



Harness inspection certificate - EN

Inspection certificate number: **PH_382.2022**

Impact pad number: **PH_382.2022**

Manufacturer data

Manufacturer name: **Advance Thun AG**
 Representative: **Rolf Zeltner**
 Street: **Uttigenstrasse 87**
 Post code / place: **3600 Thun**
 Country: **Switzerland**

Sample data:

Harness

Impact pad

| | | | |
|---|-------------------|---------------------------------------|----------------------------------|
| Name: | BIPAX 2 | Name Impact pad: ⁽¹⁾ | n/a |
| Type: | ABS | Impact pad integrated: ⁽¹⁾ | No |
| Size: | M | Impact pad type: | Hybrid |
| Weight of Sample [kg]: | 1.80 | Weight of Sample [kg]: ⁽¹⁾ | 0.60 |
| Serial number: | 1150061 | Serial number: ⁽¹⁾ | 1150061 |
| Clip-in weight [kg]: | 120 | Date of reception: | 18.02.2019 |
| Integrated container for rescue system: | No | | |
| Volume container [cm ³]: | | | n/a max n/a min |
| Date of reception: | 18.02.2019 | | |

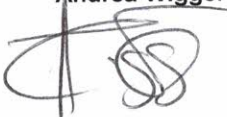
Test report summary

Structual test

Impact pad test

| | | |
|--------|-------------------|-------------------|
| Result | POSITIVE | POSITIVE |
| Place | Villeneuve | Villeneuve |
| Date | 21.08.2019 | 18.02.2019 |

Issue data

Place of declaration: **Villeneuve**
 Date of issue: **14.02.2023**
 Managing Director: **Andrea Wigger**
 Signature: 

This signature approve the validity of the test reports 94.21b and 94.22 (only if test reports are applicable)
Air Turquoise SA, has thoroughly tested the sample mentioned above and certifies its conformity with the following standards:
EN1651:2018+A1:2020⁽²⁾ and EN12491:2015+A1:2021⁽²⁾

⁽¹⁾ If Impact pad is NOT integrated in the harness, it will have independently Inspection number, and serial number. Definition of integrated impact pad is impact pad which can not be dismantled from the harness, e.g. airbag

⁽²⁾ These standards are NOT covered by accreditation D-IS-19457-01

The certificate of inspection is completed with test reports, if available, number: 94.21b and 94.22
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Harness inspection certificate - NfL

Inspection certificate number: **PH_382.2022**

Impact pad number: **PH_382.2022**

Manufacturer data

Manufacturer name: **Advance Thun AG**
 Representative: **Rolf Zeltner**
 Street: **Uttigenstrasse 87**
 Post code / place: **3600 Thun**
 Country: **Switzerland**

Sample data:

Harness

Impact pad

| | | | |
|---|-------------------|---------------------------------------|----------------------------------|
| Name: | BIPAX 2 | Name Impact pad: ⁽¹⁾ | n/a |
| Type: | ABS | Impact pad integrated: ⁽¹⁾ | No |
| Size: | M | Impact pad type: | Hybrid |
| Weight of Sample [kg]: | 1.80 | Weight of Sample [kg]: ⁽¹⁾ | 0.60 |
| Serial number: | 1150061 | Serial number: ⁽¹⁾ | 1150061 |
| Clip-in weight [kg]: | 120 | Date of reception: | 18.02.2019 |
| Integrated container for rescue system: | No | | |
| Volume container [cm ³]: | | | n/a max n/a min |
| Date of reception: | 18.02.2019 | | |

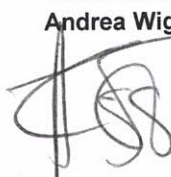
Test report summary

Structual test

Impact pad test

| | | |
|--------|-------------------|-------------------|
| Result | POSITIVE | POSITIVE |
| Place | Villeneuve | Villeneuve |
| Date | 21.08.2019 | 18.02.2019 |

Issue data

Place of declaration: **Villeneuve**
 Date of issue: **14.02.2023**
 Managing Director: **Andrea Wigger**
 Signature: 

This signature approve the validity of the test reports 94.21a and 94.22 (only if test reports are applicable)
Air Turquoise SA, has thoroughly tested the sample mentioned above and certifies its conformity with the following standards:
NfL 2-565-20, EN12491:2015 and EN1651:1999

⁽¹⁾ If Impact pad is NOT integrated in the harness, it will have independently Inspection number, and serial number. Definition of integrated impact pad is impact pad which can not be dismounted from the harness, e.g. airbag. ⁽²⁾ If harness has an integrated inner container for emergency parachute, extra deployment tests are done.

The certificate of inspection is completed with test reports, if available, number: 94.21a and 94.22
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Harness Impact Pad Report

Inspection certificate number: **PH_382.2022**

Manufacturer data:

Manufacturer name: **Advance Thun AG**
 Representative: **Rolf Zeltner**
 Street: **Uttigenstrasse 87**
 Post code place: **3600 Thun**
 Country: **Switzerland**

Harness model: **BIPAX 2**

Sample data:

Name impact pad: **n/a**
 Impact pad integrated: **No**
 Impact pad type: **Hybrid**
 Weight of sample [kg]: **0.6**
 Serial number: **1150061**
 Date of test: **18.02.2019**

Atmosphere AGL:

| | |
|--------------|------------|
| Temp. [C°] | 23 |
| R.H. [%] | 33 |
| Press. [hPa] | 978 |

Summary of Impact pad test ⁽¹⁾

| Test id | – | Test configuration ⁽²⁾ | Max Peak of Impact [g] ⁽³⁾ | Duration at 38 [g] in [ms] ⁽⁴⁾ | Duration at 20 [g] in [ms] ⁽⁵⁾ | Diff. of test 1 and 2 [%] ⁽⁶⁾ | Result |
|---------|---|---|---------------------------------------|---|---|--|-----------------|
| P | V | Test sample attached to dummy in flying position, without emergency parachute | 35.53 | 0.00 | 20.83 | 0.42 | POSITIVE |
| PR | | Test sample attached to dummy in flying position, Including emergency parachute | 0.00 | 0.00 | 0.00 | n/a | n/a |

| Manufacturer | Instrument | Type no | S/N | Validity Calibration |
|--------------|---------------------|-----------|---------|----------------------|
| Burster/MTS | Accelerometer 100 g | 89010-100 | 1263567 | 23.01.2024 |
| JDC elec | Geos n°11 Skywatch | Geos n°11 | Unit11 | 18.06.2025 |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a or 94.20b
Air Turquoise SA, has thoroughly tested the sample mentioned above and certifies its conformity with the following standards:

NfL 2-565-20 and EN1651:2018+A1:2020⁽⁷⁾

⁽¹⁾ Calculated values in tests reports 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%

⁽²⁾ The dummy is lifted minimum up to 1.65 m, and impact pad is mounted on. Where the impact occurs, measure distance from bottom of impact pad to ground

⁽³⁾ Maximum peak of impact should be less or equal to 50 [g], ⁽⁴⁾ If any, the maximum duration in at 38 [g] should be less or equal to 7 [ms], ⁽⁵⁾ If any, the maximum duration in at 20 [g] should be less or equal to 25 [ms], ⁽⁶⁾ The test should be done twice, and the 2nd test the maximum peak should not differ more than 20% from the first test, maximum peak.

