

## Harness Structural test Report - NfL

Inspection certificate number: **PH\_419.2023**

### Manufacturer data:

Manufacturer name: **Niviuk Gliders**  
 Representative: **Dominique Cizeau**  
 Street: **C. Del Ter, 6-Nave D**  
 Post code place: **17165 La Cellera de Ter Girona**  
 Country: **Spain**

### Sample data:

Name: **Sherlock**  
 Type: **ABS**  
 Size: **M**  
 Serial number: **SHERLOCKMV8**  
 Impact pad type: <sup>(1)</sup> **Airbag**  
 Clip-in weight [kg]: **120**  
 Integrated container: **Yes**  
 Date of test: **03.10.2023**

### Atmosphere AGL:

|        |             |
|--------|-------------|
| [C°]   | <b>21</b>   |
| RH [%] | <b>39</b>   |
| [hPa]  | <b>1006</b> |

### Summary of Structural test

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

### Rescue deployment test

| Test id | - NfL 2-565-20 | Setup                   | Min load [N] | Max. load [N] | Measured [N] | Result          |
|---------|----------------|-------------------------|--------------|---------------|--------------|-----------------|
| RRDT    | <b>V</b> 6.1.5 | Default flying position | 20           | 70            | <b>57.61</b> | <b>POSITIVE</b> |

### Rescue Deployment Handle strength test

| Test id | - EN 12491     | Setup                    | Req. Load [N] | Min. duration [s] | Breaking strength [N] | Result          |
|---------|----------------|--------------------------|---------------|-------------------|-----------------------|-----------------|
| RRST    | <b>V</b> 5.3.2 | Two end points of handle | 700           | 10                | <b>1249.64</b>        | <b>POSITIVE</b> |

### 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 | <b>n/a</b> |

| 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

<sup>(1)</sup> 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\_419.2023**

model: **Sherlock**

**Harness Structural test**

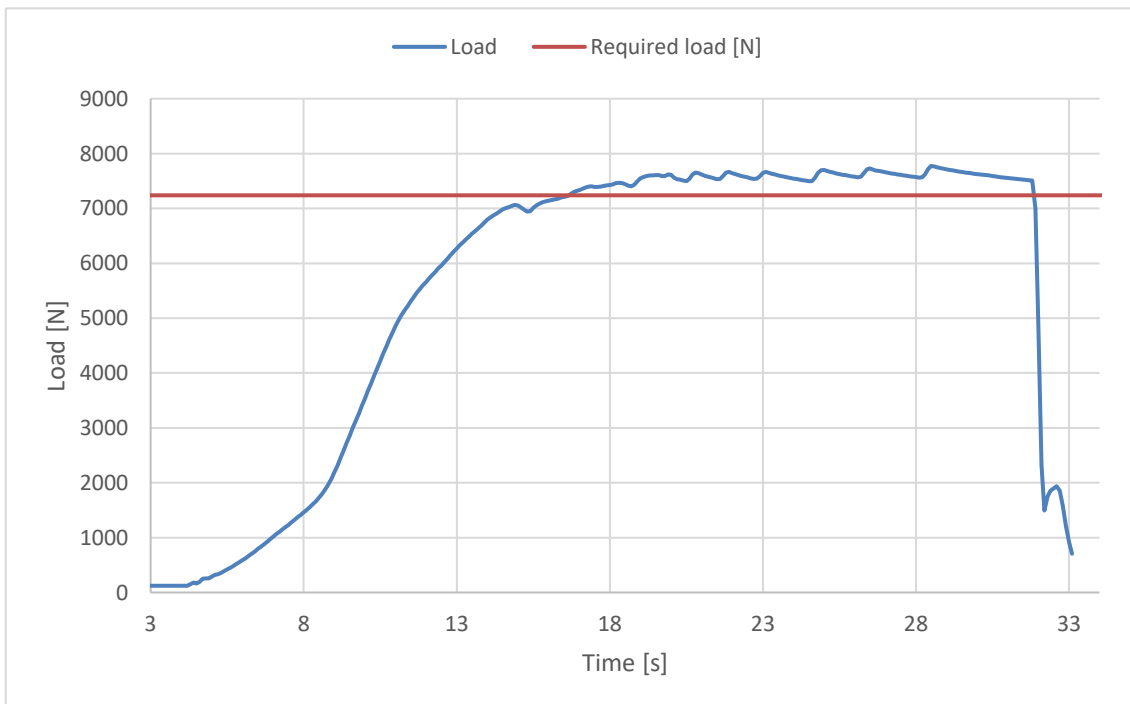
**Test ID 02**

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] **15.2**  
 Any signs of structural failure **No**  
 Test results **POSITIVE**



