



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

Legislation

UNECE Regulation 17.08 to Supplement 2 – 3
Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test) only

Test Details

Location of Test:	Unwin Martock TA12 6EY
Date of Test:	17 August 2018
VCA Representative(s):	Rob Hookway
Manufacturer's Representative(s):	Paul Nieuwenhuis
Reason for Test Report:	New approval / Extension of approval / Test report only

Manufacturer Details

Name and Address:	Tripod Mobility Collseweg 10 5674TR Nuenen The Netherlands
Type:	See Worst Case Notes
Commercial Description:	See Worst Case Notes
Category:	See Worst Case Notes

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.

Signature:

Name:	Rob Hookway
Position:	Type Approval Engineer
Date:	03 September 2018

List of Annexes

Annex	No of Pages	Subject
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Vehicle Certification Agency

VCA, 1 Eastgate Office Centre,
Eastgate Road, Bristol, BS5 6XX, United Kingdom
enquiries@vca.gov.uk | www.dft.gov.uk/vca | +44(0) 300 330 5797

Report Number: ESU437411-15

Issue: 0

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I	4	TR12193 Report
II	4	TR12194 Report
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Worst Case Rationale

Test of Four forward facing Seats, Row 2 and Row 3 tested simultaneously.

Tested in a Peugeot Rifter shell

Forward T-12193

Rearward T-12194

Row 2

Left, Fixed grey seat model number: TR03S, fixed recline, no for / Aft adjustment,

Left hand is fixed, right hand is removable via extra plate

Right hand head restraint is missing locking clip, left hand is representative so is being taken to cover the right hand as well, the right hand one has been taped into a higher than worst case position to ensure that the moment force is the same.

Row 3 Triflex AIR Left and right, tip and turn

Adjustable head rest moved to highest position, no recline

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

Left hand seat headrest retaining pin missing, non-representative retaining pin used. Right hand pin representative of both.

Tests Required

General Requirements:

Special Requirements for Seats fitted or Capable of being fitted with Head Restraints:

Head Restraints secured to the Vehicle Structure

Energy Absorption/Dissipation (Impact) Test

Mounting of Head Restraints

Head Restraints – Fixed (Non-adjustable) and Adjustable for Height

Strength of the Seat-back and its Adjustment Systems (Moment Arm test)

Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test)

Protection of Occupants from Displaced Luggage (Luggage Retention Test)

Approval

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

Not covered in this report

Not covered in this report

Not covered in this report

Not covered in this report

Not covered in this report

Not covered in this report

Not covered in this report

Yes

Not covered in this report

Not covered in this report

Vehicle Specification

Vehicle Identification Number:

Not Applicable



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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.

Yes

Facility and Equipment Checks

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

Yes

Equipment	Serial / Certificate No.	Calibration due*
Data Acquisition	UIG 133	20-Nov-18
Accelerometer AX	UIG 108	13-Sep-18
Accelerometer AX	UIG 125	24-Nov-18

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



Test Requirements

Complies
Yes / NA

Strength of the Seat Anchorage and Adjustment, Locking and Displacement Systems (Dynamic Test)

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*

Deceleration/acceleration test

Brief description of test equipment:

De-acceleration test rig.
Powered by bungee cords.
Controlled deceleration by bending on metal bars arranged to give adjustable progressive thickness

- 6.3.3.-6.3.4. Seats adjusted as specified in paragraphs 6.1.1, 6.3.3 and 6.3.4.
- 6.3.3. For seats fitted with adjustable head restraints, the restraints are set to the highest position allowed by its adjustment system.
- 6.3.1. Seats subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a frontal collision.
- 6.3.2. Seats subjected to a 20 g deceleration (or acceleration) for 30 ms, imitating a rear collision.

Not
Applicable

Yes

Yes

Yes

Collision test

Collision test report number:

Not Applicable

Remarks, including brief description of test equipment:

Not Applicable

Test Results - DynamicTest

- 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)
1	Forward	36.2	No noticeable damage or sharp edges.



