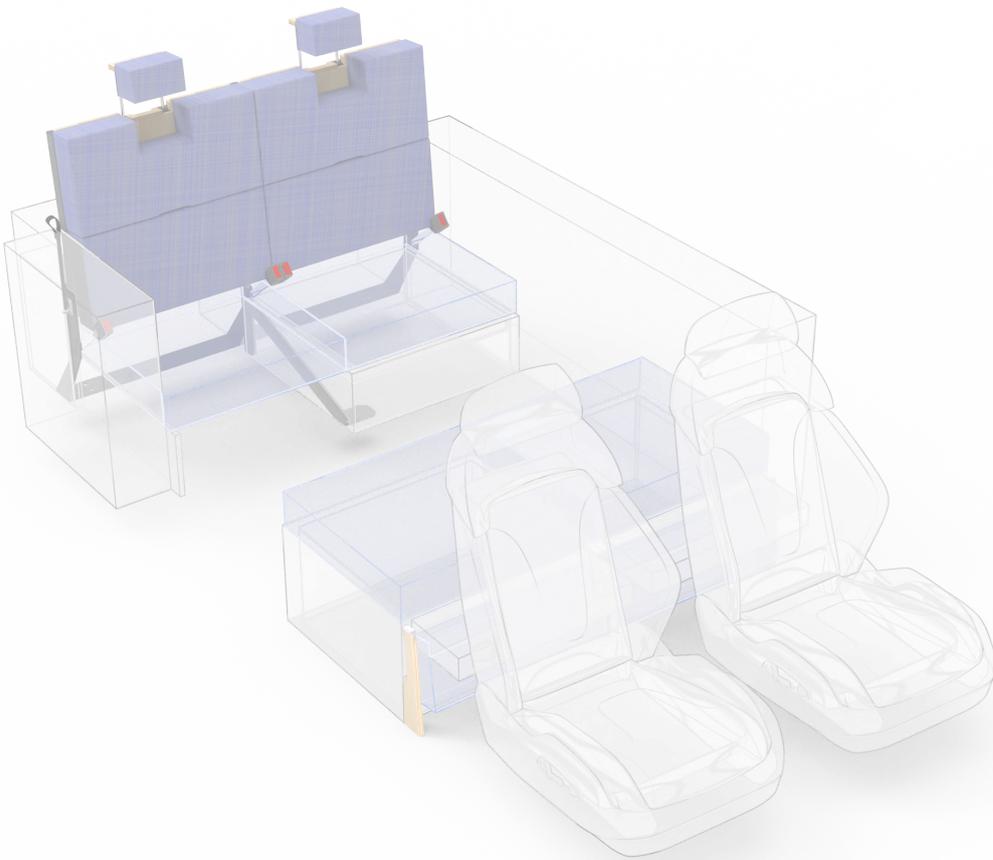


Appendices

Exploring Multifunctional Use for Compact Campervans

A Novel Forward-Facing Seating Concept



Author: Jeroen Bos
Faculty Chair: Bas Flipsen
Faculty Mentor: Susie Brand-de Groot
Company Mentors: Louw Visscher/Frank Westland

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Appendix I Project brief

DESIGN
FOR our
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TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !



family name Bos
initials J.J. given name Bos
student number _____
street & no. _____
zipcode & city _____
country _____
phone _____
email _____

Your master programme (only select the options that apply to you):

IDE master(s): IPD Dfl SPD

2nd non-IDE master: _____

individual programme: _____ (give date of approval)

honours programme: Honours Programme Master

specialisation / annotation: Medisign

Tech. in Sustainable Design

Entrepreneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair Bas Flipsen dept. / section: SDE

** mentor Susie Brand dept. / section: Design Visualisation

2nd mentor Louw Visscher

organisation: Ventje

city: Culemborg country: Netherlands

comments
(optional)

⋮

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..



Second mentor only applies in case the assignment is hosted by an external organisation.



Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Bas Flipsen date 01 - 02 - 2023 signature 

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: _____ EC YES all 1st year master courses passed

Of which, taking the conditional requirements into account, can be part of the exam programme _____ EC NO missing 1st year master courses are:

List of electives obtained before the third semester without approval of the BoE

name _____ date ____ - ____ - ____ signature _____

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

comments

name _____ date ____ - ____ - ____ signature _____

Multifunctional Campervan project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 09 - 01 - 2023 02 - 05 - 2023 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Ventje is a company that designs and manufactures the interior for their campervans. Specifically for the Volkswagen Transporter (T5, T6 and T6.1). They convert occasions as well as new vans to campers. Production and design all happens at the office in Culemborg. The vehicles that are converted are all diesel vans. Ventje's sells vans mostly within the Netherlands, but their sales abroad are growing.

Since more and more people now a days prefer to drive an electric vehicle, Ventje is planning to sell an electric campervan. They want to base this campervan on the Volkswagen ID Buzz, which is just released and inspired by the old volkswagen vans, which were one of the first to be used as campervans.

One of the project stakeholders is obviously Ventje, who wants to create a campervan that is more desirably than its competition by creating a design that attracts buyers, both in functionality and appearance.

The competitors can be considered stakeholders, more so because the competition in the field is fierce. Within the Netherlands alone, there are several other companies that make and assemble interiors for campervans, giving Ventje the incentive to be the first with a specific design solution that makes their van more desirable. Next to that, individuals who consider to build their own campervan can also be considered as competition. They generally make designs that are less sophisticated, but are cheaper.

Another stakeholder in this project are Ventje's customers. Generally speaking, customers for a campervan are not bound to one company other than the fact that the overall appearance and brand identity may attract specific people. Ventje chose to make an interior for the Volkswagen van as these vans have a history as being sold as campervans. Thus, customers may choose Ventje over competitors as they use the Volkswagen vans as a basis.

An actor in the project is the RDW, Dutch department of transport as well as similar foreign parties. They act upon the law as made by the government. The design of Ventje has to be approved by the RDW.

The suppliers of Ventje can also be considered stakeholders, the largest one being Volkswagen or resellers of the vans. They are however too big to consider them to have interest in the project.

space available for images / figures on next page



image / figure 1: The campervan interior of Ventje in the Volkswagen Transporter



image / figure 2: The design of the kitchen is one of Ventje's selling points

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Firstly, the current interior does not fit the smaller electric ID Buzz and needs structural adjustment to fit all functionality in the compact van.

Secondly, the continuing trend of camper vans being used as the only car in a household makes multi functional use of the van more relevant than ever. The fact that the next van to be converted by Ventje is smaller and more expensive contributes to this. This means the new van needs to be able to fulfill the user in a usecase where it is used throughout the year, both for camping as for daily commuting.

The current campervan interior of Ventje does not offer the flexibility to switch between functioning as a campervan and a vehicle for day to day use that users demand when buying a smaller, more expensive van.

This problem is primarily due to the fact that there are only 2-3 comfortable driving positions in the campervan, depending on the configuration. Ventje offers the option to add an extra two seats in the back of the van, but these are rear facing seats which are considered less comfortable than front facing seats.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Designing the interior of a compact campervan which can also be used for day to day transport with comfortable driving positions in the back of the van, whilst preserving the functionality and intimacy that Ventje is known for.

The expected solution is a design for the camper interior for smaller (electric) vans, especially the Volkswagen ID Buzz. To solve the problems as defined on the previous page, the interior should feature comfortable driving positions for at least two people in the back of the van. The design should also show how quick transformation between different functionalities, day to day driving and camping, will be accomplished. The design should fit the Ventje brand as well as take its current selling points into consideration and use these if possible, stated as:

- The option to cook from the inside as well as in standing position from the outside of the van.
- The overall appearance of the interior, using warmer colors and visible wood grain.
- The modular segments that can be used to build a bed, a bench inside the van as well as a lounge set outside.

To guide and frame the assignment, the following research questions have been formulated:

Main research question: How can the campervan interior for compact vans be structured so it offers comfortable driving positions in the back of the van whilst retaining all its expected camping functionalities?

