

# EP EMERGENCY PARACHUTE

## INSPECTION CERTIFICATE

Inspection certificate 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	<b>POSITIVE</b>	Villeneuve	23.02.2015
EP2	Speed of opening, descent rate and stability test	<b>POSITIVE</b>	Villeneuve	30.11.2016
EP3	Strength test / opening shock	<b>POSITIVE</b>	Illarsaz	08.12.2016
EP4	Connecting bridle (riser)	<b>POSITIVE</b>	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 approve 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 steerable model only.

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# Deployment system strength test

TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate 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 component 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  
Calculated 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  
Calculated max strength value [N]: 1157.0

Calculated 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

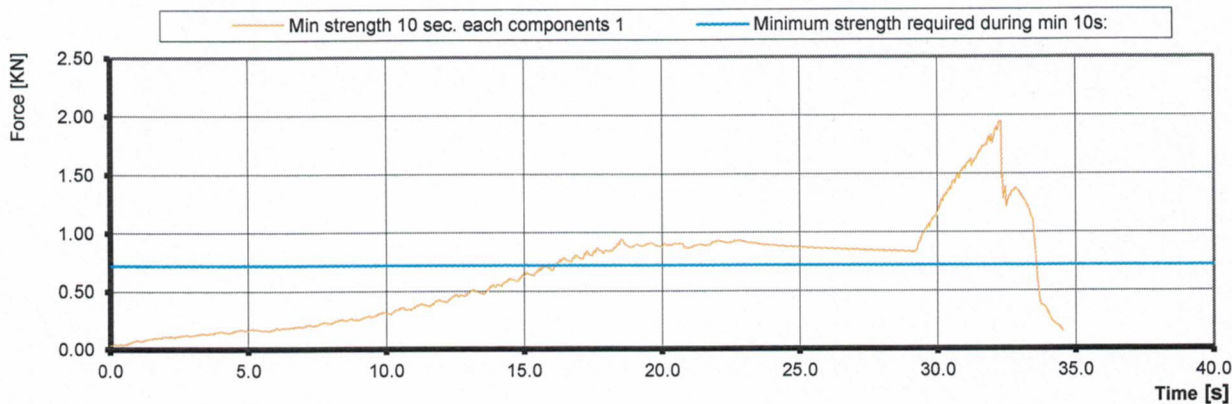
TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

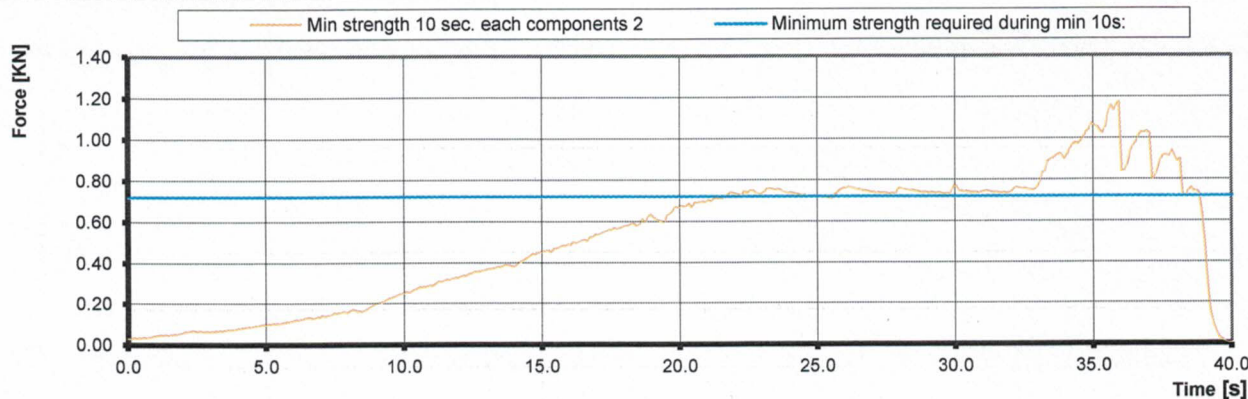
Inspection certificate ref. number: EP\_163.2016

