



2 March 2020

**Application of Regulation (EU) 2019/2144 “GSR-2”  
on motor caravans (special purpose vehicles)**

The European Caravan Federation (ECF) is the umbrella organisation representing the national organisations of the European Caravanning Industry. Membership of the ECF consists of 13 caravanning federations and numerous national members of the caravanning industry within the EU member states. Our members are involved in the production, the sales and the use of touring caravans, motor caravans and the supply of specialist parts and services to the industry.

This paper outlines the effects of GSR-2 on motor caravans which are considered as special purpose vehicles.

**Classification:**

The European type approval Framework Regulation (EU) 2018/858 classifies motor caravans as vehicles of category M<sub>1</sub> and code SA.

M<sub>1</sub>: Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver’s seat (Art. 4 (1) a)

SA: A vehicle of category M with living accommodation space which contains the following equipment as a minimum (Annex I 5.1):

- seats and table
- sleeping accommodation which may be converted from seats
- cooking facilities
- storage facilities

The equipment shall be rigidly fixed to the living compartment. However, the table shall be designed to be easily removable.

Motor caravans are predominantly multistage built vehicles (2018/858, Annex IX). Their base vehicles are usually vehicles of category N which are designed and constructed primarily for the carriage of goods. As motor caravans are derived from category N-vehicles they cannot fulfil all M<sub>1</sub> requirements. For multi-stage vehicles it is also possible to use the requirements of the base vehicle (2018/858 Annex II Part III Appendix 1).

There are many different types of motor caravans, many of them built in small quantities: small panel van conversions or semi-integrated vehicles, alcove motor caravans with a large sleeping space above the driver’s cab or luxury A class vehicles. The model range is vast: from small to big, light to heavy, basic to luxury, the customer’s choice is endless.

The four main types of motor caravans are:

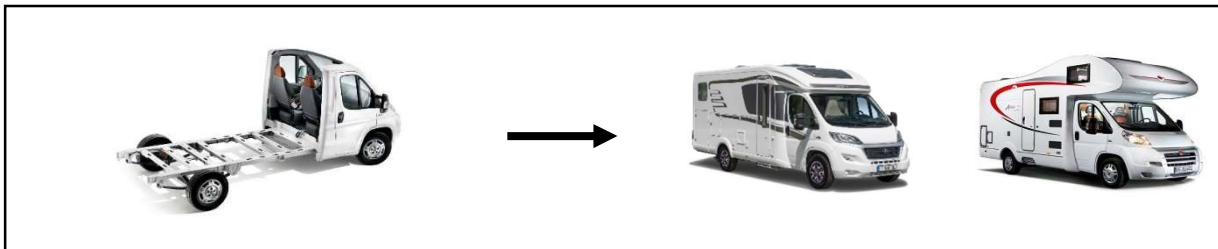
**1. Panel van conversion**



A base vehicle (van) is converted into a panel van conversion usually marketed as a ‘campervan’ whereby the general structure of the van is kept and additional windows, high roofs or elevating roofs (pop-tops) are added.

**2. Motor caravan with driver’s cab: Semi Integrated and Alcove**

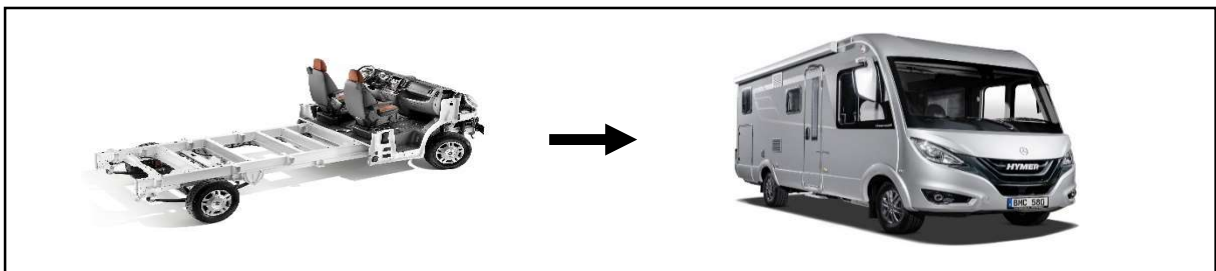
For alcoves and semi integrated motor caravans the chassis comes with a driver’s cab.