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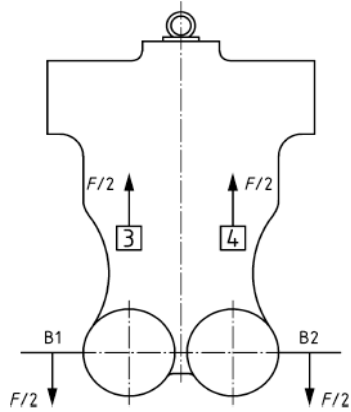
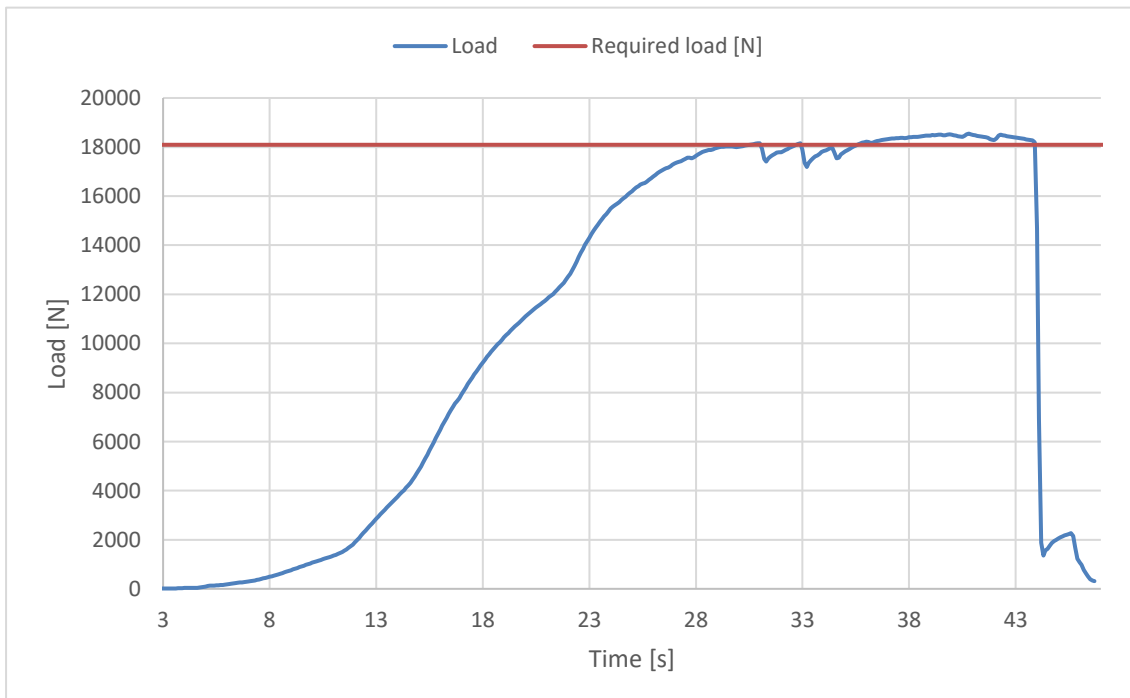
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model: **Sherlock**

**Harness Structural test**

**Test ID 03**

|                                 |   |
|---------------------------------|---|
| Standard                        | <b>EN 1651:1999</b>                     |
| Reference                       | <b>5.3.2.2</b>                          |
| Test setup                      | <b>Default flying position</b>          |
| Attachment points               | <b>Both main riser attachment (3,4)</b> |
| Anchor points                   | <b>Dummy (B1, B2)</b>                   |
| Required load [g]               | <b>15</b>                               |
| Required load [N]               | <b>18000</b>                            |
| Minimum test duration [s]       | <b>5</b>                                |
| <b>Result</b>                   |   |
| Test duration [s]               | <b>8.4</b>                              |
| Any signs of structural failure | <b>No</b>                               |
| Test results                    | <b>POSITIVE</b>                         |