## GRAPHIQUE RESULTS

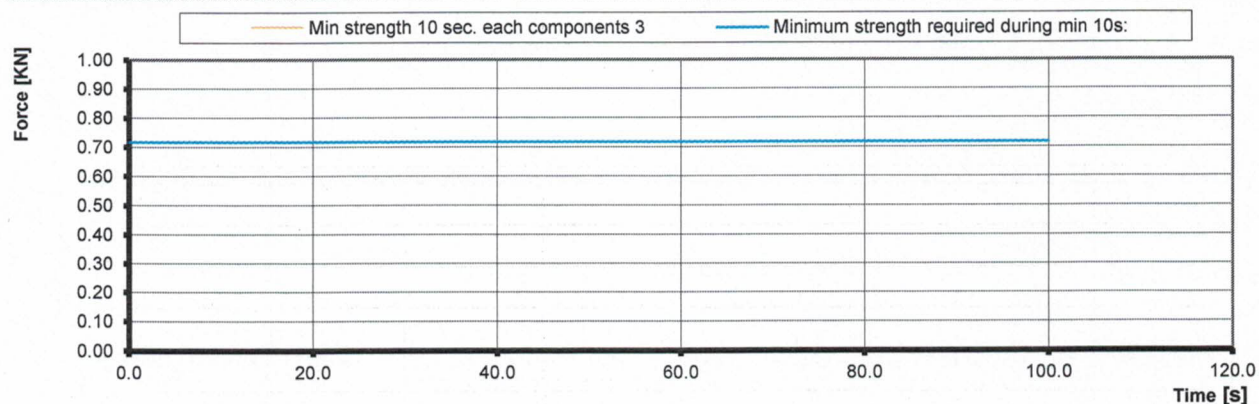
### Min strength 10 sec. each components 1



### 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 Skywac	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 certificate 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:	<b>POSITIVE</b>	

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

The rescue system is dropped from a paraglider in straight flight at 8 [m/s]  $\pm$ 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
<b>Time of opening test:</b>	<b>POSITIVE</b>	<b>POSITIVE</b>
Requirement time from the instant of free drop until a load of 200 [N] is sustained [s]:	5.00	5.00
<b>Calculated sink rate test:</b>	<b>POSITIVE</b>	<b>POSITIVE</b>
Maximum sink rate test requirements [m/s]:	5.50	6.80
<b>Stability test:</b>	<b>POSITIVE</b>	<b>POSITIVE</b>
Behavior during descent stability test: 1	Stable	Stable

Calculated 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 certificate 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		
Calculated 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]		
Calculated 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		
Calculated 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]		
Calculated Sink rate:	5.3529 [m/s]		
Behaviour:	Stable		
Inspector:	Claude Thurnheer		
Date of test :	30.11.2016		

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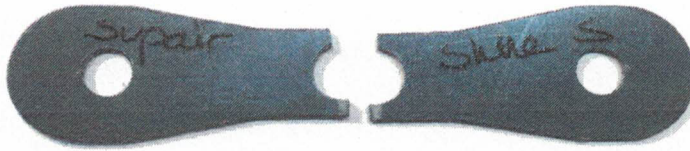
## Speed of opening and descent rate and stability test

## TEST REPORT EP 2

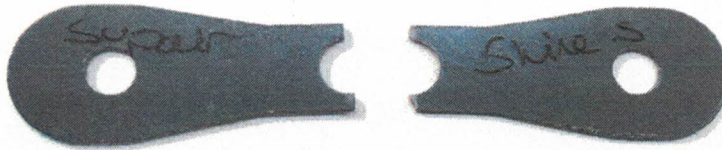
PARAGLIDERS RESCUE SYSTEMS

Inspection certificate 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

# Strength test / opening shock

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate 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:	<b>Illarsaz</b>	<b>Illarsaz</b>
Date of test: 1   2	<b>02.11.2016</b>	<b>08.12.2016</b>
Inspector:	<b>Alain Zoller</b>	<b>Alain Zoller</b>
Results:	<b>POSITIVE</b>	
Directive:	<b>EN 12491:2001 chapter 5.3.5.1 - LTF NFL II 9/09 chapter 6</b>	

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°]	<b>14.3</b>	<b>2</b>
RH [%]	<b>65</b>	<b>67</b>
[hPa]	<b>973</b>	<b>991.4</b>
Wind [m/s]	<b>0.2</b>	<b>0.2</b>

## 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**

Calculated 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

# Connecting bridle (riser)

TEST REPORT EP 4

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate 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