⁽⁷⁾ This standard is NOT covered by accreditation D-IS-19457-01

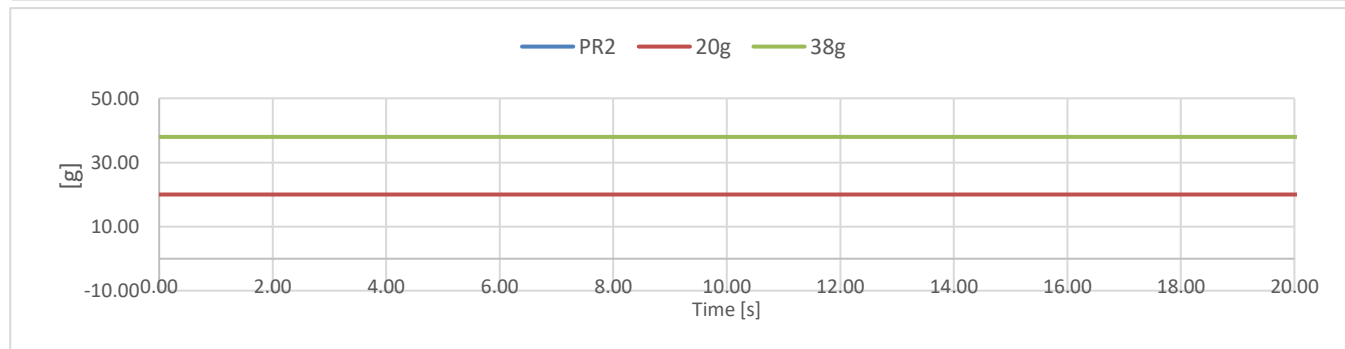
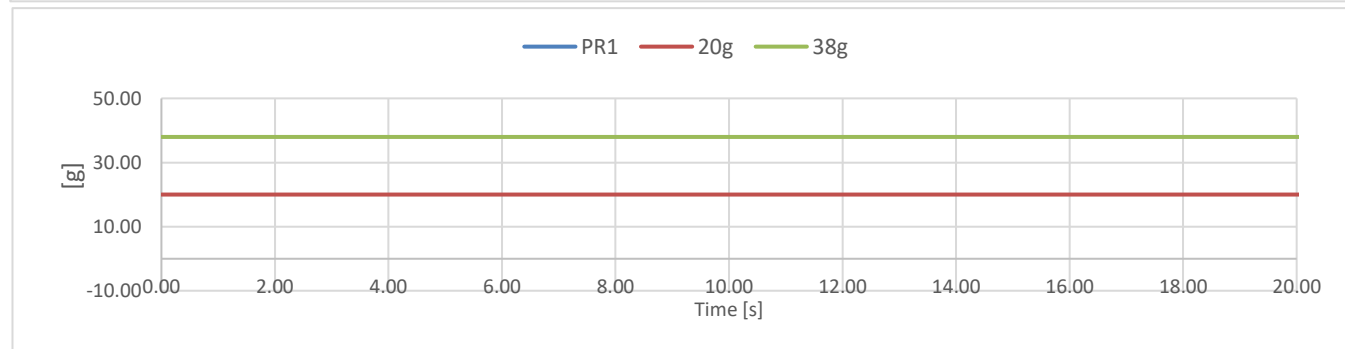
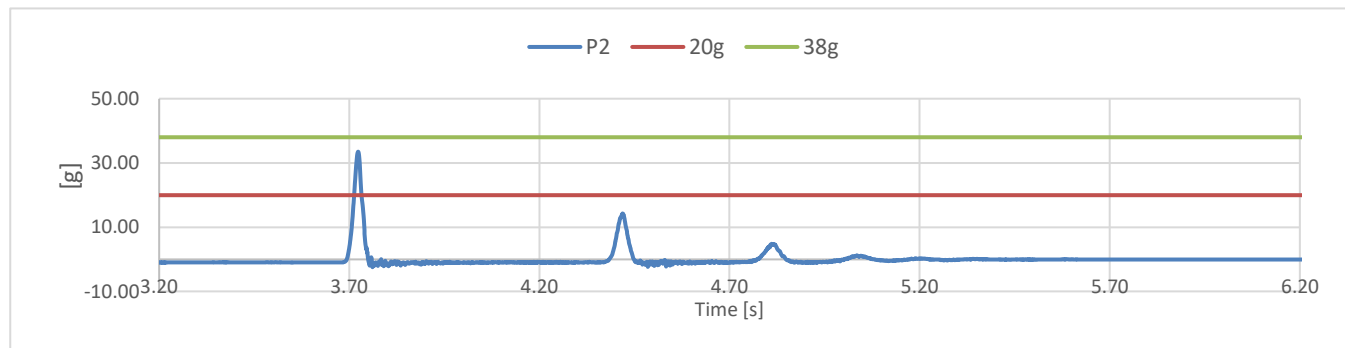
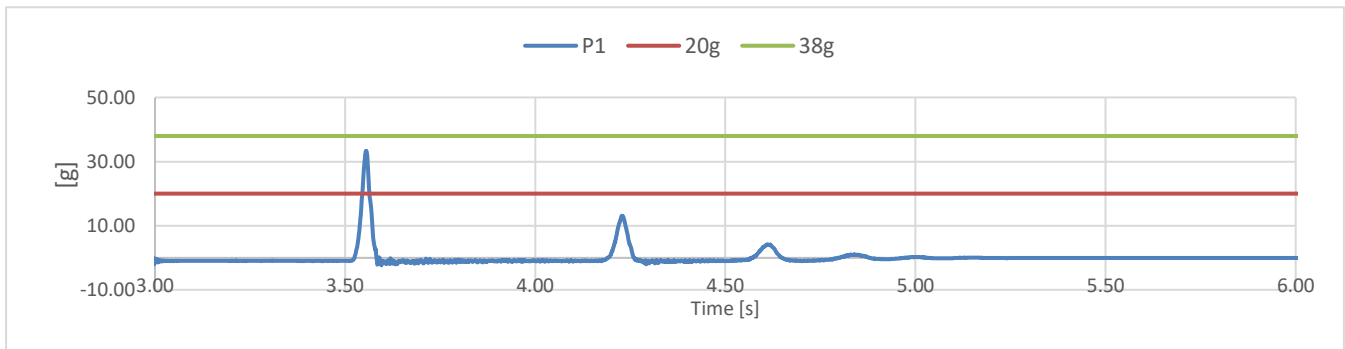
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Inspection certificate number: **PH_382.2022**

Name impact pad: **n/a**

Test results of Impact pad test

| | without emergency parachute | | including emergency parachute | |
|------------------------------------|-----------------------------|---------------|-------------------------------|-------------|
| | P1 | P2 | PR1 | PR2 |
| Maximum peak of impact [g] | 35.39 | 35.53 | 0.00 | 0.00 |
| Impact duration at +38 [g] in [ms] | 0.00 | 0.00 | 0.00 | 0.00 |
| Impact duration at +20 [g] in [ms] | 20.00 | 20.83 | 0.00 | 0.00 |
| Uncertainty k=2 [g] | 2.04 | 2.04 | 0.00 | 0.00 |
| Diff. between test 1 and 2 [%] | 100.00 | 100.42 | 100.00 | 0.00 |



Harness Structural test Report - EN

Inspection certificate number: **PH_382.2022**

Manufacturer data:

Manufacturer name: **Advance Thun AG**
 Representative: **Rolf Zeltner**
 Street: **Uttigenstrasse 87**
 Post code place: **3600 Thun**
 Country: **Switzerland**