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2	rearward	39.4	No noticeable damage or sharp edges.
-	-	-	-

Test Results

Complies
Yes / NA

Test Results - General

This section covers general observations arising from the tests and might 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. <i>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.</i>	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
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:	12193
Test Date:	17/08/2018
Test Engineer:	Gavin
Test House:	UDL
Witness 1	VCA
Witness 2	Tripod



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

Test Objective & Setup Details:

Tripod Reg 17 seat (x4) test Forward Facing

Equipment Used In Test:		
Component	Description	Post Test
TR03S	Bolted seat left hand side	Passed
TR03S	Quick release seat right hand side	Passed
Triflex Air Seat	Swivel seat rear left hand side	Passed
Triflex Air Seat	Swivel seat rear right hand side	Passed

(If Concern – Use Notes)

Instrumentation:			
Type	Variant	Unwin ID	Last Cal.
Data Acquisition	DTS Slice	UIG 133	20-Nov-17
Accelerometer AX	Endevco 200g	UIG 108	13-Sep-17
Accelerometer AX	Endevco 200g	UIG 125	24-Nov-17

Instrumentation Calibrated Annually.

Post Test Report



Post Test According to ISO 10542-1:2012		
a	ATD Shall be retained in seat of the SWC	N/A
b	The SWC shall remain in an upright position on the impact sled	N/A
c	No WTORS anchorage components or securement end fittings shall be detached or separated	N/A
d	Release of the SWC from the wheelchair tie-down shall not require the use of tools	N/A
e	Release of the ATD from the occupant restraint shall not require the use of tools	N/A
f	No part of the WTORS shall exhibit visible signs of tearing, fragmentation, fracture or complete failure of any load-bearing part unless such parts are intended to fail in a manner that limits the forces on the occupant	N/A
g	The WTORS shall exhibit no dangerous roughness, sharp edges or protrusions likely to increase the risk of injury to the occupant	N/A
h	The force required to open the buckle of any tie down or occupant restraint components shall not exceed 60N when tested as specified by 6.2.2.5 of ECE R16:1996, in accordance with the procedures of 7.8	N/A

During Test According to ISO 10542-1:2012			
		Result	Complies?
a	The horizontal excursion of the test wheelchair P-Point (Xwc) shall not exceed 200mm	0	N/A
b	The horizontal excursion of the ATD Knee (Xknee) shall not exceed 375mm	0	N/A
c	The horizontal excursion of the ATD Head (Xhead) shall not exceed 650mm	0	N/A
d	The WTORS shall prevent the wheelchair from imposing forward loads on the occupant (Xknee /	0.00	N/A

Required		Actual	Complies?
SWC Mass	85kg ± 1kg	kg	N/A
ATD	50th %ile	N/A	N/A
Horizontal Velocity Change	48-50 kph	N/A	N/A
Pulse 20g	>15ms	36.2	Passed
Pulse 15g	>40ms	N/A	Passed

Test Pass or Fail overall	Pass
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Notes
Reg 17 passed and all seats remained intact

Pulse Graph Reg 17 Deceleration:

Pre Test Photo:



Post Test Photo:



Test Number:	12194
Test Date:	17/08/2018
Test Engineer:	Gavin
Test House:	UDL
Witness 1	VCA
Witness 2	



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

Test Objective & Setup Details:

Tripod Reg 17 seat (x4) test Rearward Facing
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Equipment Used In Test:		
Component	Description	Post Test
TR03S	Bolted seat left hand side	Passed
TR03S	Quick release seat right hand side	Passed
Triflex Air Seat	Swivel seat rear left hand side	Passed
Triflex Air Seat	Swivel seat rear right hand side	Passed

(If Concern – Use Notes)

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Instrumentation Calibrated Annually.