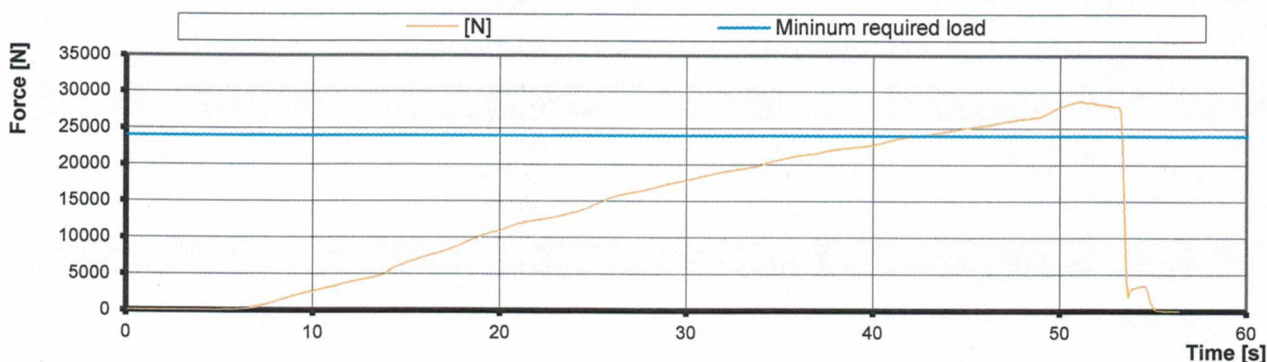
## RESULTS [N]

Minimum required load 24000  
 Load capacity 1 28625  
 Uncertainty k=2 122

Calculated max load capacity value: 28503

Calculated 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





# EP EMERGENCY PARACHUTE

## INSPECTION CERTIFICATE

Inspection certificate number: **EP\_164.2016**

### 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: **M**  
 Type: **Unsteerable** \*Payload [kg]: **105**  
 Weight [kg]: **1300** \*Total weight in flight minus weight of paraglider  
 Use: **Single-seater** Volume packed [cm3]: **3600**  
 Serial number flight: **SA-SH-M-1605-01** Date of reception: **09.06.2016**  
 Serial number load: **SA-SH-M-1605-02** Date of reception: **10.03.2016**

	TEST REPORT SUMMARY	RESULTS	PLACE	DATES
EP1	Deployment system strength test	<b>POSITIVE</b>	Villeneuve	23.02.2015
EP2	Speed of opening, descent rate and stability test	<b>POSITIVE</b>	Villeneuve	04.07.2016
EP3	Strength test / opening shock	<b>POSITIVE</b>	Illarsaz	17.03.2016
EP4	Connecting bridle (riser)	<b>POSITIVE</b>	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 approve 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 steerable 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 certificate ref. number: EP\_164.2016

## 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: M  
Payload [kg]: 105  
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 component 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]: 0  
Strength of 700 N duration each components no3 [s]: n/a  
Uncertainty K=2 [N]: 17.0  
Calculated 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  
Calculated max strength value [N]: 1157.0

Calculated 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%.

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# Deployment system strength test

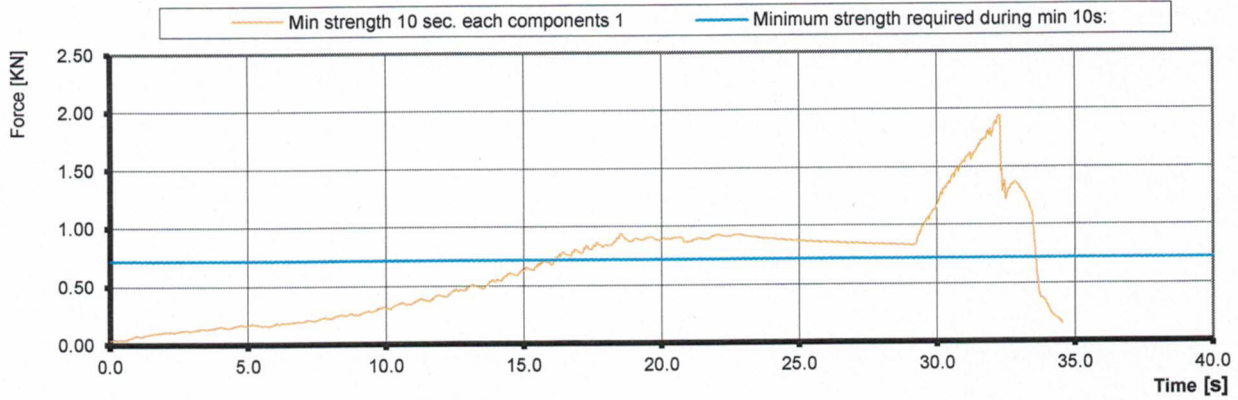
TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