Sample data:

Name: **BIPAX 2**
 Type: **ABS**
 Size: **M**
 Serial number: **1150061**
 Impact pad type: ⁽¹⁾ **Hybrid**
 Clip-in weight [kg]: **120**

 Date of test: **21.08.2019**

Atmosphere AGL:

| | |
|--------|------------|
| [C°] | 22 |
| RH [%] | 56 |
| [hPa] | 980 |

Summary of Structural test

| Test id | - EN 1651 | Setup | Req. Load [g] | Req. Load [N] | Min. duration [s] | Result |
|----------------------|------------|---------------------------------------|---------------|---------------|-------------------|-----------------|
| 01 ⁽³⁾ | ✓ 5.5.1.1 | Positive symmetric load (Slippage) | 4.5 | 5400 | 5 | POSITIVE |
| 03 ⁽³⁾ | ✓ 5.5.1.1b | Positive symmetric load | 15 | 18000 | 5 | POSITIVE |
| 05 | ✓ 5.5.1.2 | Positive asymmetric load | 6 | 7200 | 5 | POSITIVE |
| 06 | ✓ 5.5.1.6 | Negative asymmetric load | 6 | 7200 | 5 | POSITIVE |
| 08 ⁽⁵⁾ | 5.5.1.9 | Anti falling-out system | 4.5 | 5400 | 5 | n/a |
| 09 ⁽³⁾⁽⁴⁾ | 5.5.1.3 | Positive symmetric load rescue points | 15 | 18000 | 5 | n/a |
| 10 ⁽³⁾⁽⁴⁾ | 5.5.1.4 | Negative symmetric load rescue points | 15 | 18000 | 5 | n/a |
| 11 | 5.5.1.8 | Connecting element for rescue | n/a | 24000 | 0.3 | n/a |
| 12 ⁽³⁾ | ✓ 5.5.1.7 | Upright (landing) position load | 6 | 7200 | 5 | POSITIVE |
| 14 | 5.5.1.5 | Negative symmetric load towing points | 5 | 6000 | 5 | n/a |

Rescue deployment test

| Test id | - EN 1651 | Setup | Min load [N] | Max. load [N] | Measured [N] | Result |
|---------|-----------|-------------------------|--------------|---------------|--------------|------------|
| RRDT | 5.5.1.11 | Default flying position | 20 | 70 | 0.00 | n/a |

Rescue Deployment Handle strength test

| Test id | - EN 12491 | Setup | Req. Load [N] | Min. duration [s] | Breaking strength [N] | Result |
|---------|------------|--------------------------|---------------|-------------------|-----------------------|------------|
| RRST | 5.3.2 | Two end points of handle | 700 | 10 | 0.00 | n/a |

| Manufacturer | Instrument | Type no | S/N | Validity |
|---------------|----------------------|--------------------|----------|------------|
| HBM | Load Sensor GE01 | 1-S9M/50KN-1 | 31314643 | 04.09.2023 |
| Burster / MTS | Load sensor 10kN SL2 | 8431-6010-N000S000 | 593507 | 21.04.2026 |
| JDC elec | Geos n°11 Skywatch | Geos n°11 | Unit11 | 18.06.2025 |

Air Turquoise SA, has thoroughly tested the sample mentioned above and certifies its conformity with the following standards:

EN1651:2018+A1:2020⁽⁶⁾ and EN12491:2015+A1:2021⁽⁶⁾

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

⁽¹⁾ If Impact pad available, see test report no. 94.22 and inspection certificate no. 94.20b. ⁽³⁾ Slipping test of any adjustable components: No slippage of any adjustable element more than 10 mm at 4500N for 5 s. The marks should be added with a pre-load of 1000N. ⁽⁴⁾ For harness with integrated Y bridle, test in the end loop ⁽⁵⁾ Attach to anti-falling out system without connecting the crotch straps (breast straps)

⁽⁶⁾ These standards are NOT covered by accreditation D-IS-19457-01

Calculated value in tests reports 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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Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

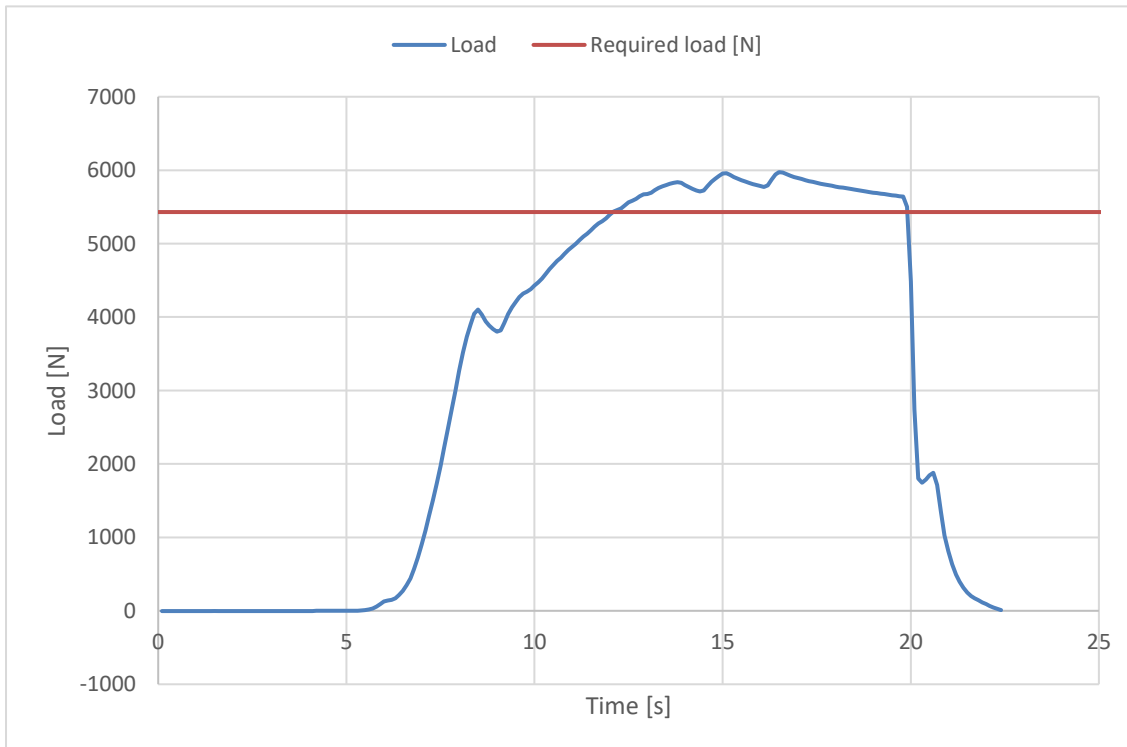
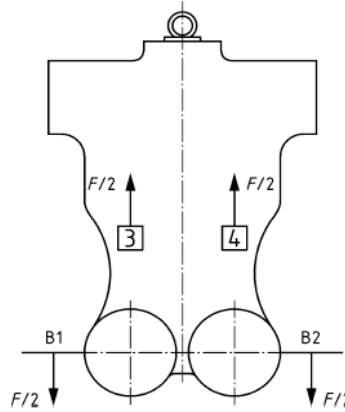
Test ID 01