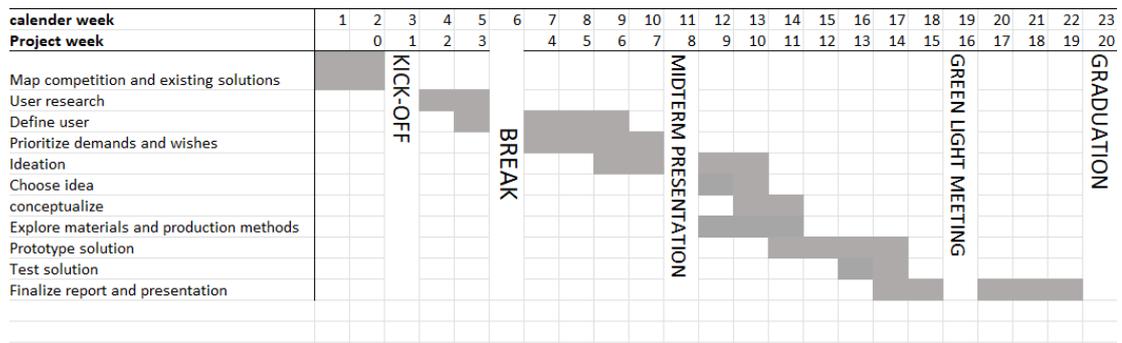
Sub-questions:

1. How can the interior be designed so that quick transformation from campervan to day to day vehicle is possible?
2. How can the camper functionality of Ventje be implemented in a smaller vehicle?
3. How does the potential user differ from the current user?

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 9 - 1 - 2023 2 - 5 - 2023 end date



The project comes with two main challenges.

Firstly, an accurate description of the user has to be made in order to be able to design for this user. Quantitative information of the user group can be gathered through Ventjes database of users. A survey can be conducted to gather specific information from a bigger amount of potential users. Next to this, qualitative data will be gathered through interviews. This can be used to dig deeper in the needs of the user.

A persona will be made as a guiding document and for efficient communication of the intended target group. Storyboarding will be used to explore how the van is used in different use cases and to communicate with stakeholders.

Secondly, the electric van is smaller and has a different shape than the current van that Ventje sells. It will be a challenge to fit all functionality into the new van.

In order to make sure that the design fits the van and to make quick iterations to the design, a combination of explorative sketching combined with CAD modeling will be used to ensure an efficient design process and communication with all those involved. Ventje has a CAD model of the ID Buzz available as well as the van itself, which could be used for prototyping if necessary.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

The reason I chose this project and Ventje as a client is because I aspire to work in a company where you participate in the design process from idea all the way to eventual production. Things I particularly like about Ventje is that they have their production facilities in house, which creates a good connection with the people that produce and assemble the product. Next to that, the Ventje brand is quite new, which means that the company is less bound to their current products or the way they are produced or sold. The company seems very open to new technologies or strategic directions.

A project like this needs a combination of several ideas to work together as one to make a strong concept. A skill I want to acquire during this project is to be able to shift my focus when needed between details in the design and the overall concept regularly, guiding the design process to make sure all the details together create a strong concept which fits the company brand.

Also connected to guiding the design process is the skill of communicating the research directions and ideas constantly. This is something that I experienced to be difficult sometimes, especially when you are in a workflow and not looking for feedback actively. Nevertheless I think this is an important skill and something I want to become better at doing this project.

A competence which I have developed during the bachelor, but would like to prove and get better in are my prototype skills. Specifically to get a better idea on how to efficiently test (part of) a concept idea. During my masters I did several tests with prototypes as well as simulated tests. All tough testing itself was very useful, I would barely have the time or resources to strengthen the concepts after these tests, regardless of the outcome.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Appendix II Requirements for cam- pervan



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Furnishing requirements bpm for motorhomes

A motorhome must meet the following equipment requirements to qualify for the [bpm rate for motorhomes](#):

- The interior space must be able to contain a rectangular block with a height of at least 170 cm over a length of at least 200 cm and over a width of at least 90 cm.
- The interior space is the space behind the rear-mounted driver and passenger seats. The facilities must be fixed.
- The interior features:
 - at least 2 fixed seats
 - a table
The table or its attachment may be designed so that you can easily remove it.
 - sleeping places for at least 2 persons
These sleeping places may be made with seats, but not with the seats for the driver and passenger.
 - fixed and lockable storage facilities
a fixed kitchen unit with a work surface at least 60 cm high, provided with a built-in water supply with a sink, a tap and a drain. This water supply may be removable. The entire kitchen block is intended for use in the interior space.
 - a fixed built-in stove

Different height

Is the interior space higher than 130 cm but lower than 170 cm? Then your camper does not meet the height requirement of at least 170 cm. You can raise the interior space to 170 cm or more to do meet that requirement. For example, with a fixed raised roof or a lifting roof. The elevation must be at least 100 cm long and 90 cm wide. Such an elevation is only allowed if the camper also meets all other furnishing requirements.

Appendix III Questionnaire questions

kampeerbus voor alledaags gebruik

Alvast bedankt voor het invullen van deze anonieme vragenlijst!

Let op: De vragenlijst is bedoeld voor eigenaars van een kampeerbus op basis van een **kleinere maat bestelbus** (bijvoorbeeld de VW California)

De vragenlijst heeft als doel te onderzoeken hoe vaak een kampeerbus gebruikt wordt voor andere functies dan de kampeervakantie. De resultaten zullen direct na het invullen worden gepresenteerd.

Bent u op een later moment benieuwd naar de resultaten, stuur dan even een berichtje.

1. Welk model kampeerbus heeft u? Indien u dit niet weet, kan u dan een korte omschrijving geven?

2. Hoeveel dagen kampeert u gemiddeld per jaar met de kampeerbus? (Dit hoeven geen aaneengesochte dagen te zijn)

Markeer slechts één ovaal.

- Ik kampeer niet/ heb nog niet gekampeerd met deze bus
- 1-20 dagen (of ongeveer 3 weken)
- 21-56 dagen (of ongeveer 3-8 weken)
- Meer dan 56 dagen (meer dan 8 weken)

3. Hoeveel dagen per jaar wordt de bus gemiddeld uitgeleend of verhuurd?

Markeer slechts één ovaal.

- 0 dagen (wordt niet uitgeleend)
- 1-20 dagen (of ongeveer 3 weken)
- 21-56 dagen (ongeveer 3-8 weken)
- meer dan 56 dagen (meer dan 8 weken)

4. Hoeveel zitplekken zijn er aanwezig in uw kampeerbus die goedgekeurd zijn voor gebruik tijdens het rijden? (Inclusief bestuurders en bijrijdersstoel)

Markeer slechts één ovaal.

- 2
 3
 4
 5
 meer dan 5

5. Door welke leeftijdsgroep(en) worden de zitplekken achterin de bus, indien aanwezig, doorgaans gebruikt?

Vink alle toepasselijke opties aan.

- Jonge kinderen (0-8 jaar)
 Oudere kinderen (9-18)
 Jong volwassenen (19-25)
 Volwassenen (26-64)
 Ouderen (vanaf 65)
 De stoelen achterin worden niet gebruikt

- 6.

Wordt de kampeerbus naast kampeervakanties ook gereden?

Markeer slechts één ovaal.

- Ja *Ga naar vraag 7*
 Nee *Ga naar vraag 10*

7. Waarvoor wordt de kampeerbus gereden, anders dan voor kampeervakanties (meerdere antwoorden mogelijk)?

Vink alle toepasselijke opties aan.

- Vakanties waarbij niet gekampeerd wordt
- Boodschappen
- Halen/ brengen van mensen
- ritjes naar vrienden of familie
- woon/werk verkeer (forensen)
- Anders: _____

8. Ervaart u wel eens uitdagingen of ongemakken tijdens het gebruik van de kampeerbus voor zaken anders dan kampeervakanties?

Markeer slechts één ovaal.