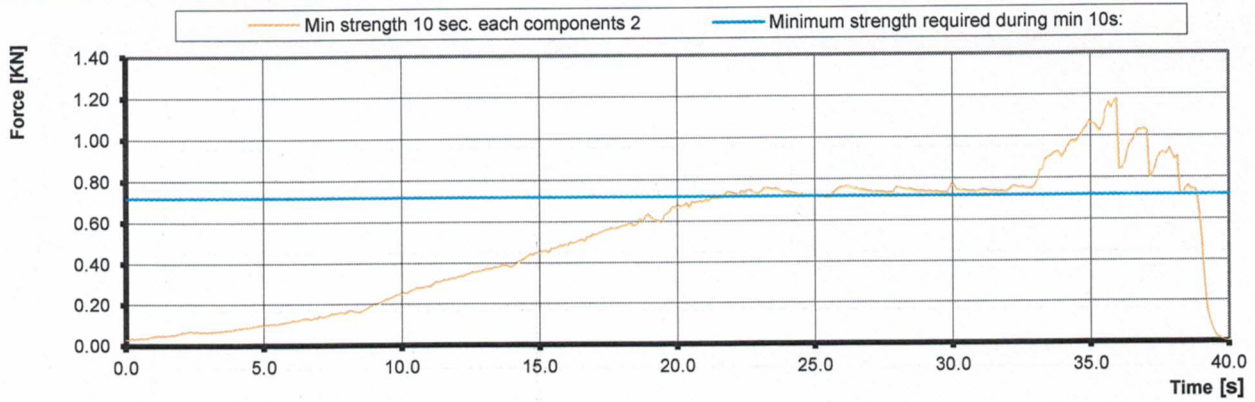
Inspection certificate ref. number: EP\_164.2016

## GRAPHIQUE RESULTS

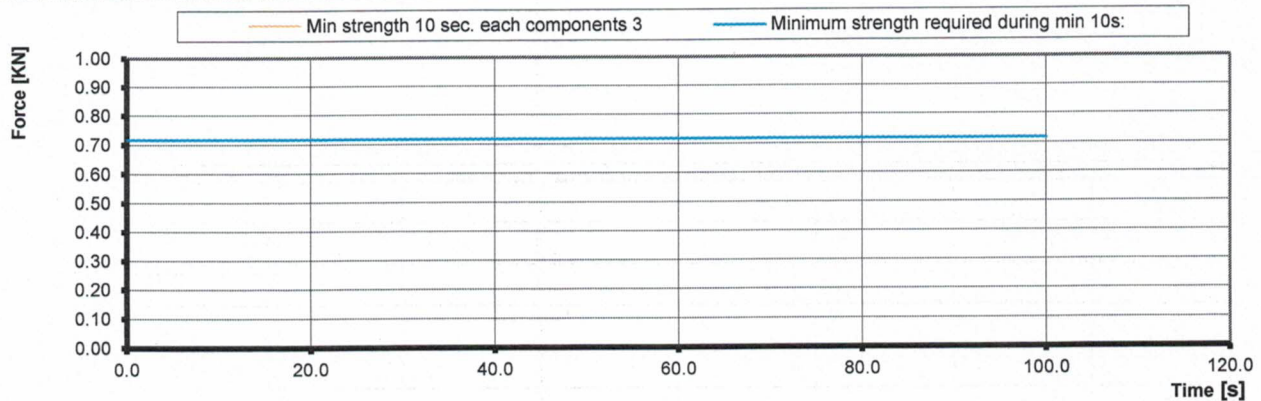
### Min strength 10 sec. each components 1



### 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 Skywac	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 certificate ref. number: EP\_164.2016

### 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: M  
 Payload [kg]: 105  
 Serial number: 3600  
 Date of reception: 09.06.2016

### ISSUE DATA

	Test no1	Test no2
Place of tests:	Villeneuve	Villeneuve
Date of tests:	23.06.2016	04.07.2016
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 dropped from a paraglider in straight flight at 8 [m/s]  $\pm$ 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°]	24	24
RH [%]	69	57
[hPa]	977.5	975.5
Wind [m/s]	0.1	0.2

### RESULTS

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

Calculated 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 certificate ref. number: EP\_164.2016