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model: **Sherlock**

**Harness Structural test**

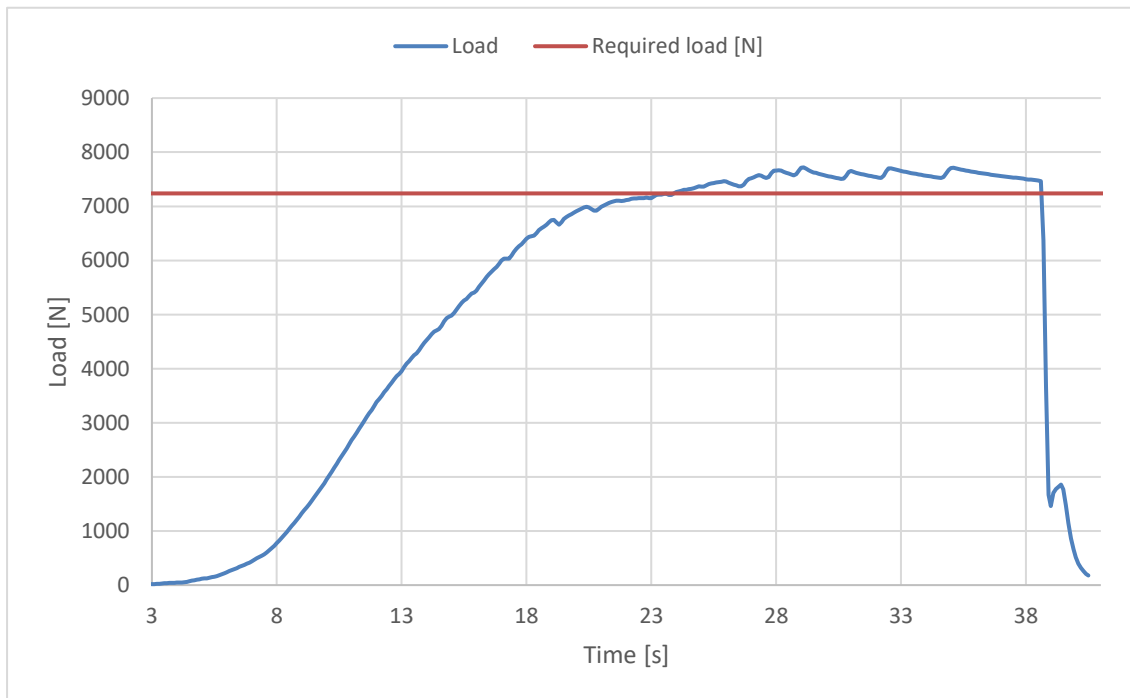
**Test ID 04**

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] **14.8**  
 Any signs of structural failure **No**  
 Test results **POSITIVE**



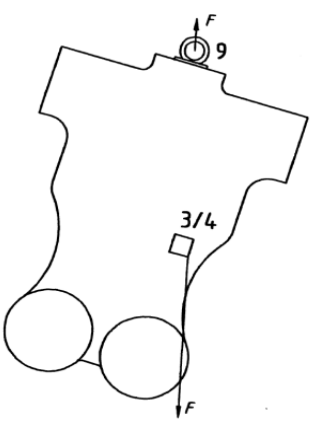
The validation of this test report is given by the signature of the test manager on the Inspection Certificate no 94.20a

