



Inspection/Test Report: Seats, their Anchorages and any Head Restraints Vehicles of Category M1

Legislation

UNECE Regulation 17.09 to Supplement 1

Inspection/Test Details

Location of Inspection/Test: Braunability UK, The Horseshoe, Coat Road, Martock, TA12 6EY (test witnessed remotely)
Date of Inspection/Test: 19-20 May 2021
VCA Representative(s): Fraser Coulter
Inspectors office location: VCA HQ
Manufacturer's Representative(s): Paul Nieuwenhuis
Reason for Report: Report only

Manufacturer Details

Name and Address: Tripod Mobility B.V.
Collseweg 10
5674 TR Nuenen / The Netherlands
Type: SKT
Commercial Description: Caddy Tripod / Caddy Maxi Tripod
Category: M1 SPV (WAV)

Conclusion

The above mentioned vehicle was tested in accordance with the above mentioned legislation and was found to comply in all respects. This report relates only to the items tested.

Witness Engineer/Test Engineer
Signature:

Name: Fraser Coulter
Position: Type Approval Engineer
Date: 20 May 2021

List of Annexes

Annex	No of Pages	Subject
I	12	Braunability Test Reports (combined)
II	67	Info Doc



Issue Record

Issue 0 is original report
Issue 1 Corrected test report numbers, signature date and Annex 2

Worst Case Rationale

Test report to cover Tripod Mobility conversion of SWB and LWB Caddy for seats which have a locking or displacement function that are either modified or added as part of Tripod Mobility conversion. Test report covers unladen dynamic requirements and associated criteria only.

For full details of the exact seating covered by these tests refer to annex 1 and 2

Note: Include information on variants and versions this report covers, as applicable. Supporting documents may be annexed to this report.

Significant Interpretations, Alternative Test Methods, New Technologies

Inspection/Tests Required

Yes, NA, See Report ... / Approval ... /
Annex ...

General Requirements	Yes
Special Requirements	Not covered by this test report
Mounting of Head Restraints	Not covered by this test report
Head Restraints secured to the Vehicle Structure	Not Applicable
Removal and Displacement of Head Restraints	Not covered by this test report
Approval marking	Not covered by this test report
Tests & Measurements:	
Head Restraint Dimensions	Not covered by this test report
Energy Absorption/Dissipation (Impact) Tests	Not covered by this test report
Moment Arm Test - Seats without Head Restraints	Not Applicable
Moment Arm Test - Seats with Head Restraints	Not covered by this test report
Dynamic Test	Yes
Luggage Retention Tests	Not Applicable

Vehicle Specification

Vehicle Identification Number:

Not Applicable- BiW used

Manufacturer's Documentation

Manufacturer's documentation is complete and reflects the agreed specification for the vehicle tested and covers all variants and versions agreed in the worst case rationale. Information document uploaded to job folder and identified by job number.

Yes

Facility and Equipment Checks





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Calibration certificates checked and valid, recorded in the following table:

Yes

Facility Appraisal reference and date (if applicable)

Not Applicable

Equipment Make	Model	Serial Number	Calibration due date
DTS	Slice	UIG133	04 September 2021
Accelerometers		UIG 108	21 September 2021
		UIG 275	21 September 2021
		UIG125	21 September 2021
		UIG 276	21 September 2021

*Specify calibrated date + (interval) or calibration due date.

Inspection/Test Requirements

Complies
Yes / NA

General Requirements

5.1.1.	Vehicle is of category M1 and has no side-facing seats installed.	Yes
5.1.2.	Vehicle is not an ambulance or for use by the armed services, civil defence, fire services or forces responsible for maintaining public order.	Yes
	H-points and seat-back angles are as specified.	Yes
6.2.1	Tests carried out simultaneously, where appropriate.	Yes
5.2.1.	Adjustment and displacement systems lock automatically.	Yes
5.2.2.	The unlocking control for a displacement system is placed on the outside of the seat close to the door and is easily accessible, even to the occupant of the seat immediately behind. <i>Applies only to a seat for which the seat or one of its parts can be displaced and/or rotated to permit easy access of occupants to the space behind the seat.</i>	Yes
5.2.4.	Padding and radii of the seat are satisfactory.	NA*