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

### B. Formula to be used for correcting the test mass of 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)	977.5 [hPa]	RH [%]	69
ICAO standard atmospheric pressure at MSL: (p <sub>0</sub> )	1013.25 [hPa]	Wind [m/s]	0.1
Ground level temperature at the test location: (T)	24 [C°]		
	297.15 [°K]		
ICAO standard temperature at MSL: (T <sub>0</sub> )	15 [C°]		
	288.15 [°K]		
Total weight in flight: (m <sub>dec</sub> )	105 [kg]		
Corrected mass: (m <sub>corr</sub> )	98.23 [kg]		
Corrected mass with uncertainty: (m <sub>corr</sub> )	99.13 [kg]		
Time when pilot release rescue	46.64		
Time when weak link broke	50.68		
Calculated Speed opening (sec.):	4.19 [s]		
Time boil touch	44.64		
Time pilot touch	50.28		
Time between boil touch and pilot touch (30m)	5.49 [s]		
Calculated Sink rate:	5.4699 [m/s]		
Behaviour:	Stable		
Inspector:	Claude Thurnheer		
Date of test :	23.06.2016		

#### Sink rate test 2

Ground level atmospheric pressure at the test location: (p)	975.5 [hPa]	RH [%]	57
ICAO standard atmospheric pressure at MSL: (p <sub>0</sub> )	1013.25 [hPa]	Wind [m/s]	0.2
Ground level temperature at the test location: (T)	22.3 [C°]		
	295.45 [°K]		
ICAO standard temperature at MSL: (T <sub>0</sub> )	15 [C°]		
	288.15 [°K]		
Total weight in flight: (m <sub>dec</sub> )	105 [kg]		
Corrected mass: (m <sub>corr</sub> )	98.59 [kg]		
Corrected mass with uncertainty: (m <sub>corr</sub> )	99.49 [kg]		
Time when pilot release rescue	40.4		
Time when weak link broke	43.16		
Calculated Speed opening (sec.):	2.91 [s]		
Time boil touch	31.04		
Time pilot touch	36.76		
Time between boil touch and pilot touch (30m)	5.57 [s]		
Calculated Sink rate:	5.3914 [m/s]		
Behaviour:	Stable		
Inspector:	Claude Thurnheer		
Date of test :	04.07.2016		

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

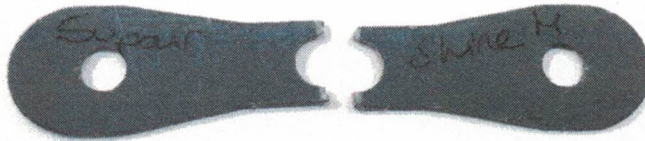
## Speed of opening and descent rate and stability test

## TEST REPORT EP 2

PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: EP\_164.2016

### 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

# Strength test / opening shock

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: EP\_164.2016

## 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: M  
Payload [kg]: 105  
Serial number: SA-SH-M-1605-02  
Date of reception: 10.03.2016

## ISSUE DATA

	Test no1	Test no2
Place of test:	Illarsaz	Illarsaz
Date of test: 1   2	17.03.2016	17.03.2016
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°]	5.4	6.8
RH [%]	78	69
[hPa]	987.7	988.5
Wind [m/s]	0.3	0.5

## 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

Calculated 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

# Connecting bridle (riser)

**TEST REPORT EP 4**

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: **EP\_164.2016**

## 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: **M**  
 Payload [kg]: **105**  
 Serial number: **SA-SH-S-1605-02**  
 Date of reception: **10.03.2016**

## 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**

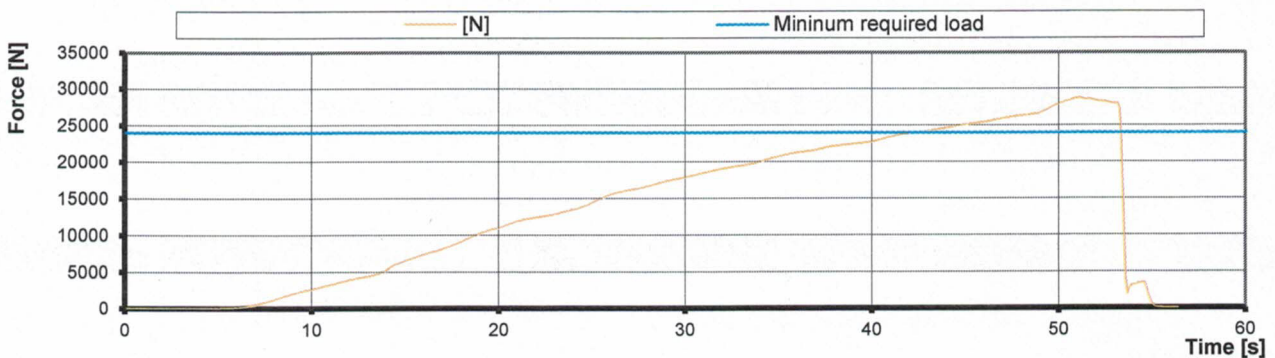
## RESULTS [N]