- Nee
- Ja

9. Indien u 'ja' antwoordde bij de vorige vraag, kan u een kleine omschrijving geven van wat deze ongemakken zijn?

Ga naar vraag 11

10. Waarom heeft u ervoor gekozen de kampeerbus niet te rijden voor zaken anders dan kampeervakanties?

11. Hoeveel auto's, inclusief de kampeerbus, zijn er in totaal in uw huishouden aanwezig?

Markeer slechts één ovaal.

- 1 auto (kampeerbus)
- 2
- 3
- Meer dan 3

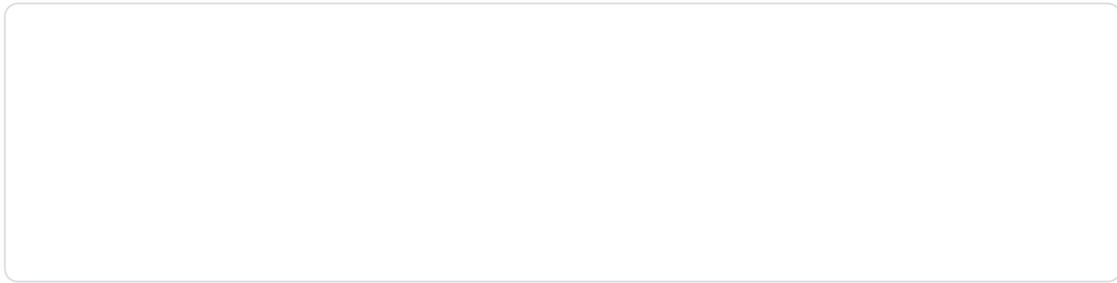
12. Uit hoeveel personen bestaat uw huishouden?

Markeer slechts één ovaal.

- 1
- 2
- 3
- 4
- 5
- 6
- meer dan 6

13. Heeft u naar aanleiding van de vragenlijst nog opmerkingen of heeft u ideeën over het verbeteren van het gebruik van een kampeerbus in het dagelijks leven?

Appendix IV Questionnaire results



kampeerbus voor alledaags gebruik

22 antwoorden



Welk model kampeerbus heeft u? Indien u dit niet weet, kan u dan een korte omschrijving geven?

20 antwoorden

Iveco Daily bakwagen

VW Transporter zelfbouw

Peugeot Boxer, bus van 5,99m lang.

Fiat Ducato L1H1

vw california

T5GP H1L2

T4 California Coach 1997

Trigano eurocamp S (L1H2)

Fiat Ducato 6.0 m

Opel Vivaro L2H2

T4

Minivan

Ducato bj 2020, L3H2

Ducato L2H2

Mercedes MB 100

VW California Coas

Mercedes Benz Viano Marco Polo

California Coast

T4 met vast hoog dak

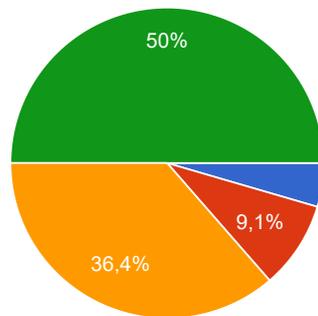
Citroen Berlingo



Hoeveel dagen kampeert u gemiddeld per jaar met de kampeerbus?
(Dit hoeven geen aaneengeschakelde dagen te zijn)

 [Kopiëren](#)

22 antwoorden

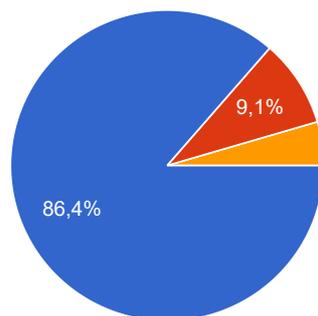


- Ik kampeer niet/ heb nog niet gekampeerd met deze bus
- 1-20 dagen (of ongeveer 3 weken)
- 21-56 dagen (of ongeveer 3-8 weken)
- Meer dan 56 dagen (meer dan 8 weken)

Hoeveel dagen per jaar wordt de bus gemiddeld uitgeleend of verhuurd?

 [Kopiëren](#)

22 antwoorden

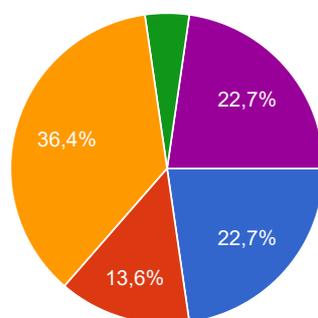


- 0 dagen (wordt niet uitgeleend)
- 1-20 dagen (of ongeveer 3 weken)
- 21-56 dagen (ongeveer 3-8 weken)
- meer dan 56 dagen (meer dan 8 weken)

Hoeveel zitplekken zijn er aanwezig in uw kampeerbus die goedgekeurd zijn voor gebruik tijdens het rijden? (Inclusief bestuurders en bijrijdersstoel)

 [Kopiëren](#)

22 antwoorden



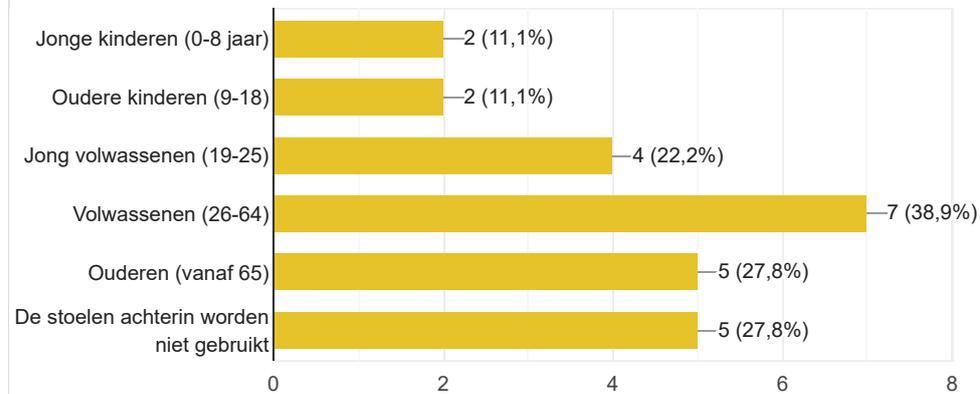
- 2
- 3
- 4
- 5
- meer dan 5



Door welke leeftijdsgroep(en) worden de zitplekken achterin de bus, indien aanwezig, doorgaans gebruikt?

 Kopiëren

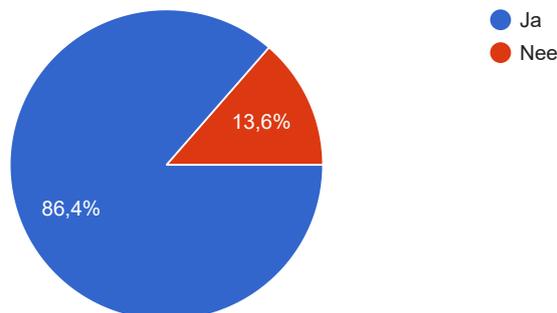
18 antwoorden



Wordt de kampeerbus naast kampeervakanties ook gereden?

 Kopiëren

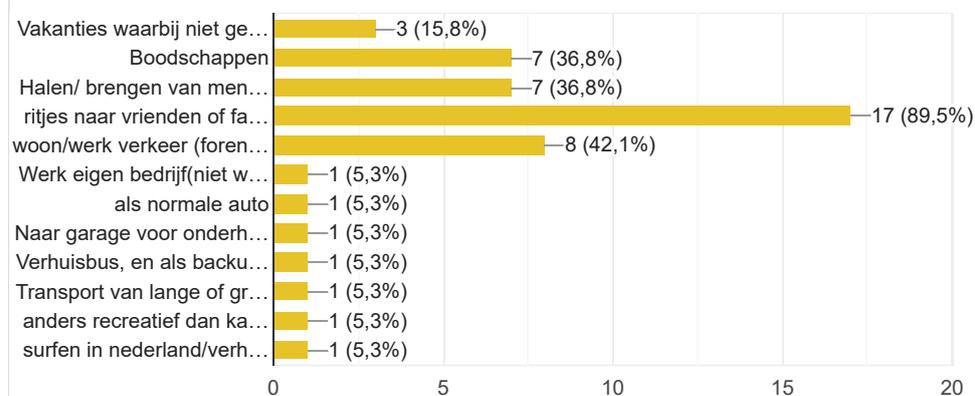
22 antwoorden



Waarvoor wordt de kampeerbus gereden, anders dan voor kampeervakanties (meerdere antwoorden mogelijk)?