*not covered by this TR

Special Requirements

Special Requirements for Seats fitted or Capable of being fitted with Head Restraints
See page 2



Mounting of Head Restraints

See page 2

Head Restraints secured to the Vehicle Structure

See page 2

Removal and Displacement of Head Restraints

See page 2

Approval Marking

See page 2

Tests & Measurements

See page 2

Head Restraint Dimensions

See page 2

Energy Absorption/Dissipation (Impact) Tests

See page 2

Moment Arm Test - Seats without Head Restraints

Strength of the Seat-back and its Adjustment Systems for seats not fitted/incapable of being fitted with Head Restraints

See page 2

Moment Arm Test - Seats with Head Restraints

Strength of the Seat-back and its Adjustment Systems for seats fitted/capable of being fitted with Head Restraints

See page 2



Dynamic Test

Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems

Test type:

- 6.3.1., 6.3.2. - Deceleration test. *
- 6.3.1., 6.3.2. - Acceleration test. *
- 6.3.5. - Collision test. *

* Strikethrough as appropriate

Collision test

Collision test report number: Not Applicable

Remarks, including brief description of test equipment:

Not Applicable

Deceleration/acceleration test

Brief description of test equipment:

Bungee propelled deceleration sled

6.1. Seat test setup is appropriate:

Yes

- 6.1.2. - Tests of all seats with their locking mechanism and installations. *
- 6.1.2. - ~~Test of single seat of type with locking mechanism and installation identical or symmetrical with respect to another on the vehicle. *~~
- 6.1.3. - Each seat with adjustable head restraint is tested with the restraint placed in the highest position allowed by its adjustment system. *
- 6.3.3. - Test for each folding seat is in the position of use by its occupant. *
- 6.1.4. - Test for each folding seat is in the position of use by its occupant. *

* Strikethrough as appropriate

Details:

Row 2 bench seat and set to 25 degree back angle, tip and turn row 3 seat in position of use by occupant

6.3.3.-6.3.4. Seats are adjusted as specified in paragraphs 6.1.1, 6.3.3 and 6.3.4.

Yes

6.1.1. Details of manufacturer's specification for seat-back angle if not 25°:

Not Applicable

6.3.1. Seats are subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a frontal collision.

Yes

6.3.1. Where the rearmost row seats are subjected to a deceleration (or acceleration) imitating a frontal impact with curve remaining within the corridor in Annex 9, this also meets the requirement for 20 g for 30ms.

NA

Note: This permits the frontal impact test to be achieved in conjunction with a Luggage Retention test; however, for rearmost seats, this combined test should only be performed without the seats "staggered" longitudinally, and it may be necessary to perform separate tests where seats can be staggered.

6.3.2. Seats are subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a rear collision.

Yes
Approval
Authority

20-May-21



Test Results

6.2.1
5.2.5

No failure in the seat frame, seat anchorage, adjustment and
displacement systems or their locking devices during/after the test.

Yes

Dynamic (Deceleration/acceleration) Test Results			
Extend/reduce table as required			
Run No	Direction	Time at 20 g (ms)	Remarks (Comments on damage, sharp edges, etc)
Caddy Maxi (LWB)			
T-12885	Rearward	44.9	No sharp edges or damage. No effect on seat locking mechanisms
T-12886	Forward	41.5	No sharp edges or damage. No effect on seat locking mechanisms
Caddy (SWB)			
T-12887	Rearward	43.2	No sharp edges or damage. No effect on seat locking mechanisms
T-12889	Forward	44.3	No sharp edges or damage. No effect on seat locking mechanisms

Luggage Retention Tests

Protection of Occupants from Displaced Luggage

See page 2

Inspection/Test Results

This section covers general observations arising from the tests and may be duplicated to cover each individual test, or be used as a summary covering all tests.

For results covering specific tests, see the tables within the relevant sections.

5.2.4.

Except for rearmost seats, back-to-back seats or seats compliant with Regulation No. 21, the relevant parts of the surface of the rear parts of seats exhibit no dangerous roughness or sharp edges likely to increase the risk of severity of injury to the occupants.

Yes

5.2.5.