- Motor caravan manufacturer buys in an incomplete commercial base vehicle
- Motor caravan manufacturer builds body (except driver’s cab) and interior

**3. Integrated (A class): Motor caravan built on chassis cowl:**

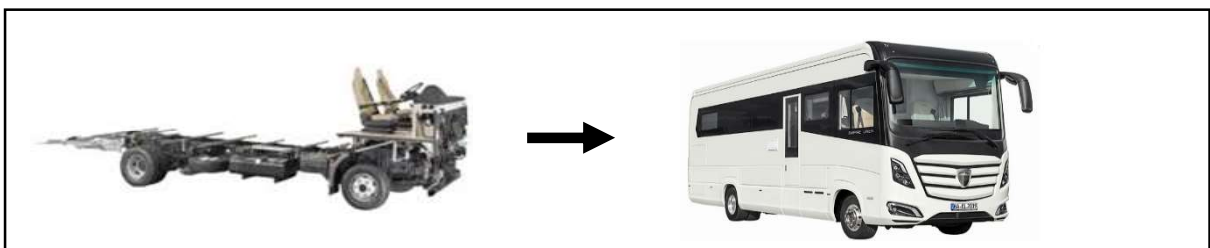
Integrated motor caravans are fully constructed by the motor caravan manufacturer.



- Motor caravan manufacturer buys in commercial base vehicle without driver’s cab
- Motor caravan manufacturers build the complete body and interior

**4. “Liner” (large integrated): Motor caravan built on a specialised truck chassis:**

Very large motor caravans (> 7.5 tons) often use specifically enhanced N<sub>2</sub> base vehicles.



**Market overview<sup>1</sup>**

In 2019, the registration of new motor caravans was approx. 132.000<sup>2</sup>. If you compare this to the 17.6 million motor vehicles (all types) newly registered in the EU, motor caravans only represent 0,75 % of total EU registrations.

Motor caravans are manufactured in quantities from 10 to 7.000 by brand (manufacturer) annually from a wide range of manufacturers, many of which are SMEs.

**Construction types**

The market share in the European Union for the four different types of motorhomes (as defined above) is as follows:

Market share of motor caravans by types (2019)		
Conversion Type	Market share	Number of vehicles
Panel Van Conversion	38 %	50,200
Semi Integrated	32 %	42,200
Alcove	10 %	13,200
Integrated (A Class)	20 %	26,400
Liner	<< 1%	

**Motor caravan manufacturers**

Motor caravans are built in small and medium-sized quantities. Most manufacturers produce less than 500 motor caravans a year.

Annual production	Number of manufacturers	Market share
< 500	> 60	6 %
501 – 1,000	16	13 %
1,001 – 5,000	19	45%
> 5,000	6	36 %

**The road safety of motor caravans is very good**

Detailed and regular accident statistics for motor caravans are very limited as in most countries they are not even recorded. The ECF have tried to identify if there is specific statistical information from individual Member States. It appears that only Germany has a detailed breakdown. The number of accidents in motorhomes is so low it is assumed that many Member states do not even record them. The ECF would very much welcome supplementary accident data from other EU Member States.

Each death on the road is one death too many. In Germany, the accident figures of motor caravans have been analysed on an annual basis by the Federal Highway Research Institute (BAST) since 1997. Similar to previous years, these figures are extremely low. They provide clear evidence that leisure vehicles and their drivers are among the safest traffic participants.