 Kopiëren

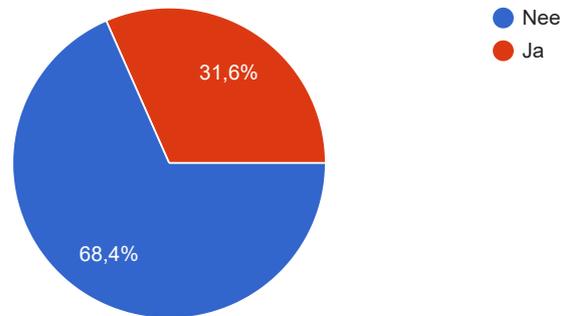
19 antwoorden



Ervaart u wel eens uitdagingen of ongemakken tijdens het gebruik van de kampeerbus voor zaken anders dan kampeervakanties?

 [Kopiëren](#)

19 antwoorden



Indien u 'ja' antwoordde bij de vorige vraag, kan u een kleine omschrijving geven van wat deze ongemakken zijn?

6 antwoorden

Lastig parkeren in de stad, geen parkeervergunning voor mijn deur mogelijk

Parkeren is het enige probleem. Zeker bij langs/file parkeren zijn er vaak weinig plekken groot genoeg. Hoewel maar 5 meter is dat met een kleinere auto een stuk makkelijker.

Hoogte parkeergarage bij parkeren in stad

Parkeren, maar niet vaak hoor

Parkeerhoogte lager dan 1.90 m

Bed achterin eruit halen zodat er spullen verhuisd kunnen worden

Waarom heeft u ervoor gekozen de kampeerbus niet te rijden voor zaken anders dan kampeervakanties?

3 antwoorden

Veel te onhandig in dagelijks gebruik.

Andere auto

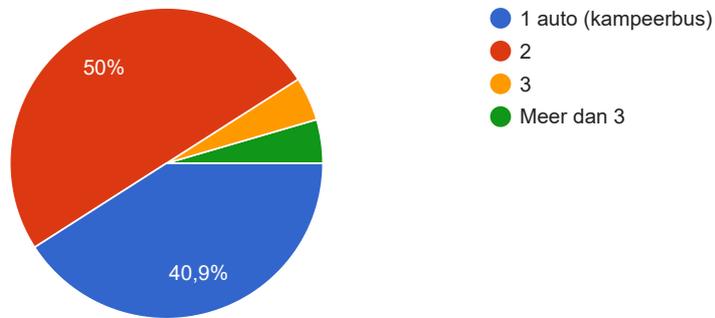
daar hebben we een personenauto voor



Hoeveel auto's, inclusief de kampeerbus, zijn er in totaal in uw huishouden aanwezig?

 [Kopiëren](#)

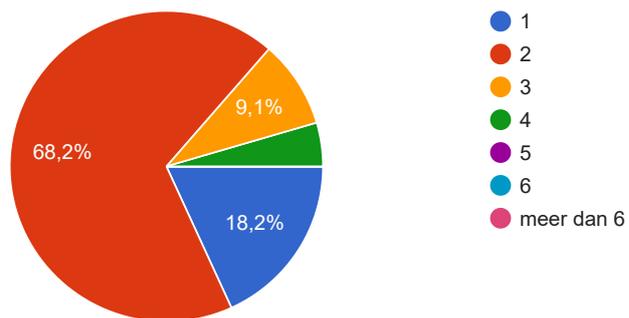
22 antwoorden



Uit hoeveel personen bestaat uw huishouden?

 [Kopiëren](#)

22 antwoorden



Heeft u naar aanleiding van de vragenlijst nog opmerkingen of heeft u ideeën over het verbeteren van het gebruik van een kampeerbuis in het dagelijks leven?

6 antwoorden

Fabriekscampers worden voor een specifiek doel gemaakt, en een kantoor op wielen is dat niet. Het zou mooi zijn als camperbouwers meer aandacht zouden geven aan de wensen van niet-gepensioneerden: een ergonomische werkplek voor 1 of 2 personen ipv een dinette voor 4 personen.

Wil je luxer en meer ruimte heb je een grotere camper nodig. Hoe groter de camper hoe minder handig om als dagelijks gebruik te dienen. Dit is dus altijd een compromis.

Lager brandstofgebruik

Ik vind dit een zeer slechte vragen lijst. Ik kan niet aan geven dat ik de zitplekken achter in de bus niet gebruik. Bovendien is dit een gevoelig onderwerp. Een deel van de campers ziet dit als misbruik van de regelgeving. Het kwarttarief zou hierdoor wel eens kunnen verdwijnen is de redenatie. Een camper op kwarttarief rijden, is niet bedoeld voor dagelijks gebruik!!!!

Nee

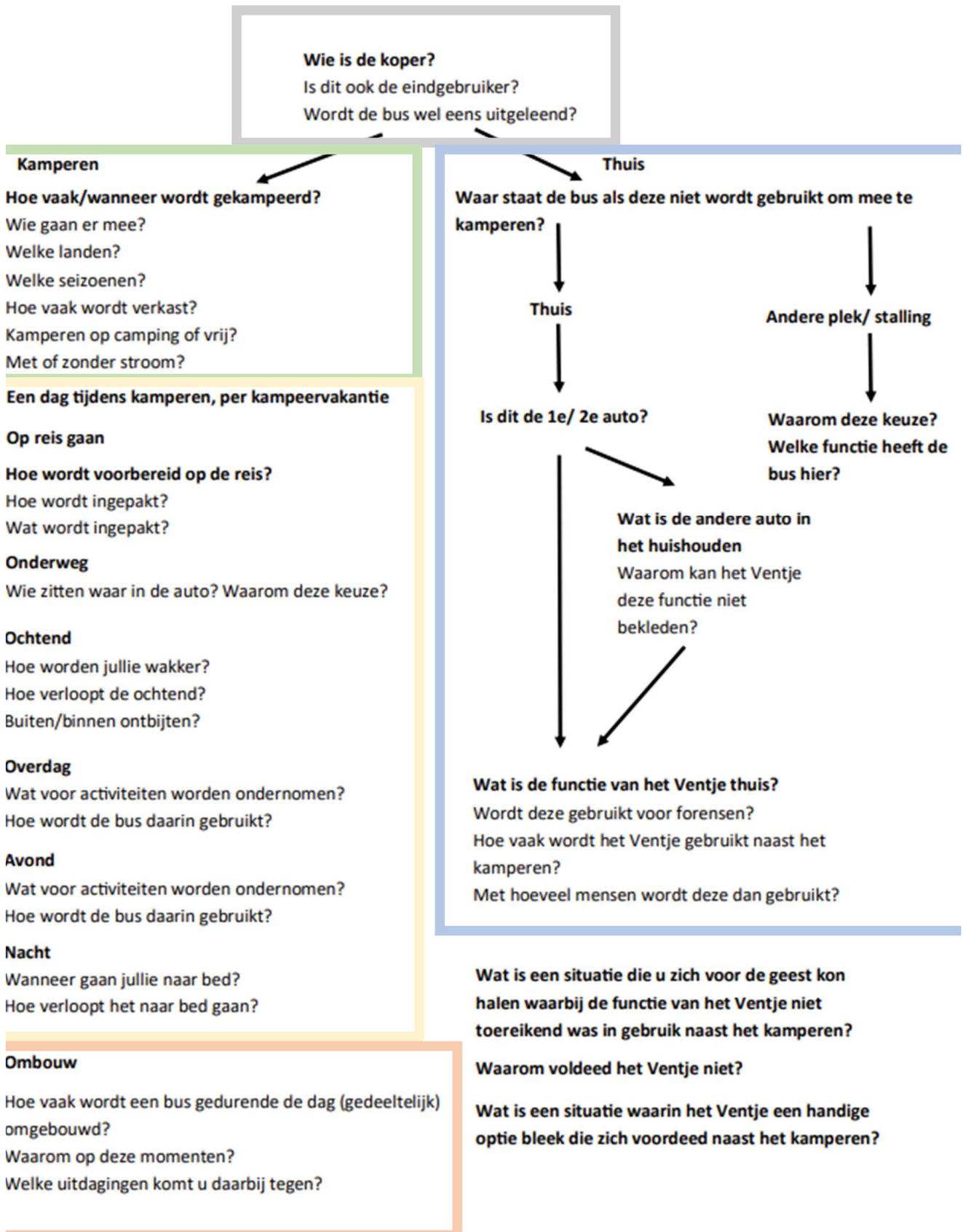
veel succes met uitwerken van deze enquête