No failure in the seat frame, seat anchorage, adjustment and displacement systems or locking devices during or after the tests.
Note: Permanent deformations, including ruptures, may be accepted, provided that these do not increase the risk of injury in the event of a collision and prescribed loads were sustained.

Yes

5.2.6.

No release of the locking systems occurs during the tests.

Yes

5.2.7.

After the tests, the displacement systems intended for permitting or facilitating the access of occupants are in working order

Yes



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5.5.4

No rigid or dangerous parts projected from the Head restraint padding
or attachments to the vehicle as a result of the pressure exerted
during the tests.

Yes

Remarks

Note: VCA apply measurement uncertainty to calibrated items but not test results.

Test Number:	T-12885
Test Date:	5/19/2021
Test Engineer:	Ben Cox
Test House:	UDL
Witness 1:	Gavn Pike
Witness 2:	Fraser Coulter

Customer:	Tripod International
Address:	Collseweg 10
	5674 TR Nuenen

Test Objectives & Setup Details:
Tripod VW Caddy Max (Rearward) REG 17

Equipment Used In Test:		
Component	Description	Post Test
Occupant Restraint	N/A	N/A
Anchorage Type	N/A	N/A
3rd Point Restraint	N/A	N/A
Anchorage Type	N/A	N/A
Front Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Rear Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Combined System	N/A	N/A
Anchorage Type	N/A	N/A
Wheelchair	N/A	N/A
ATD	50th %ile N/A	N/A

Instrumentation:			
Type	Variant	Unwin ID	Last Calibration
Data Acquisition	BR00476	UIG 133	09/04/2020
Accelerometer	Sled Accelerometer (UIG108)	UIG108	09/21/2020 10:28:46
Accelerometer	Sled Accelerometer (UIG 275)	UIG 275	09/21/2020 10:31:31
Accelerometer	Sled Accelerometer (UIG 125)	UIG 125	09/21/2020 10:27:17
Accelerometer	Sled Accelerometer (UIG 276)	UIG 276	09/21/2020 10:23:05