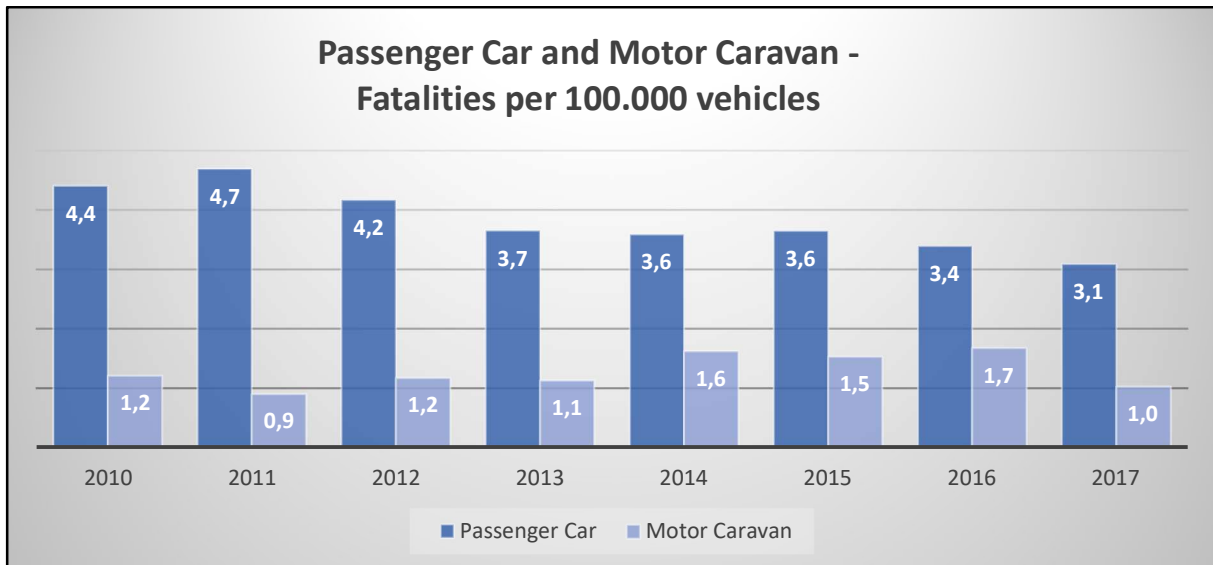
<sup>1</sup> For reasons of simplicity it is referred to registrations (sales) of new vehicles (when not specifically mentioned). Registration and production are largely identical. Significant export/import between the continents does not exist.

<sup>2</sup> Including the United Kingdom.

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Of the 457,354 vehicle accidents causing injuries in 2017, 884 involved motor caravans. A look at the effects of the accidents demonstrates the significantly higher road safety of motor caravans, even compared to the passenger cars.

Of the 2,298 fatally injured drivers and passengers in 2017, five were motor caravan passengers. In relation to a total number of 100,000 vehicles in use, this means that accidents resulted in the deaths of 3.1 persons in passenger cars, and 1 person in motor caravans. The situation is similar with regard to slightly or seriously injured passengers. While 469 vehicle passengers per 100,000 registered passenger cars were involved in an accident, this number falls to 86 for motor caravans.



Source: Bundesanstalt für Straßenwesen (BASt), Kraftfahrt-Bundesamt (KBA)

Motor caravans can be classified as extremely safe, both in terms of the absolute number of accidents as well as accident risks related to driving performance. A comparison shows 256 accidents that caused personal injuries per billion vehicle kilometres for motor caravans, versus 519 personal injuries per billion vehicle kilometres in the case of passenger cars.

### **BASt-Study<sup>3</sup>.**

A study conducted by BASt evidences a very positive result, with less than 0.3 percent of all accidents involving personal injury being caused by motor caravans. Accidents involving motor caravans are not a priority or urgent road safety problem when considering both the absolute number of accidents and the mileage-related accident risk.

<sup>3</sup> BASt Heft M 236 – Unfallbeteiligung von Reisemobilen 2000-2010;  
[https://www.bast.de/BASt\\_2017/DE/Publikationen/Berichte/unterreihe-m/2013-2012/m236.html](https://www.bast.de/BASt_2017/DE/Publikationen/Berichte/unterreihe-m/2013-2012/m236.html)

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### List of requirements which shall be adapted to motor caravans with specific footnotes.

For many motor caravans, but especially for the integrated type, the following requirements must be amended as they cannot be met with today's motor caravans' structures. Transferring the requirements to M<sub>1</sub>SA would dramatically challenge and disrupt the entire industry, as no converter (motor caravan manufacturer) has the necessary development expertise to satisfy what is being proposed. Research in accident data must be carried out to determine whether the additional requirements are really justified and necessary.

