acea

January 2024

Position Paper

Revision of the Weights and Dimensions Directive

REVIEW OF THE WEIGHTS AND DIMENSIONS DIRECTIVE

KEY MESSAGES

ACEA strongly welcomes the revision of the Weights and Dimensions Directive, published on 11 July 2023, as part of the 'Greening Freight Package'. The revision is one important element of the regulatory framework to facilitate the market uptake of zero-emission vehicles (ZEVs), namely battery-electric and hydrogen-powered trucks and buses. ZEVs will only be adopted in the market – at the necessary speed – if transport operators can use them as seamlessly and at least as profitably as conventionally powered vehicles. This requires firmly putting them on a **level playing field** with conventional diesel-powered trucks and buses. The proposed revision incorporates several of ACEA's recommendations and strikes **a good balance** in establishing a level playing field with conventionally powered vehicles. However, **further adjustments and improvements are necessary:**

- Heavy-duty motor vehicles are the primary source of emissions from heavy-duty vehicles (HDVs). Therefore, it must be clarified that the **additional weight allowances can be fully allocated to zero-emission motor vehicles** (and not to trailers). The vehicle combination weight allowance must always be linked to the additional weight allowance of a zero-emission motor vehicle (ie tractor units, rigid trucks, etc.). The additional weight allowance must not be applicable to vehicle combinations without a zero-emission motor vehicle. **Only if the additional weight allowance becomes fully available for motor vehicles will it be possible to accommodate zero-emission powertrains** in a wide range of vehicle segments without sacrificing payload and thus reducing their competitiveness.
    - The additional weight allowance will only become fully available if the axle weight of the driven axle is increased by 1 tonne at the same time. The proposal to **increase the axle weight of the driven axle to 12.5 tonnes** (from 11.5 tonnes) is **a crucial prerequisite,** without which it will not be possible to use the additional weight allowance fully. Despite a moderately higher driven axle weight, the overall impact on road wear and tear will be even lower due to inner-vehicle weight distribution adjustments that will become possible with the new provisions. The higher the manufacturers' flexibility to redistribute vehicle weight to the drive axle, the lower the impact on road wear will be.
    - **The additional length (+0.9 metres) granted for zero-emission vehicles is an equally crucial prerequisite to enable the swift transition of a wide range of vehicle segments to zero-emission powertrains.** If vehicle manufacturers would have to redesign all cabs, which under the current provisions give additional flexibilities for vehicle length, the transition of a wide range of vehicle segments to

zero-emission powertrains will not be as swift as is required by other regulations (eg the currently reviewed CO2 standards (EU) 2019/1242 which will likely further increase CO2 reduction targets).

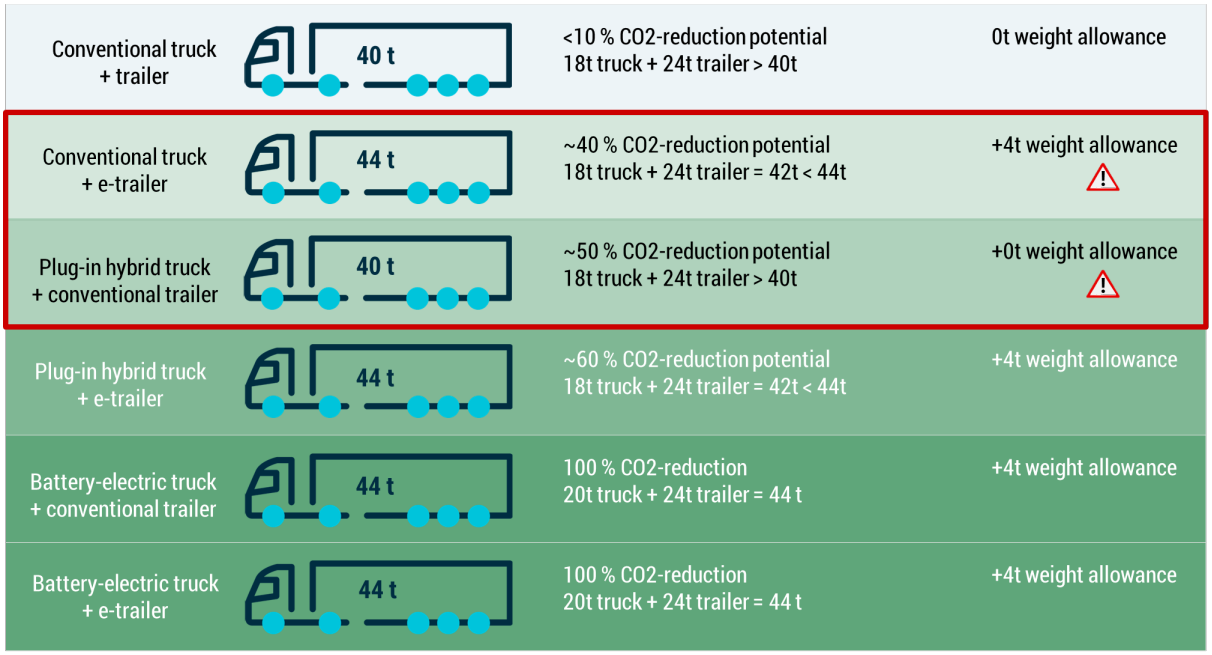
- Some provisions in the proposed review can be simplified further, and regulatory gaps should be closed. This specifically refers to missing definitions for four-axle articulated buses and five-axle motor vehicles.