Instrumentation Calibrated Annually



Test Photos T-12885

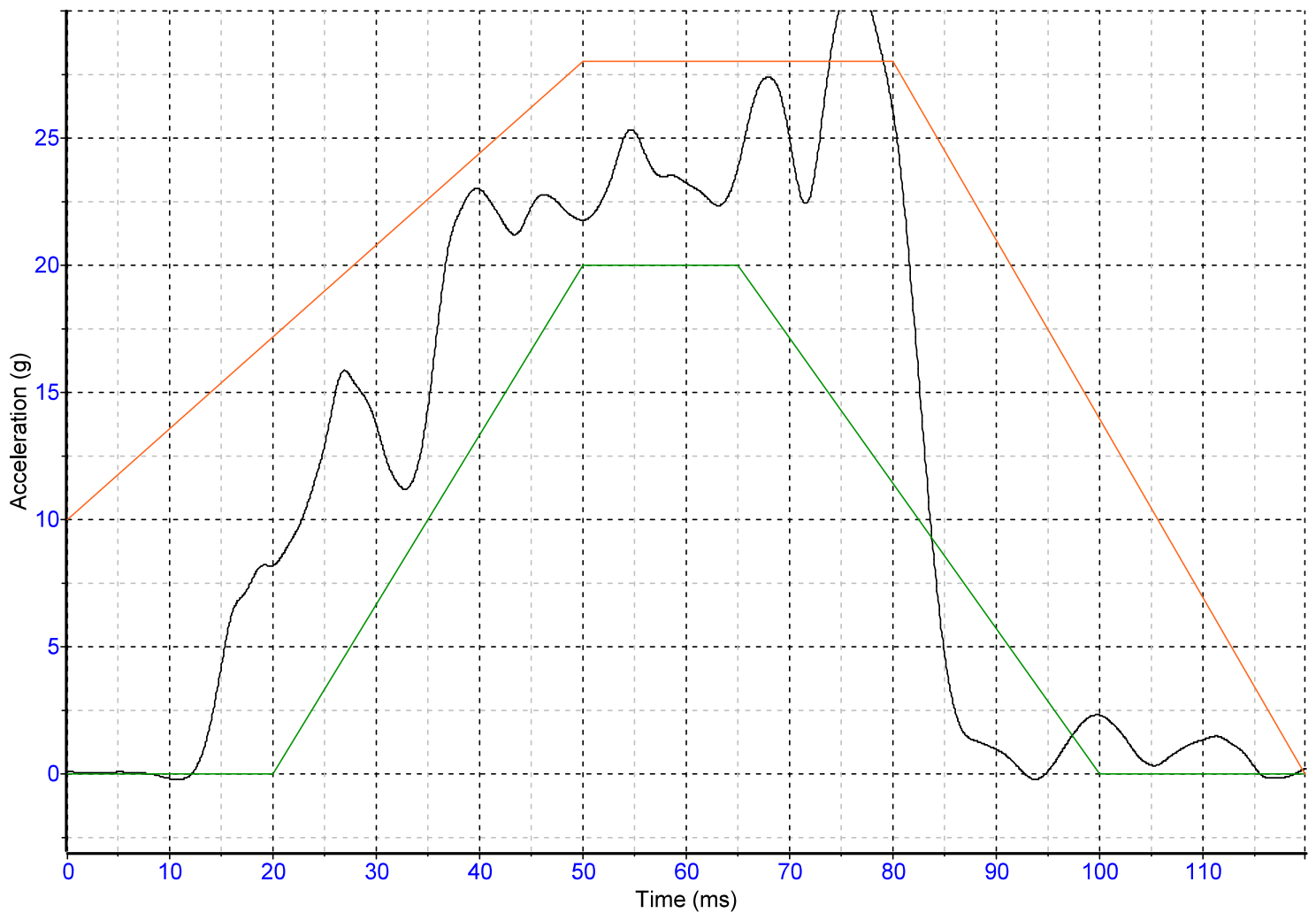


Pre Test



Post Test

Pulse Graph for Deceleration to Reg 17 T-12885



Time at 20g (Single Peak) : 44.9 ms [t1 : 36.7 ms, t2 : 81.6 ms] (Cumulative) : 44.9 ms

Test Pass or Fail Overall

5.2.5	No failure shall be shown in the seat frame or in the seat anchorage, the adjustment and displacement systems or their locking devices	N/A
5.2.6	No release of the locking systems shall occur during the test	N/A
5.2.7	After the tests, the displacement systems intended for permitting or facilitating the access of occupants shall be in working order; they shall be capable, at least once, of being unlocked and shall permit the displacement of the seat or the part of the seat for which they are intended	N/A

Test Pass or Fail Overall

Pass

Notes

All Held for over 30ms



Test Number:	T-12886
Test Date:	5/19/2021
Test Engineer:	Ben Cox
Test House:	UDL
Witness 1:	Gavn Pike
Witness 2:	Fraser Coulter

Customer:	Tripod International
Address:	Collseweg 10
	0
	0
	0
	0
	0

Test Objectives & Setup Details:

Tripod VW Caddy Max (Rearward) REG 17

Equipment Used In Test:

Component	Description	Post Test
Occupant Restraint	N/A	N/A
Anchorage Type	N/A	N/A
3rd Point Restraint	N/A	N/A
Anchorage Type	N/A	N/A
Front Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Rear Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Combined System	N/A	N/A
Anchorage Type	N/A	N/A
Wheelchair	N/A	N/A
ATD	50th %ile N/A	N/A

Instrumentation:

Type	Variant	Unwin ID	Last Calibration
Data Acquisition	BR00476	UIG 133	09/04/2020
Accelerometer	Sled Accelerometer (UIG108)	UIG108	09/21/2020 10:28:46
Accelerometer	Sled Accelerometer (UIG 275)	UIG 275	09/21/2020 10:31:31
Accelerometer	Sled Accelerometer (UIG 125)	UIG 125	09/21/2020 10:27:17
Accelerometer	Sled Accelerometer (UIG 276)	UIG 276	09/21/2020 10:23:05

