



INSPECTION REPORT

PH PARAGLIDERS HARNESS

Inspection report number: **PH_128.2015**

TEST SAMPLE DATA

Manufacturer name: SUPAIR sàrl
Contact person: Laurent Chiabaut
Street: 34, rue Adrastée
Post code / place: 74650 Chavanod
Country: France

Harness manufacturer name: Strike
Harness manufacturer size: M
Serial number of the test sample: STRIKE-M-20150318-EI
Harness type: ABS
Maximum certified pilot weight (kg): 100
Harness protector type: Foam
Harness weight (kg) : 1,54

Volume reserve parachute container (cm3) Min: n/a Max: **4500**

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Test responsible: Alain Zoller
Inspection place: Villeneuve
Sample reception date: 20.03.2015

Place of declaration: Villeneuve

Date of issue: 21.05.2015

Director management: Alain Zoller

Signature: 

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

- European Standard **EN1651** September 1999
- European Standard **EN12491** September 2001

Airworthiness requirements for hang gliders and paragliders **LTF 2009** as published in NfL 91/09 chapter 4 and 6

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 **PH ID 0 to 12, ST and RD**

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A. STRUCTURAL STRENGTH 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

Test ID	TESTED ?	Standard Ref.		TEST setup	Anchoring		Forces		Min. Test duration [sec]	Result
		EN 1651	LTF		Attach -ment points	Dummy	Req. Load in g	Min. force [N]		
R0	✓	5.3.2.1		Default flying position	2 main attachment points	Hip fixated	6g	6000	10	POSITIVE
R1	✓		4.2.1.a				9g	9000		POSITIVE
R2	✓	5.3.2.2					15g	15000	5	POSITIVE
R3	✓		4.2.1.b	Default, landing position	2 main att. points	Hip fixated,	6g	6000	10	POSITIVE
R4	✓	5.3.2.7				landing conf.	15g	15000	5	POSITIVE
R5	✓		4.2.1.a rescue	Rescue	2 rescue att. Pnts.	Hip fixated	9g	9000	10	POSITIVE
R6	✓	5.3.2.4					15g	15000	5	POSITIVE
R7	✓		4.2.1.b rescue				Rescue, landing	Hip fixated, landing conf.	6g	6000
R8	✓	5.3.2.3		One riser	ONE main att.	1 central hip fixation	6g	6000	10	POSITIVE
R9			4.2.1.d	Towing	2 main att. + 2 tow att.	None	3g	3000	10	n/a
		5.3.2.5					5g	5000		
R10	✓	5.3.2.6		Default, Negatif	One main att.	Head fix.	4.5g	4500	10	POSITIVE
R11	✓		4.2.1.c	Upside down	2 main att. downw.	Head fix.	6g	6000	10	POSITIVE
R12	✓		4.2.1.c rescue	Upside down rescue	2 rescue att. downw.		6g	6000	10	POSITIVE

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B. PARAGLIDER HARNESS BACK PROTECTORS

Shock impact tests have to be executed on these harnesses in order to prove the damping characteristics of it. Most paraglider harnesses are equipped with a protection device that damps the shock on the pilot's spine during a hard landing

Test ID	TESTED ?	Standard Ref.:	TEST setup	Anchoring		Impact				Result
		LTF		Attach-ment points	Dummy	Max. tolerated peak impact in g	Max Peak impact measured	Impact duration of +38 g (if any) recorded:	Impact duration of +20 g (if any) recorded:	
PRO TECT 1	✓	5.1.1	Default flying position	Test dummy is attached to the harness like a pilot in flight. +20-25°	+50g	48.1	6.61	19.81	POSITIV	
PRO TECT 2	✓	5.1.1	Default flying position	Test dummy is attached to the harness like a pilot in flight. +20-25° with rescue	+50g	49.9	6.82	20.67	POSITIV	
PRO TECT 3		5.1.1	Default flying position	Test dummy is attached to the harness like a pilot in flight. -5-10°	+50g				n/a	
PRO TECT 4		5.1.1	Default flying position	Test dummy is attached to the harness like a pilot in flight. -5-10° with rescue	+50g				n/a	

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

Test ID	TESTED ?	Standard Ref.	TEST setup	Anchoring		Force for single hand deployment			Result
		LTF		Attach-ment points	Dummy	Min. force [N]	Max. force [N]	Resistance measured [N]	
RRDT	✓	6.1.5	Default flying position	Test responsible is attached to the harness like a pilot in flight. (no dummy required)	20 N	70 N	17.0	POSITIVE	

D. RESCUE DEPLOYMENT STRAP STRENGTH 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 ?	Standard Ref.		TEST setup	Minimum force [N]	Min. Test duration [s]	Breaking resistance measured [N]	Result
		LTF	EN 12491			[s]		
RRST	✓	6.1.8	5.3.2	Connection strap in tensile testing machine	700N	10	1132.0	POSITIVE

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HARNESS STRUCTURAL STRENGTH TEST

Test ID 0

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard EN 1651

Test standard §: 5.3.2.1 (EN)

Test setup: Default flying position

Anchoring:

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

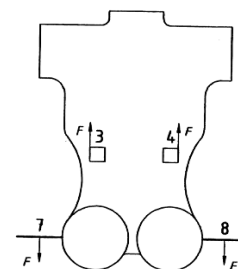
Dummy: Default, hip fixed (7, 8)