- It is important to note that the Weights & Dimensions Directive sets provisions for **the operation of road vehicles** in the EU. As such, the provisions of the Directive, once transposed into national law, apply to **all vehicles on the market**. The Directive does not directly address the design of new vehicles, their weights or other dimensions. To the extent that the Directive aims to incentivise the operation of vehicles with new design parameters, such as additional weights, axle weights, or additional length provisions, these will not become available unless the respective type-approval provisions are amended simultaneously. Therefore, **amending the type-approval provisions simultaneously is crucial.** It is equally crucial to adjust national rules where necessary to ensure the provisions not only allow the cross-border operation of vehicles but also their inner-state operation on the territories of member states.
- The revision also **expands and simplifies the use of longer and heavier vehicles and combinations, such as the European Modular System** (EMS). ACEA strongly supports this proposal as it will further improve road transport efficiency, minimise fuel consumption, reduce emissions, and mitigate driver shortages. Longer/ heavier vehicle combinations are in operation in several member states. Numerous evaluations and many years of real-world experiences clearly show the benefits of longer/heavier vehicles and demonstrate that potential negative impacts on safety, road maintenance, or modal shift can be successfully addressed.
- ACEA calls on the European Parliament and Council to **prioritise adopting the Weights and Dimensions revision**. The transposition of the revised rules into national law and the implementation of other affected national provisions will take significant time. Therefore, it is imperative that progress to adopt the Weights and Dimensions revision is made swiftly to remove barriers in the current framework that hinder the market adoption of zero-emission trucks and buses.

KEY MESSAGES IN DETAIL

Weight-related items

- Heavy-duty motor vehicles are the primary source of emissions from HDVs in road transport. Zero-emission powertrains, such as battery-electric or hydrogen-powered drivetrains, require more space and weight in the motor vehicle. Therefore, **additional weight allowances for zero-emission vehicles must be granted to the motor vehicle** to successfully implement zero-emission powertrain technologies.



Based on the Commission's proposal, conventional trucks with e-trailers would qualify for an additional weight allowance, while hybrid trucks with conventional trailers would not. The additional weight allowance must always be linked to a zero-emission motor vehicle.