Minimum required load 24000  
 Load capacity 1 28625  
 Uncertainty k=2 122

**Calculated max load capacity value: 28503**

Calculated 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



# EP EMERGENCY PARACHUTE

## INSPECTION CERTIFICATE

Inspection certificate number: **EP\_165.2016**

### 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: **L**  
 Type: **Unsteerable** \*Payload [kg]: **125**  
 Weight [kg]: **1563** \*Total weight in flight minus weight of paraglider  
 Use: **Single-seater** Volume packed [cm3]: **5000**  
 Serial number flight: **SA-SH-L-1605-01** Date of reception: **09.06.2016**  
 Serial number load: **SA-SH-L-1605-02** Date of reception: **09.06.2016**

TEST REPORT SUMMARY	RESULTS	PLACE	DATES
EP1 Deployment system strength test	<b>POSITIVE</b>	Villeneuve	23.02.2015
EP2 Speed of opening, descent rate and stability test	<b>POSITIVE</b>	Villeneuve	28.09.2016
EP3 Strength test / opening shock	<b>POSITIVE</b>	Illarsaz	29.06.2016
EP4 Connecting bridle (riser)	<b>POSITIVE</b>	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 approve 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 steerable 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 certificate ref. number: **EP\_165.2016**

### 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: **L**  
Payload [kg]: **125**  
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 component 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**  
Calculated 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**  
Calculated max strength value [N]: **1157.0**