Required load in g : 6

Minimum load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



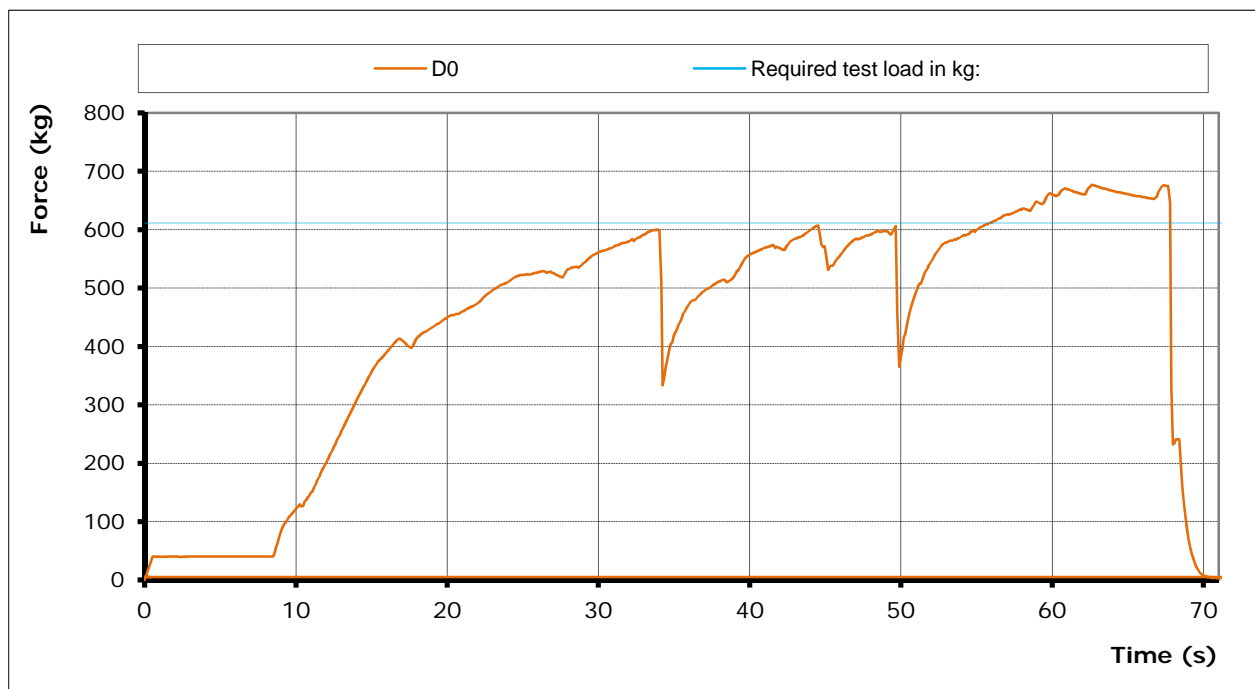
Results

Duration of maintained min. load [s]: 10.21

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

Test result: POSITIVE

Graph: D0





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 1

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

Test standard §: 4.2.1 a (LTF DV)

Test setup: Default flying position

Anchoring:

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

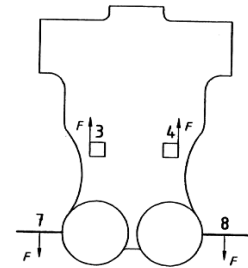
Dummy: Default, hip fixed (7, 8)

Required load in g : 9

Minimum load [N]: 9000

Required test load in kg: 917

Min. duration [s]: 10



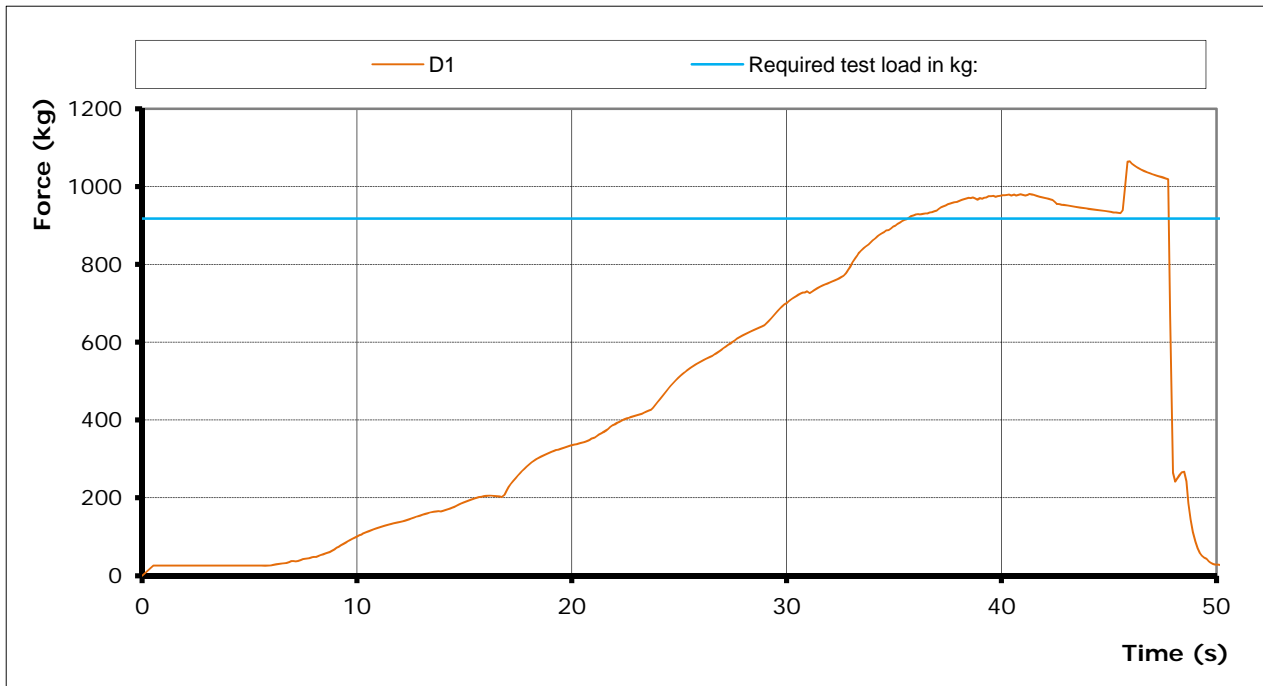
Results

Duration of maintained min. load [s]: 10.92

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

Test result: POSITIVE

Graph: D1



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HARNESS STRUCTURAL STRENGTH TEST

Test ID 2

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

Standard EN 1651

Test standard §: 5.3.2.2

Test setup: Default flying position

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

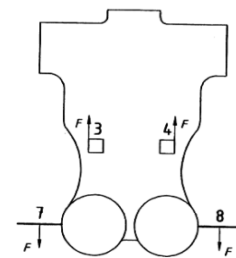
Dummy: Default, hip fixed (7, 8)

