

En application de la directive n°89/686/CEE du 21 décembre 1989 concernant le rapprochement des législations des Etats Membres relatives aux équipements de protection individuelle l'échantillon essayé est déclaré conforme aux exigences essentielles de santé et de sécurité du décret n°2007-1133 du 24 juillet 2007 portant transposition de cette directive en droit français.

In application of the directive n°89/686/EEC dated 21/12/89 on the approximation of the laws of the Member States relating to personal protective equipment and the decree n°2007-1133 of July 24<sup>th</sup> 2007 transposing this Directive into French law,

Le C.R.I.T.T. SPORT-LOISIRS, habilité par le ministère de l'économie, de l'industrie et de l'emploi, pour effectuer l'examen CE de type prévu par l'article R.322-35 du code du sport et identifié sous le numéro 0501 (publié au JORF du 23/06/2015) attribue The C.R.I.T.T. SPORT-LOISIRS, authorized by order of the Ministry in charge of economy, industry and labour, for the EC type examination with the number 0501 (notified in JORF on June 23, 2015) grants

# l'ATTESTATION D'EXAMEN CE DE TYPE

the EC type Examination Certificate

# N° 0501/2580/162/12/16/1890

au modèle d'équipement de protection individuelle suivant : to the following designated personal protective equipment:

- Protection pour Sellette de parapente Protection for Paraglider harness......(dénomination)(product)
- BUMPAIR 17 XC.....(marque commerciale)(trademark)
- Unique one size.....(taille)(size)
- SUPAIR, 34 rue Adrastée 74650 CHAVANOD- FRANCE..(fabricant et demandeur) (manufacturer and applicant)
- Protocole Protocol CRITT SL SP-001 02/2016.....(référentiel technique)(standard)

Le modèle BUMPAIR 17 XC est associé aux sellettes de référence : EVO XC 3
The model BUMPAIR 17 XC is associated with the reference Paragliders harness : EVO XC 3





Fait à Châtellerault, le 24/07/2017 Châtellerault, the 07/24/2017

Franck LEPLANQUAIS
Directeur (Manager)

Nota : toute modification apportée au matériel neuf objet de la présente attestation d'examen CE de type doit être portée à la connaissance de l'organisme habilité, en application de l'article R 322-35 du Code du sport. Any modification carried out on the material being the subject of the present EC type Examination Certificate must be brough to the authorised body in application of Article R 322-35 of the sport Code.

Cette attestation comporte 1 page. This is a one page document.

**CRITT Sport Loisirs de Poitou-Charentes** 

ZA du Sanital - 21 Rue Albert Einstein - 86100 CHATELLERAULT - France



# **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: Sup'Air

Harness model: Evo XC 3

Size tested: Large

Harness Weight tested: 4.2 kg

Maximum certified pilot 120 kg
Impact protection type: Mousse bag

Harness type: ABS

Test responsible:

Test place:

Villeneuve

Test date: December 27, 2013

Test room temp & humidity: 22,6° C; 31 %rel

Certification number EN: PH 084.2013
Certification number LTF: GZ 084.2013

page 1 of 4





# 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.

		Standard Ref.		Ω	Anchoring		Forces		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 2	<u> </u>	5.3.2.1 5.3.2.2	4.2.1.a	Default flying position	2 main attachment points	Hip fixated	6g 9g 15g	6000 9000 15000	10 5	ок ок
3	✓	5.3.2.7	4.2.1.b	Default, landing position	2 main att. points	Hip fixated, landing conf.	6g	6000 15000	10 5	OK OK
5 6 7	✓	5.3.2.4	4.2.1.a rescue 4.2.1.b	Rescue Rescue,	2 rescue att. Pnts.	Hip fixated Hip fixated,	9g 15g 6g	9000 15000 6000	10 5	OK OK
8	<b>√</b>	5.3.2.3	rescue	landing One riser	ONE main att.	landing conf. 1 central hip fixation	6g	6000	10	OK
9 =====	==:	5.3.2.5	4.2.1.d	Towing  Default,	2 main att. + 2 tow att.	None	3g 5g	3000 5000	10	n/a
10 11	<b>✓</b>	5.3.2.6	4.2.1.c	Negatif Upside down	One main att.  2 main att. downw.	Head fix.	4.5g  6g	4500 6000	10 10	OK OK
12	<b>✓</b>		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.

page 2 of 4





Test ID	TESTED?	Standa rd Ref.: LTF	TEST setup	Anch Attach- ment points	noring Summo	Max. tolerated peak impact in g	Max Peak impact 3	Impact duration of +38 g (if any) recorded:	Impact duration of +20 g (if any) recorded:	Result
PRO TECT 1	<b>✓</b>	5.1.1	Default flying position	the harness	is attached to s like a pilot in ight.		23.688	0	16.02 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.