Standard **EN 1651**
 Reference in standard **5.5.1.1**
 Test setup **Positive symmetric load (Slippage)**
 Attachment points **Both main riser attachment (3,4)**
 Anchor points **Dummy (B1, B2)**

Required load [g] **4.5**
 Required load [N] **5400**
 Minimum test duration [s] **5**

Result

Test duration [s] **7.9**
 Any signs of structural failure **No**
 Slippery test OK **Yes**
 Test results **POSITIVE**



The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

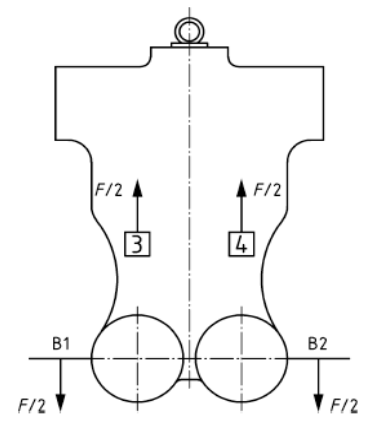
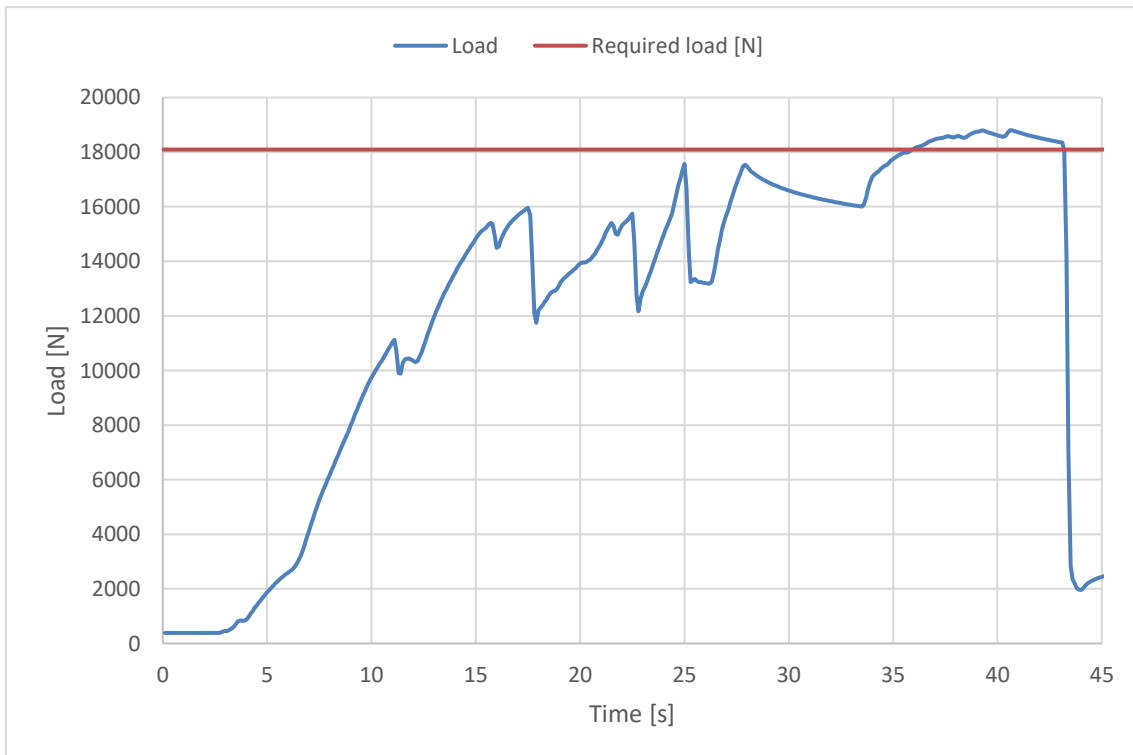
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 03

| | |
|---------------------------------|---|
| Standard | EN 1651 |
| Reference in standard | 5.5.1.1b |
| Test setup | Positive symmetric load |
| Attachment points | Both main riser attachment (3,4) |
| Anchor points | Dummy (B1, B2) |
| Required load [g] | 15 |
| Required load [N] | 18000 |
| Minimum test duration [s] | 5 |
| Result | |
| Test duration [s] | 7.2 |
| Any signs of structural failure | No |
| Slippery test OK | Yes |
| Test results | POSITIVE |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

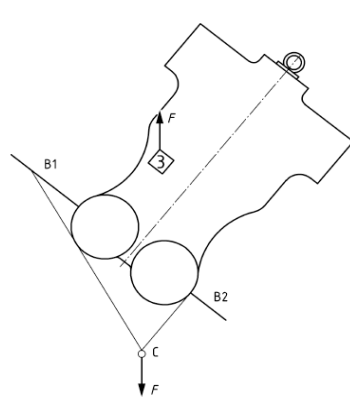
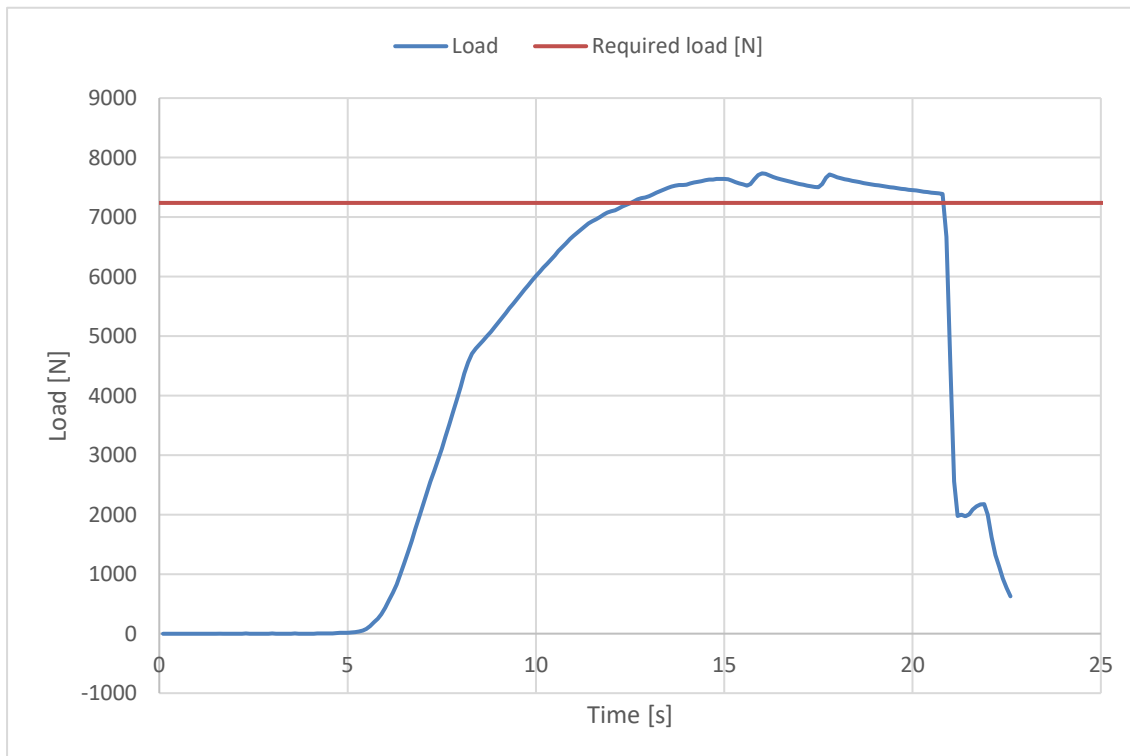
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 05

| | |
|---------------------------------|--------------------------------------|
| Standard | EN 1651 |
| Reference in standard | 5.5.1.2 |
| Test setup | Positive asymmetric load |
| Attachment points | One riser attachment (3 or 4) |
| Anchor points | Dummy (C) |
| Required load [g] | 6 |
| Required load [N] | 7200 |
| Minimum test duration [s] | 5 |
| Result | |
| Test duration [s] | 8.3 |
| Any signs of structural failure | No |
| Test results | POSITIVE |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

