)	15
Dummy:	Hip fixed (7, 8	-> 12)	$\sim \sim \sim \sim$
Required load in g:	6	g	$\langle \langle \cdot \rangle \langle \cdot \rangle$
Min load [N]:	6 000 N		
Required test load in kg:	720	kg	F
Min. duration [s]:	10 s		
Results			
Duration of maintained min. load [s]:		10.2 s.	
Any signs of structural failure after th	is test:	No visible failure	
Test result:		Passed	
Graph:			
TEST ID 8: EN 5	.3.2.3	Norm	600 daN
900			
800 •			
700			
600 •			
2			
e constant de la cons			
g 400 •			
ق ₃₀₀			
200			
10 15 20	25 30		0 45 50
	Time	(s)	

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Item:Progress 2ManufacturerAdvance Thun SATest place & date:VilleneuveTest responsible:Alain ZollerTest responsible:Alain ZollerTest standardEN 1651Test standard §:5.3.2.6StandardEN 1651Test standard §:DifferTest standard §:S.3.2.6Required load in g:4.5.gMin load [N]:4.5.gRequired test load in kg:540 kgMin load [N]:11.1 s.Any signs of structural failure after this test:No visible failureTest result:PassedGraph:Test result:PassedGraph:Test result:PassedTest result:Content of the main rise of the main rise of the failureItem (s)Test result:PassedTest result:Content of the main rise	Harness Test			Test ID 10
Test standard §: 5.3.2.6 Test setup: Anchoring: Attachment points: ONE of the main riser attachments attached downwards(3 or 4): Dummy: Dummy anchored at the head position (9) Required load in g: 4.5 g Min load [N]: 4500 N Required test load in kg: 540 kg Min. duration [s]: 10 s Results Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: $0 = \frac{1}{10} = \frac{1}{26} = $	Manufacturer Test place & date: Test responsible: Temp. [°C] & Humidity:	Advance Thu Villeneuve Alain Zoller 21.1° C; 27 %i	December 13, 2013	3
Test setup: Normal flying position in NEGATIF Anchoring: Attachment points: ONE of the main riser attachments attached downwards(3 or 4): Dummy: Dummy anchored at the head position (9) Required load in g: 4.5 g Min load [N]: 450 N Required test load in kg: 540 kg Min. duration [s]: 10 s Results 11.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: 0 0 0	Standard	EN 1651		
Anchoring: Attachment points: Dummy: Dummy: Required load in g: Attached in g: Attached downwards(3 or 4): Dummy anchored at the head position 9 Min load [N]: Required test load in kg: Min. duration [s]: Any signs of structural failure after this test: Test result: Test result: Test result: Test result: Duration of maintained min. load [s]: Test result: Test result: Test result: Any signs of structural failure after this test: Min to visible failure Test result: Test result: Test result: Duration of maintained min. load [s]: Test result: Test		5.3.2.6		۱ <i>۴</i>
Dummy: attached downwards(3 or 4); Dummy: Dummy anchored at the head position (9) Required load in g: 4.5 g Min load [N]: 4500 N Required test load in kg: 540 kg Min. duration [s]: 10 s Results In the second	Test setup:	Normal flying	g position in NEGATIF	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
(9) Required load in g: 4.5 g 4500 N Required test load in kg: 540 kg Min. duration [s]: 10 s Results Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: Test result: Test result: Passed Graph: 10 = 10 = 10 = 10 = 10 = 10 = 10 = 10 =	Anchoring: Attachment points:			5 7
Min load [N]: 4500 N Required test load in kg: 540 kg Min. duration [s]: 10 s Results Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: 10 = 10 = 10 = 10 = 10 = 10 = 10 = 10 =		(9)	nored at the head position	n 3/4
Required test load in kg: 10 s kg Min. duration [s]: 10 s kg Results Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: $10 ext{ for the first in the firs$			g	\mathcal{A} (
Min. duration [s]: 10 5 Results Duration of maintained min. load [s]: 1.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: $10^{0^{$			ka	\square
Results Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: No visible failure. Test result: Passed Graph:			ĸy	F
Duration of maintained min. load [s]: 11.1 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph:	win. duration [s]:	10.5		
Any signs of structural failure after this tes: Test result: Passel Graph:	Results			
Test result: Pased Graph:	Duration of maintained min. load [s]:		11.1 s.	
<section-header></section-header>	Any signs of structural failure after thi	s test:	No visible failure	
$\begin{array}{c} \hline \\ \hline $	Test result:		Passed	
$ \begin{array}{c} & & \\ & & $	Graph:			
600 6000 600 600 6000 6000 6000 6000 6000 6000 6000 6000 6000 6000	TEST ID 10:	EN 5.3.2.6		50 daN
$ \begin{pmatrix} 500 \\ 400 \\ 300 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	700			
$\left(\begin{array}{c} \mathbf{y} \\ \mathbf{y} \\$	600			
$\left(\begin{array}{c} \mathbf{y} \\ \mathbf{y} \\$				
200 + 100				
200 + 100	2 400 • • • • • • • • • • • • • • • • • •			
200 + 100	о) а			
200 + 100				
100 + 100				
0 <u>6</u> 16 26 36 46 56 66				
6 16 26 36 46 56 66	100			
6 16 26 36 46 56 66				
Time (s)		36	46	56 66
		Time	(s)	