	خ	Standa rd Ref.		Ancl	horing	Force for single hand deployment			
Test ID	TESTED	LTF	TEST S	ment points	Dumm	force [N]	[N]	Resistance measured [daN]	Result
Resc	✓	6.1.5	Default flying	lest responisble is attached to the harness like a pilot in flight.		20 N	i i i 70 N	I I I n/t I	ОК
depl			position	(no dumn	ny required)	1	!	l	I

# 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	<b>✓</b>	6.1.8	5.3.2	Connection strap in tensile testing machine	700N	10	n/t	ОК

page 3 of 4





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

Sup'Air Evo XC 3 Large

# 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 27, 2013

Place, Date

Alain Zoller Www.para-test.com
Test responsible

page 4 of 4



Annex: detailed test reports

Harness Test Test ID 1

I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

Standard EN 1651 & 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 5.3.2.1 (EN) & 4.2.1 a (LTF DV)

Test setup: Default flying position

Anchoring: Attachment points: Both main riser attachments (3, 4)

**Dummy:** Default, hip fixed (7, 8)

**Required load in g:** 9g (EN: 6g)

Minimum load [N]: 9000 N (EN: 6000 N)

Required test load in kg: 1080 kg

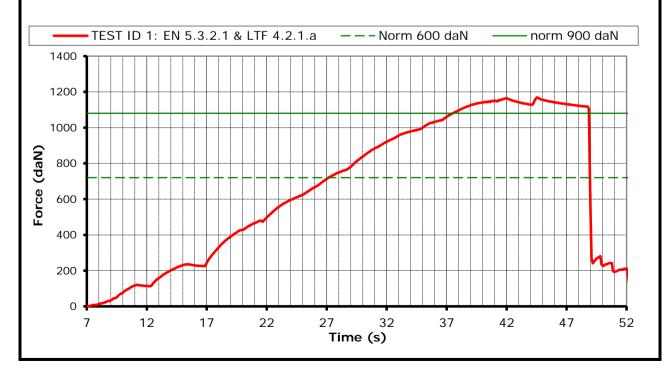
Min. duration [s]: 10 s



Duration of maintained min. load [s]: 10.8 s

Any signs of structural failure after this test: No visible failure

Test result: Passed







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

Standard EN 1651
Test standard §: 5.3.2.2

Test setup: Default flying position

Anchoring: Attachment points: Both main riser attachments (3, 4)

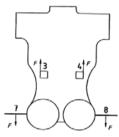
**Dummy:** Default, hip fixed (7, 8)

Required load in g: 15 g

Min load [N]: 15 000 N

Required test load in kg: 1800 kg

Min. duration [s]: 5s

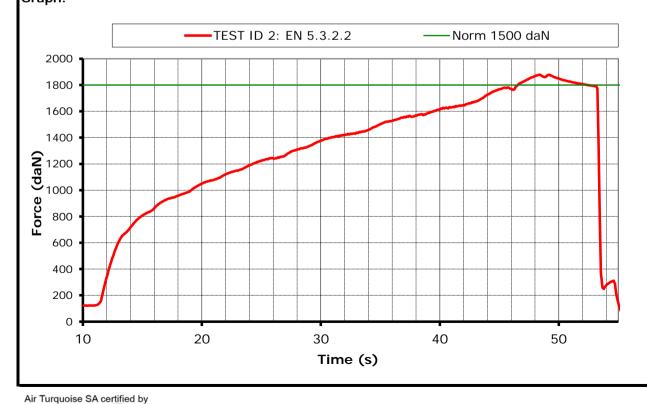


#### Results

Duration of maintained min. load [s]: 5.6 s

Any signs of structural failure after this test: No visible failure

Test result: Passed







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 4.2.1.b

Test setup: Flying position before landing: seat

board (11) in landing position, leg

kg

straps (10) closed.