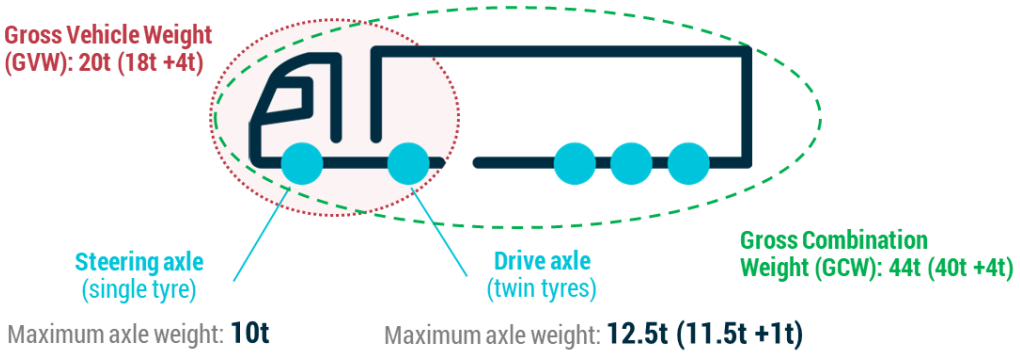
- The definition of "zero-emission vehicle" in Article 2 of the Directive refers to point (11) of Article 3 of Regulation (EU) 2019/1242. A review of this regulation is currently in the inter-institutional process and also proposes to include trailers in the definition of zero-emission vehicles (2023/0042 (COD), Article 1, point 3(g) amending Article 3, point 11(c) of (EU) 2019/ 1242). To ensure that the additional weight allowance is fully available for zero-emission motor vehicles, a definition in Article 2 of the Weights and Dimensions Directive should be added to specify that for this Directive, a "zero-emission vehicle" means a "zero-emission motor vehicle".
- To the same end, Annex I, Table 1, points 2.2 (on Vehicle Combinations), 2.3 (on Motor Vehicles), and 2.4 (Articulated Buses) must be amended accordingly.
- A further clarification and simplification of the Directive is possible by replacing the specified requirements for three-axle and four- and five-axle motor vehicles (with at least two steering axles) with the related references in Annex I, Table 1 points 3.5.3.2 to 3.5.3.5.
- An overview of the necessary weight-related amendments is available in the Annex.

Axle-weight related items

- Making full use of the additional weight allowances for ZEVs requires the weight of the driven axle to be increased by one tonne (from 11.5 tonnes to 12.5 tonnes). Without this increase, the axle weight will effectively limit the additional total weight allowance that can be accommodated in a vehicle. For a number of vehicle configurations (eg two-axle tractor units and two-axle rigid, long-haul vehicles, two-

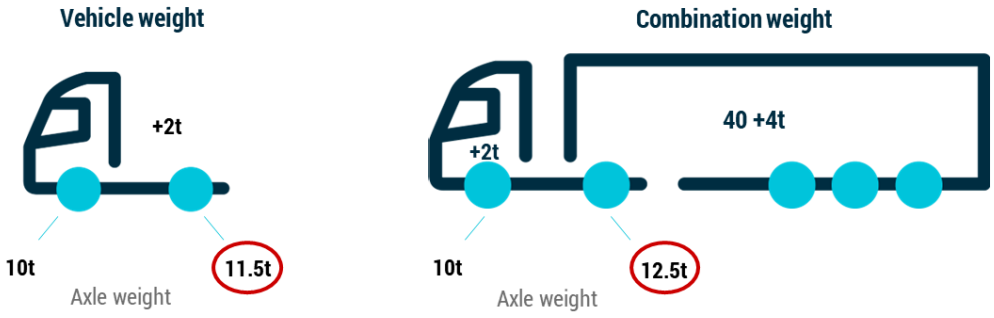
and three-axle buses), the additional weight allowance will not be fully usable. Zero-emission powertrain configurations of these vehicles would remain restricted in their performance or the available payload and thus not be on a level-playing field with conventional vehicles. Therefore, the proposed increase of the drive axle weight by one tonne, from 11.5 tonnes to 12.5 tonnes, is an essential prerequisite to enable the swift rollout of a range of zero-emission heavy-duty vehicles necessary to reach the CO2 reduction targets required by (EU) 2019/1242 and the overall climate targets.

ZERO-EMISSION VEHICLES AND COMBINATIONS



	Limiting factor	Payload
GVW 4t + drive axle 12.5t	GCW	Reference
GVW 4t + drive axle 11.5t	Drive axle	~ -1.5 – -2t
GVW 2t + drive axle 12.5t	GVW	~ -3t