Post Test Report



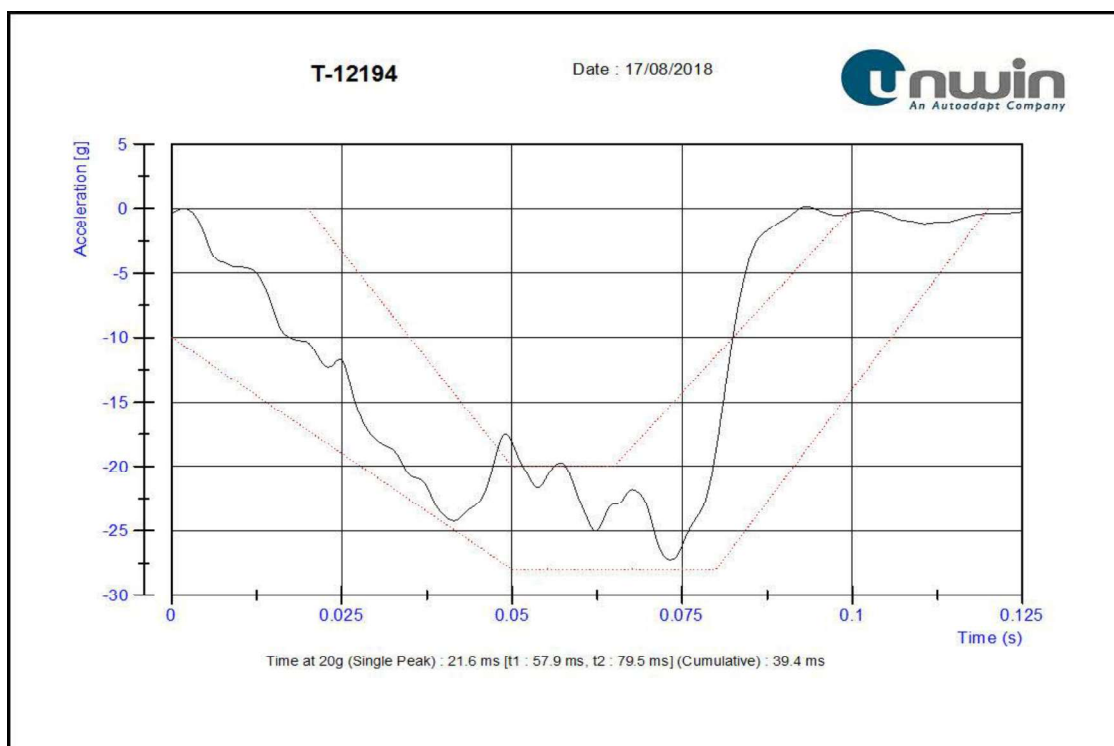
Post Test According to ISO 10542-1:2012		
a	ATD Shall be retained in seat of the SWC	N/A
b	The SWC shall remain in an upright position on the impact sled	N/A
c	No WTORS anchorage components or securement end fittings shall be detached or separated	N/A
d	Release of the SWC from the wheelchair tie-down shall not require the use of tools	N/A
e	Release of the ATD from the occupant restraint shall not require the use of tools	N/A
f	No part of the WTORS shall exhibit visible signs of tearing, fragmentation, fracture or complete failure of any load-bearing part unless such parts are intended to fail in a manner that limits the forces on the occupant	N/A
g	The WTORS shall exhibit no dangerous roughness, sharp edges or protrusions likely to increase the risk of injury to the occupant	N/A
h	The force required to open the buckle of any tie down or occupant restraint components shall not exceed 60N when tested as specified by 6.2.2.5 of ECE R16:1996, in accordance with the procedures of 7.8	N/A

During Test According to ISO 10542-1:2012			
		Result	Complies?
a	The horizontal excursion of the test wheelchair P-Point (Xwc) shall not exceed 200mm	0	N/A
b	The horizontal excursion of the ATD Knee (Xknee) shall not exceed 375mm	0	N/A
c	The horizontal excursion of the ATD Head (Xhead) shall not exceed 650mm	0	N/A
d	The WTORS shall prevent the wheelchair from imposing forward loads on the occupant (Xknee /	0.00	N/A

Required		Actual	Complies?
SWC Mass	85kg ± 1kg	kg	N/A
ATD	50th %ile	N/A	N/A
Horizontal Velocity Change	48-50 kph	N/A	N/A
Pulse 20g	>15ms	39.4	Passed
Pulse 15g	>40ms	N/A	N/A

Test Pass or Fail overall	Pass
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Notes
All held Ok and Passed Reg 17

Pulse Graph Reg 17 Deceleration:

Pre Test Photo:



Post Test Photo:

