

## TEST REPORT



concerning the seats, seat anchorages and head restraints of certain vehicle categories in accordance with ECE Regulation number 17.09 supplement 1 and as specified by Regulation (EU) 2018/858, Annex II, Part III, Appendix 3 and International Standard ISO 10542-1:2012 (WTORS).

**Test report number** : RDW-17R-0109480

0.1. Make : VOLKSWAGEN, VW

0.2. Type : SKT (Short wheelbase, SWB (Caddy Tripod))  
(Long wheelbase, LWB (Caddy Maxi Tripod))

0.4. Category of vehicle : M1

0.5. Name and address of the manufacturer : Tripod Mobility B.V.  
Collseweg 10  
5674 TR Nuenen  
The Netherlands

**General** : The seats, seat anchorages and head restraints comply with the requirements laid down in:  
- paragraph 5 of above-mentioned ECE Regulation.  
- Regulation (EU) 2018/858, Appendix 3 of Annex II, Part III  
- International Standard ISO 10542-1:2012 (WTORS)  
See documentation: "SKT-14R-16R-17R-0012" dated: 29 September 2021


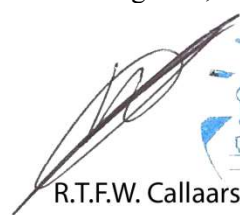
**Tests** : The tests have been carried out in accordance with the above-mentioned EU and UNECE Regulation(s) and ISO 10542-1:2012 (WTORS).  
See page 2 to 12.

**Conclusion** : The type of vehicle complies with the requirements and there are no objections against approval according to the above-mentioned EU and UNECE Regulation(s).

**Tests conducted on** : 29 September 2021

**By** : R.T.F.W. Callaars

Zoetermeer (NL), 29 September 2021  
The test engineer,



R.T.F.W. Callaars

### List of contents

- Reason for testing : see below
- General information : page 4
- Requirements : page 4
- Tests : page 6
  - Test of strength of the seat anchorage and the adjustment, locking and displacement systems : page 6
  - Test of the performance of the head restraint : page 6
  - Tests for checking energy dissipation on the seat-back and head restraint : page 6
  - Test procedure for devices intended to protect the occupants against displacement of luggage : page 6
- Test pictures : page 9

### List of attached diagrams

| Subject                                       | Diagram number |
|---|----------------|
| 20 g sled test of rear seats (frontal impact) | 1              |
| 20 g sled test of rear seats (rear impact)    | 2              |

### Reason for testing

2<sup>nd</sup> stage vehicle, base vehicle e13\*2018/858\*00002 modified to a wheelchair accessible vehicle (SH). For the 2<sup>nd</sup> seat row the OEM 60/40 bench seat is used with a new seating attachment system for the SWB (N???.....???-??M) versions.

### Used test equipment:

| Item                 | Identification number<br>(make and type) | Calibration papers available |
|----------------------|--|------------------------------|
| Accelerometer 1 sled | Endevco, 2262CA-1000;<br>s/n EN07        | yes                          |
| Accelerometer 2 sled | Endevco, 2262CA-200;<br>s/n DL15         | yes                          |
| Accelerometer 3 sled | Endevco, 2262CA-1000;<br>s/n EN01        | yes                          |
| Accelerometer 4 sled | MEAS, 3801A-0500;<br>s/n A323205         | yes                          |



## Remarks

This test report is a supplement of test report RDW-17R-0101889 and can only be used in combination with it and cover the complete interior behind the first row of seats. All test results remain valid. The modification includes the following changes (relevant for this subject):

- No modifications to the 1<sup>st</sup> seating row and safety belt anchorages
- 2<sup>nd</sup> row, OEM 60/40 bench seat carry-over and mounted with a new seating attachment system to the vehicle for the SWB (N???.....???-??M) versions.

