AIR TURQUOISE SA | PARA-TEST.COM
Route du Pré-au-Comte 8 ▲ CH-1844 Villeneuve ▲ +41 (0)21 965 65 65

Test laboratory for paragliders, paraglider harnesses
and paraglider reserve parachutes

paragliding by air turquoise

EP EMERGENCY PARACHUTE

INSPECTION CERTIFICATE

Inspection certicicate number: **EP_163.2016**

MANUFACTURER DATA

Manufacturer name:	**Supair Sàrl**
Representative	**Laurent Chiabaut**
Street:	**34, rue Adrastée**
Post code / place:	**74650 Chavanod**
Country:	**France**

SAMPLE DATA

Name:	**Shine**	Size:	**S**
Type:	**Unsteerable**	*Payload [kg]:	**85**
Weight [kg]:	**1150**	*Total weight in flight minus weight of paraglider	
Use:	**Single-seater**	Volume packed [cm3]:	**3500**
Serial number flight:	**SA-SH-S-1605-02**	Date of reception:	**09.06.2016**
Serial number load:	**SA-SH-S-1605-01**	Date of reception:	**09.06.2016**

	TEST REPORT SUMMARY	RESULTS	PLACE	DATES
EP1	Deployment system strength test	POSITIVE	Villeneuve	23.02.2015
EP2	Speed of opening, descent rate and stability test	POSITIVE	Villeneuve	30.11.2016
EP3	Strength test / opening shock	POSITIVE	Illarsaz	08.12.2016
EP4	Connecting bridle (riser)	POSITIVE	Villeneuve	17.10.2016
EP5	Interaction and stability test	n/a	n/a	n/a

ISSUE DATA

Date of issue:	**02.03.2017**
Place of declaration:	**Villeneuve**
Managing Director:	**Alain Zoller**

Signature:



This signature aprouve the validity of the test reports EP 1 to EP 5 (Only if test report are applicable).

Air Turquoise SA, having thoroughly assessed the sample mentioned hereunder, declare it was found conform with all requirements defined by the following directives:

EN 12491:2001 and LTF NFL II 91/09 chapter 6 Paraglider rescue systems
LTF Ref chapter: 6.1.1 to 6.1.19, exclusion 6.1.10

Present declaration's scope only extends to the conformity of a given sample, on a given date and in a given place – as mentioned here above.

This inspection report contain the following test and is complet with the test report number EP1 to EP4, EP5 for stearable model only.

This declaration must not be reproduced in part without the written permission of AIR TURQUOISE SA.

Deployment system strength test

TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number: **EP_163.2016**

MANUFACTURER DATA

Manufacturer name:	**Supair Sàrl**
Representative	**Laurent Chiabaut**
Street:	**34, rue Adrastée**
Post code / place:	**74650 Chavanod**
Country:	**France**

SAMPLE DATA

Name:	**Shine**
Size:	**S**
Payload [kg]:	**85**
Serial number:	**SA-SH-S-1605-02**
Date of reception:	**09.06.2016**

ISSUE DATA

Place of test:	**Villeneuve**
Date of test:	**23.02.2015**
Inspector:	**Alain Zoller**
Results:	POSITIVE
Directive:	**EN 12491 | 2001** chapter 5.3.2 **and LTF 91/09** chapter 6.1.8

The deployment system (the connection between handgrip and inner container) is loaded at min 700 [N] over 10 secondes. The deployment system is loaded until breaking. Each componnent is tested.

ATMOSPHERE AGL

[C°]	**21.8**
RH [%]	**32**
[hPa]	**1016.7**

RESULTS

Minimum strength required during min 10s:	**700 [N]**
Strength of 700 N duration each components no1 [s]:	15.44
Strength of 700 N duration each components no2 [s]:	17.2
Strength of 700 N duration each components no3 [s]:	n/a
Uncertainty K=2 [N]:	17.0
Calculed time value for minimum strength [s]:	**15.44**

Max strength components:	
Max strength components no1 [N]:	1920.0
Max strength components no2 [N]:	1157.0
Max strength components no3 [N]:	n/a
Uncertainty K=2 [N]:	17.0
Calculed max strength value [N]:	**1157.0**

Calculed value include the value minus the uncertainty (on safe side) / The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. The value of the measurand lies within the assigned range of values with a probability of 95%.