Required load in g: 15

Min load [N]: 15 000

Required test load in kg: 1529

Min. duration [s]: 5



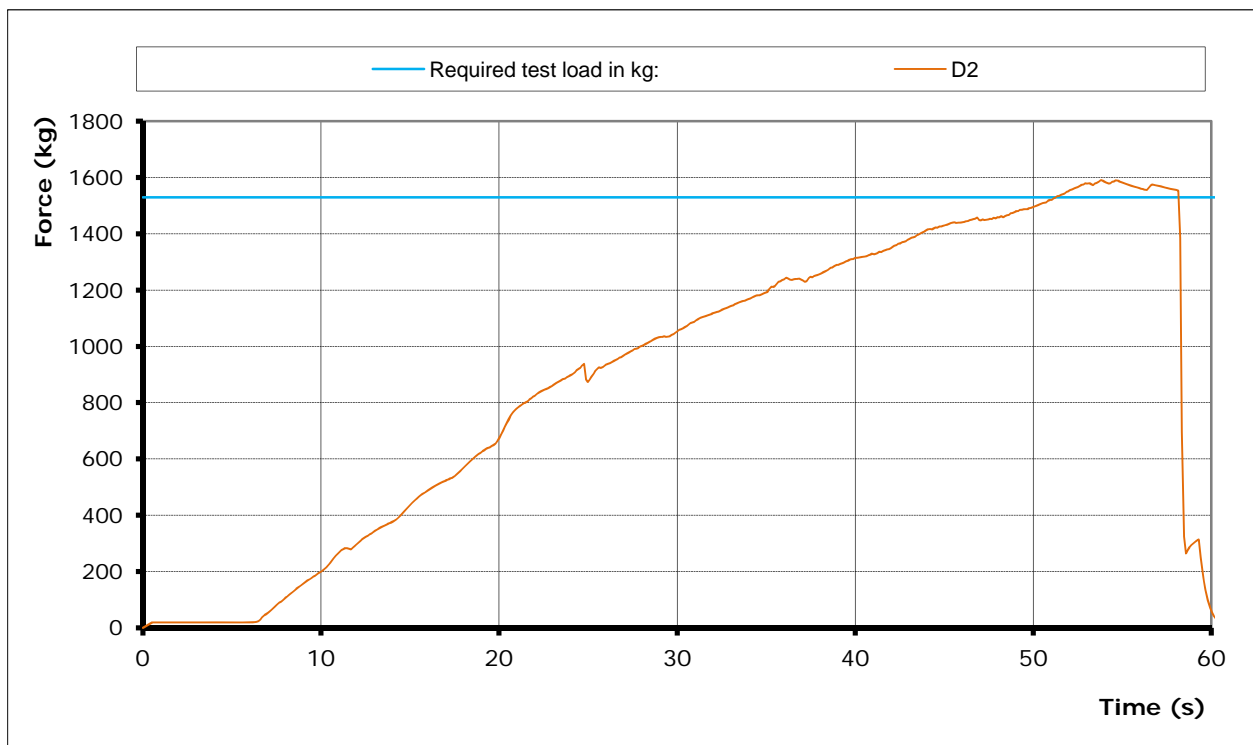
Results

Duration of maintained min. load [s]: 5.12

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

Test result: POSITIVE

Graph: D2





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 3

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

Test standard §: 4.2.1.b

Test setup: Flying position before landing: seat board (11) in landing position, leg straps (10) closed.

Attachment points: Both of the main riser attachments attached (3 and 4);

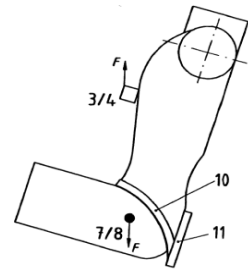
Dummy: Default, hip fixed (7, 8)

Required load in g: 6

Min load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



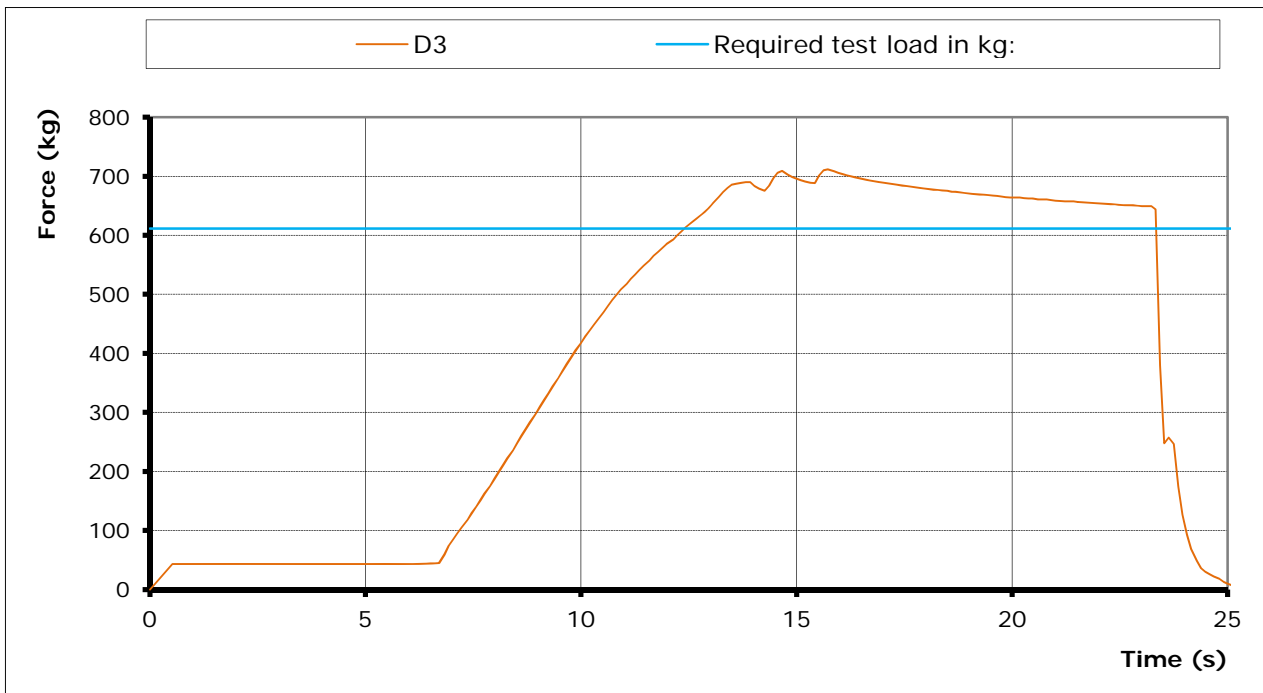
Results

Duration of maintained min. load [s]: 10.54

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

Test result: POSITIVE

Graph: D3





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 4

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard EN 1651

Test standard §: EN 5.3.2.7

Flying position before landing: seat

Test setup: board (11) in landing position, leg straps (10) closed.