**Subject: A21 Full frontal width impact**

Regulation: R137

Scope: M<sub>1</sub>, N<sub>1</sub>

Comment: Cannot be tested with motor caravans as numerous vehicles need to be crash-tested; disproportionate burden for small and medium-sized motor caravan manufacturers; exemption in Annex II Part III Appendix 1 is necessary. Motor caravans with M<sub>1</sub> ≥ 2 500 kg have too many different body shapes based on different base vehicles and different categories.

Item	Subject	Regulatory Act	M <sub>1</sub> ≤ 2 500 kg	M <sub>1</sub> ≥ 2 500 kg	M <sub>2</sub>	M <sub>3</sub>
	Full frontal impact	R137	X	N/A		

Application limited to motor caravans < 2.5 t

**Subject: A25 Side impact**

Regulation: R95

Scope: M<sub>1</sub>, N<sub>1</sub>; will be extended to motor caravans with R point of the lowest seat > 700 mm from ground level

Comment: It is understood that this provision will be tested by the base vehicle manufacturers (therefore letter "G"); cannot be tested with motor caravans as numerous vehicles need to be crash-tested; disproportionate burden for small and medium-sized motor caravan manufacturers; impossible for integrated motor caravans as the chassis cowl needed additional testing (tested by the base vehicle manufacturer without seats)

Item	Subject	Regulatory Act	M <sub>1</sub> ≤ 2 500 kg	M <sub>1</sub> ≥ 2 500 kg	M <sub>2</sub>	M <sub>3</sub>
	Side impact	R95	G	G		

**Subject: A26 Pole Side Impact**

Regulation: R135

Scope: M<sub>1</sub>, N<sub>1</sub>

Comment: Cannot be tested with motor caravans; disproportionate burden for small and medium-sized motor caravan manufacturers; exemption in Annex II Part III Appendix 1 is necessary

## ECF Position Paper on GSR-2

Item	Subject	Regulatory Act	M <sub>1</sub> ≤ 2 500 kg	M <sub>1</sub> ≥ 2 500 kg	M <sub>2</sub>	M <sub>3</sub>
	Pole side impact	R135	X	N/A		

**Subject: B2 Enlarged head impact zone**

Regulation: R127

Scope: M<sub>1</sub>, N<sub>1</sub>

Comment: Disproportionate burden for small and medium-sized motor caravan manufacturers; exemption in Annex II Part III Appendix 1 is necessary

Item	Subject	Regulatory Act	M <sub>1</sub> ≤ 2 500 kg	M <sub>1</sub> ≥ 2 500 kg	M <sub>2</sub>	M <sub>3</sub>
	Enlarged head impact zone	R127	X	N/A		

### List of requirements which can be fulfilled depending on clarification

**Subject: B7 Reversing detection (M<sub>1</sub>, N<sub>1</sub>, N<sub>2</sub>, N<sub>3</sub>)**

Comment: Acceptable - if it is the parking sensor; otherwise many different shapes makes it difficult to fulfil by SME manufacturers. See general comment on page 5.

**Subject: C7 Stability control (M<sub>1</sub>, N<sub>1</sub>, N<sub>2</sub>, N<sub>3</sub>)**

Comment: Acceptable - if the converter is to meet the base vehicle manufacturers requirements; testing is complicated and lengthy as many possible scenarios must be taken into account.

### Specific problems for integrated motor caravans due to new front windscreens with different angles and camera positions. However, an adequate view must be available.

- B4 Advanced emergency breaking for pedestrian and cyclist
- B8 Forward vision (an adequate view must be available)
- C3 Emergency lane keeping
- C9 Advanced emergency braking
- D8 Intelligent speed assistance

Comment 1: Likely to significantly impact integrated motor caravan if the converter needs to meet the base vehicle manufacturers requirements  
Letter "G" to be used in Annex II Part III Appendix 1

Comment 2: Special transitional provisions necessary because of the multi-stage-build process. The base vehicles might only be available for conversion after the compulsory introduction dates for various subjects, so that the final stage approval can only be granted after the information is received by the convertor. Some GSR2 subjects are new technologies which are likely to be available very late.