Instrumentation Calibrated Annually



Test Photos T-12886

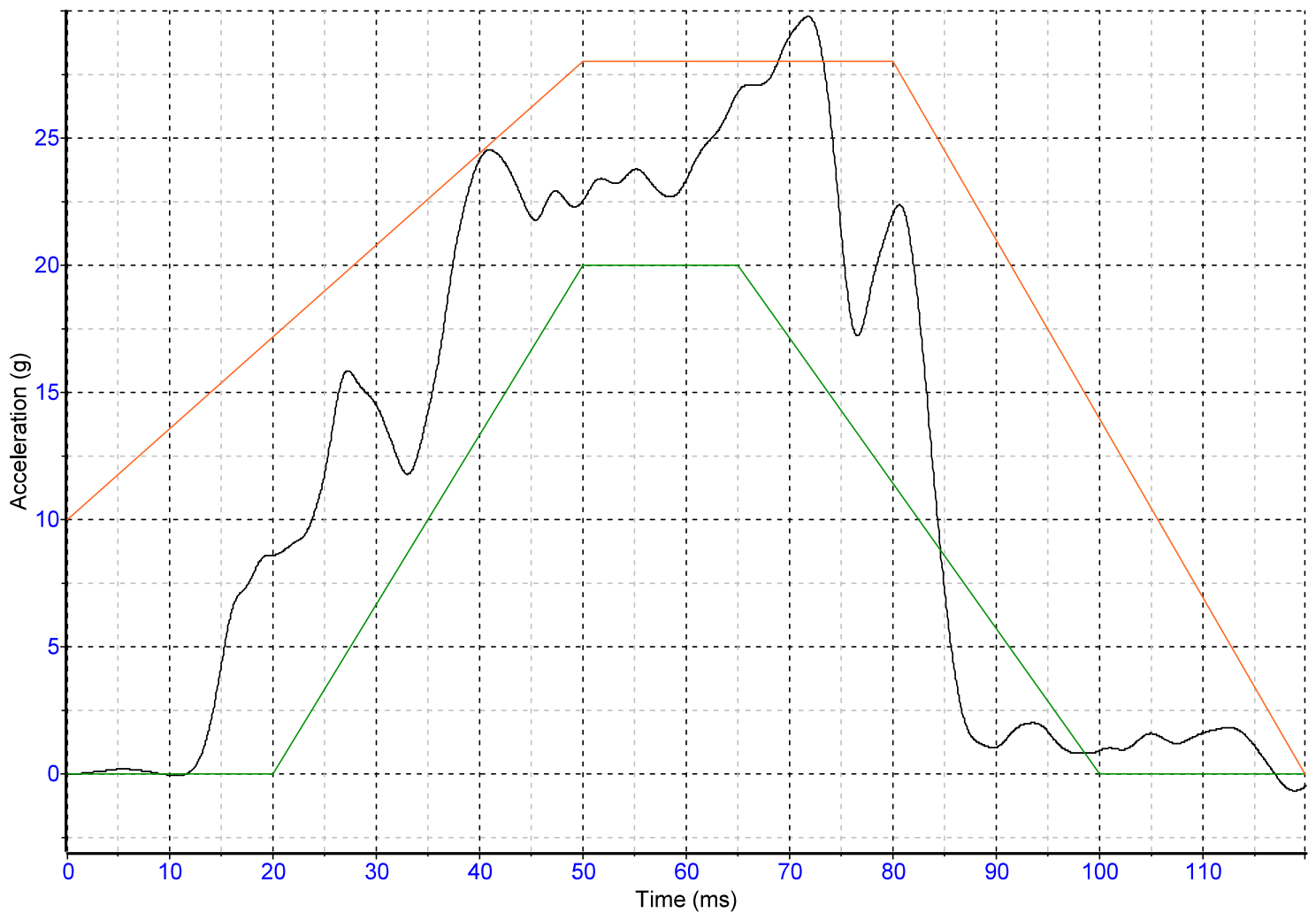


Pre Test



Post Test

Pulse Graph for Deceleration to Reg 17 T-12886



Time at 20g (Single Peak) : 37.9 ms [t1 : 78.5 ms, t2 : 82.0 ms] (Cumulative) : 41.5 ms

Test Pass or Fail Overall

5.2.5	No failure shall be shown in the seat frame or in the seat anchorage, the adjustment and displacement systems or their locking devices	N/A
5.2.6	No release of the locking systems shall occur during the test	N/A
5.2.7	After the tests, the displacement systems intended for permitting or facilitating the access of occupants shall be in working order; they shall be capable, at least once, of being unlocked and shall permit the displacement of the seat or the part of the seat for which they are intended	N/A