Anchoring:

Attachment points: Both of the main riser attachments attached (3 and 4);

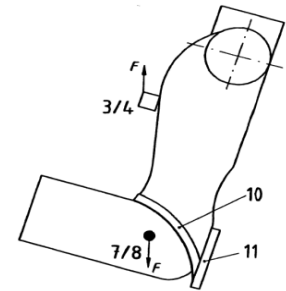
Dummy: Default, hip fixed (7, 8)

Required load in g: 15

Min load [N]: 15000

Required test load in kg: 1529

Min. duration [s]: 5



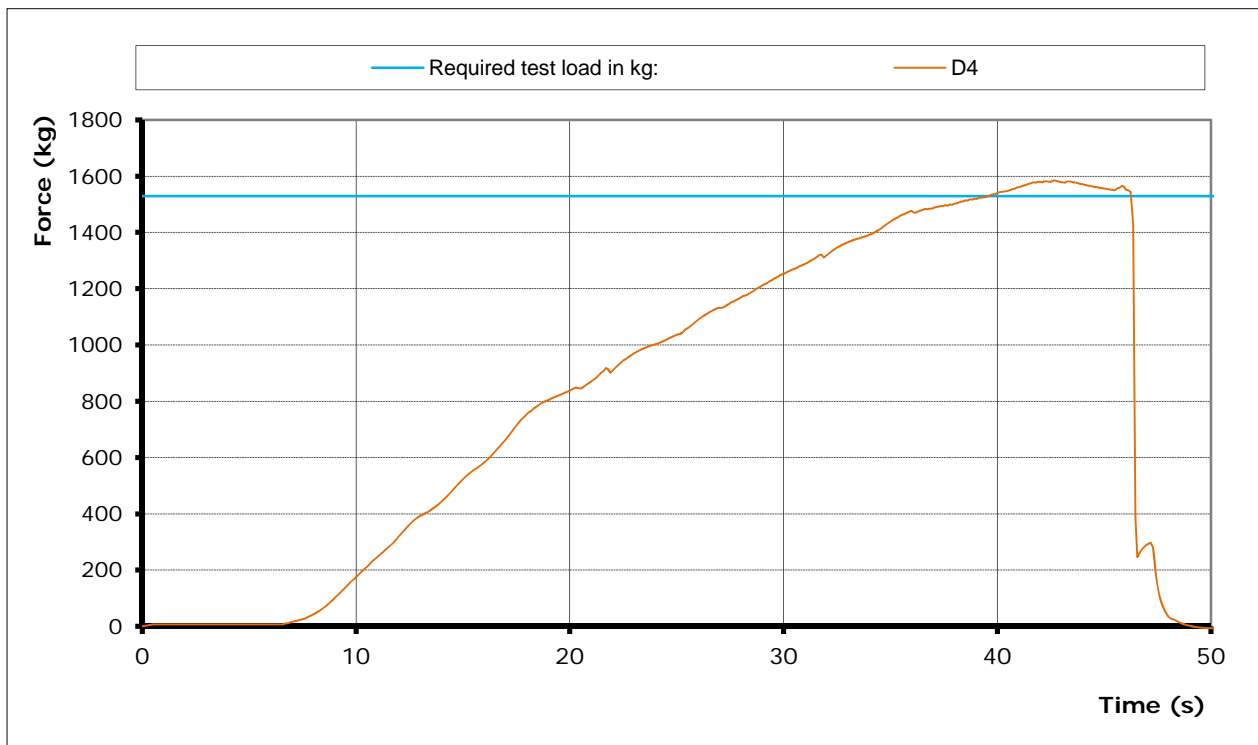
Results

Duration of maintained min. load [s]: 5.36

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

Test result: POSITIVE

Graph: D4



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HARNESS STRUCTURAL STRENGTH TEST

Test ID 5

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

Test standard §: 4.2.1.a rescue

Test setup: Rescue attachments

Anchoring:

Attachment points: Rescue riser attachments (1,2)

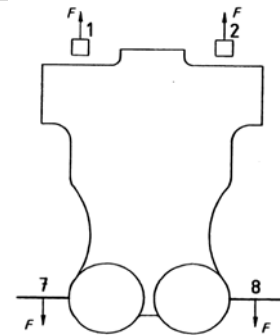
Dummy: Hip fixed (7, 8)

Required load in g: 9

Min load [N]: 9000

Required test load in kg: 917

Min. duration [s]: 10



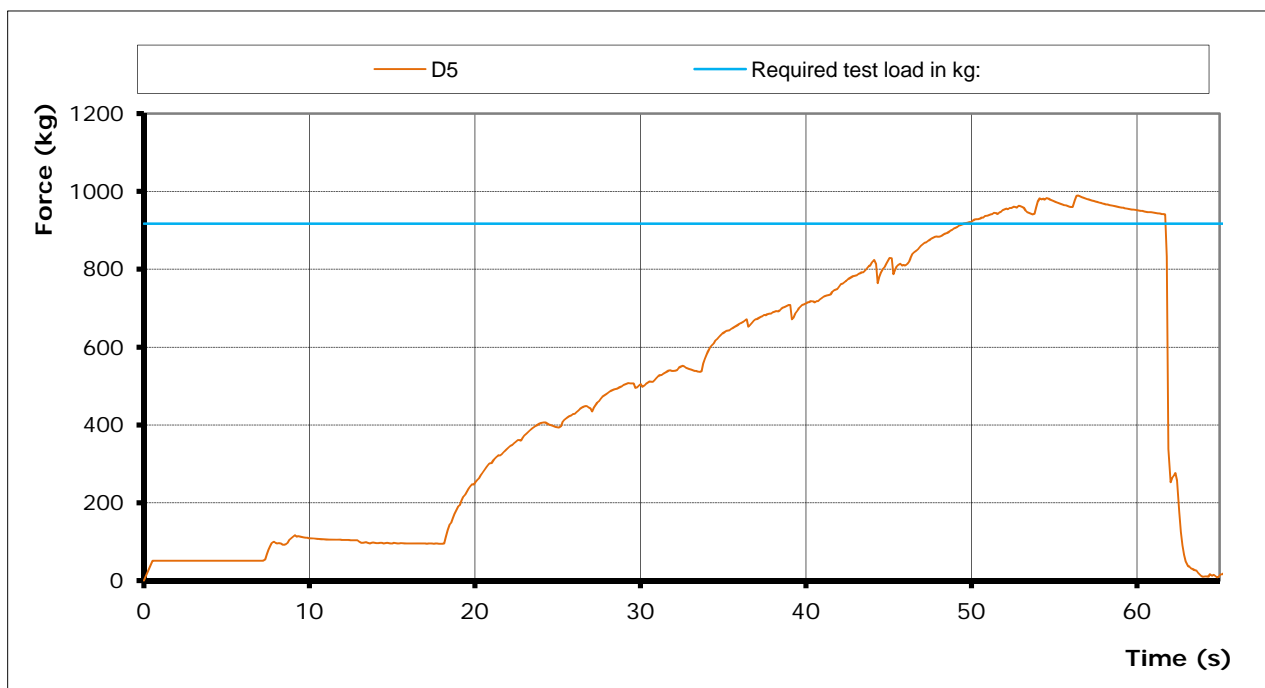
Results

Duration of maintained min. load [s]: 10.96

Any signs of structural failure after this test:

Test result: **POSITIVE**

Graph: D5





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 6

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

Standard EN 1651

Test standard §: 5.3.2.4

Test setup: Rescue attachments

Anchoring:

Attachment points: Rescue riser attachments (1,2)

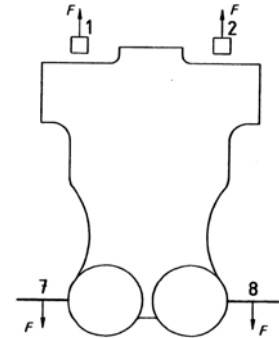
Dummy: Hip fixed (7, 8)

Required load in g: 15

Min load [N]: 15000

Required test load in kg: 1529

Min. duration [s]: 5



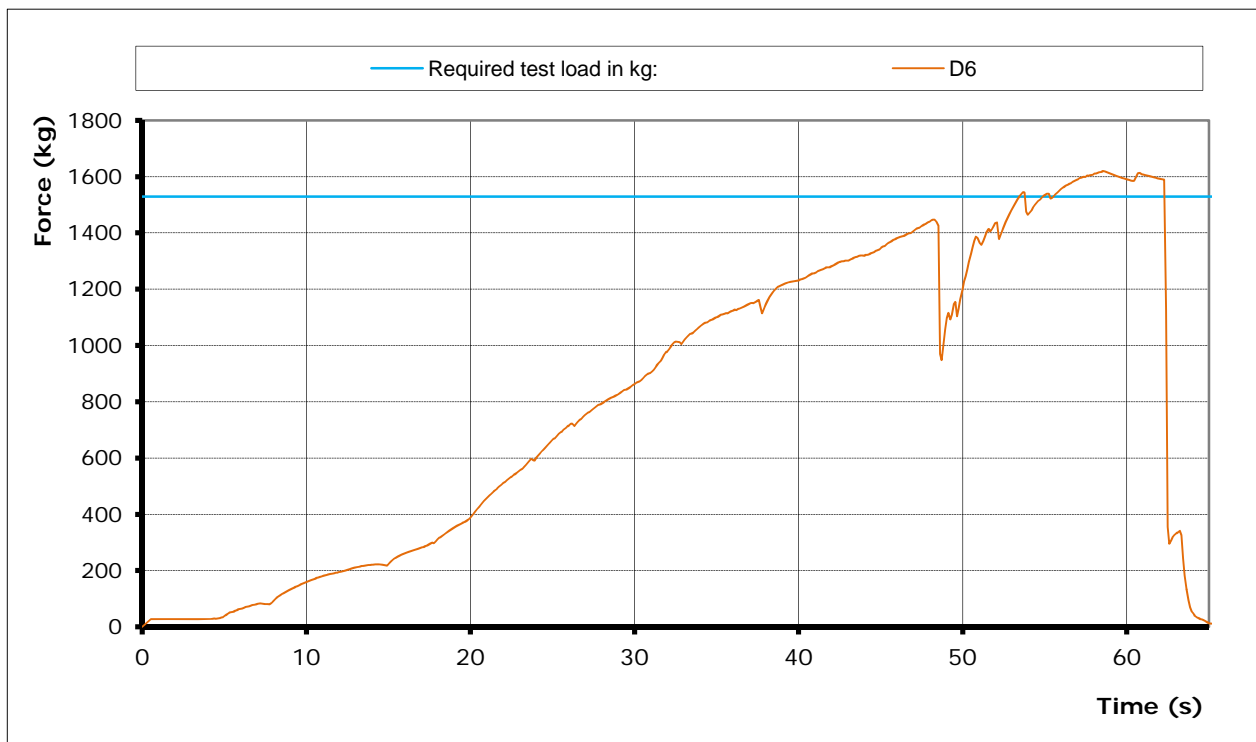
Results

Duration of maintained min. load [s]: 5.44

Any signs of structural failure after this test:

Test result: POSITIVE

Graph: D6





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 7

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

Test standard §: 4.2.1.b rescue

Flying position before landing: seat board

Test setup: (11) in landing position, leg straps (10) closed.

Anchoring:

Attachment points: Both of the rescue riser attachments attached (1 and 2);

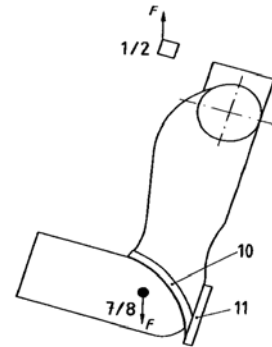
Dummy: Default, hip fixed (7, 8)