For this change, only tests according paragraph 6.3 (Test of strength of the seat anchorage and the adjustment, locking and displacement systems) are performed, for all other test results except those of Annex 9 (devices intended to protect the occupants against displacement of luggage), which do not apply to wheel chair accessible vehicles according to Annex II, Part III, Appendix 3 of 2018/858. For all other test results, see below:

The OEM 2<sup>nd</sup> seating row for LWB (L???.....???-??M) fulfils the requirement, for detailed test results, see test report VCA No.: ESY534417 Issue 1, dated 20 May 2021 (general and dynamic requirement) and 1<sup>st</sup> stage approval (general and static requirements)

The TR04S 2<sup>nd</sup> row seat(s) fulfils the requirements, for detailed test results, see test reports:

- RDW-17R-0104530, dated 20 May 2021 (general and static requirements)
- VCA No.: ESY534417 Issue 1, dated 20 May 2021 (general and dynamic requirements)

The TriflexAIR, 3<sup>rd</sup> row seat(s) fulfils the requirements, for detailed test results, see test reports:

- TÜV No.: 145XS0059-03, dated 12 July 2017 (general, static and dynamic requirements)
- VCA No.: ESY534417 Issue 1, dated 20 May 2021 (general and dynamic requirements)

For test results WTORS 85kg, see VCA test report: ESW528880, dated 18 March 2021

For test results WTORS 160kg, see VCA test report ESW527980, dated 18 March 2021

Relevant data and approval(s) valid for donor vehicle and completed vehicle (if applicable): see information document



### General information

|                              |   |
|------------------------------|---|
| Make and type of the vehicle | VOLKSWAGEN, VW SKT<br>(SWB, version N???.....??-??M)                                |
| Vehicle category             | M1  |
| Test conducted by            | R.T.F.W. Callaars   |
| Place                        | Ingenieurbüro Walter & Weißgerber<br>Bornewasserstraße 18<br>54294 Trier<br>Germany |
| Date                         | 29 September 2021   |

### Requirements

#### 5.1. *General requirements*

- 5.1.1. There shall be no side-facing seats fitted in vehicles of categories M1, N1, M2 (of class II, III and B) and M3 of a technically permissible laden mass not exceeding 10 tonnes (of class II, III and B)<sup>(1)</sup> : pass

#### 5.2. *General requirements applicable to all seats of vehicles of category M1*

- 5.2.1. Every adjustment and displacement system shall incorporate a locking system, which shall operate automatically<sup>(2)</sup> : pass

Folding seats shall lock automatically in the position of use by occupants : N/A

- 5.2.2. The unlocking control for the displacement system, which permits easy access for the occupants to the vehicle, shall be placed on the outside of the seat close to the door : pass

It shall be easily accessible, even to the occupant of the seat immediately behind the seat concerned : yes

- 5.2.3. The rear parts of seats situated in area 1 shall pass the energy dissipation test : no change (see page 3)

- 5.2.4. The surfaces of the rear parts of the seats shall exhibit no dangerous roughness or sharp edges likely to increase the risk of severity of injury to the occupants
- radius at least 2.5 mm in area 1 : pass
  - radius at least 5.0 mm in area 2<sup>(3)</sup> : pass
  - radius at least 3.2 mm in area 3 : pass

- 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 during or after the tests prescribed in paragraphs 6.2. and 6.3. below. Permanent deformations, including ruptures, may be accepted, provided that these do not increase the risk of injury in the event of a collision and the prescribed loads were sustained : pass



<sup>(1)</sup> ambulances or vehicles intended for use by the armed services, civil defence, fire services and forces responsible for maintaining public order are exempted from this requirement.

<sup>(2)</sup> Locking systems for armrests or other comfort devices are not necessary unless the presence of such devices will cause additional risk

<sup>(3)</sup> surfaces may exhibit radii less than 5 mm, but not less than 2.5 mm provided that they pass the energy-dissipation test prescribed in annex 6 to the Regulation. Moreover, these surfaces must be padded to avoid direct contact of the head with the seat frame structure