Anchoring: Attachment points: Both of the main riser attachments

attached (3 and 4);

**Dummy:** Default, hip fixed (7, 8)

Required load in g: 6 g

Min load [N]: 6000 N

Required test load in kg: 720 kg

Min. duration [s]:



Duration of maintained min. load [s]: 11.3 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:
Alain Zoller
Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:
Alain Zoller
22,6° C; 31 %rel

Standard EN 1651
Test standard §: EN 5.3.2.7

**Test setup:** Flying position before landing: seat

board (11) in landing position, leg

straps (10) closed.

Anchoring: Attachment points: Both of the main riser attachments

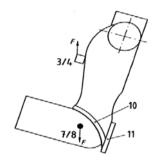
attached (3 and 4);

**Dummy:** Default, hip fixed (7, 8)

**Required load in g**: 15 g **Min load [N]**: 15 000 N

Required test load in kg: 1800 kg

Min. duration [s]: 5 s

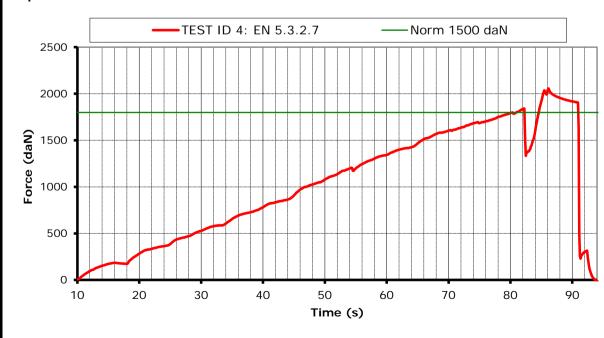


Results

Duration of maintained min. load [s]: 6.1 s

Any signs of structural failure after this test: No visible failure

Test result: Passed





I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible: Alain Zoller
Temp. [°C] & Humidity: 22,6°C; 31 %rel
Maximum certified pilot weight [kg]: 120 kg

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 4.2.1.a rescue

Test setup: Rescue attachments

Anchoring: Attachment points: Rescue riser attachments (1,2)

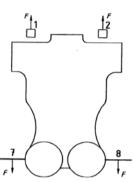
**Dummy:** Hip fixed (7, 8)

Required load in g: 9 g

Min load [N]: 9 000 N

Required test load in kg: 1080 kg

Min. duration [s]:

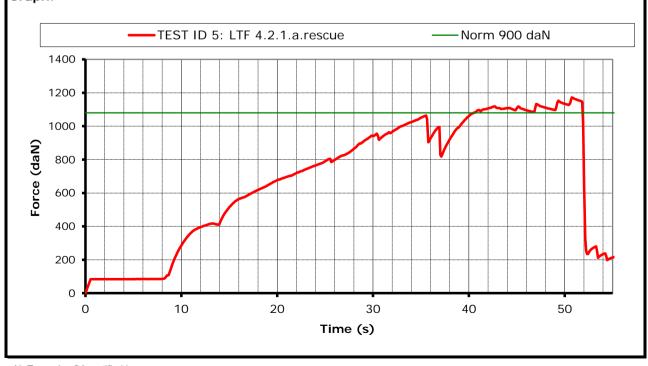


**Results** 

Duration of maintained min. load [s]: 10.9 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed







**Test ID 6 Harness Test** 

Item: Evo XC 3 Manufacturer Sup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible: Alain Zoller Temp. [°C] & Humidity: 22,6° C; 31 %rel Maximum certified pilot weight [kg]: kg

EN 1651 Standard 5.3.2.4

Test standard §:

Rescue attachments Test setup:

Rescue riser attachments (1,2) Anchoring: Attachment points:

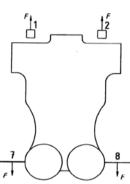
> Dummy: Hip fixed (7, 8)

Required load in g: 15

15 000 N Min load [N]:

Required test load in kg: 1800 kg

Min. duration [s]: 5 s

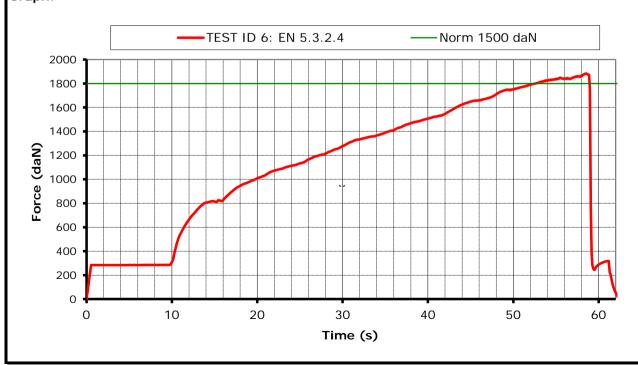


#### Results

Duration of maintained min. load [s]: 5.2 s.

Any signs of structural failure after this test: Structural failure!

Test result: **Passed** 







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible: Alain Zoller
Temp. [°C] & Humidity: 22,6°C; 31 %rel
Maximum certified pilot weight [kg]: 120 kg

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 4.2.1.b rescue

**Test setup:** Flying position before landing: seat

board (11) in landing position, leg

straps (10) closed.

Anchoring: Attachment points: Both of the rescue riser attachments

attached (1 and 2);

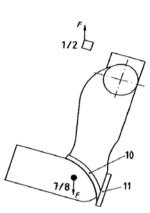
**Dummy:** Default, hip fixed (7, 8)

Required load in g: 6

Min load [N]: 6 000 N

Required test load in kg: 720 kg

Min. duration [s]:

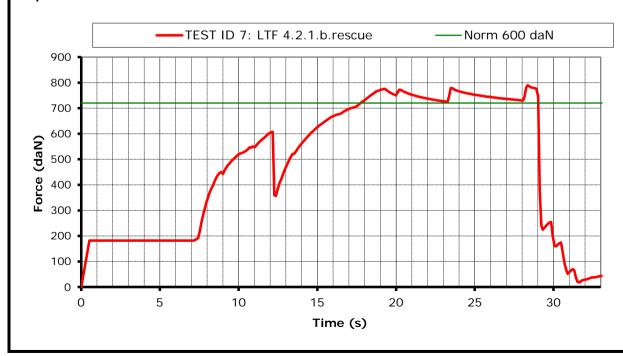


#### Results

Duration of maintained min. load [s]: 12 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:
Alain Zoller
Temp. [°C] & Humidity:
22,6°C; 31 %rel
Maximum certified pilot weight [kg]:
120 kg

Standard EN 1651
Test standard §: 5.3.2.3

**Test setup:** Only one riser attached

Anchoring: Attachment points: One main riser attachments (3)

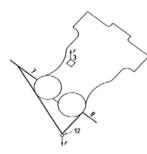
**Dummy:** Hip fixed (7, 8 -> 12)

Required load in g: 6 g

Min load [N]: 6 000 N

Required test load in kg: 720 kg

Min. duration [s]:

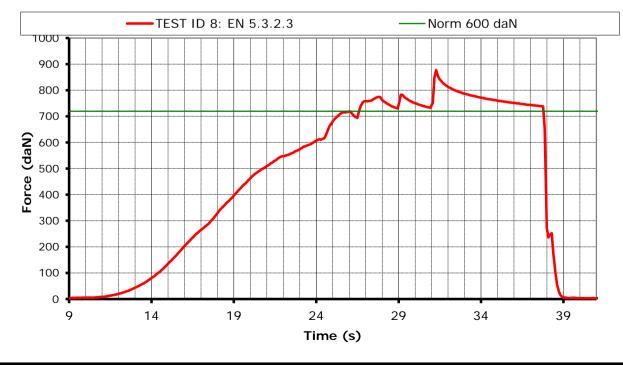


#### Results

Duration of maintained min. load [s]: 11.3 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed









I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

120 kg

Standard EN 1651
Test standard §: 5.3.2.6

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

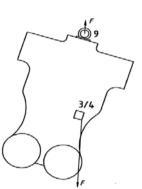
(9)

Required load in g: 4.5 g

**Min load [N]**: 4500 N

Required test load in kg: 540 kg

Min. duration [s]:



#### Results

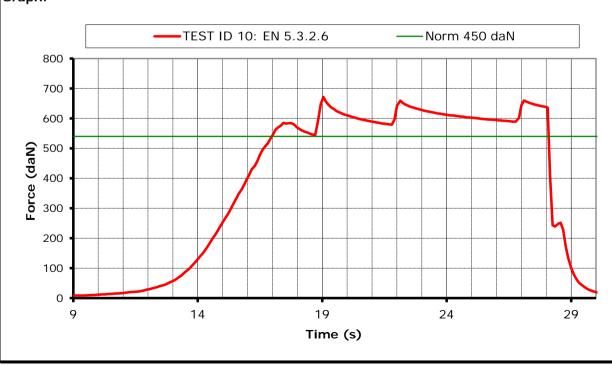
Duration of maintained min. load [s]: 11.3 s.

Any signs of structural failure after this test:

No visible failure

Test result: Passed

Graph:



**BUREAU VERITAS** 



I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 4.2.1.c

**Test setup:** Pilot upside down flying position

Anchoring: Attachment points: Both of the main riser attachments

attached downwards (3 and 4);

Dummy anchored at the head position

(9)

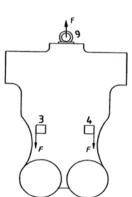
Required load in g: 6

Min load [N]: 6 000 N

Required test load in kg: 720 kg

Min. duration [s]:

Dummy:



Results

Duration of maintained min. load [s]: 11 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed







I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6°C; 31 %rel

120 k

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 4.2.1.c 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

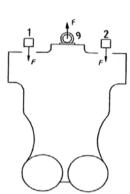
(9)

Required load in g: 6

Min load [N]: 6 000 N

Required test load in kg: 720 kg

Min. duration [s]:



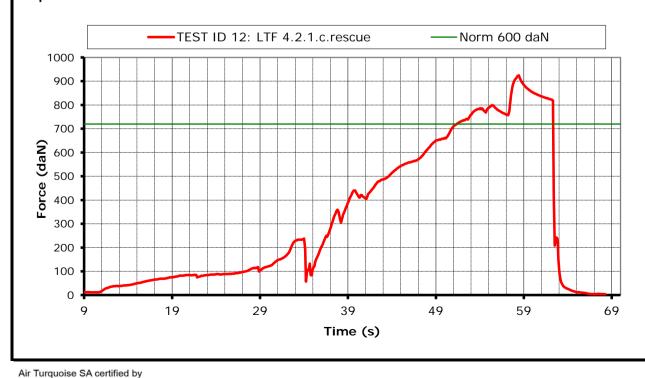
#### Results

Duration of maintained min. load [s]: 10.9 s.

Any signs of structural failure after this test: No visible failure

Test result: Passed

Graph:





**BUREAU VERITAS** 



Test ID Protect Protector shock test I tem: Evo XC 3 Manufacturer Sup'Air Test place & date: Villeneuve December 27, 2013 Test responsible: Alain Zoller Temp. [°C] & Humidity: 22.6° C: 31 %rel Maximum certified pilot weight [kg]: kg Standard 2. DV LuftGerPV §1, Nr. 7 c Test standard §: 5.1.1 Harness attached to protector test dummy, in a similar way like a Test setup: 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) 1.65 m (between lowest point test dummy and impact surface) Requirements: Minimun height: **Impact** +50g as absolute maximum; requirements: +38g during less than 7 msec; +20g during less than 25 msec. Repetitions: The test will be performed 2 times, minimum 1 hour and

more than 20%

maximum 2 hours after the first impact (with airbag protectors this pause is not necessary). The 2 Max-values should not differ

 $\Delta < 20 \%$ ?