Calculated 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

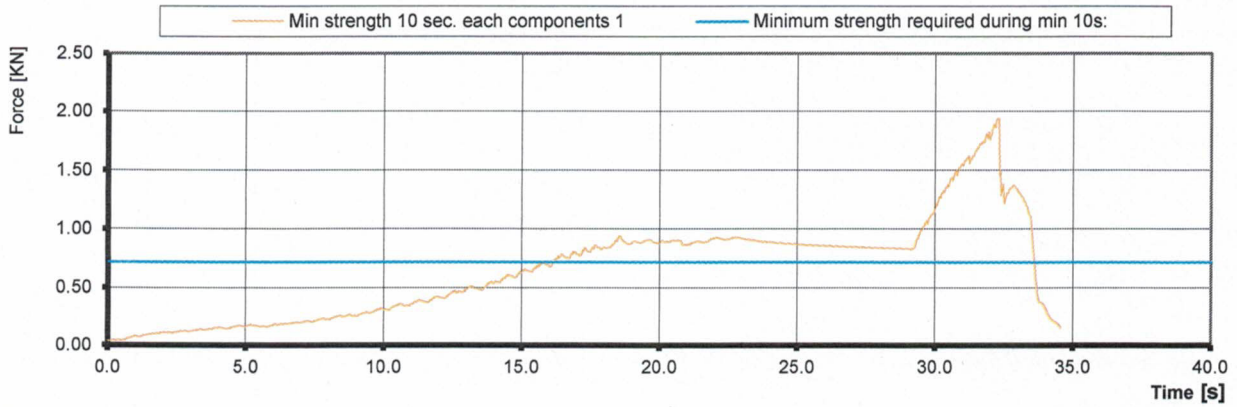
TEST REPORT EP 1

EP PARAGLIDERS RESCUE SYSTEMS

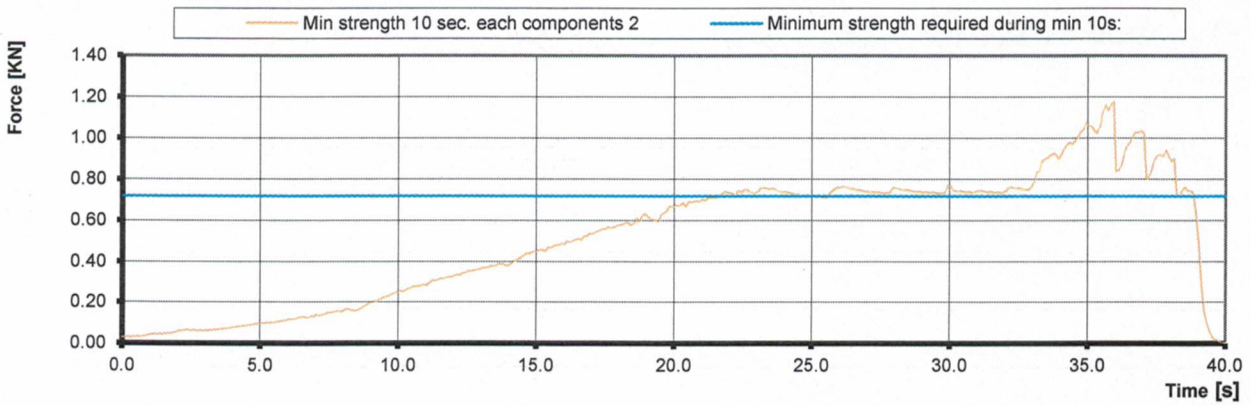
Inspection certificate ref. number: EP\_165.2016

## GRAPHIQUE RESULTS

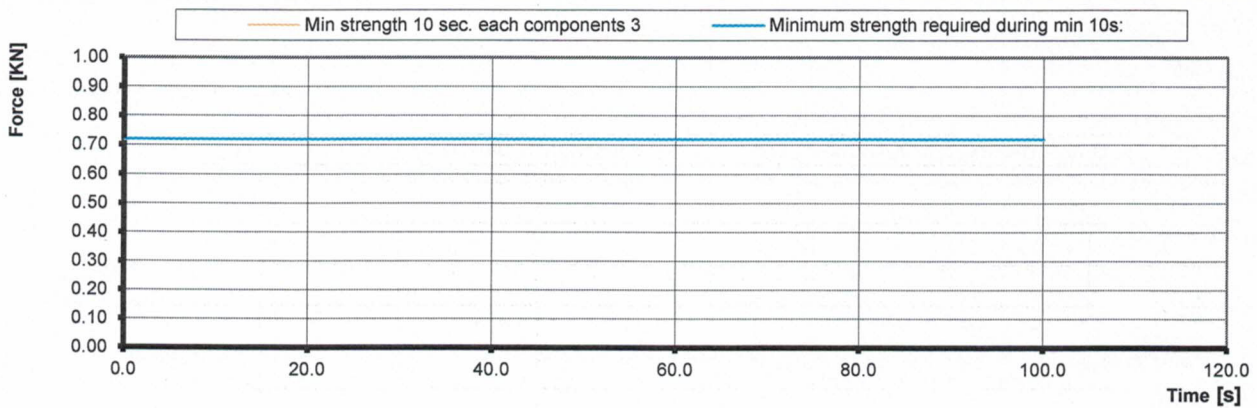
### Min strength 10 sec. each components 1



### 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 certificate ref. number: EP\_165.2016

### 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: L  
Payload [kg]: 125  
Serial number: 5000  
Date of reception: 09.06.2016

### ISSUE DATA

	Test no1	Test no2
Place of tests:	Villeneuve	Villeneuve
Date of tests:	04.07.2016	28.09.2016
Inspectors:	Alain Zoller	Alain Zoller
Results:	<b>POSITIVE</b>	

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

The rescue system is dropped from a paraglider in straight flight at 8 [m/s]  $\pm$ 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°]	19	19
RH [%]	65	61
[hPa]	972	977.5
Wind [m/s]	0.1	0.1

### RESULTS

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

Calculated 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 certificate ref. number: EP\_165.2016

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

### B. Formula to be used for correcting the test mass of 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)	972 [hPa]	RH [%]	65
ICAO standard atmospheric pressure at MSL: (po)	1013.25 [hPa]	Wind [m/s]	0.1
Ground level temperature at the test location: (T)	19 [C°]		
	292.15 [°K]		
ICAO standard temperature at MSL: (To)	15 [C°]		
	288.15 [°K]		
Total weight in flight: (mdec)	125 [kg]		
Corrected mass: (mcorr)	118.27 [kg]		
Corrected mass with uncertainty: (mcorr)	119.17 [kg]		
Time when pilot release rescue	29		
Time when weak link broke	33.48		
Calculated Speed opening (sec.):	4.63 [s]		
Time boil touch	41		
Time pilot touch	47.12		
Time between boil touch and pilot touch (30m)	5.97 [s]		
Calculated Sink rate:	5.0302 [m/s]		
Behaviour:	Stable		
Inspector:	Alain Zoller		
Date of test :	04.07.2016		