- 5.2.6. No release of the locking systems shall occur during the tests described in paragraph 6.3. and in Annex 9, paragraph 2.1. to this Regulation : 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
- 5.3. ***General specifications applicable to seats of vehicles of categories N1, N2 and N3 and to seats of vehicles of categories M2 and M3 not covered by Regulation No. 80*** : N/A
- 5.4. ***Mounting of head restraints*** : no change (see page 3)
- 5.5. ***Special requirements for seats fitted or capable of being fitted with head restraints*** : no change (see page 3)
- 5.6. ***Height of head restraints*** : no change (see page 3)
- 5.7. ***In the case of a seat capable of being fitted with a head restraint*** : no change (see page 3)
- 5.8. Gap between seat back and the head restraint <sup>(4)(5)</sup> : no change (see page 3)
- 5.9. In the case of head restraints integral with the seat-back <sup>(6)</sup>:  
Between two vertical longitudinal planes passing at 85 mm on either side of the reference line, one or more gaps which regardless of their shape can show a distance "a" of more than 60 mm are permitted as long as the minimum width requirement is fulfilled : N/A
- 5.10. In the case of head restraints adjustable for height one or more gaps, which regardless of their shape can show a distance "a" of more than 60 mm, are permitted on the part of the device serving as a head restraint provided that, the requirements are still met : N/A
- 5.11. The width of the head restraint shall be such as to provide appropriate support for the head of a person normally seated : no change (see page 3)
- 5.14. In the case of a height adjustable head restraint, it shall not be possible to raise it beyond the maximum operational height without a deliberate action by the user : no change (see page 3)

---

<sup>(4)</sup> The gap shall not be more than 60 mm between the seat-back and the head restraint in the case of a device not adjustable for height

<sup>(5)</sup> The gap shall not be more than 25 mm from the top of the seat-back and the head restraint (in its lowest position)

<sup>(6)</sup> area to be considered is; above a plane perpendicular to the reference line at 540 mm from the R point



## Tests

### *Test of strength of the seat anchorage and the adjustment, locking and displacement systems*

Tested seats:

1<sup>st</sup> row : N/A

2<sup>nd</sup> row : 3-seater 60/40-bench seat, cloth upholstery

| Position of the seats          |                                      | Time of acceleration/deceleration exceeding 20 g [ms] |                     |
|--------------------------------|--------------------------------------|---|---------------------|
|                                |                                      | Frontal crash   | Rear crash          |
| 2 <sup>nd</sup> row bench seat | Fixed, head rest in highest position | 42.9<br>(diagram 1)                                   | 37.8<br>(diagram 2) |

### *Requirements*

There shall be no release of the locking systems : pass

After the test, the displacement systems intended for permitting or facilitating the access of occupants shall be in working order : pass

No failure shall be shown in the seat frame or in the anchorage, the adjustment and displacement systems or their locking devices<sup>(7)</sup> : pass

### *Mass of the tested seats:*

|                                |                        |   |         |
|--------------------------------|------------------------|---|---------|
| 2 <sup>nd</sup> row bench seat | - 60/40 OEM bench seat | : | 57.4 kg |
|                                | - OEM brackets         | : | 2.0 kg  |
|                                | - Mounting system      | : | 10.6 kg |

*Test of the performance of the head restraint: N/A*

*Test of strength of the seat-back and its adjustment systems: N/A*

*Tests for checking energy dissipation on the seat-back and head restraint: N/A*

*Test procedure for devices intended to protect the occupants against displacement of luggage: N/A*

<sup>(7)</sup> Permanent deformations, including ruptures, may be accepted provided that these do not increase the risk of injury



Diagram 1 - 20 g sled test of rear seats (frontal impact)