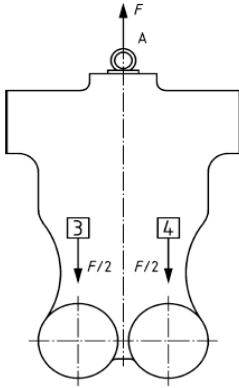
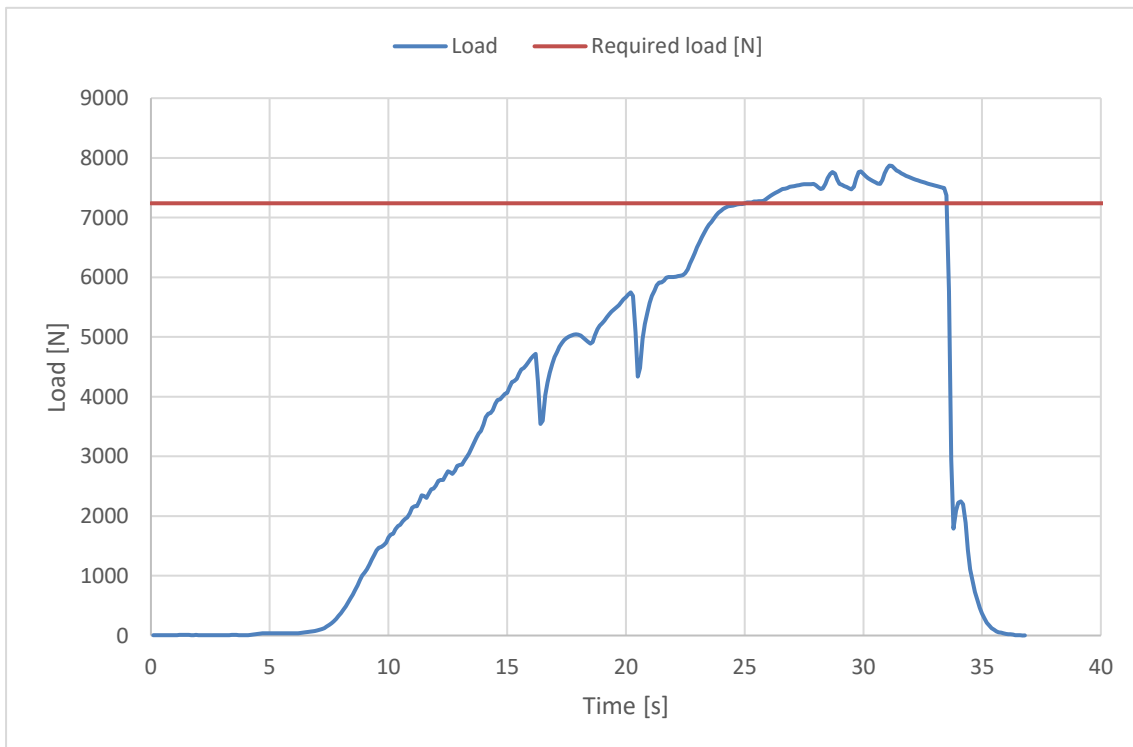
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 06

| | |
|---------------------------------|---|
| Standard | EN 1651 |
| Reference in standard | 5.5.1.6 |
| Test setup | Negative symmetric load |
| Attachment points | Both main riser attachment (3,4) |
| Anchor points | Dummy (A) |
| Required load [g] | 6 |
| Required load [N] | 7200 |
| Minimum test duration [s] | 5 |
| Result | |
| Test duration [s] | 8.5 |
| Any signs of structural failure | No |
| Test results | POSITIVE |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

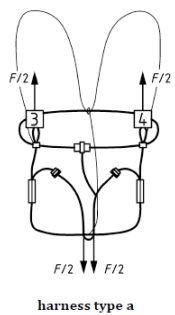
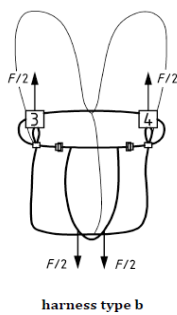
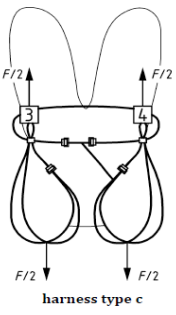
Inspection certificate number: **PH_382.2022**

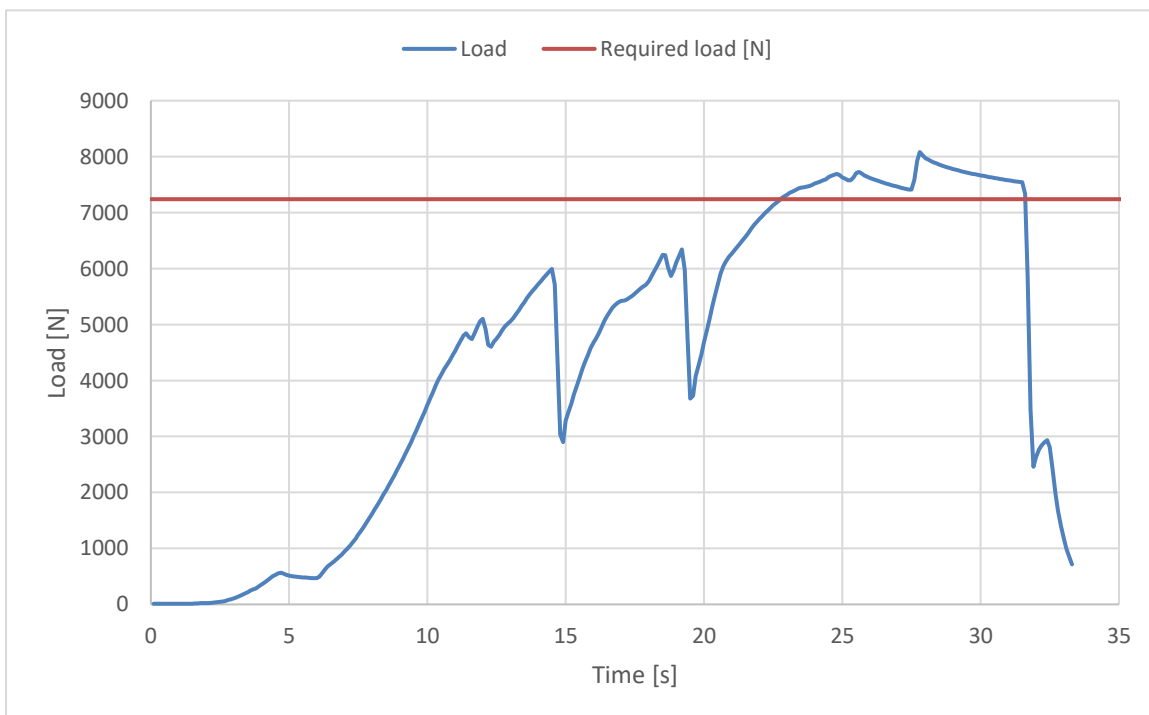
model: **BIPAX 2**

Harness Structural test

Test ID 12

| | |
|---------------------------------|--|
| Standard | EN 1651 |
| Reference in standard | 5.5.1.7 |
| Test setup | Upright (landing) position load |
| Attachment points | Both main riser attachment (3, 4) |
| Anchor points | Both legstrap of harness (no dummy) |
| Required load [g] | 6 |
| Required load [N] | 7200 |
| Minimum test duration [s] | 5 |
| Harness type | type c |
| Result | |
| Test duration [s] | 8.9 |
| Any signs of structural failure | No |
| Slippery test OK | Yes |
| Test results | POSITIVE |