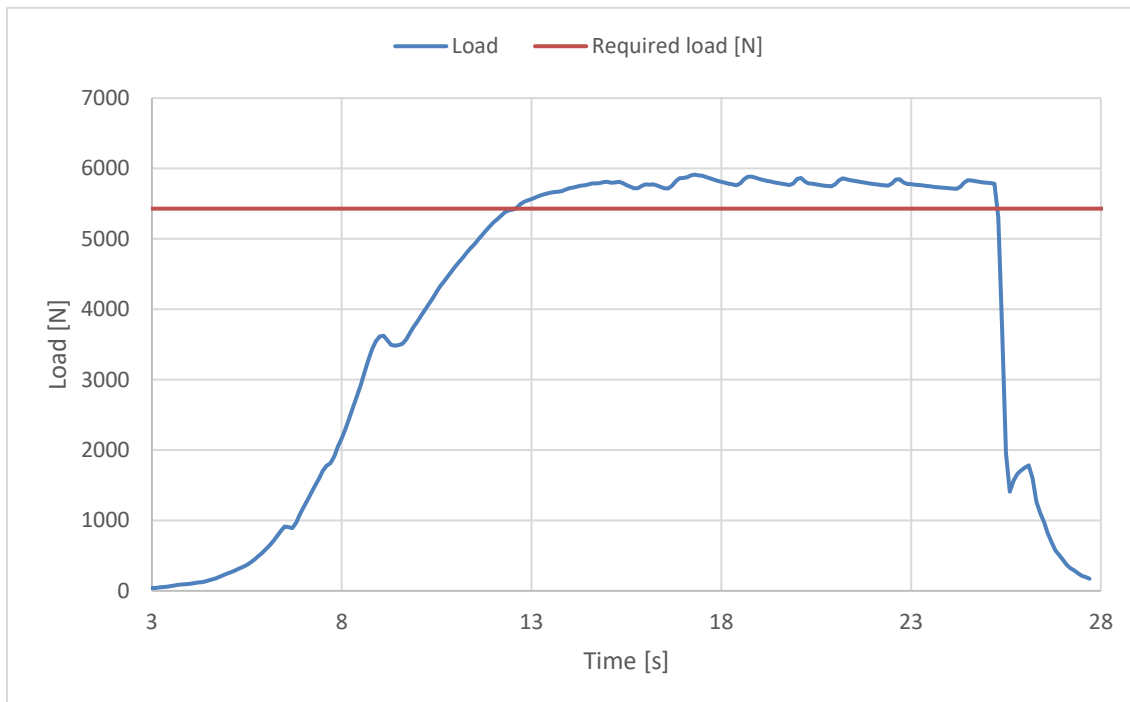
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model: **Sherlock**

**Harness Structural test**

**Test ID 07**

|                                 |   |  |
|---------------------------------|---|--|
| Standard                        | <b>EN 1651:1999</b>                                 |  |
| Reference                       | <b>5.3.2.6</b>                                      |  |
| Test setup                      | <b>Asymmetric, negative</b>                         |  |
| Attachment points               | <b>One main riser attachment (3 or 4) downwards</b> |  |
| Anchor points                   | <b>Dummy (9)</b>                                    |  |
| Required load [g]               | <b>4.5</b>  |  |
| Required load [N]               | <b>5400</b>   |  |
| Minimum test duration [s]       | <b>10</b>   |  |
| <b>Result</b>                   |   |  |
| Test duration [s]               | <b>12.7</b>   |  |
| Any signs of structural failure | <b>No</b>   |  |
| Test results                    | <b>POSITIVE</b>                                     |  |



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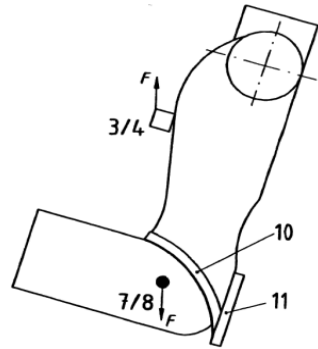
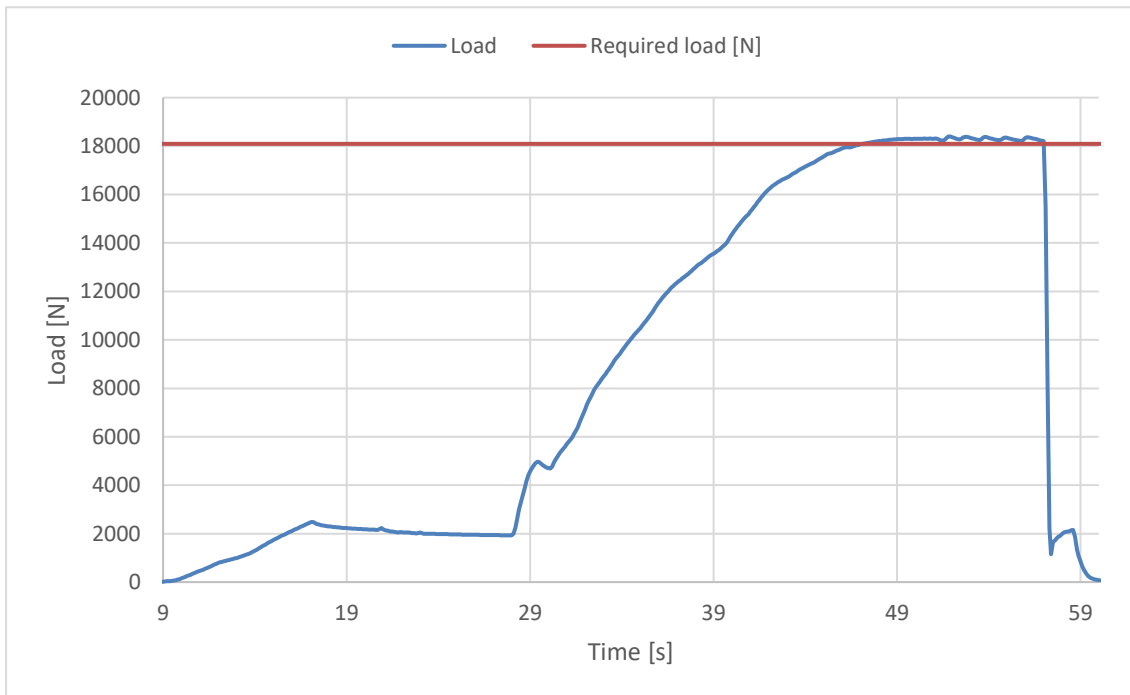
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model: **Sherlock**