Test Pass or Fail Overall

Pass

Notes

All Held for over 30ms



Test Number:	T-12887
Test Date:	5/19/2021
Test Engineer:	Gavin Pike
Test House:	UDL
Witness 1:	Fraser Coulter
Witness 2:	Ben Cox

Customer:	Tripod Mobility
Address:	Collseweg 10
	5674 TR Nuenen
	Netherlands
	0
	0
	0

Test Objectives & Setup Details:

2 Tripod seats (TR04S) 2nd row + Triflex seats 3rd row. (Rearward) Caddy Short

Equipment Used In Test:

Component	Description	Post Test
Occupant Restraint	N/A	N/A
Anchorage Type	N/A	N/A
3rd Point Restraint	N/A	N/A
Anchorage Type	N/A	N/A
Front Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Rear Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Combined System	N/A	N/A
Anchorage Type	N/A	N/A
Wheelchair	N/A	N/A
ATD	50th %ile N/A	N/A

Instrumentation:

Type	Variant	Unwin ID	Last Calibration
Data Acquisition	BR00476	UIG 133	09/04/2020
Accelerometer	Sled Accelerometer (UIG108)	UIG108	09/21/2020 10:28:46
Accelerometer	Sled Accelerometer (UIG 275)	UIG 275	09/21/2020 10:31:31
Accelerometer	Sled Accelerometer (UIG 125)	UIG 125	09/21/2020 10:27:17
Accelerometer	Sled Accelerometer (UIG 276)	UIG 276	09/21/2020 10:23:05