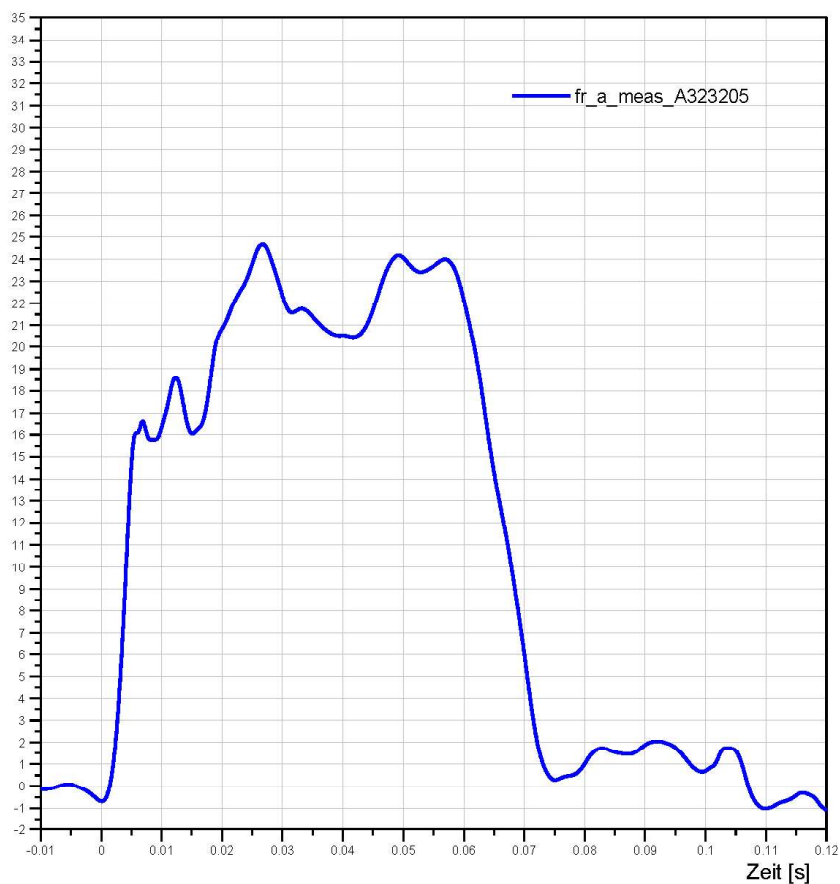


Prüfbericht tripod21\_01  
Seite 3 / 5

Sled acceleration:

|  |   |
|--|---|
| Bearbeiter: IWW                            | Prüfstruktur: CADDY TRIPOD SKT                          |
| Datum: 29.09.2021                          | Prüfling: orig. rearbench 1 / 2                         |
| Datei: tripod21_01                         | Versuchsbed. nach: UN-R17 Anh.7 20g                     |
| Sensor: Endevco 2262CA                     | Schlittengeschwindigkeit Soll, Ist: 35 - 40 / 38.5 km/h |
| Meßdatenerfassung: MINIdau (Kayser-Threde) | Bemerkung: forward                                      |
| Auswertesoftware: DIAdem 8.1               |   |

Schlittenverzögerung (Sled acceleration)



Software: DIAdem 8.1, Crashmodul, Auswertesequenz md\_haupt\_stand\_D1-D2, Meßsequenz MINIDAU, Standard D71-D72, Layout: Schlitten\_M1

Ingenieurbüro  
Walter & Weißgerber

Prüflabor an der Hochschule Trier -  
Institut für Fahrzeugtechnik

Bornewasserstr.18  
54294 Trier

Schneidershof  
54293 Trier

Tel.: 0049 651 1461641  
Fax: 0049 651 1461642

Tel.: 0049 651 8103-520  
Fax: 0049 651 8103-446



Diagram 2 - 20 g sled test of rear seats (rear impact)