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

Deployment system strength test

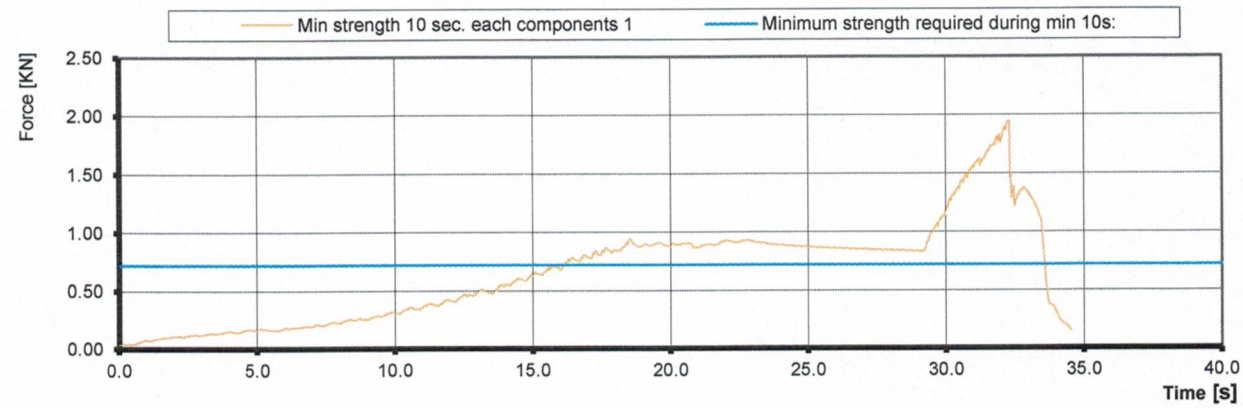
TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

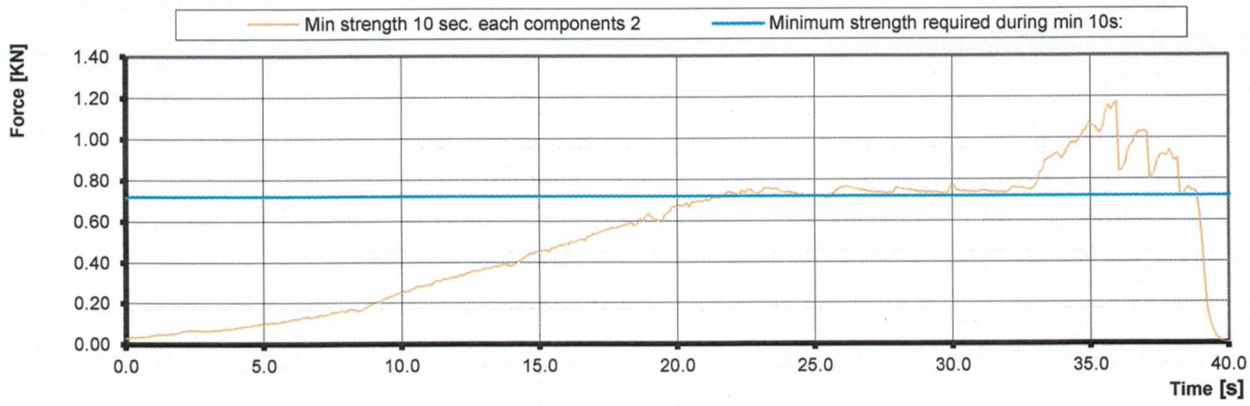
Inspection certicicate ref. number: **EP_163.2016**

GRAPHIQUE RESULTS

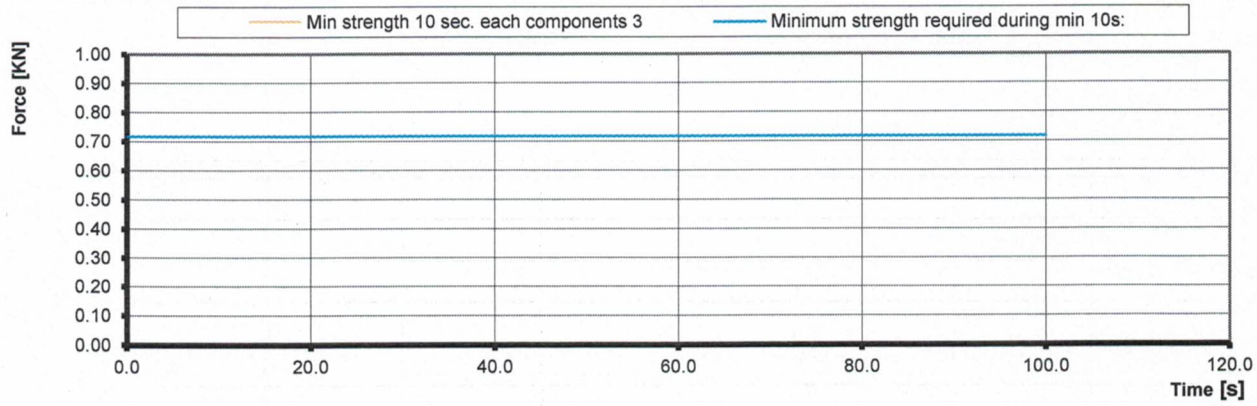
Min strength 10 sec. each components 1



Min strength 10 sec. each components 2



Min strength 10 sec. each components 3



Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Deployment system strength test	Load Cell (axial)	11.06.2016	Burster / MTS	8431-10000	1185483
Deployment system strength test	Winch	15.01.2018	Arwin	300/600	n/a
Weather	Geos n° 11 Skywatc	08.05.2017	JDC elec.	Geos n° 11	22

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

Speed of opening and descent rate and stability test

TEST REPORT EP 2

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number: **EP_163.2016**

MANUFACTURER DATA	
Manufacturer name:	**Supair Sàrl**
Representative	**Laurent Chiabaut**
Street:	**34, rue Adrastée**
Post code / place:	**74650 Chavanod**
Country:	**France**

SAMPLE DATA	
Name:	**Shine**
Size:	**S**
Payload [kg]:	**85**
Serial number:	**3500**
Date of reception:	**09.06.2016**

ISSUE DATA	Test no1	Test no2
Place of tests:	**Villeneuve**	**Villeneuve**
Date of tests:	**16.11.2016**	**30.11.2016**
Inspectors:	**Claude Thurnheer**	**Claude Thurnheer**
Results:	**POSITIVE**	

Directive: **EN 12491:2001 chapter 5.3.3 / 5.3.4 - LTF NFL II 9/09 chapter 6**

The rescue system is droped from a paraglider in straight flight at 8 [m/s] +-1 [m/s] and a vertical airspeed of less than 1,5 [m/s].
The paraglider is released as the rescue system begins to open. Wink link 200 [N] is used to measure the speed opening.
After a minimum of 100 m of descent, the average rate of descent is measured over 30 m of descent.
The test is carried out twice.

ATMOSPHERE AGL	Test no1	Test no2
[C°]	**7**	**7**
RH [%]	**79**	**77**
[hPa]	**973.1**	**990**
Wind [m/s]	**0.1**	**0.1**

RESULTS	EN	LTF
Time of opening test:	**POSITIVE**	**POSITIVE**
Requirement time from the instant of free drop until a load of 200 [N] is sustained [s]:	**5.00**	**5.00**
Calculed sink rate test:	**POSITIVE**	**POSITIVE**
Maximum sink rate test requirements [m/s]:	**5.50**	**6.80**
Stability test:	**POSITIVE**	**POSITIVE**
Behavior during descent stability test: 1	**Stable**	**Stable**

Calculed value include the value minus the uncertainty (on safe side) / The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. The value of the measurand lies within the assigned range of values with a probability of 95%.

The tests do not include any compatibility tests with alternative inner containers.

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

Speed of opening and descent rate and stability test

TEST REPORT EP 2

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number: **EP_163.2016**

A. At horizontal airspeed 8 m/s and vertical speed 1.5 m/s

B. Formula to be used for correcting the test mass ofr differences from ICAO standard atmosphere

$$m_{corr} := m_{dec} \cdot \frac{p \cdot T_0}{p_0 \cdot T}$$

Sink rate test 1				
Ground level atmospheric pressure at test location: (p)	973.1	[hPa]	RH [%]	79
ICAO standard atmospheric pressure at MSL: (po)	1013.25	[hPa]	Wind [m/s]	0.1
Ground level température at the test location: (T)	7	[C°]		
	280.15	[°K]		
ICAO standard temperature at MSL: (To)	15	[C°]		
	288.15	[°K]		
Total weight in flight: (mdec)	85	[kg]		
Corrected mass: (mcorr)	83.96	[kg]		
Corrected mass with uncertainty: (mcorr)	84.86	[kg]		
Time when pilot release rescue	16.4			
Time when weak link broke	19.72			
Calculed Speed opening (sec.):	3.47	[s]		
Time boil touch	26.12			
Time pilot touch	32.04			
Time between boil touch and pilot touch (30m)	5.77	[s]		
Calculed Sink rate:	5.2045	[m/s]		
Behaviour:	Stable			
Inspector:	Claude Thurnheer			
Date of test :	16.11.2016			

Sink rate test 2				
Ground level atmospheric pressure at the test location: (p)	990	[hPa]	RH [%]	77
ICAO standard atmospheric pressure at MSL: (po)	1013.25	[hPa]	Wind [m/s]	0.1
Ground level température at the test location: (T)	3	[C°]		
	276.15	[°K]		
ICAO standard temperature at MSL: (To)	15	[C°]		
	288.15	[°K]		
Total weight in flight: (mdec)	85	[kg]		
Corrected mass: (mcorr)	86.66	[kg]		
Corrected mass with uncertainty: (mcorr)	87.56	[kg]		
Time when pilot release rescue	52.44			
Time when weak link broke	57			
Calculed Speed opening (sec.):	4.71	[s]		
Time boil touch	49.56			
Time pilot touch	55.32			
Time between boil touch and pilot touch (30m)	5.61	[s]		
Calculed Sink rate:	5.3529	[m/s]		
Behaviour:	Stable			
Inspector:	Claude Thurnheer			
Date of test :	30.11.2016			

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

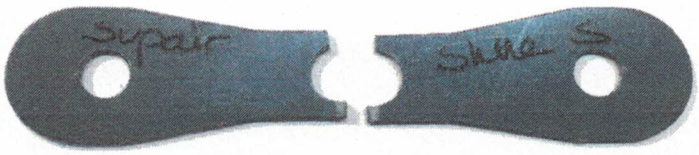
Speed of opening and descent rate and stability test

TEST REPORT EP 2

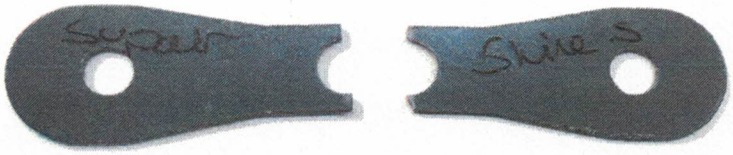
PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number: **EP_163.2016**

WINK LINKS 1



WINK LINKS 2



Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Deployment system strength test	Weak links	2030	Tost	n/a	n/a
Descent rate and stability test	Line 30 meters	2020	Air Turquoise	n/a	n/a
Weather	Geos n° 11 Skywatch	08.05.2017	JDC elec.	Geos n° 11	22

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

AIR TURQUOISE SA | Rte du Pré-au-Comte 8 | CH-1844 Villeneuve | +41 (0)21 965 65 65
Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

Strength test / opening shock

TEST REPORT EP 3

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number:	**EP_163.2016**
MANUFACTURER DATA	
Manufacturer name:	**Supair Sàrl**
Representative	**Laurent Chiabaut**
Street:	**34, rue Adrastée**
Post code / place:	**74650 Chavanod**
Country:	**France**
SAMPLE DATA	
Name:	**Shine**
Size:	**S**
Payload [kg]:	**85**
Serial number:	**SA-SH-S-1605-01**
Date of reception:	**09.06.2016**

ISSUE DATA	**Test no1**	**Test no2**
Place of test:	**Illarsaz**	**Illarsaz**
Date of test: 1 I 2	**02.11.2016**	**08.12.2016**
Inspector:	**Alain Zoller**	**Alain Zoller**
Results:	**POSITIVE**	
Directive:	**EN 12491:2001 chapter 5.3.5.1 - LTF NFL II 9/09 chapter 6**	

The emergency parachute (in its standard inner container and packed according to the user's manual instructions) is stowed on the drop test device. The test parachute's riser (or both risers in the case of a two riser parachute) is (are) connected to the single anchor point on the drop test device using the connector(s) specified and supplied by the parachute manufacturer.
The drop test device is accelerated to a straight line velocity of 40 m/s and the parachute deployed using its handle or handle attachment point by a static line attached to a drogue chute or similar low force deployment system.
The test is carried out twice with the same parachute.
Speed of opening must be less than 5 seconds and shock not exceeded 15g.

ATMOSPHERE AGL	**Test no1**	**Test no2**
[C°]	**14.3**	**2**
RH [%]	**65**	**67**
[hPa]	**973**	**991.4**
Wind [m/s]	**0.2**	**0.2**

TEST RESULTS	
Speed of opening in max 5 secondes	
Speed of opening test 1	**POSITIVE**
Speed of opening test 2	**POSITIVE**
Sample statut after shock	
Strength test 40 m/s opening shock 1	**POSITIVE**
Strength test 40 m/s opening shock 2	**POSITIVE**
Aircraft speed Uncertainty K=2 [m/s]	1.7

Calculed value include the value minus the uncertainty (on safe side) / The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. The value of the measurand lies within the assigned range of values with a probability of 95%.

Involved test	Item	Validity	Manufacturer	Type nr.	S/N
Strength test 40 m/s opening shock	Weight	2020	Air Turquoise	n/a	n/a
Weather	Geos n° 11	08.05.2017	JDC elec.	Geos n° 11	22
Strength test 40 m/s opening shock	Weak link	2020	Tost	n/a	n/a

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1

AIR TURQUOISE SA | Rte du Pré-au-Comte 8 | CH-1844 Villeneuve | +41 (0)21 965 65 65
Test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

Connecting bridle (riser)

TEST REPORT EP 4

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certicicate ref. number: **EP_163.2016**

MANUFACTURER DATA

Manufacturer name:	**Supair Sàrl**
Representative	**Laurent Chiabaut**
Street:	**34, rue Adrastée**
Post code / place:	**74650 Chavanod**
Country:	**France**

SAMPLE DATA

Name:	**Shine**
Size:	**S**
Payload [kg]:	**85**
Serial number:	**SA-SH-S-1605-02**
Date of reception:	**09.06.2016**

ISSUE DATA

Place of test:	**Villeneuve**
Date of test:	**17.10.2016**
Inspector:	**Alain Zoller**
Results:	**POSITIVE**
Directive:	**LTF NFL II 9/09 chapter 6.1.4**

The connecting strap has to have a minimum load capacity of 24000 [N]. The exposed part of the connecting belt has to be protected against environmental factors.

ATMOSPHERE AGL

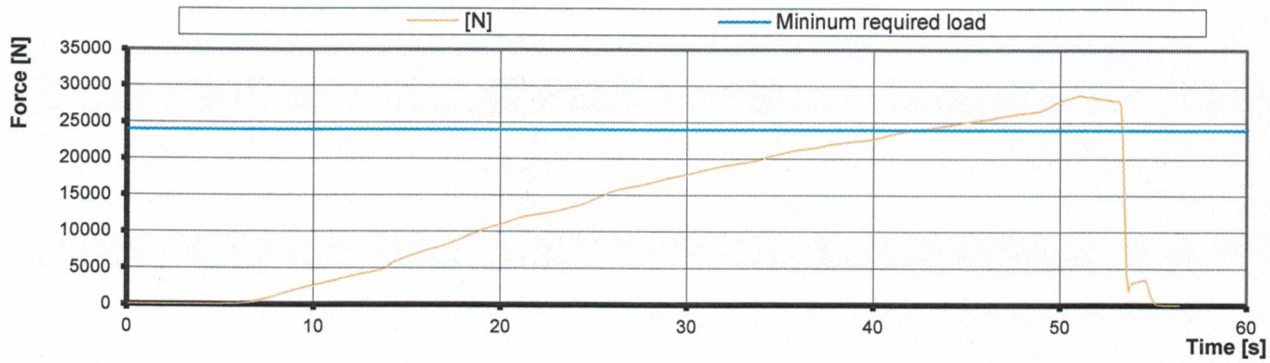
[C°]	**22.7**
RH [%]	**48**
[hPa]	**1025.4**

RESULTS [N]

Mininum required load	24000
Load capacity 1	28625
Uncertainty k=2	122
Calculed max load capacity value:	**28503**

Calculed value include the value minus the uncertainty (on safe side) / The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. The value of the measurand lies within the assigned range of values with a probability of 95%.

GRAPHIQUE RESULTS [N]



Instruments	Manufacturer	Type nr.	Validity	S/N
Load sensor	HBM	1-S9M/50KN-1	14.10.2017	31314652
Geos n°11 Skywatch	JDC	Geos n° 11	07.04.2017	0022

The validation of this test report is given by the signature of the test manager on inspection certificate 71.5.1