Required load in g: 6

Min load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



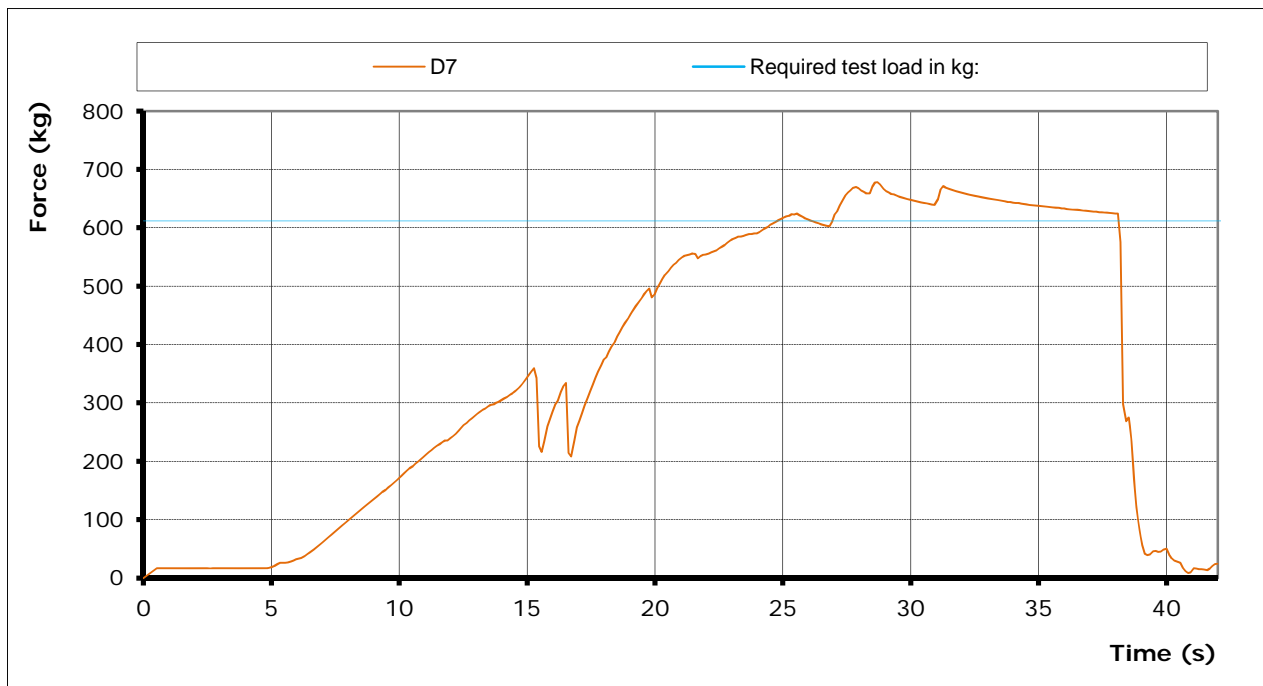
Results

Duration of maintained min. load [s]: 11.19

Any signs of structural failure after this test:

Test result: **POSITIVE**

Graph: D7





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 8

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard EN 1651

Test standard §: 5.3.2.3

Test setup: Only one riser attached

Anchoring:

Attachment points: One main riser attachments (3)

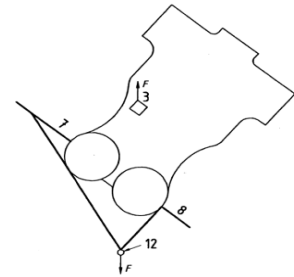
Dummy: Hip fixed (7, 8 -> 12)

Required load in g: 6

Min load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



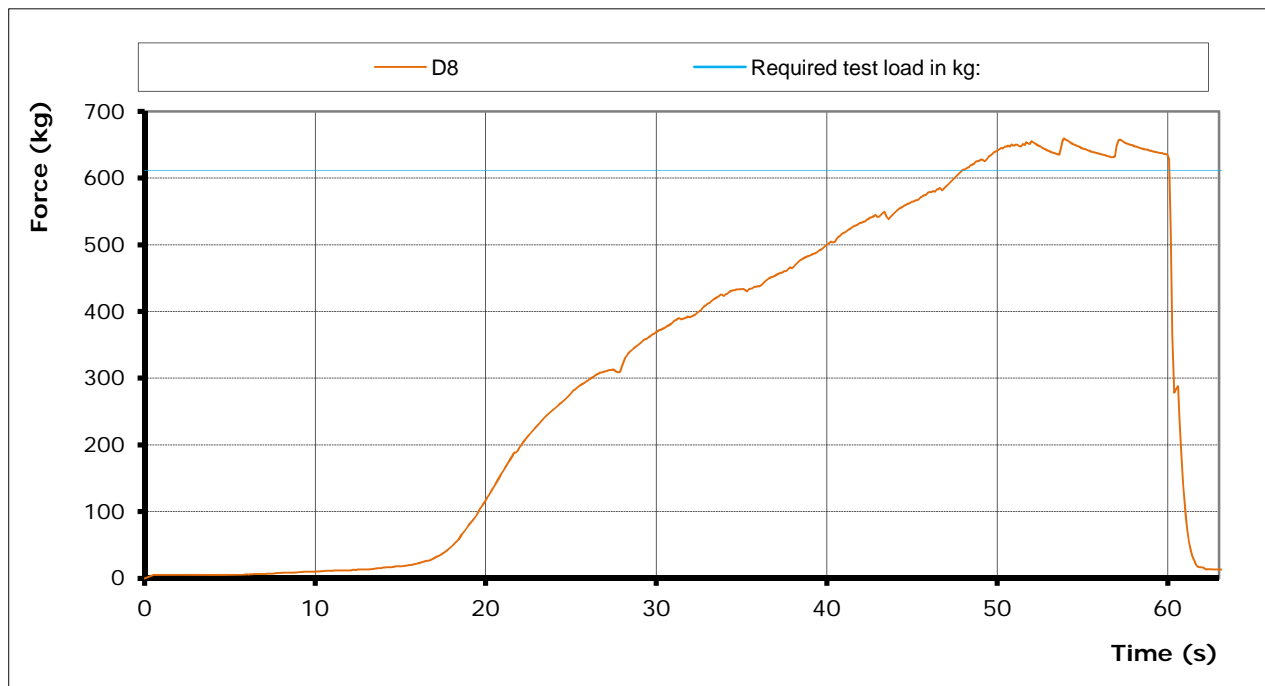
Results

Duration of maintained min. load [s]: 12.37

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

Test result: **POSITIVE**

Graph: D8





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 10

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

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);

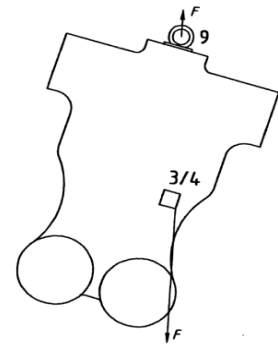
Dummy: Dummy anchored at the head position (9)