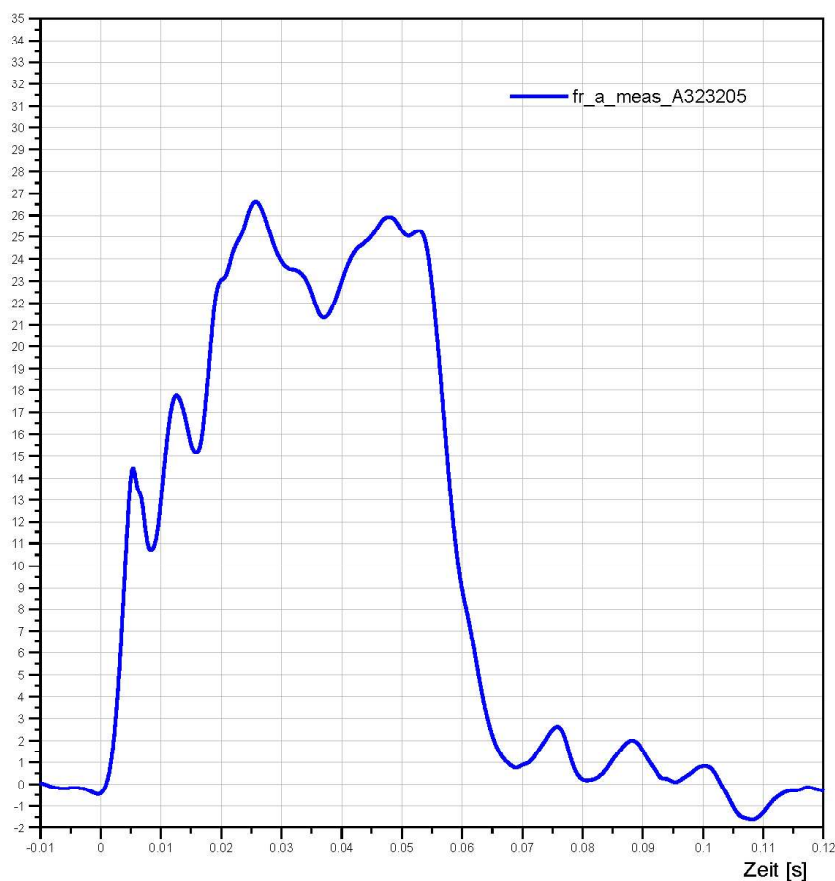


Prüfbericht tripod21\_02  
Seite 3 / 5

Sled acceleration:

|  |   |
|--|---|
| Bearbeiter: IWW                            | Prüfstruktur: CADDY TRIPOD SKT                          |
| Datum: 29.09.2021                          | Prüfling: orig. rearbench 1 / 2                         |
| Datei: tripod21_02                         | Versuchsbed. nach: UN-R17 Anh.7 20g                     |
| Sensor: Endevco 2262CA                     | Schlittengeschwindigkeit Soll, Ist: 35 - 40 / 38.5 km/h |
| Meßdatenerfassung: MINIdau (Kayser-Threde) | Bemerkung: rearward                                     |
| Auswertesoftware: DIAdem 8.1               |   |

Schlittenverzögerung (Sled acceleration)



Software: DIAdem 8.1, Crashmodul, Auswertesequenz mit\_haupt\_stand\_D1-D2, Meßsequenz MINIDAU, Standard D71-D72, Layout: Schlitten\_M1

Ingenieurbüro  
Walter & Weißgerber

Prüflabor an der Hochschule Trier -  
Institut für Fahrzeugtechnik

Bornwasserstr.18  
54294 Trier

Schneidershof  
54293 Trier

Tel.: 0049 651 1461641  
Fax: 0049 651 1461642

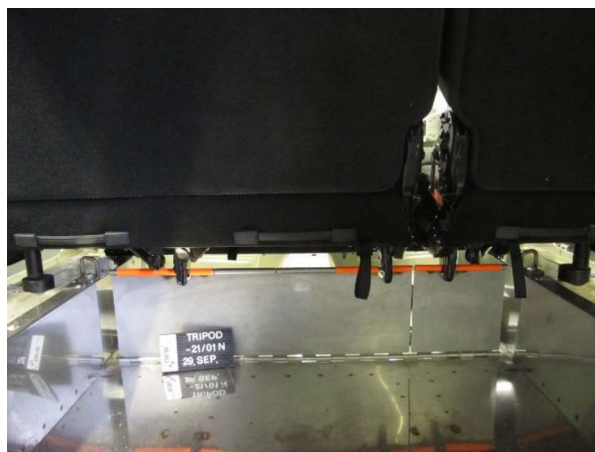
Tel.: 0049 651 8103-520  
Fax: 0049 651 8103-446

**Test pictures**

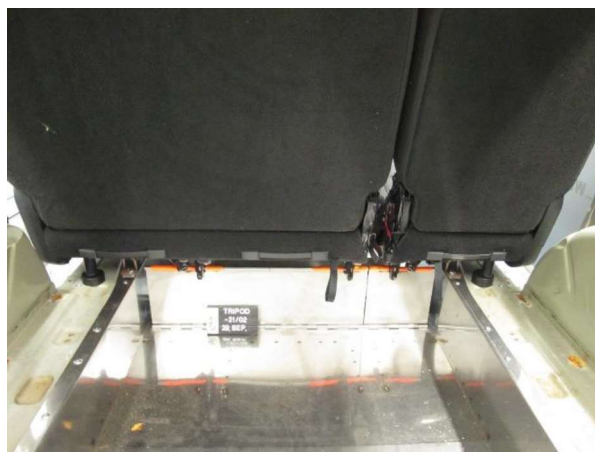
***Frontal impact – pre test***



*Frontal impact – post test*



*Rear impact – pre test*



*Rear impact – post test*