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Google Formulieren



Appendix V Interview results



General information about the interviewees

	Travel company	Does lend out the van	Model van	Time of ownership	Location of the Van
1	Couple	no	L1, no seating places	3 years	At home
2	Couple and dog	Yes, through Goboony	L2, no seating places	3 years	At home or rented out
3	Single	Yes, shares ownership with ex-wife	L1, no seating places	3 years	In storage

Use of the van on camping trips

What becomes clear from the data is that every owner uses the van for quite different purposes. Despite this, the way the van is used during these times shows quite some similarities. Same counts for what people like or dislike about the van.

Experience with the van thus far:

	Camping experience with the van thus far	Use of grid power on camping trips
1	Uses the van for multiple longer trips per year. Last trip was a Roadtrip through France, visiting 30 campings in 9 weeks	Around 50% of the time
2	On average per year: one longer camping trip of 3 weeks and 6-7 weekends of camping. 2 times per year a workation* of 1 week each. Was on workation in Portugal when interview took place. Plans to use the van in the winter, but they not yet tried.	No
3	Roadtrips to Spain. Roadtrips in Sweden, also experienced sub zero temperatures.	No

What does use look like:

	Preparations	morning	Afternoon	Evening/at night
1	Store everything in boxes that they bring in the van	Breakfast inside. If the camping place has a shower, they shower. If not, they wash in the van, using the sink and boiled water. They have breakfast inside in the morning.	They have dinner outside. For cooking, they have an additional 2 burner stove and an extra induction stove.	Sleeps in the main bed. Boxes go on the sleeping deck as storage place.
2	Nothing special. Most items are	Depending on the season. They have	When on workation, couple switches	Sleeps on sleeping deck, dog sleeps in

	clothes.'	day.	
3			

Challenges:

	Challenges when camping	Solutions	Praises the van
1	<p>Does not use the waste bin inside the van, because this is too small. Uses separate bag attached to a magnetic hook. Waste bin space is now used for storage, mostly of groceries.</p> <p>The hole in the side of the kitchen where we are supposed to put the trash is too small, especially with today's extensive plastic packaging.</p>	<p>Boxes that fit exactly in the storage spaces underneath the bed and that can be moved to the sleeping deck anytime.</p> <p>3 extra cooking stoves.</p> <p>We have a hook attached to a magnet that is mounted to the side of the van that we use to hang the trashbag.</p> <p>We have separate chairs next to the outside set.</p>	<p>Kitchen is awesome! Also like the van because of aesthetics.</p> <p>When we go to the beach, we take the Ventje, as we can just put stuff in the fridge and have a drink when we get back.</p> <p>What we really like is the fact that you can quickly move from one place to another. If you get up in the morning and you move your bed out of the way, you are ready to go.</p>
2	<p>The internet signal on campings in Spain or France is bad.</p> <p>Does not use the sleeping deck when its windy or if it rains and they don't want to</p> <p>'We do not use the outside set as we're afraid that the wood will damage and we don't have the hassle of bringing the pillows inside.'</p> <p>You have to think about getting the groceries outside of the fridge before you start cooking as you use the space on top of the fridge to cut etc.</p> <p>Would be nice to have some kind of service that looks after</p>	<p>They made a car which fits precisely between the benches in the in the camper.</p> <p>Made special stitched boxes that fit in the storage spaces on the side of the campervan.</p> <p>New mattress in the sleeping deck.</p> <p>A USB outlet in the sleeping deck</p> <p>When on a worktation, they bring a tent as the van does not provide enough space to work in the van for two people.</p>	<p>Liked the van because of aesthetics</p> <p>We always use the toilet in the van. We taught we would never use it, but it turns out it is actually much nicer than walking over the campsite to the toilets.</p> <p>'The kitchen is the perfect height for me (1.95m), but for my wife it is too high.'</p>

<p>van damage if it gets below zero.'</p> <p>'I would like to bring a canoe, but I have solar panels and a pop up roof. I should have thought about that before buying the van.'</p> <p>'Sometimes I miss an actual toilet in the van, but I understand that there is already an actual toilet in the longer Ventje.'</p> <p>'You offer colors of fabric for the folding roof, but they are more flimsy than the grey version I believe.'</p> <p>'I don't know how to maintain the van in the condition that it is now.'</p>	<p>winter protection that works on electricity and keeps the temperatures in the Ventje above zero in all places</p> <p>'I saw a van once that has a folding roof that has double walls.'</p> <p>'Perhaps you can give people tips to maintain their van or give the option for a paid service.'</p>	<p>het achterste deel zou ik niks kunnen bedenken dat efficiënter zou kunnen.</p> <p>'Solar panels are awesome. You never run out of electricity.'</p> <p>I like the wood a lot.</p>
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Use of the van for other purposes than camping:

	Use of the van when not for camping	Why they would not use the van for other functions	Why they would the van for other functions
1	Day trips, when the functionalities in the van can be put to use. , traveling longer distances as the van drives better than the other car.		The Ventje drives better than the other car.
2	No, only to friends and family. Usually when the van stood still for a longer amount of time.	The driving characteristics of the van are good. We only use it when the van stood still for a longer time.	Our other car is smaller and cheaper when using it. Our dog fits easily in the trunk, whereas in the Ventje he does not really have a place. 'Our passenger car is a hybrid, of course it is more fuel efficient than the larger Ventje.'
3	Sometimes, not often. Only when	I live close to the centre of Amsterdam. I am afraid it will be damaged if I park it in	I am happy I choose the one with a bench next to the drivers seat. I am a bit more flexible than if you would just have two seats.

When my current (passenger) car is worn out, I will probably not buy a new one, but will do everything with public transport and shared cars. And of course with the Ventje.

Appendix VI Tests and safety requirements



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Types of inspections

All types of inspections applicable in the production of vehicle (parts) from large and complex to simple.

European type approval

N/A.

European small series

- Probably [not sure] only for 1^e phase construction, think parties like Donkervoort and such.

- Expensive due to extensive testing to be done. -

Direct approval and partnership with VW needed

- Complex route

-Max 1500 vehicles per year

Type testing national small series

-Cooperation with a representative of VW, probably then Pon.

Other member states may adopt but no guarantee

- Same technical requirements as Individual Inspection

- *Operation, production process and characteristics of vehicle must be documented.* RDW visits regularly to do audits and there are costs associated with this

- Max 250 vehicles per year

Individual inspection (what Ventje is doing now)

- The seats are approved once for the Transporter, but after that, any bus that has this built in must pass the RDW to have it approved.

+ Is no maximum, as each bus is inspected individually

+ Stripped-down requirements package compared to European type approval (see Technical Requirements section)

+ No requirements for operations

Source : <https://www.rdw.nl/zakelijk/branches/fabrikant/typegoedkeuring-aanvragen/hoe-u-een-typegoedkeuring-krijgt>

Technical requirements for an individual inspection

The RDW has a document in which they have recorded what they test for, called "Alternative prescriptions M, N and O for the purpose of individual approval and national small series type approval."