#### Sink rate test 2

Ground level atmospheric pressure at the test location: (p)	977.5 [hPa]	RH [%]	61
ICAO standard atmospheric pressure at MSL: (po)	1013.25 [hPa]	Wind [m/s]	0.1
Ground level temperature at the test location: (T)	20.3 [C°]		
	293.45 [°K]		
ICAO standard temperature at MSL: (To)	15 [C°]		
	288.15 [°K]		
Total weight in flight: (mdec)	125 [kg]		
Corrected mass: (mcorr)	118.41 [kg]		
Corrected mass with uncertainty: (mcorr)	119.31 [kg]		
Time when pilot release rescue	14.56		
Time when weak link broke	18.92		
Calculated Speed opening (sec.):	4.51 [s]		
Time boil touch	32.08		
Time pilot touch	37.76		
Time between boil touch and pilot touch (30m)	5.53 [s]		
Calculated Sink rate:	5.4304 [m/s]		
Behaviour:	Stable		
Inspector:	Alain Zoller		
Date of test :	28.09.2016		

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

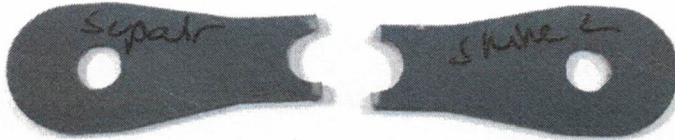
## Speed of opening and descent rate and stability test

## TEST REPORT EP 2

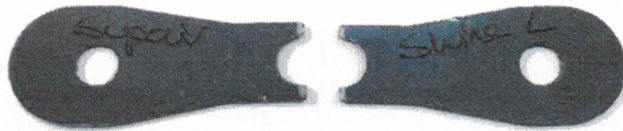
PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: EP\_165.2016

### 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

# Strength test / opening shock

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: EP\_165.2016

## 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: L  
Payload [kg]: 125  
Serial number: SA-SH-L-1605-02  
Date of reception: 09.06.2016

## ISSUE DATA

	Test no1	Test no2
Place of test:	Illarsaz	Illarsaz
Date of test: 1   2	29.06.2016	29.06.2016
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°]	21	25.8
RH [%]	62	57
[hPa]	972.3	969.4
Wind [m/s]	0.2	0.5

## 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

Calculated 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

# Connecting bridle (riser)

TEST REPORT EP 4

EP PARAGLIDERS RESCUE SYSTEMS

Inspection certificate ref. number: EP\_165.2016

## 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: L  
 Payload [kg]: 125  
 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

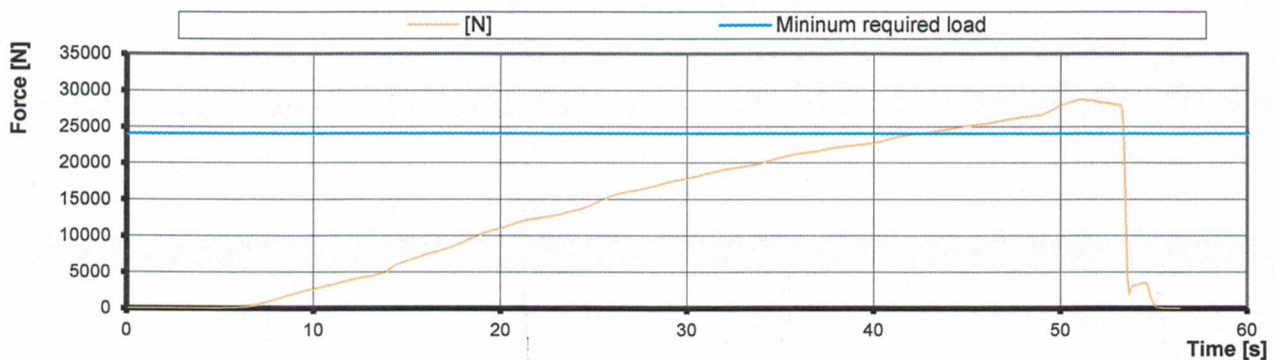
## RESULTS [N]

Minimum required load 24000  
 Load capacity 1 28625  
 Uncertainty k=2 122

Calculated max load capacity value: 28503

Calculated 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