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Harness Test		Test ID 11
tom.		
Item:	Progress 2	
Manufacturer	Advance Thun SA	
Test place & date:	Villeneuve December 13	, 2013
Test responsible:	Alain Zoller	
Temp. [°C] & Humidity:	21.1° C; 27 %rel	
Maximum certified pilot weight [kg]:	120 kg	
Standard	2. DV LuftGerPV §1, Nr. 7 c	_
Frandard Fest standard §:	4.2.1.c	٨F
		<u>6</u> 9
Test setup:	Pilot upside down flying position	
Anchoring: Attachment points:	Both of the main riser attachmen attached downwards (3 and 4);	its
Dummy:	Dummy anchored at the head po (9)	sition
Required load in g:	6 g	\F 5/
Min load [N]:	6 000 N	
Required test load in kg:	720 kg	()()
Min. duration [s]:	10 s	$\langle A \rangle$
Results		
Duration of maintained min. load [s]:	<mark>10.9 s.</mark>	
Any signs of structural failure after thi	s test: No visible failu	ire
Test result:	Passed	
Graph:		
	TF 4.2.1.c — I	Norm 600 daN
800 -		
700		
600		
g 500 •		
8 400		
Š		
⊥ 300 .		η
100		
0 5 10	15 20 2	25 30 35
	15 20 2 Time (s)	25 30 35



Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID 11 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Item: Progress 2 Manufacturer Advance Thun SA Test place & date: Vileneuw December 13, 2013 Test responsible: Alain Zoller Temp. [*C] & Humidity: 21.1*C.2* 7srel Maximum certified pilot weight [kg]: 120 kg Standard 2. DV LufiGerPV \$1, Nr. 7 c Test standard \$: 4.2.1.0 rescue Test setup: Pilot upside down flying position Anchoring: Attachment points: Both of the rescue riser attachments attached downwards (1 and 2): Dummy: Dummy anchored at the head position (9) Required load in g: 6 g Min. doar [N]: 6000 N Required test load in kg: 720 kg Min. duration [S]: 10 5 Results Duration of maintained min. load [s]: 11.8 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph:	Item: Progress 2 Manufacturer Advance Thun SA Test place & date: Villeneuve December 13, 2013 Test responsible: Alain Zoller Temp. [°C] & Humidity: 21.0° (; 27 %rel Maximum certified pliot weight [kg]: 120 kg Standard 2. DV LuftGerPV 51. Nr. 7 c Test standard §: 4.2.1 c rescue Test standard §: 4.2.1 c rescue Test stetup: Pliot upside down Hying position Anchoring: Attachment points: Both of the rescue riser attachments attached downwards (1 and 2): Dummy: Dummy anchored at the head position (0) Required load in g: 6 g Min load [N]: 6000 N Required test load in kg: 720 kg Min. duration [s]: 10 s Results Duration of maintained min. load [S]: 11.8 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: Yung 0	Harness Test			Test ID 12
Required load in g: 6 g Min load [N]: 6 000 N Required test load in kg: 720 kg Min. duration [s]: 10 s Results Duration of maintained min. load [s]: Any signs of structural failure after this test: No visible failure Test result: Carph: No function of maintained min. load [s]: Test result: Passed Graph: No function of maintained min. load [s]: 11.8 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph: No function of maintained min. load [s]: Passed Composed Co	Required load in g: 6 9 Min load [N]: 6 000 N Required test load in kg: 720 kg Min. duration [s]: 10 s Results Duration of maintained min. load [s]: Any signs of structural failure after this test: No visible failure Test result: Carph: No visible failure Passed Graph: No visible failure 000 M 000	Manufacturer Test place & date: Test responsible: Temp. [°C] & Humidity: Maximum certified pilot weight [kg]: Standard Test standard §: Test setup: Anchoring: Attachment points:	Advance Thun Villeneuve Alain Zoller 21.1° C; 27 %rel 120 2. DV LuftGerf 4.2.1.c rescue Pilot upside do Both of the res attached down	December 13, 2013 kg PV §1, Nr. 7 c wwn flying position scue riser attachments wards (1 and 2);	Test ID 12
Duration of maintained min. load [s]: 11.8 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph:	Duration of maintained min. load [s]: 11.8 s. Any signs of structural failure after this test: No visible failure Test result: Passed Graph:	Min load [N]: Required test load in kg:	6 6 000 N 720		
Any signs of structural failure after this test: Test result: Passed Graph:	Any signs of structural failure after this test: Do visible failure Test result: Passed Graph: y y y y y y y y y y y y y y y y y y y	Results			
Test result: Pased Graph:	Test result: Passed Graph:	Duration of maintained min. load [s]:		11.8 s.	
Graph:	Graph:	Any signs of structural failure after this	s test:	No visible failure	
(PP 99)	(Pg 9g)	Test result:		Passed	
(PP 99)	(Pg 9g)	Graph:			
-2 3 8 13 18 23 28 33 38 Time (s)	Time (s)		13 18		