Required load in g: 4.5

Min load [N]: 4500

Required test load in kg: 459

Min. duration [s]: 10



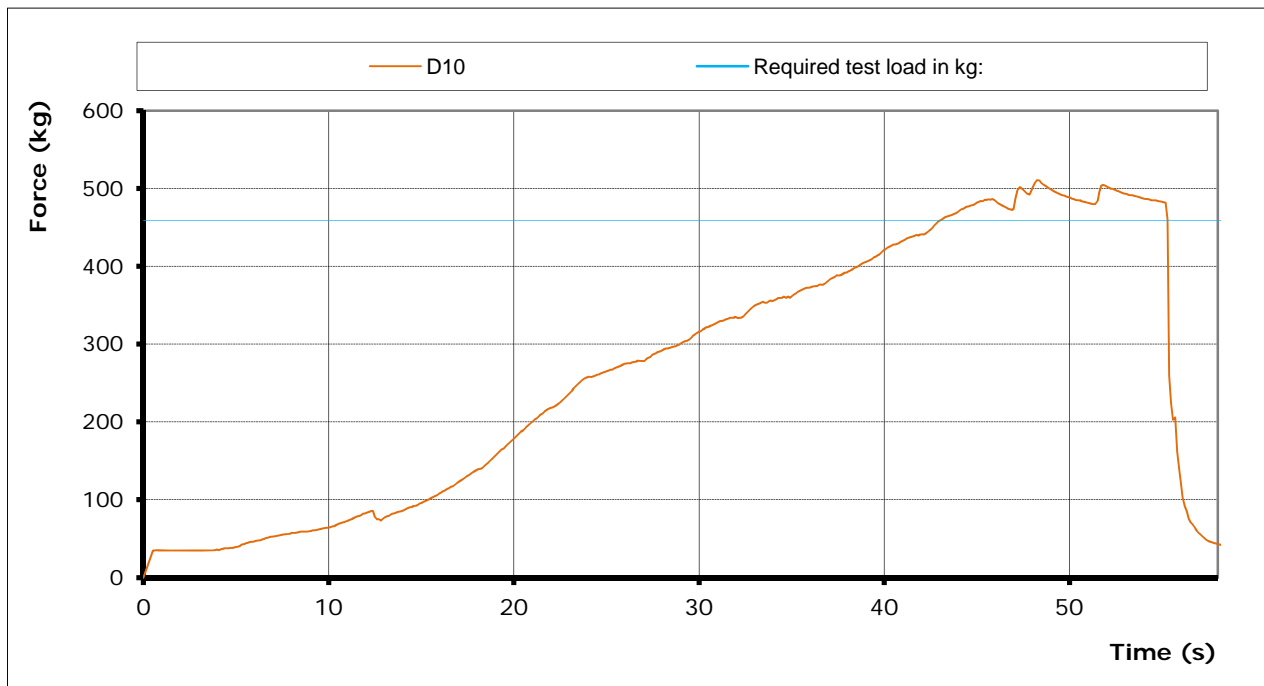
Results

Duration of maintained min. load [s]: 10.63

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

Test result: POSITIVE

Graph: D10





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 11

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

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);

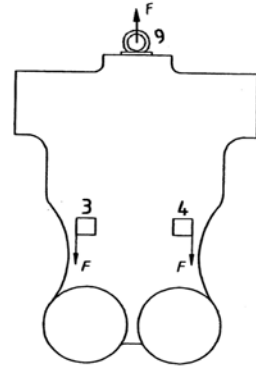
Dummy: Dummy anchored at the head position (9)

Required load in g: 6

Min load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



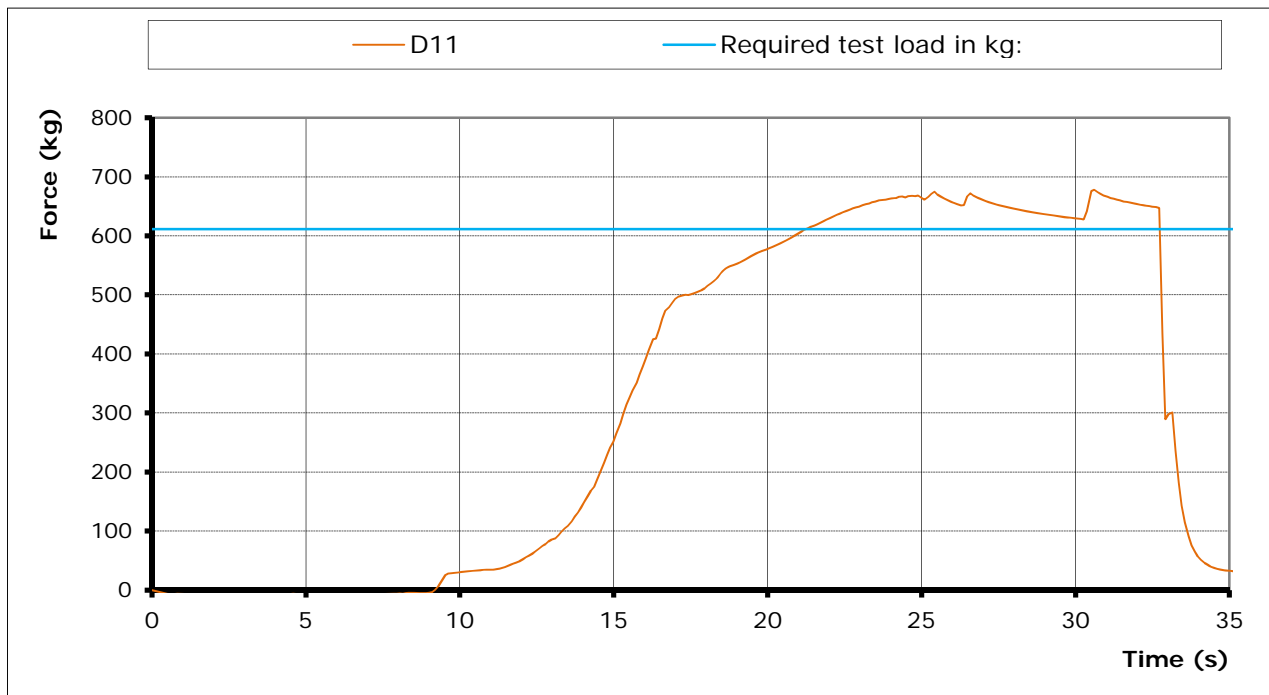
Results

Duration of maintained min. load [s]: 10.92

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

Test result: POSITIVE

Graph: D11





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HARNESS STRUCTURAL STRENGTH TEST

Test ID 12

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard NfL II 91 / 09

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);

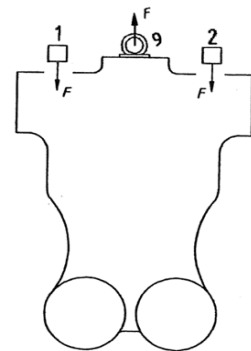
Dummy: Dummy anchored at the head position (9)