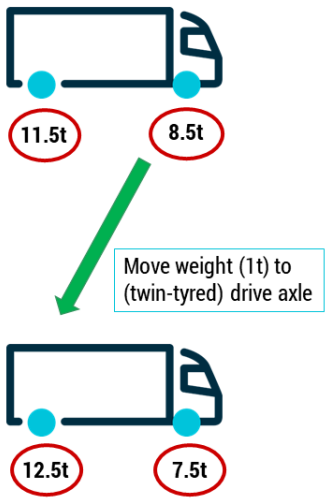
ZERO-EMISSION VEHICLES AND COMBINATIONS INCLUDING ZERO-EMISSION VEHICLES



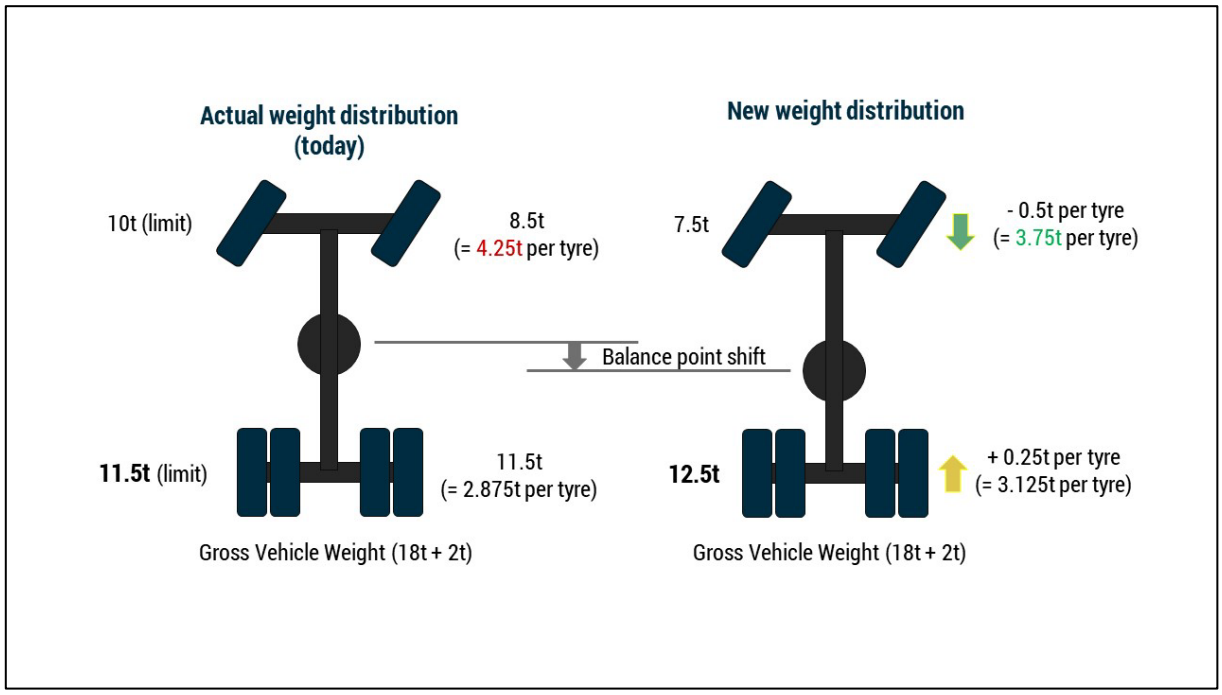
The Commission proposal sets a lower axle weight (11.5t) for a **decoupled tractor** unit without a trailer than for the same tractor unit (12.5t) **coupled** with a trailer (ie in tractor/trailer combination).

- It is important to note that **increasing the driven axle weight limit will <u>not</u> necessarily lead to a significantly higher impact on road infrastructure**.
  - In order to accurately assess the road wear impact of a vehicle, all axles, their axle weights, and the total vehicle weight have to be considered – not only the negative impact of the higher drive axle weight as an isolated element.
  - Increasing the axle weight of the drive axle enables new vehicle designs and the redistribution of the weight in the vehicle. Moving weight from the single-tyre steering axle to the twin-tyre drive axle positively affects a vehicle's total road wear impact, despite a higher drive axle weight.

HIGHER DRIVE AXLE WEIGHT TO MINIMISE ROAD WEAR



- To assess the road infrastructure impact of a vehicle, **all axles** have to be considered
- **Increasing the drive axle weight** allows new inner-vehicle weight distribution designs that **reduce the axle weight on other axles**
- Calculations based on EU-funded research show **road wear with 12.5t is lower than with 11.5t drive axle load**
- Moving weight from **<u>single-tyred steering axle</u>** to the **<u>twin-tyred drive axle</u>** has a positive effect on road wear for a given vehicle weight



- ACEA requests that Annex I, Table 1, be adjusted accordingly in points 3.1.2 (single non-driving axles with twin tyres for buses), 3.4.2, 3.5.3.4, and 3.4.3.5.
- In addition, the provision in Annex I Table 1 point 4.3 (on the maximum authorised weight depending on the wheelbase) must be adjusted for four- and five-axle ZEVs. The current factor (the maximum authorised weight may not exceed *five times* the distance between the foremost and rearmost axles) must be adjusted to 5.63 to maintain the current vehicle dimensions for ZEVs.[1] An extended wheelbase would be required to accommodate additional vehicle weight without this adjustment.
- An overview of the necessary weight-related amendments is available in the Annex.