Instrumentation Calibrated Annually



Test Photos T-12887

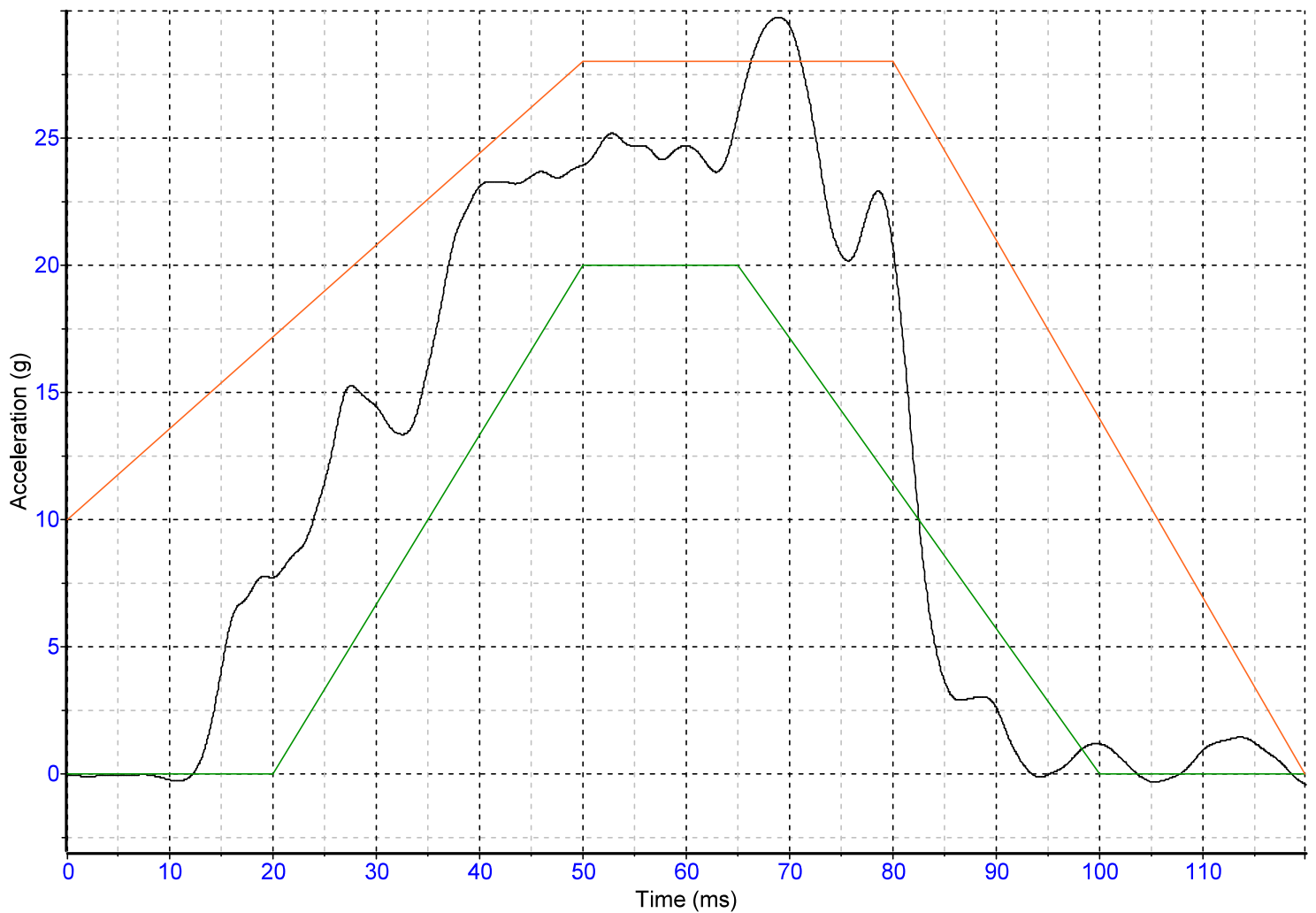


Pre Test



Post Test

Pulse Graph for Deceleration to Reg 17 T-12887



Time at 20g (Single Peak) : 43.2 ms [t1 : 37.0 ms, t2 : 80.2 ms] (Cumulative) : 43.2 ms

Test Pass or Fail Overall

5.2.5	No failure shall be shown in the seat frame or in the seat anchorage, the adjustment and displacement systems or their locking devices	Pass
5.2.6	No release of the locking systems shall occur during the test	Pass
5.2.7	After the tests, the displacement systems intended for permitting or facilitating the access of occupants shall be in working order; they shall be capable, at least once, of being unlocked and shall permit the displacement of the seat or the part of the seat for which they are intended	Pass

Test Pass or Fail Overall

Pass

Notes

All Held to R17



Test Number:	T-12889
Test Date:	5/20/2021
Test Engineer:	Gavin Pike
Test House:	UDL
Witness 1:	Fraser Coulter
Witness 2:	Ben Cox

Customer:	Tripod Mobility
Address:	Collseweg 10
	5674 TR Nuenen
	Netherlands
	0
	0
	0

Test Objectives & Setup Details:

2 Tripod seats (TR04S) 2nd row + Triflex seats 3rd row. (Forward) Caddy Short

Equipment Used In Test:

Component	Description	Post Test
Occupant Restraint	N/A	N/A
Anchorage Type	N/A	N/A
3rd Point Restraint	N/A	N/A
Anchorage Type	N/A	N/A
Front Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Rear Tie-Down	N/A	N/A
Anchorage Type	N/A	N/A
Combined System	N/A	N/A
Anchorage Type	N/A	N/A
Wheelchair	N/A	N/A
ATD	50th %ile N/A	N/A

Instrumentation:

Type	Variant	Unwin ID	Last Calibration
Data Acquisition	BR00476	UIG 133	09/04/2020
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Accelerometer	Sled Accelerometer (UIG 125)	UIG 125	09/21/2020 10:27:17
Accelerometer	Sled Accelerometer (UIG 276)	UIG 276	09/21/2020 10:23:05