Required load in g: 6

Min load [N]: 6000

Required test load in kg: 612

Min. duration [s]: 10



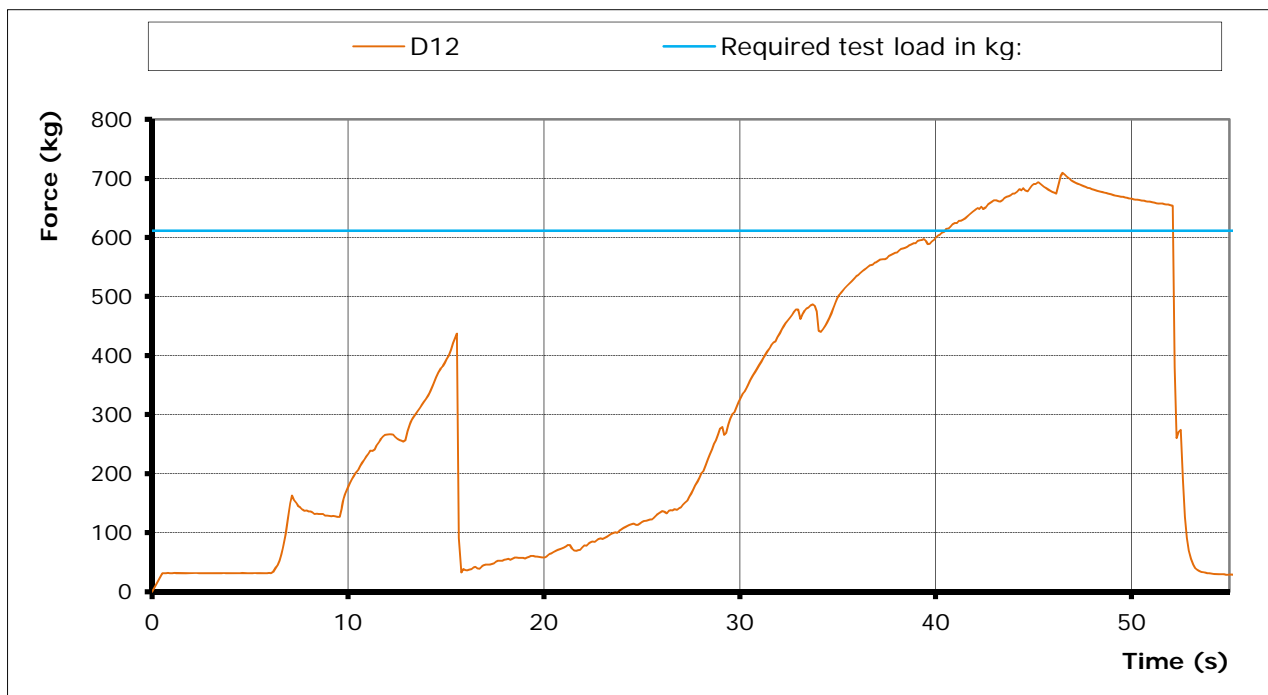
Results

Duration of maintained min. load [s]: 11.06

Any signs of structural failure after this test:

Test result: **POSITIVE**

Graph: D12





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Rescue deployment resistance test Test ID resc depl

Manufacturer name: SUPAIR sàrl
Harness manufacturer name: Strike
Test place & date: Villeneuve
Test responsible: Alain Zoller
Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4
Maximum certified pilot weight [kg]: 100

Standard Nfi II 91 / 09

Test standard §: 6.1.5

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.

Requirements [kN]: 0.07

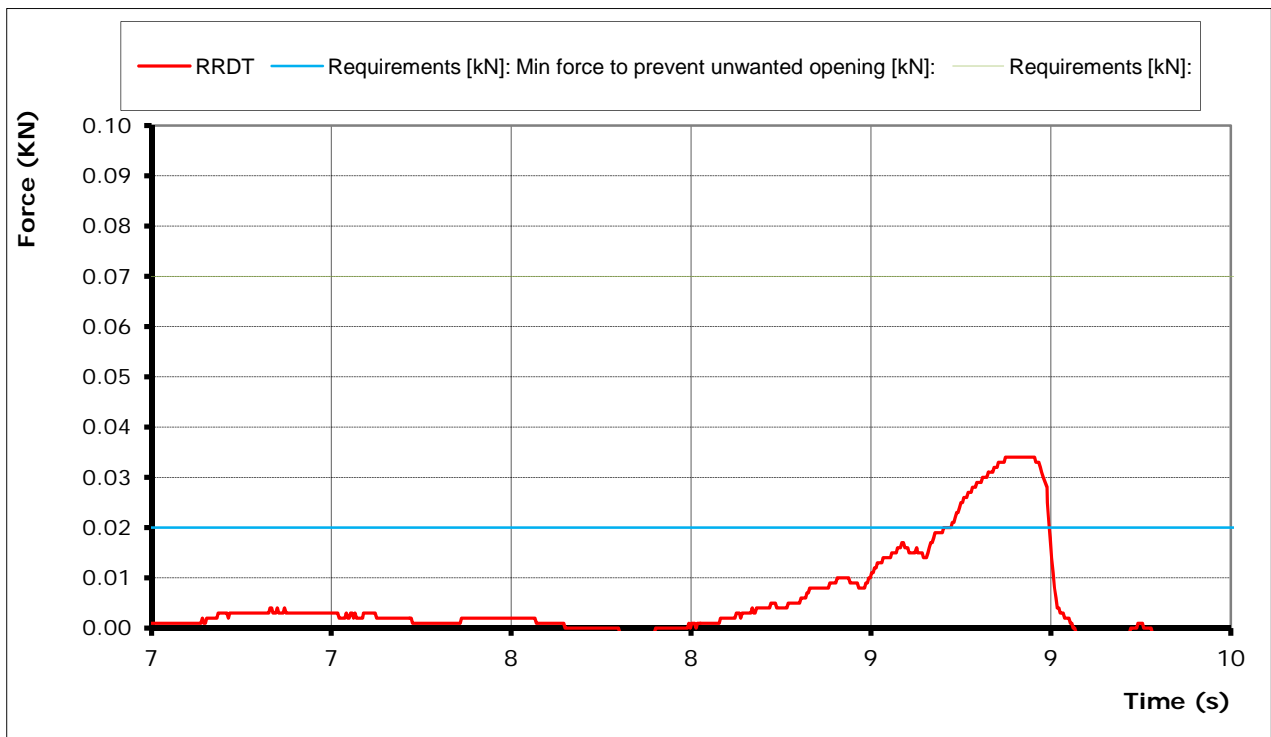
Min force to prevent unwanted opening [kN]: 0.02

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

Test result 20 N: POSITIVE

Test result 70 N: POSITIVE

Graph: RRDT





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Rescue deployment strap strength test

Test ID resc strap

Manufacturer name: SUPAIR sàrl

Harness manufacturer name: Strike

Test place & date: Villeneuve

Test responsible: Alain Zoller

Atmosphere [°C] [Hum] [hPa]: 22,3;30;1026.4

Maximum certified pilot weight [kg]: 100

Standard EN 12491 & Nfi II 91 / 09

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[kN]: 0.7

Requirements[s]: 10

Results

Duration of maintained load [s]: 11.50

Breaking resistance [KN]: 1.13

Test result: POSITIVE

Graph: RRST