The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20b

Harness Structural test Report - NfL

Inspection certificate number: **PH_382.2022**

Manufacturer data:

Manufacturer name: **Advance Thun AG**
 Representative: **Rolf Zeltner**
 Street: **Uttigenstrasse 87**
 Post code place: **3600 Thun**
 Country: **Switzerland**

Sample data:

Name: **BIPAX 2**
 Type: **ABS**
 Size: **M**
 Serial number: **1150061**
 Impact pad type: ⁽¹⁾ **Hybrid**
 Clip-in weight [kg]: **120**
 Integrated container: **No**
 Date of test: **21.08.2019**

Atmosphere AGL:

| | |
|--------|------------|
| [C°] | 22 |
| RH [%] | 56 |
| [hPa] | 980 |

Summary of Structural test

| Test id | - EN 1651:1999 | Setup | Req. Load [g] | Req. Load [N] | Min. duration [s] | Result |
|---------|----------------|--------------------------------|---------------|---------------|-------------------|----------|
| 02 | ✓ 5.3.2.1 | Default flying position | 6 | 7200 | 10 | POSITIVE |
| 03 | ✓ 5.3.2.2 | Default flying position | 15 | 18000 | 5 | POSITIVE |
| 04 | ✓ 5.3.2.3 | Asymmetric, one riser | 6 | 7200 | 10 | POSITIVE |
| 07 | ✓ 5.3.2.6 | Asymmetric, negative | 4.5 | 5400 | 10 | POSITIVE |
| 09 | 5.3.2.4 | Rescue attachments | 15 | 18000 | 5 | n/a |
| 13 | ✓ 5.3.2.7 | Flying position before landing | 15 | 18000 | 5 | POSITIVE |
| 14 | 5.3.2.5 | Towing | 5 | 6000 | 10 | n/a |

Rescue deployment test

| Test id | - NfL 2-565-20 | Setup | Min load [N] | Max. load [N] | Measured [N] | Result |
|---------|----------------|-------------------------|--------------|---------------|--------------|--------|
| RRDT | 6.1.5 | Default flying position | 20 | 70 | 0.00 | n/a |

Rescue Deployment Handle strength test

| Test id | - EN 12491 | Setup | Req. Load [N] | Min. duration [s] | Breaking strength [N] | Result |
|---------|------------|--------------------------|---------------|-------------------|-----------------------|--------|
| RRST | 5.3.2 | Two end points of handle | 700 | 10 | 0.00 | n/a |

Rescue deployment test with integrated container for rescue system

| Test id | - NfL 2-565-20 | Setup | Result |
|---------|----------------|--|--------|
| RDIC | 4.3.2-4.3.6 | Release of the container at maximum volume | n/a |

| Manufacturer | Instrument | Type no | S/N | Validity |
|---------------|----------------------|--------------------|----------|------------|
| HBM | Load Sensor GE01 | 1-S9M/50KN-1 | 31314643 | 04.09.2023 |
| Burster / MTS | Load sensor 10kN SL2 | 8431-6010-N000S000 | 593507 | 21.04.2026 |
| JDC elec | Geos n°11 Skywatch | Geos n°11 | Unit11 | 18.06.2025 |

Air Turquoise SA, has thoroughly tested the sample mentioned above and certifies its conformity with the following standards:

NfL 2-565-20, EN12491:2015 and EN1651:1999

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

⁽¹⁾ If Impact pad available, see test report no. 94.22 and inspection certificate no. 94.20a

Calculated values in tests reports 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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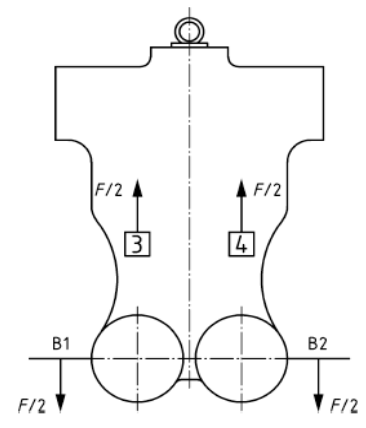
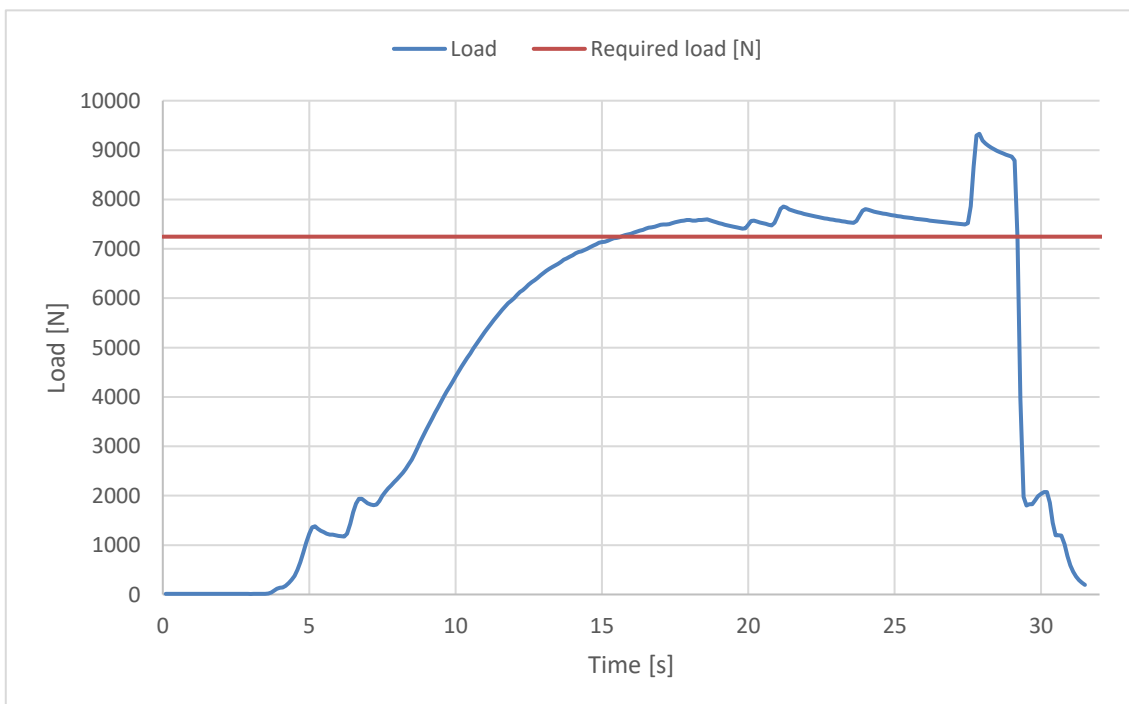
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 02

| | |
|---------------------------------|---|
| Standard | EN 1651:1999 |
| Reference | 5.3.2.1 |
| Test setup | Default flying position |
| Attachment points | Both main riser attachment (3,4) |
| Anchor points | Dummy (B1, B2) |
| Required load [g] | 6 |
| Required load [N] | 7200 |
| Minimum test duration [s] | 10 |
| Result | |
| Test duration [s] | 13.5 |
| Any signs of structural failure | No |
| Test results | POSITIVE |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

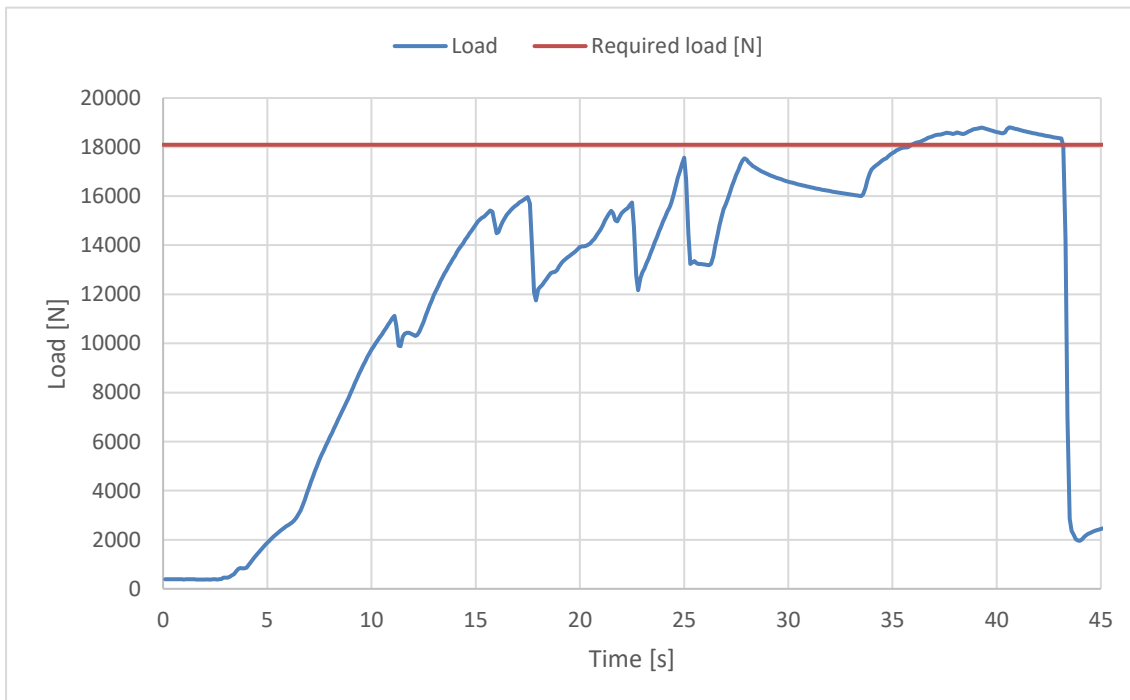
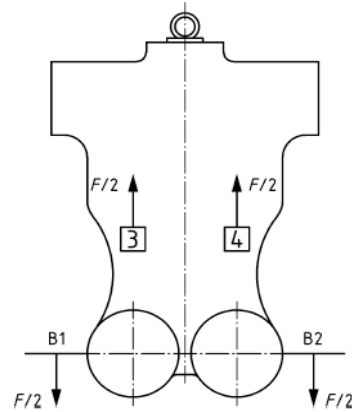
Test ID 03

Standard **EN 1651:1999**
 Reference **5.3.2.2**
 Test setup **Default flying position**
 Attachment points **Both main riser attachment (3,4)**
 Anchor points **Dummy (B1, B2)**

Required load [g] **15**
 Required load [N] **18000**
 Minimum test duration [s] **5**

Result

Test duration [s] **7.2**
 Any signs of structural failure **No**
 Test results **POSITIVE**



The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

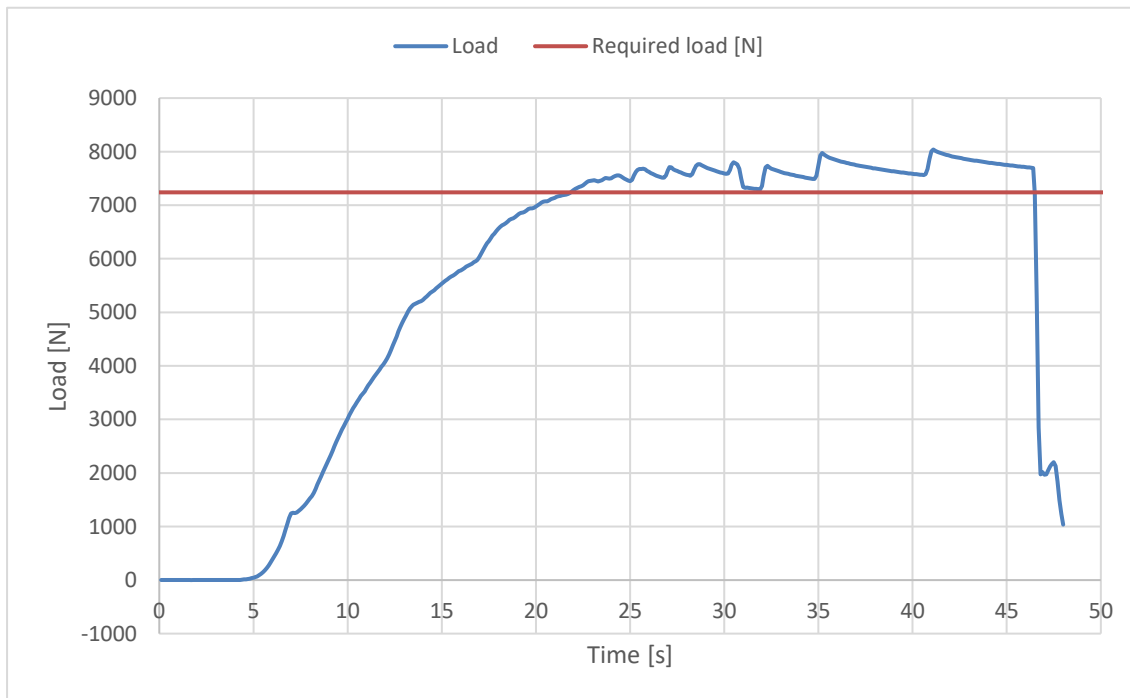
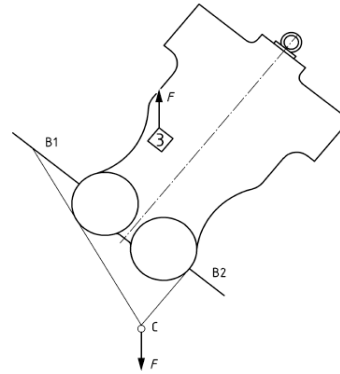
Test ID 04

Standard **EN 1651:1999**
 Reference **5.3.2.3**
 Test setup **Asymmetric, one riser**
 Attachment points **One main riser attachment (3)**
 Anchor points **Dummy (B1,B2)**

Required load [g] **6**
 Required load [N] **7200**
 Minimum test duration [s] **10**