Instrumentation Calibrated Annually



Test Photos T-12889

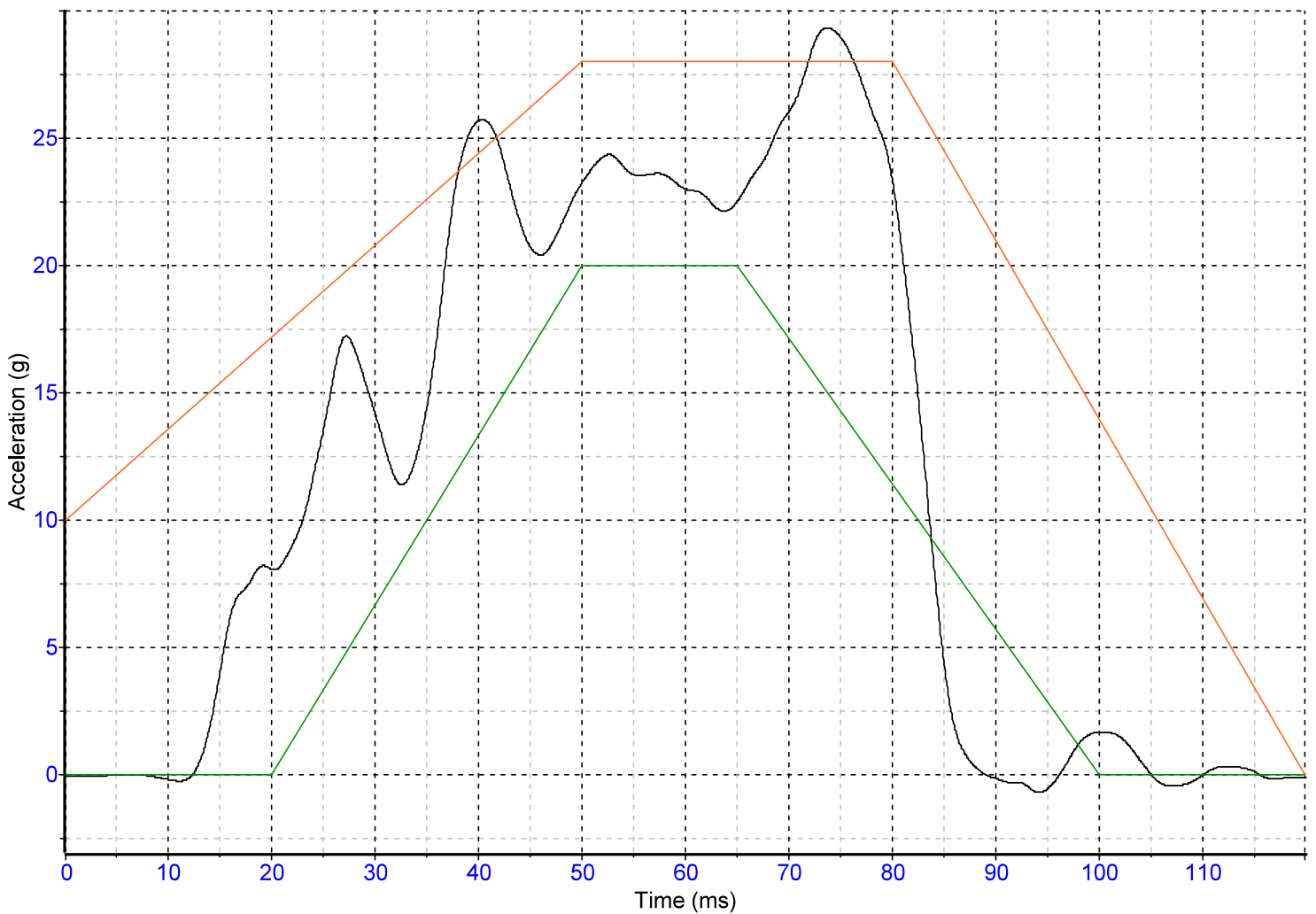


Pre Test



Post Test

Pulse Graph for Deceleration to Reg 17 T-12889



Time at 20g (Single Peak) : 44.3 ms [t1 : 36.8 ms, t2 : 81.1 ms] (Cumulative) : 44.3 ms

Test Pass or Fail Overall

5.2.5	No failure shall be shown in the seat frame or in the seat anchorage, the adjustment and displacement systems or their locking devices	Pass
5.2.6	No release of the locking systems shall occur during the test	Pass
5.2.7	After the tests, the displacement systems intended for permitting or facilitating the access of occupants shall be in working order; they shall be capable, at least once, of being unlocked and shall permit the displacement of the seat or the part of the seat for which they are intended	Pass

Test Pass or Fail Overall

Pass

Notes

All Held as required for Reg 17