Length-related items

- For new powertrain technologies for trucks, it is important to emphasise that they require more space (eg for batteries and tanks) than is currently provided for under the Weights and Dimensions Directive. Therefore, it is important that the additional length provision (+0.9 metres) is granted as proposed by the European Commission. In any case, the vehicles would still have to comply with the turning-circle requirements and meet all safety-related requirements (eg Direct Vision, the General Safety Regulation, etc).
- The revised Directive proposes two different definitions for articulated buses in Annex I Table 1, point 1.1: For length, it specifies articulated buses in general, while for weight, it specifies three-axle articulated buses only.

[1] The proposed factor is based on the following calculation: a 4-axle with 32 tons vehicle weight requires a wheelbase of 6.4 meters. Considering the same wheelbase with the additional vehicle weight (32 +4 tons) leads to a factor of 5.63.

- To clarify the definitions for three- and four-axle articulated buses, the current length provision of 18.75 metres should be allocated to three-axle articulated buses only, and a new length definition for four-axle articulated buses should be introduced. The length definition for four-axle articulated buses should be set at 21 metres and is applicable in combinations while maintaining the turning-circle requirements.
- An overview of the necessary weight-related amendments is available in the Annex.

Definitions

- The revised Directive changes the definition of “alternatively fuelled vehicle” to mean a motor vehicle powered wholly (instead of “wholly or in part”) by an alternative fuel and which has been approved under the framework of Regulation (EU) 2018/858.
- As the Directive applies to all vehicles in operation, this change would effectively restrict the current operational flexibility granted to a large number of alternatively fueled vehicles in the vehicle fleet today. Therefore, ACEA recommends that this definition in Article 1(e) be reverted to the text that is currently in force.

Implementation

- To the extent that the proposed Directive allows new vehicle designs and, especially heavier vehicles, regardless of their powertrain technology, it is important to note that these will only be able to circulate in the EU if they are type-approved. In order to enable manufacturers to quickly adapt their products to the additional flexibilities provided by the proposed review, **type-approval provisions must be updated simultaneously**. Only once the type-approval provisions allow the placement of vehicles with new dimensions on the market will it be possible to produce and register them at scale and put them on the market. Delays due to a long transposition time must be avoided for the provisions for zero-emission vehicles to become available as soon as possible.
- ACEA, therefore, recommends that the **transposition time of the Directive** be shortened to one year and the necessary **adjustments to the type-approval rules** (and related national provisions) begin immediately and be updated no later than three months after entry into force of the revised Directive.

ANNEX

Comparative overview of the necessary amendments in Annex I, Table 1

Commission proposal		ACEA amendments	
1. Maximum authorised dimensions for the vehicles referred to in Article 1(1), point (a)		***1. Maximum authorised dimensions for the vehicle referred to in Article 1(1), point (a)***	
1.1 Maximum length		*1.1 Maximum length*	
— motor vehicle other than a bus	12,00 m	— motor vehicle other than a bus	12,00 m
— trailer	12,00 m	— trailer	12,00 m
— articulated vehicle	16,50 m	— articulated vehicle	16,50 m
— road train	18,75 m	— road train	18,75 m
— articulated bus	18,75 m	— **three axled** articulated bus	18,75 m
		— four axled articulated bus	**21,00 m**
— bus with two axles	13,50 m	— bus with two axles	13,50 m
— bus with more than two axles	15,00 m	— bus with more than two axles	15,00 m
— bus + trailer	18,75 m	— bus + trailer	18,75 m
1.2 Maximum width:		*1.2 Maximum width:*	
(a) all vehicles except vehicles referred to in point (b)	2,55 m	(a) all vehicles except vehicles referred to in point (b)	2,55 m
(b) superstructures of conditioned vehicles or conditioned containers or swap bodies transported by vehicles	2,60 m	(b) superstructures of conditioned vehicles or conditioned containers or swap bodies transported by vehicles	2,60 m
1.3 Maximum height		*1.3 Maximum height*	
— any vehicle	4,00 m	— any vehicle	4,00 m
— vehicles or vehicle combinations carrying in intermodal transport one or more containers with	4,30 m	— vehicles or vehicle combinations carrying in intermodal transport one or more containers with	4,30 m