# Results

#### Shock test 1:

Impact at a height of 1.65m: 23.688

Impact duration of+ 38 g (if any):

Impact duration of +20 g (if any): 16.02 msec

Shock test 2:

Impact at a height of 1.65m: 26.56

Impact duration of + 38 g (if any): 0

Impact duration of +20 g (if any): 18 msec

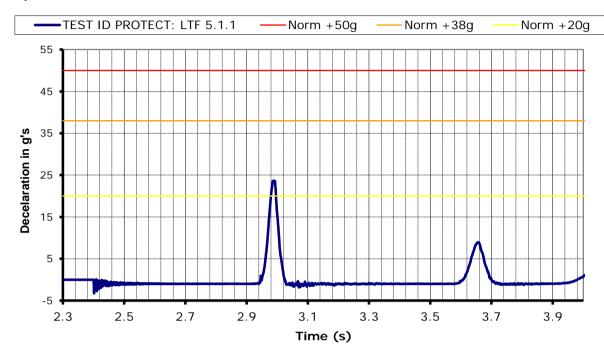
Test Result: Passed



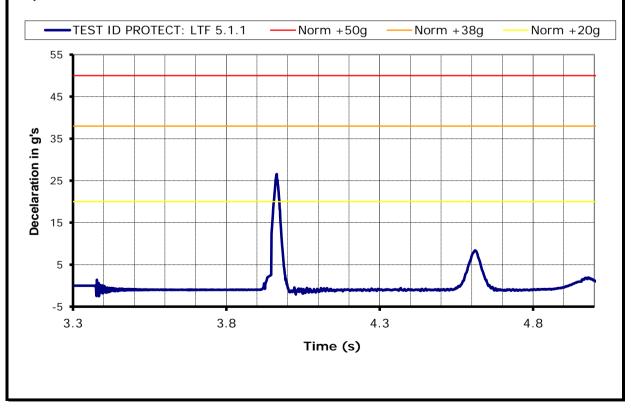


paragliding by air turquoise





# Graph 2:







# Rescue deployment resistance test

Test ID resc

I tem: Evo XC 3 Manufacturer Sup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible: Alain Zoller Temp. [°C] & Humidity: 22,6° C; 31 %rel Maximum certified pilot weight [kg]: 120 kg

Standard 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 6.1.5

Test setup: The deployment of the rescue system has to be ensured in all

circumstances, especially with a damaged glider.

The pilot has to be able to deploy the rescue chute with a single pull out of the outer container, single handed and in an

anatomical favorable direction.

In order to simulate this, the test responsible deploys the rescue seated in the harness. In a similar way as in real flight. The deployment resistance is approximately measured by the load cell, which is placed between the hand of the test responsible and

the rescue hand grip.

On the other hand inadvertent deployment has to be fairly remote. Therefore a shear link has to withstand a minimum load.

Max force for single Requirements:

hand deployment:

Min force to prevent

approx. 70 N

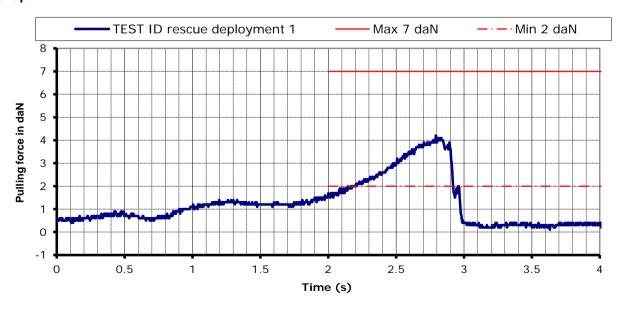
unwanted opening: approx. 20 N

Results

Measured peak to peak required force for deployment [daN]:

4.2 daN

Comment: **Passed** 







# Rescue deployment strap strength test

**Test ID resc strap** 

I tem:Evo XC 3ManufacturerSup'Air

Test place & date: Villeneuve December 27, 2013

Test responsible:

Temp. [°C] & Humidity:

Maximum certified pilot weight [kg]:

Alain Zoller

22,6° C; 31 %rel

kg

Standard EN 12491 & 2. DV LuftGerPV §1, Nr. 7 c

Test standard §: 5.3.2 (EN 12491) & 6.1.8 (LTF)

Test setup: The handgrip of the outer container has to be connected to the

inner container with a removable loop in a way that it is possible to use the inner container with different types of outer

containers.

The connection between handgrip and inner container has to have sufficient load capacity/structural strength in any situation

that may arise during normal operation.

In order to verify this, the connection is tested on its tensile

strength by a default tensile testing setup.

In addition to this the breaking resistance will also be

measured.

Requirements: Min. tensile strenght for

10 s:

700 N (= 70daN)

# Results

Duration of maintained load [s]: < 10 sec

Breaking resistance [daN]: 365

Comment: Passed