Bron: <https://www.rdw.nl/-/media/rdwnl/documenten/individuele-goedkeuringen/handleidingen/wijze-van-keuren-m-n-o-va-6-juli-2022.pdf?rev=2a9e166a4913471cb9c522cbf789629b&hash=63CA65F1D1B104402D72C8AADDEC34A8>



This document obviously contains EVERYTHING they test for on a car. For us, only the headings apply:

- A2 (15A) Seats and Head Restraints
- A4 (19A) Anchorage seat belts
- A5 (31A) Safety belts and restraint systems + safety indicators

These refer to legislation:

Chairs and Headrests	ECE R17	https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:230:0081:0118:NL:PDF
Safety belt anchorages	ECE R14	https://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=uriserv:OJ.L.:2019.324.01.0014.01.NLD
Safety belts and restraint systems +	ECE R16	https://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=CELEX:42015X1120(01)&from=SL

safety indicators		
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Chairs and Headrests	ECE R17	General: 5.1, For seating: 5.2 to 5.2.4.3 with the exception of 5.2.3, For headrests: 5.4 to 5.11.
Safety belt anchorages	ECE R14	5.2, 5.3.1 to 5.3.7, 5.3.9, with the exception of the entry in the information sheet, 5.4 and 5.5; 6. Notwithstanding section 6.3.3, derogation may be made from the specified rate at which the entire load is to be achieved; and 7, with the exception of section 7.1.1,
Safety belts and restraint systems + safety indicators	ECE R16	5.3, 6, 7, 8.1.1. to 8.1.10 and 8.2. to 8.3.4. The colors described in Section 8.1.8 may vary.

Chairs and headrests

This refers to ECE Regulation No. 17 to Amendment Series 08

<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:230:0081:0118:NL:PDF>

General: 5.1,

For seating: 5.2 to 5.2.4.3 with the exception of 5.2.3,

For headrests: 5.4 to 5.11.

General regulations

5.1. General requirements

5.1.1. In vehicles of categories M1, N1, M2 (Class III or B) and M3 (Class III or B), the installation of side-facing seats is prohibited.

5.1.2. Ambulances or vehicles intended for use by the military, civil defense, fire and law enforcement agencies are not subject to this restriction.

5.1.3. Vehicles of category M3 (Class III or B) with a technically permissible maximum laden mass exceeding 10 tons, in which side-facing seats are grouped at the rear of the vehicle to form an integrated space with up to 10 seats, are also not subject to this restriction. However, such side-facing seats must be equipped with at least one head restraint and a two-point belt with retractor type-approved under Regulation No. 16. Safety belt anchorages shall comply with Regulation No. 14.

Seat requirements

5.2. General requirements for all seats of M1 category vehicles (1).

5.2.1. Each adjustment and displacement system provided shall be equipped with an automatic locking system. Locking systems for armrests or other comfort devices are not required unless the presence of these devices presents an additional risk of injury to the occupants of the vehicle in the event of a collision.

5.2.2. The control to unlock the device referred to in paragraph 2.7 above shall be located on the outside of the seat close to the door. It shall be easily accessible even to the person on the seat immediately behind the seat in question.

5.2.3. The rear of seats located in Area 1, as defined in paragraph 6.8.1.1, shall pass the energy dissipation test according to the requirements of Annex 6.

5.2.3.1. This requirement shall be deemed to be satisfied if, during the tests carried out according to the procedure in Annex 6, the deceleration of the dummy head does not exceed 80 g continuously for more than 3 ms. In addition, no dangerous edges shall occur during and after the test.

5.2.3.2. The requirements of paragraph 5.1.3. shall not apply to rear seats, to back-to-back seats and to seats complying with the provisions of Regulation No. 21 "Uniform provisions concerning the approval of vehicles with regard to their interior fittings" (E/ECE/324-E/ECE/TRANS/505/Rev.1/Add.20/Rev.2, as last amended).

- 5.2.4. The surface of the rear of the seats shall not exhibit any dangerous roughness or sharp edges likely to increase the risk or severity of injuries. This requirement shall be deemed to be met if, after the tests specified in paragraph 6.1 above, the surface of the rear of the seats exhibits a radius of curvature of at least:
- 2.5 mm in area 1,
 - 5.0 mm in area 2,
 - 3.2 mm in area 3.
- These areas are defined in Section 6.8.1.
- 5.2.4.1. This requirement does not apply to:
- 5.2.4.1.1. the parts of these areas that project less than 3.2 mm above the surrounding surface and

Headrest requirements

- 5.4. Mounting of headrests
- 5.4.1. A head restraint shall be installed on each outboard front seat in each vehicle of category M1. Headrest-equipped seats intended to be used in other seats or in other vehicle categories to be installed, may also be installed pursuant to this regulation approved.
- 5.4.2. In each vehicle of category M2 with a maximum mass of 3 500 kg and in each vehicle of category N1, a head restraint shall be mounted on each outboard front seat; the in such vehicles mounted head restraints must meet the requirements of Regulation No. 25, Amendment Series 03.
- 5.5. Special requirements for seats fitted or capable of being fitted with a head restraint equipped
- 5.5.1. The presence of the head restraint shall not create additional danger to the occupants of the vehicle. In particular, in no operating position should it have dangerous uneven or exhibit sharp edges that may increase the risk or severity of injury to occupants increase.
- 5.5.2. The front and rear parts of the head restraints located in Area 1, as defined in paragraph 6.8.1.1.3, shall pass the energy absorption test.
- 5.5.2.1. This requirement shall be deemed to be satisfied if during the tests conducted in accordance with the procedure of annex 6 are performed, the delay of the dummy head does not exceed 3 ms long continuously exceeds 80 g. In addition, during and after the test, no dangerous edges should be arise.
- 5.5.3. Parts of the front and rear of head restraints located in Area 2, as defined in paragraph 6.8.1.2.2, shall be padded so that no direct contact between the head and the components of the structure may arise and that the requirements of paragraph applicable to the back of chairs in Area 2.
- 5.2.4
5.5.4. The requirements of paragraphs 5.5.2 and 5.5.3 shall not apply to the rear of head restraints designed to be mounted on seats behind which there is no chair is located.

- 5.5.5. The head restraint shall be secured to the seat or vehicle structure in such a manner that no rigid and dangerous parts from the headrest lining or headrest attachment stick to the backrest as a result of the pressure applied during the test by the dummy head is exercised.
- 5.5.6. If the technical service agrees, a seat equipped with a head restraint shall be deemed to meet Meet the provisions of Section 5.1.3 if he meets the provisions of Section 5.5.2.
- 5.6. Height of headrests
- 5.6.1. The height of head restraints shall be measured as described in Section 6.5.
- 5.6.2. For head restraints not adjustable in height, the height shall be not less than 800 mm for front seats and at least 750 mm for other seats.
- 5.6.3. For height-adjustable headrests:
- 5.6.3.1. the height shall be not less than 800 mm for front seats and not less than 750 mm for other seats; this value is obtained in a position between the highest and lowest;
- 5.6.3.2. the height shall not be less than 750 mm for any position of use;
L 230/88 Official Journal of the European Union 31.8.2010 EN
- 5.6.3.3. In the case of seats other than the front seats, it may be possible to adjust the head restraint in a position places where the height is less than 750 mm, to the extent that the occupant's clear that the headrest is not to be used in this position;
- 5.6.3.4. In front seats, the head restraint may move automatically to a position where the height is less than 750 mm when the seat is not occupied, provided it is also automatically returns to user mode when the seat does become occupied.
- 5.6.4. To leave sufficient space between the headrest and the inner surface of the roof, the windows or other parts of the vehicle structure may not exceed the requirements of paragraphs 5.6.2 and 5.6.3.1. dimensions are less than 800 mm for front seats and less than 750 mm for other seats; however, the clearance shall not exceed 25 mm. In the case of seats fitted with displacement and/or adjustment systems, this applies to all seats. Notwithstanding paragraph 5.6.3.2 above, these chairs do not have any use position where the height is less than 700 mm.
- 5.6.5. Notwithstanding the height requirements in Sections 5.6.2 and 5.6.3.1, the height of head restraints designed for center rear seats or rear seats not be less than 700 mm.
- 5.7. In the case of a seat capable of being fitted with a head restraint, it shall be verified that the provisions of Sections 5.1.3 and 5.4.2 are met.
- 5.7.1. In the case of a head restraint adjustable in height, the height of the part of the device where the head against rest, measured in accordance with Section 6.5, shall not be less than 100 mm.
- 5.8. For a head restraint that is not height adjustable, the space between the backrest and the headrest do not exceed 60 mm. The distance between the lowest position of any in the height adjustable headrest and the top of the backrest should not exceed 25 mm

amounts. For height-adjustable seats or sofas with separate headrests, must be verified that the chair or bench meets this requirement in every position.