a standard external height of 9' 6" (high-cube containers)	a standard external height of 9' 6" (high-cube containers)
1.4 *Removable superstructures and standardised freight items such as containers are included in the dimensions specified in points 1.1, 1.2, 1.3, 1.6, 1.7, 1.8 and 4.4.*	***1.4*** *Removable superstructures and standardised freight items such as containers are included in the dimensions specified in points 1.1, 1.2, 1.3, 1.6, 1.7, 1.8 and 4.4.*
1.4a *If any removable attachments such as ski-boxes are fitted to a bus, its length, including the attachments, must not exceed the maximum length laid down in point 1.1.*	***1.4a*** *If any removable attachments such as ski-boxes are fitted to a bus, its length, including the attachments, must not exceed the maximum length laid down in point 1.1.*
1.5 *Any motor vehicle or vehicle combination which is in motion must be able to turn within a swept circle having an outer radius of* ***12,50 m*** *and an inner radius of* ***5,30 m***	***1.5*** *Any motor vehicle or vehicle combination which is in motion must be able to turn within a swept circle having an outer radius of* ***12,50 m*** *and an inner radius of* ***5,30 m***
1.5a *Additional requirements for* ***buses***	***1.5a*** *Additional requirements for* ***buses***
With the vehicle stationary, a vertical plane tangential to the side of the vehicle and facing outwards from the circle shall be established by marking a line on the ground. In the case of an articulated vehicle, the two rigid portions shall be aligned with the plane.	*With the vehicle stationary, a vertical plane tangential to the side of the vehicle and facing outwards from the circle shall be established by marking a line on the ground. In the case of an articulated vehicle, the two rigid portions shall be aligned with the plane.*
When the vehicle moves from a straight line approach into the circular area described in point 1.5, no part of it shall move outside of that vertical plane by more than 0,60 m	*When the vehicle moves from a straight line approach into the circular area described in point 1.5, no part of it shall move outside of that vertical plane by more than 0,60 m*
1.6 *Maximum distance between the axis of the fifth-wheel king pin and the rear of a semi-trailer.*	***1.6*** *Maximum distance between the axis of the fifth-wheel king pin and the rear of a semi-trailer.*
1.7 *Maximum distance measured parallel to the longitudinal axis of the road train from the foremost external point of the loading area behind the cabin to the rearmost external point of the trailer of the combination, minus the distance between the rear of the drawing vehicle and the front of the trailer.*	***1.7*** *Maximum distance measured parallel to the longitudinal axis of the road train from the foremost external point of the loading area behind the cabin to the rearmost external point of the trailer of the combination, minus the distance between the rear of the drawing vehicle and the front of the trailer.*
1.8 *Maximum distance measured parallel to the longitudinal axis of the road train from the foremost external point of the loading area behind the cabin to the rearmost external point of the trailer of the combination.*	***1.8*** *Maximum distance measured parallel to the longitudinal axis of the road train from the foremost external point of the loading area behind the cabin to the rearmost external point of the trailer of the combination.*

2. Maximum authorised vehicle weight				
2.1 Vehicles forming part of a vehicle combination				
	2,1,1	Two-axle trailer		18 tonnes
	2,1,2	Three-axle trailer		24 tonnes
2.2 Vehicle combinations				
	2,2,1	Road trains with five or six axles		
		(a) two-axle motor vehicle with three-axle trailer		40 tonnes
		(b) three-axle motor vehicle with two or three-axle trailer		40 tonnes
	2,2,2	**Articulated vehicles with five or six axles**		
		(a)	two-axle motor vehicle with three-axle semi-trailer	40 tonnes
		(b)	three-axle motor vehicle with two or three-axle semi-trailer	40 tonnes
		(c)	two-axle motor vehicle with three-axle semi-trailer involved in intermodal transport operations	42 tonnes
		(d)	three-axle motor vehicle with two- or three-axle semi-trailer involved in intermodal transport operations	44 tonnes
	2,2,3	Road trains with four axles consisting of a two-axle motor vehicle and a two-axle trailer		36 tonnes
	2,2,4	**Articulated vehicles** with four axles consisting of a two-axle motor vehicle and a two-axle semi-trailer, if the distance between the axles of the semi-trailer:		
		2.2.4.1	is 1,3 m or greater but not more than 1,8 m	36 tonnes