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Comment 3: Some motor caravans are also produced in small quantities. Therefore, it is appropriate that requirements set out in Regulation (EU) 2019/2144 and the delegated acts and implementing acts adopted pursuant to it take into account such vehicles or classes of vehicles where such requirements are incompatible with the use or design of such vehicles, or where the additional burden imposed by them is disproportionate. Therefore, the application of this Regulation should be deferred.

### **General comment for all motor caravans:**

D4 Protection against Cyberattacks. This could slow down and even prevent the electronic integration between the base vehicle and the Motor Caravan conversion. Needs further clarification.

### **The application of the following items to motor caravans is fully accepted by the ECF**

It is important to note that the exemptions in regulatory acts and the appropriate referenced letters provided for motor caravans as special purpose vehicles in Regulation (EU) No 2018/858 Annex II Part III Appendix 1 must be kept.

A1	Interior fittings	ECE 21
A2	Seats and head restraints	ECE 17
A4	Safety belt anchorages	ECE 14
A5	Safety-belts and restraint systems	ECE 16
A6	Safety-belt reminders	ECE 16
A9	Child restraint system (compl. required if fitted)	ECE 44
A10	Enhanced child restraint system	ECE 129
A12	Rear underrun protection	ECE 58
A14	Fuel and tank safety	ECE 34
A15	LPG safety	ECE 67
A16	CNG safety	ECE 110
A17	Hydrogen safety	ECE 134
A18	Hydrogen system material qualification	None
A19	In-use electric safety	ECE 100
A20	Frontal off-set impact	ECE 94 (mc exempt)
A22	Protective Steering	ECE 12
A23	Replacement Airbag	ECE 114
A 27	Rear impact (post-crash electrical safety)	ECE 34
B1	Pedestrian head/leg protection	ECE 127 (mc exempt)
B2	Enlarged head impact zone	ECE 127 (mc exempt)
B10	Safety glazing	ECE 43
B11	Defrost/Demist	adequate
B12	Wash/Wipe	adequate
B13	Direct vision	ECE 46
C1	Steering equipment	ECE 79
C4	Braking	ECE 13, 13-H
C5	Replacement braking parts	ECE 90
C6	Brake assist system	ECE R139
C10	Tyre safety and environmental performance	ECE 30, 54, 117

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C11	Spare wheel and run-flat systems	ECE 64
C12	Retreaded tyres	ECE 108, 109
C13	TPMS for light duty	ECE 141
C14	TPMS for heavy duty	
C15	Tyre installation (Annex II Part III App1: 458/2011)	ECE 142
D1	Audible Warning	ECE 28
D2	EMC	ECE 10
D3	Protection against unauthorised use	ECE 18, 97, 116
D5	Speedometer	ECE 39
D6	Odometer	ECE 39
D9	Identification of controls, tell-tales and indicators	ECE 121
D10	Heating systems	ECE 122
D11	Light signalling devices	ECE 4, 6, 7, 19, 23, 38, etc.
D12	Road illumination devices	ECE 31, 98, 112, 119, 123
D13	Retro-reflective devices	ECE 3, 104
D14	Light sources	ECE 37, 99, 128
D15	Installation of light signalling devices	ECE 48
D16	Emergency stop signal	None
D17	Headlamp cleaners (compl. required if fitted)	ECE 45
E1	Alcohol interlock installation facilitation	EN 50436:2012
E2	Driver drowsiness and attention warning	None
E3	Advanced driver distraction warning	None
E4	Driver availability monitoring system	None
E5	Event data recorder	None
E6	Systems to replace driver's control	None
E7	Systems to provide vehicle with information on state of the vehicle	
E9	Systems to provide safety information to other road users	
F1	Registration plate space	None
F2	Reversion motion	None
F7	Statutory plate and FIN	None
F8	Towing devices	None
F11	Masses and dimensions	None
F12	Mechanical couplings	ECE 55, 102

The remaining requirements of Regulation (EU) 2019/2144 for trucks and/or busses are not applicable to the vast majority of motor caravans.

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