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Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID 12 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Protector sho	ock test	Test ID Protect	
I tem: Manufacturer Test place & date Test responsible: Temp. [°C] & Hur Maximum certifie		Progress 2 Advance Thun SA Villeneuve December 13, 2013 Alain Zoller 21.1° C; 27 %rel 120 kg	
Standard		2. DV LuftGerPV §1, Nr. 7 c	
Test standard §:		5.1.1	
Test setup:		Harness attached to protector test dummy, in a similar way like a real pilot in flight.Impact will be simulated by dropping the dummy from a certain height (with and without reserve).To simulate the "in-flight" conditions, the airbag is inflated with pressurized air equalling an airspeed of 7m/s. Inflation has to be stopped at least 5 sec before impact.	
		Impact will be measured by an accelerometer mounted on the dummy. (Impact measured in g's)	
Requirements:	Minimun height:	1.65 m (between lowest point test dummy and impact surface)	
	Impact requirements:	+50g as absolute maximum; +38g during less than 7 msec;	
	Repetitions:	+20g during less than 25 msec. The test will be performed 2 times, minimum 1 hour and maximum 2 hours after the first impact (with airbag protectors this pause is not necessary). The 2 Max-values should not differ more than 20%	
Results			
Shock test 1:			
Impact at a heigh	nt of 1.65m:	24.016	
Impact duration of+ 38 g (if any):		0	
Impact duration	of +20 g (if any):	9 msec $\Delta < 20\%$?	
<u>Shock test 2:</u>			
Impact at a heigh	nt of 1.65m:	25.304	
Impact duration	of+ 38 g (if any):	0	
-	of +20 g (if any):	16 msec	
Test Result:		Passed	

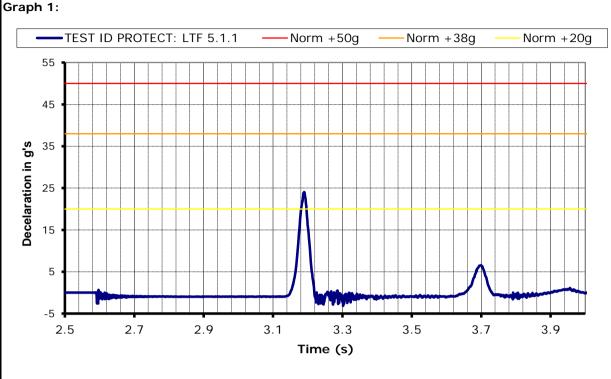


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Graph 1:

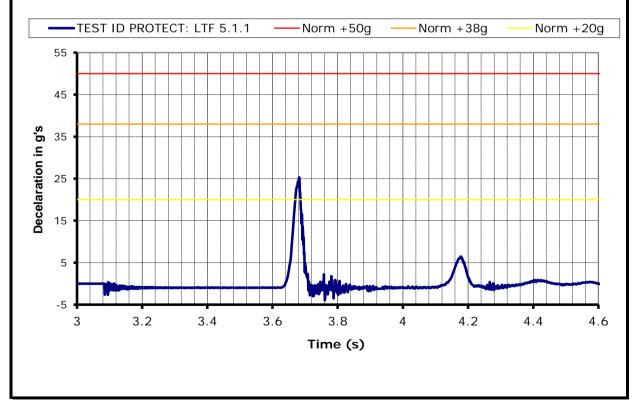
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PD



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Graph 2:





Annex TEST ID Protect 1 Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Reso	cue deplo	oyment resistance	ce test Test ID resc	
Test p Test r Temp.	facturer blace & date esponsible: . [°C] & Hur		Progress 2 Advance Thun SA Villeneuve December 13, 2013 Alain Zoller 21.1° C; 27 %rel 120 kg	
Stand	ard		2. DV LuftGerPV §1, Nr. 7 c	
Test s	tandard §:		6.1.5	
Test s	etup:		The deployment of the rescue system has to be ensured in a circumstances, especially with a damaged glider.	all
			The pilot has to be able to deploy the rescue chute with a si pull out of the outer container, single handed and in an anatomical favorable direction.	ingle
			In order to simulate this, the test responsible deploys the re- seated in the harness. In a similar way as in real flight. The deployment resistance is approximately measured by the lo cell, which is placed between the hand of the test responsib the rescue hand grip.	ad
			On the other hand inadvertent deployment has to be fairly remote. Therefore a shear link has to withstand a minimum	load.
Requi	rements:	Max force for single hand deployment: Min force to prevent	approx. 70 N	
		unwanted opening:	approx. 20 N	
Result				
	ployment [c	<pre>peak required force daN]:</pre>	4.7 daN	
Comm	nent:		Passed	
Graph	:			
		TEST ID rescue deployr	ment 1 — Max 7 daN — Min 2 daN	
-	10			7
	9			
z	8			
Pulling force in daN	6			
orce	5			
ng fo	4			
Pulli	3 •			
	2			-
	1			-
	2.7	3.2	3.7 4.2 4.7	_
	2.1	3.2	3.7 4.2 4.7 Time (s)	



Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID resc depl Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

Rescue deployment strap stre	ngth test	Test ID resc strap
Item:	Progress 2	
Manufacturer	Advance Thun SA	
Test place & date:	Villeneuve December 13, 2013	
Test responsible:	Alain Zoller	
Temp. [°C] & Humidity:	21.1° C; 27 %rel	
Maximum certified pilot weight [kg]:	120 kg	
Standard	EN 12491 & 2. DV LuftGerPV	'81 Nr 7 c
Test standard §:	5.3.2 (EN 12491) & 6.1.8 (
Test setup:	The handgrip of the outer container inner container with a removable of possible to use the inner container containers. The connection between handgrip a have sufficient load capacity/struct	oop in a way that it is with different types of outer and inner container has to ural strength in any situation
	that may arise during normal opera In order to verify this, the connecti strength by a default tensile testing	on is tested on its tensile
	In addition to this the breaking resi measured.	stance will also be
Requirements: Min. tensile strenght for 10 s:	700 N (= 70daN)	
Results		
Duration of maintained load [s]:	< 10 sec	
Breaking resistance [daN]:	142 kg	
Comment:	Passed	
Graph:		
	rap strenght Mir	n 70 daN
160 140 140 120 120 100 100 100 100 100 10		50
	Time (s)	



Air Turquoise S.A. - Certification of paraglider equipment Tested in accordance with EN 1651:1999 and 2.DV LuftGerPV§1, Nr.7c Annex TEST ID resc strap Prepared by RE Rev.0, 25.01.2011 No. 71.9.3

ADVANCE Thun AG

Rolf Zeltner Uttigenstrasse 87 3602 Thun Switzerland



The hereunder sample of the strap (riser) of rescue has been tested in accordance with following German standards: 2. DV LuftGerPV, §1, Nr. 7 c (6.1.4)

Manufacturer:	ADVANCE Thun SA	
Model and size:	Progress 2	
Maximum load of t	he strap: 2595.6 daN	
Air Turquoise H LOAD DIAGRA		
2712.2		
2500.0		
2300.0		
2200.0		
2000.0		
1800.0		
1700.0		
1500.0 1400.0		
O 1300.0		
0 1200.0 1100.0		
900.0		
800.0		
700.0		
500.0		
300.0		
200.0		
-41.2	0 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 363	
Progress2	Time [s] TEST PASSED Fm = 2595.6	
Test Load [kg] = 2400	27/12/2013 - 11:52 measurement with ShockRecord (c) 2006 Jonas Buchli tops://www.searchitecommons.org	
	Villeneuve, 27.12.2013 Alain Zoller	
	Villeheuve, 27.12.2013 Alain Zoller	R
ISO 9001	Air Turquoise SA – Certification of Paraglider equipments Paraglider EN 926-2:2005 / EN 926-1:2006 – Rescue EN 12491 – VIMES EN 1651 Prepared by BEK No 71.7.5 Rev.1	t.com
BUREAU VERITAS	Falagiluei Ein 920-2.2003 / Ein 920-1.2000 - Rescue Ein 12491 - Thanness Ein 1031	
1828	Prepared by BEK No 71.7.5 Rev.1 Rev. 1 01.09.2009 101.09.2009	