- 5.9. For head restraints integral with the backrest, the following area shall be considered:
above a plane perpendicular to the reference line, 540 mm away from the R point; between two vertical longitudinal planes at a distance of 85 mm on either side of the reference line. This area may include one or more openings which, regardless of their shape, have a distance "a" of more than 60 mm, measured in accordance with Section 6.7, to the extent that after the additional test of Section 6.4.3.3.2 still meet the requirements of Section 5.11.
- 5.10. For height-adjustable head restraints, the part of the device serving as a headrest, include one or more openings that, regardless of their shape, have a distance "a" of more than 60 mm, measured in accordance with section 6.7, to the extent that after the additional test of section 6.4.3.3.2 still meet the requirements of section 5.12.
- 5.11. The head restraint shall be of sufficient width to provide proper support for the head of a person normally seated in the chair. As determined according to the procedure of paragraph 6.6, the head restraint covers an area of not less than 85 mm on each side of the vertical center plane of the seat for which the headrest is intended.

Anchors and safety belts

Basis: ECE Regulation No. 14 to Supplement 5 on changes series 07.

Vehicle must meet the points:

5.2, 5.3.1 to 5.3.7, 5.3.9, with the exception of the entry in the information sheet, 5.4 and 5.5;

6. Notwithstanding section 6.3.3, derogation may be made from the specified rate at which the entire load is to be achieved; and

7, with the exception of section 7.1.1,

The presence of isofix anchorage systems and points and i-Size seats is not mandatory. If these are affixed must comply with all applicable regulations met.

- 5.2. General specifications
- 5.2.1. Safety belt anchorages shall be designed, manufactured and arranged so that:
 - 5.2.1.1. the installation of a suitable seat belt is possible. The belt anchorages for the side seats before shall be suitable for safety belts with a retractor and retractor shaft, whereby in particular account must be taken of the strength of the belt anchorages, unless the manufacturer has provided the vehicle with also supplies with other safety belt types with retractors. If the anchors are only are suitable for certain seat belt types, those types must be indicated on the form specified in Section 4.3 are listed;
 - 5.2.1.2. the risk of the belt slipping is minimized when worn correctly;
 - 5.2.1.3. The risk of the strap becoming caught by contact with sharp rigid parts of the vehicle or seat structure. damaged, is kept to a minimum;
 - 5.2.1.4. The vehicle, in normal use, can meet the provisions of this Regulation;
 - 5.2.1.5. at anchors that can occupy different positions for the purpose of boarding and on their keep occupants in place, the specifications of these regulations apply to anchorages in the position where the belts actually hold the occupants in place.

- 5.3. Minimum number of belt anchorages.
- 5.3.1. All vehicles of categories M and N (except those of categories M2 and M3 belonging to class I or A1) must be equipped with seat belt anchorages that attach to the requirements of these regulations.
If M2 or M3 category vehicles belonging to class I or A1, are equipped with safety belt anchorages, they must meet the requirements of this Regulation.
- 5.3.1.1. The anchorages of harness belt systems approved in accordance with Regulation No. 16 as Type S belts (with or without retractor(s)) shall meet the requirements of Regulation No. 14 comply, but the additional anchorage(s) for the installation of a crotch strap (structure) need not (need) not meet the strength and drafting requirements of these regulations.
- 5.3.2. Annex 6 shows the minimum number of safety belt anchorages for all forward, rearward and side-facing seats specified.
- 5.3.3. With the exception of front seats, the side seats of vehicles of category N1, in Annex 6 indicated by the symbol \emptyset , are provided with two anchors at the bottom, insofar as there is a passageway exists between a seat and the nearest side wall of the vehicle through which occupants can access have access to other parts of the vehicle.
A space between a chair and the side wall is considered a passage if the distance of this side wall, with all doors closed, to a vertical longitudinal plane passing through the centerline of the seat in question, measured at the point R and perpendicular to the median longitudinal plane of the vehicle, exceeds 500 mm.
- 5.3.4. For front center seats, indicated in annex 6 by the symbol *, two anchorages shall be provided below considered sufficient when the windshield is outside the limits defined in Annex 1 to Regulation No. 21 reference zone; when the windshield is in this reference zone, three anchors are required.
13.12.2019 EN Official Journal of the European Union L 324/19
Regarding belt anchorages, the windshield is considered part of the reference zone when it may come into static contact with the test equipment.
- 5.3.5. Three anchorages are required for each seat indicated by the symbol in Annex 6. If one of the following conditions are met, two anchors are sufficient:
- 5.3.5.1. A seat or other part of the vehicle conforming to paragraph 3.5. is located immediately in front of this seat of Appendix 1 to Regulation No. 80;
- 5.3.5.2. no part of the vehicle is or may be in the reference zone when the vehicle is in motion, or
- 5.3.5.3. Parts of the vehicle located in the said reference zone comply with the requirements of

Appendix 6 of Regulation No. 80 on energy absorption.

- 5.3.5.4. Items 5.3.5.1 to 5.3.5.3 shall not apply to a driver's seat.
- 5.3.6. For seats and seating intended for use only when the vehicle is stationary, as well as vehicle seats not covered by paragraphs 5.3.1 to 5.3.4 are not required to have belt anchorages. However, if the vehicle is equipped with anchorages for these seats, these anchorages must be attached to comply with the provisions of this regulation. Anchors intended solely for use with a seat belt for persons with disabilities or with any other restraint system in accordance with Annex 8 to Regulation No. 107, 02 series of amendments, to be used, need not meet the requirements of these regulations.
- 5.3.7. For the upper deck of a double-deck vehicle, the requirements for the front center seat shall also apply. Application to front side seats.
- 5.3.9. In the case of seats capable of being turned to or placed in other orientations, for use when the vehicle is stationary, the requirements of paragraph 5.3.1 shall apply only to those orientations designated for normal use when the vehicle is travelling on a road, in accordance with this Regulation. A note to this effect shall be included in the information document.

5.4. Location of belt anchorages (see Figure 1 of Appendix 3).

5.4.1. General

5.4.1.1. The belt anchorages of the same belt may all be attached to the vehicle or seat structure or any other part of the vehicle are attached or scattered about these places.

5.4.1.2. At one belt anchorage, the ends of two adjacent safety belts may be confirmed, provided the testing requirements have been met.

5.4.2. Location of effective belt anchorages at the bottom

5.4.2.1. Front seats, vehicle category M1

In motor vehicles of category M1, angle α_1 (on the side opposite the fastener) should be 30 to 80° and angle α_2 (on the latch side) are 45 to 80°. This applies to all normal operating positions of the front seats. If at least one of the two corners is constant in all positions of use (e.g., if the anchorage is attached to the seat), it shall be $60 \pm 10^\circ$. For adjustable seats with an adjustment system and a backrest forming an angle of less than 20° (see Figure 1 of Appendix 3), angle α_1 may be less than the minimum value (30°) mentioned above, provided that in each normal operating position it is not less than 20°.

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5.4.2.2. Rear seats, vehicle category M1

In motor vehicles of category M1, the angles α_1 and α_2 for all rear seats shall be 30 to 80°. If the rear seats are adjustable, these angles apply to all normal positions of use.

5.4.2.3. Front seats, vehicle categories other than M1

In motor vehicles of categories other than M1, the angles α_1 and α_2 for all normal use positions of the front seats are 30 to 80°. If in motor vehicles with a mass of at least maximum 3.5 tons at least one of these corners of the front seats in all normal operating positions constant is, it should be $60 \pm 10^\circ$ (e.g., if the anchorage is attached to the chair).