Result

Test duration [s] **24.6**
 Any signs of structural failure **No**
 Test results **POSITIVE**



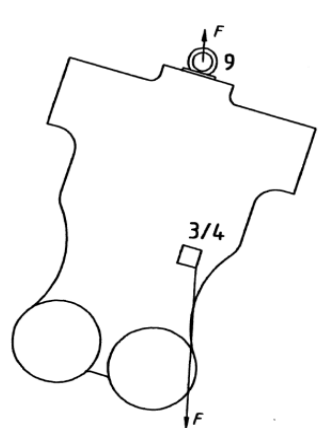
The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

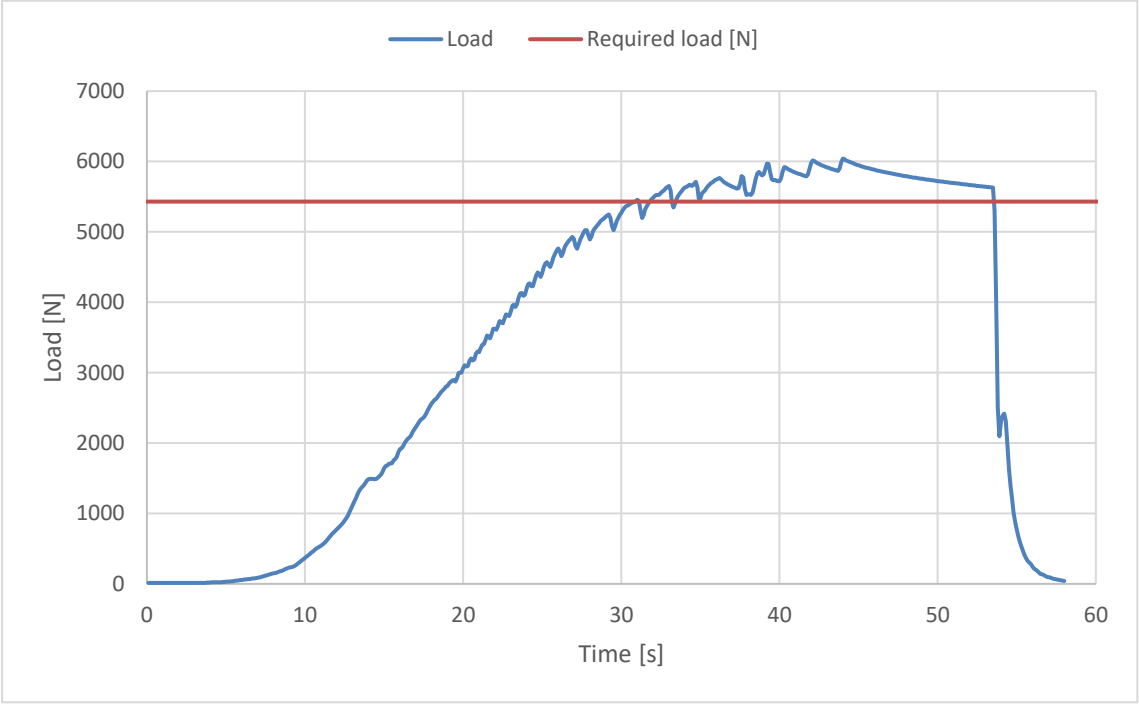
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 07

| | | |
|---------------------------------|---|--|
| Standard | EN 1651:1999 |  |
| Reference | 5.3.2.6 | |
| Test setup | Asymmetric, negative | |
| Attachment points | One main riser attachment (3 or 4) downwards | |
| Anchor points | Dummy (9) | |
| Required load [g] | 4.5 | |
| Required load [N] | 5400 | |
| Minimum test duration [s] | 10 | |
| Result | | |
| Test duration [s] | 20.1 | |
| Any signs of structural failure | No | |
| Test results | POSITIVE | |



The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

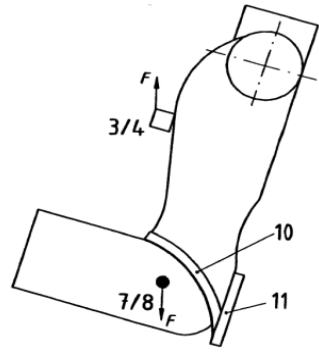
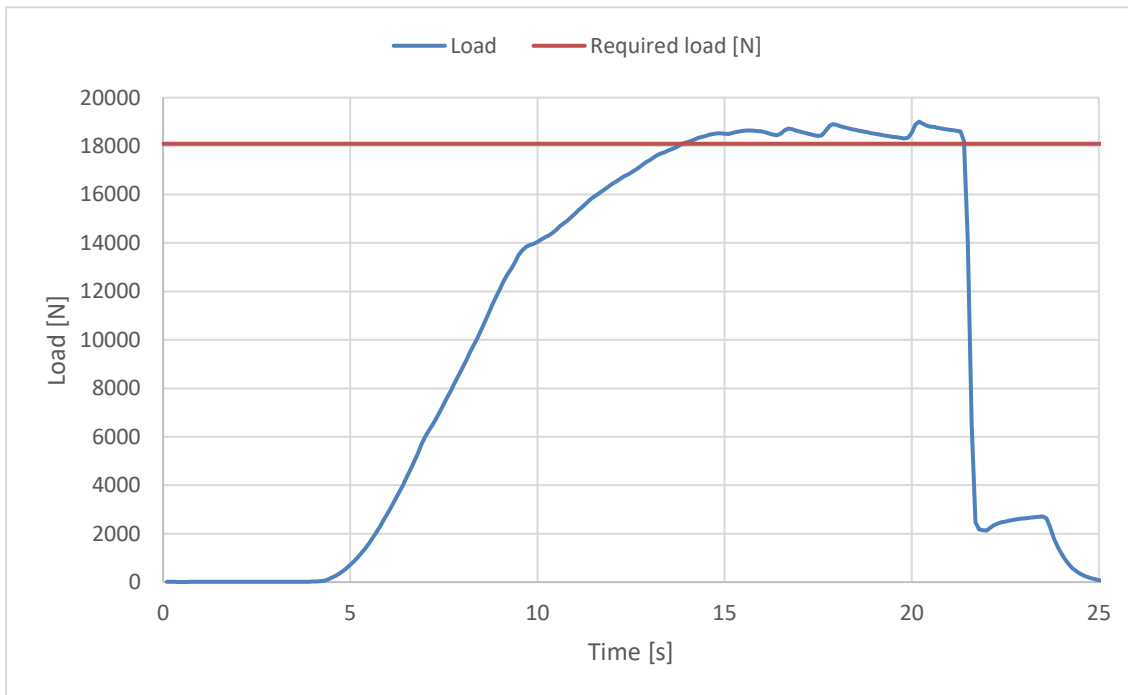
Inspection certificate number: **PH_382.2022**

model: **BIPAX 2**

Harness Structural test

Test ID 13

| | |
|---------------------------------|---|
| Standard | EN 1651:1999 |
| Reference | 5.3.2.7 |
| Test setup | Flying position before landing |
| Attachment points | Both main riser attachment (3,4) |
| Anchor points | Dummy (7,8) |
| Required load [g] | 15 |
| Required load [N] | 18000 |
| Minimum test duration [s] | 5 |
| Result | |
| Test duration [s] | 7.6 |
| Any signs of structural failure | No |
| Test results | POSITIVE |

The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a