**Harness Structural test**

**Test ID 13**

|                                 |   |
|---------------------------------|---|
| Standard                        | <b>EN 1651:1999</b>                     |
| Reference                       | <b>5.3.2.7</b>                          |
| Test setup                      | <b>Flying position before landing</b>   |
| Attachment points               | <b>Both main riser attachment (3,4)</b> |
| Anchor points                   | <b>Dummy (7,8)</b>                      |
| Required load [g]               | <b>15</b>                               |
| Required load [N]               | <b>18000</b>                            |
| Minimum test duration [s]       | <b>5</b>                                |
| <b>Result</b>                   |   |
| Test duration [s]               | <b>9.9</b>                              |
| Any signs of structural failure | <b>No</b>                               |
| Test results                    | <b>POSITIVE</b>                         |

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model: **Sherlock**

**Rescue Deployment Test**

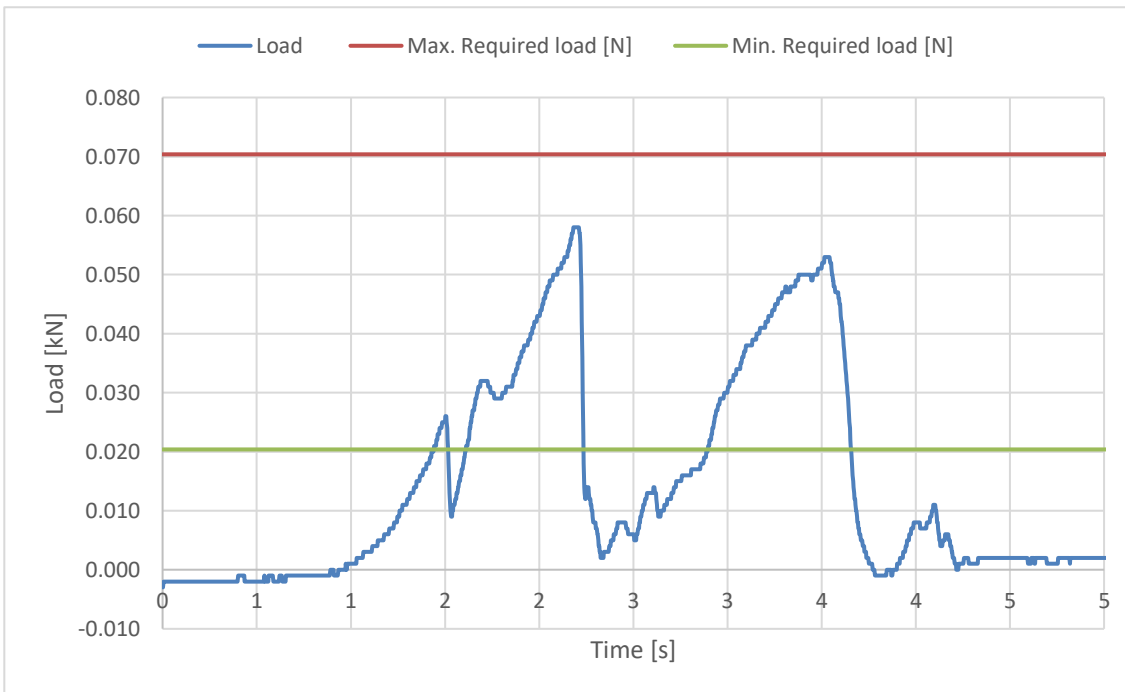
**Test ID RRDT**

Standard **NfL 2-565-20**  
 Reference **6.1.5**  
 Test setup **Default flying position**  