5.4.2.4. Rear seats and special front or rear seats, vehicle categories other than M1

In vehicles of categories other than M1 equipped with:

(a) benches;

(b) adjustable seats (front and rear) with an adjustment system and a seatback angle of less than 20° (see Figure 1 of Appendix 3), and

(c) other rear seats;

the angles α_1 and α_2 are 20 to 80° in all normal operating positions. If in motor vehicles with a mass not exceeding 3.5 tons at least one of these corners of the front seats in all normal operating positions is constant, it should be $60 \pm 10^\circ$ (e.g., if the anchorage is attached to the chair).

For seats on vehicles of categories M2 and M3, excluding front seats, the angles α_1 and α_2 in all normal operating positions 45 to 90°.

5.4.2.5. The distance between the two vertical planes parallel to the median longitudinal plane of the vehicle and

each passing through one of the two effective belt anchorages at the bottom (L1 and L2) of the same seat belt

run shall be at least 350 mm. In the case of side-facing seats, the distance between

the two vertical planes parallel to the chair's median longitudinal plane, each passing through one of the

Two effective belt anchorages at the bottom (L1 and L2) of the same seat belt run at least

350 mm. If there is only one center seat on a row of seats in the rear of vehicles of the categories M1 and N1, the above distance for that center seat shall be at least 240 mm

amounts, insofar as it is not possible to exchange the rear center seat with one of the other seats

of the vehicle. The median longitudinal plane of the seat shall lie between points L1 and L2 and be at least

120 mm from these points.

5.4.3. Location of effective upper belt anchorages (see Appendix 3).

5.4.3.1. If a belt guide or similar device is used that locates the

affects effective belt anchorage at the top, then this location is determined in the ordinary way by the

place of anchoring to be considered when the longitudinal centerline of the strap passes through a point J1 running from the R point defined by the following three line segments:

RZ: a 530 mm long section of hull line measured in an upward direction from the R point;

ZX: a 120 mm long section of the perpendicular to the longitudinal center plane of the vehicle, measured from

the Z point in the direction of anchoring;

XJ1: a 60 mm piece of the perpendicular to the plane determined by the line segments RZ and ZX, measured from the X point in the forward direction.

Point J2 is determined by symmetry with point J1 with respect to the vertical longitudinal plane by the in

paragraph 5.1.2 described torso line of the manikin placed on the corresponding seat.

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If a two-door configuration is used to provide access to both the front and rear seats

and the anchorage is attached to the top of the B-pillar, then the system must be designed so that the

boarding and alighting is not impeded.

5.4.3.2. The effective belt anchorage at the top is located below the plane FN, which is perpendicular to the

median longitudinal plane of the seat and makes an angle of 65° with the torso line. For the rear seats

this angle be reduced to 60°. The plane FN intersects the torso line at the point D, where $DR = 315 \text{ mm} +$

1.8 S. However, if $S \leq 200 \text{ mm}$, $DR = 675 \text{ mm}$.

5.4.3.3. The effective belt anchorage at the top is located behind the plane FK, which is perpendicular to the

median longitudinal plane of the chair and intersects the torso line at point B at an angle of 120° , where $BR =$

$260 \text{ mm} + S$. If $S \geq 280 \text{ mm}$, the manufacturer may optionally use $BR = 260 \text{ mm} + 0.8 S$.

5.4.3.4. S shall not be less than 140 mm.

5.4.3.5. The effective upper belt anchorage is located behind a vertical plane perpendicular to the median longitudinal plane of the vehicle and passes through the R point, as shown in Appendix 3.

5.4.3.6. The effective upper belt anchorage shall be located above a horizontal plane passing through the plane defined in paragraph 5.1.4.

defined C point runs.

5.4.3.6.1. Notwithstanding the requirements of paragraph 5.4.3.6, the effective belt anchorage at the top for

passenger seats of M2 and M3 category vehicles are adjustable to a position below this specification, if the following conditions are met:

(a) a permanent marking shall be placed on the seat belt or seat to indicate in which position the effective upper belt anchorage shall be located in order to meet the requirements in paragraph 5.4.3.6

prescribed minimum height for the belt anchorage at the top. This marking must be on the clearly indicate to the user the position in which the anchorage is suitable for adult use with an average build;

(b) the effective upper belt anchorage shall be designed to be adjustable in height with a hand-operated adjustment system that is accessible to the seated user and at appropriate and easy way can be used;

(c) the effective upper belt anchorage shall be designed so that unintentional upward displacements of the belt anchorage that impair the effectiveness of the adjustment system in normal

use would reduce, be prevented;

(d) the manufacturer must provide clear explanations in the vehicle manual on the use of such adjustment systems, as well as information on their suitability and limitations for occupants with a small stature.

However, when the adjustment system to adjust shoulder height is not attached directly to the vehicle structure or seat structure, but a flexible adjustment system of the shoulder height;

(e) must still comply with the requirements of (a) and (d) under the type approval conducted pursuant to Regulation No. 14, using the type to be install security system;

(f) it shall be demonstrated that the safety belt, together with the flexible adjustment system to accommodate the

shoulder height adjustment, meets the requirements for restraint systems of Regulation No. 16; requirements (b) and (c) shall be met in the context of type approval pursuant to Regulation No. 16 shall be met in accordance with paragraph 8.3 of that Regulation.

5.4.3.7. In addition to the top anchorage specified in paragraph 5.4.3.1, additional effective belt anchorages may be installed at the top if one of the following conditions is met:

5.4.3.7.1. the additional anchorages comply with the requirements of paragraphs 5.4.3.1 through 5.4.3.6;

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5.4.3.7.2. the additional anchors can be used without tools, meet the requirements of paragraphs 5.4.3.5 and 5.4.3.6, and are located in one of the areas defined by a vertical displacement of 80 mm upward or downward from the area shown in Figure 1 of Annex 3, or

5.4.3.7.3. the anchorages are for a harness belt, meet the requirements of paragraph 5.4.3.6 if

they are located behind the transverse plane passing through the reference line, and are positioned as follows:

5.4.3.7.3.1. in the case of one anchorage point, they are located in the common part of the two dihedral angles whose vertical parts pass through points J1 and J2 defined in Section 5.4.3.1 and whose horizontal sections are shown in Figure 2 of Appendix 3;

5.4.3.7.3.2. in the case of two anchors, they are located in the most convenient of the above described

two-plane angles, provided that one anchorage is not more than 50 mm from the location being determined by mirroring the other anchor symmetrically with respect to the anchorage in Section 5.1.6

defined plane P of the corresponding chair.

5.5. Dimensions of screw holes for anchors.

5.5.1. The anchors have screw holes of 7/16 inch (20 UNF 2B).

5.5.2. If the vehicle is equipped by the manufacturer with safety belts meeting all the requirements for the particular seat

prescribed anchorages are attached, these anchorages need not meet the requirement of paragraph 5.5.1 to the extent that they comply with the other provisions of these regulations. The requirement of

Section 5.5.1 also does not apply to additional anchorages that meet the requirement of Section 5.4.3.7.3.

5.5.3. The safety belt must be able to be released from the anchorage without damaging it.

Seat belts and restraint systems + safety indicators

Refers to ECE R16

Vehicle must meet the points

5.3, 6, 7, 8.1.1 to 8.1.10 and paragraphs 8.2. to 8.3.4 of UN/ECE Regulation No. 16 to Supplement 5 to the 06 series of amendments. The colors described in paragraph 8.1.8. may vary. The presence of child restraint systems is not mandatory. If child restraints are fitted, all applicable requirements shall be met. In addition to the previous requirement, a vehicle equipped with wheelchair restraint systems and restraint systems shall meet the requirements listed in Annex II, Part III of Regulation (EU) 2018/858. The requirement regarding items 5.3, 6, 7 and 8.2. to 8.3.4 is deemed to be fulfilled if the seat belt complies with one of the following standards: • UNECE Regulation No. 16

Appendix VII Comfortability test bed