 Attachment points **Sensor connect to handle, and pull in opening direction**  
 The test is to simulate the load required to open the emergency parachute(1st action).

Min. Required load [N] **20**  
 Max. Required load [N] **70**

**Result**

Load for first action [N] **57.61**  
 Test results **POSITIVE**



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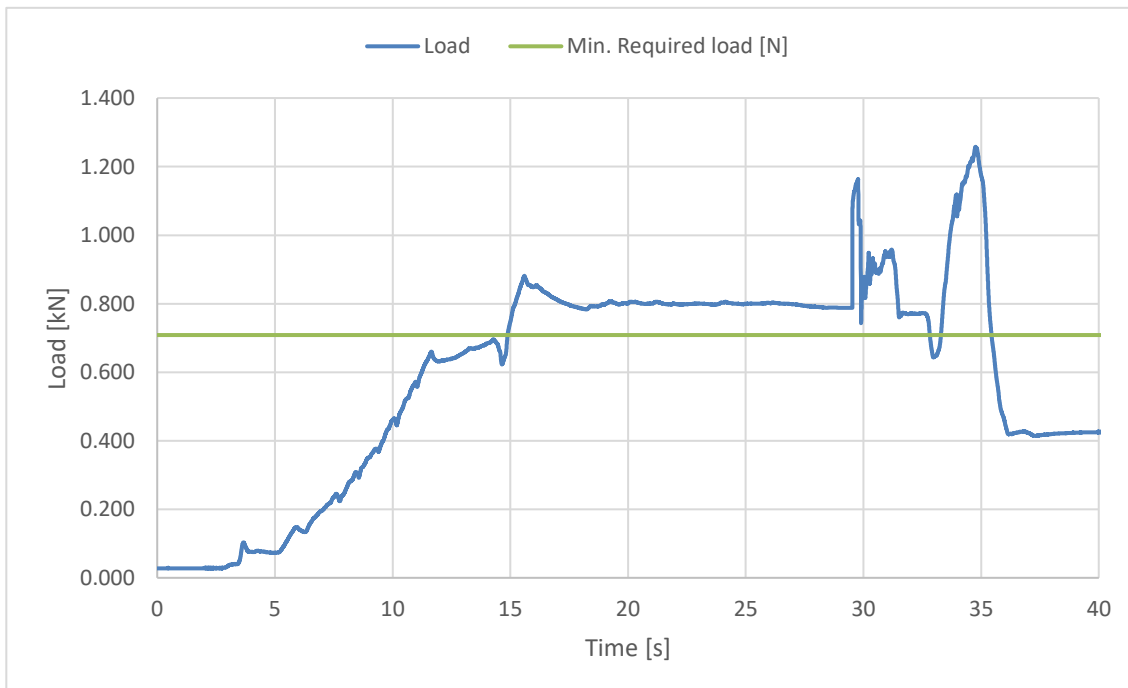
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model: **Sherlock**

**Rescue Deployment Handle strength test**

**Test ID RRST**

|                           |   |
|---------------------------|---|
| Standard                  | <b>EN 12491</b>   |
| Reference in standard     | <b>5.3.2</b>  |
| Test setup                | <b>Two end points of handle</b>   |
| Attachment points         | <b>Sensor connect to end of handle, pull on the other side</b>              |
|                           | The handle must support min 700 N for 10 s, after measure breaking strength |
| Min. Required load [N]    | <b>700</b>  |
| Minimum test duration [s] | <b>10</b>   |
| <b>Result</b>             |   |
| Test duration [s]:        | <b>17.0</b>   |
| Breaking strength [N]     | <b>1249.64</b>  |
| Test results              | <b>POSITIVE</b>   |



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