2. Maximum authorised vehicle weight				
2.1 Vehicles forming part of a vehicle combination				
	2,1,1	Two-axle trailer		18 tonnes
	2,1,2	Three-axle trailer		24 tonnes
2.2 Vehicle combinations				
	2,2,1	Road trains with five or six axles		
		(a) two-axle motor vehicle with three-axle trailer		40 tonnes
		(b) three-axle motor vehicle with two or three-axle trailer		40 tonnes
	2,2,2	**Articulated vehicles with five or six axles**		
		(a)	two-axle motor vehicle with three-axle semi-trailer	40 tonnes
		(b)	three-axle motor vehicle with two or three-axle semi-trailer	40 tonnes
		(c)	two-axle motor vehicle with three-axle semi-trailer involved in intermodal transport operations	42 tonnes
		(d)	three-axle motor vehicle with two- or three-axle semi-trailer involved in intermodal transport operations	44 tonnes
	2,2,3	Road trains with four axles consisting of a two-axle motor vehicle and a two-axle trailer		36 tonnes
	2,2,4	**Articulated vehicles** with four axles consisting of a two-axle motor vehicle and a two-axle semi-trailer, if the distance between the axles of the semi-trailer:		
		2.2.4.1	is 1,3 m or greater but not more than 1,8 m	36 tonnes

	2.2.4.2	is greater than 1,8 m	36 tonnes
		In case the maximum authorised weight (MAW) of the motor vehicle (18 tonnes) and the MAW of the tandem axle of the semi-trailer (20 tonnes) are respected and the driving axle is fitted with twin tyres and air suspension or suspension recognised as being equivalent within the Union as defined in Annex II the maximum authorised weight provided for in point 2.2.4.2 shall be increased by **2 tonnes.**	
In the case of vehicle combinations including alternatively fuelled vehicles other than zero-emission vehicles, the maximum authorised weights provided for in Sub-section 2.2 shall be increased by the additional weight of the alternative fuel technology with a maximum of **1 tonne.**			
In the case of vehicle combinations including **zero-emission vehicles** the maximum authorised weights provided for in Sub-section 2.2.1 and 2.2.2 shall be increased by **4 tonnes.**			
In the case of vehicle combinations including **zero-emission vehicle**s the maximum authorised weights provided for in in Sub-section 2.2.3 and 2.2.4 shall be increased by **2 tonnes.**			

	2.2.4.2	is greater than 1,8 m	36 tonnes
		In case the maximum authorised weight (MAW) of the motor vehicle (18 tonnes) and the MAW of the tandem axle of the semi-trailer (20 tonnes) are respected and the driving axle is fitted with twin tyres and air suspension or suspension recognised as being equivalent within the Union as defined in Annex II the maximum authorised weight provided for in point 2.2.4.2 shall be increased by **2 tonnes.**	
In the case of vehicle combinations including alternatively fuelled motor vehicles or zero-emission motor vehicles, the maximum authorised weights provided for in Sub-section 2.2 shall be increased by the additional weight of the motor vehicle.			

2.3 Motor vehicles			
	2,3,1	Two-axle motor vehicles other than buses:	18 tonnes
	2,3,2	two-axle buses:	19,5 tonnes

2.3 Motor vehicles			
	2,3,1	Two-axle motor vehicles other than buses:	18 tonnes
	2,3,2	two-axle buses:	19,5 tonnes

2,3,3	Three-axle motor vehicles:	25 tonnes
2,3,4	**Three-axle motor vehicle**s where the driving axle is fitted with twin tyres and air suspension or suspension recognised as being equivalent within the Union as defined in Annex II, or where each driving axle is fitted with twin tyres and the maximum weight of each axle does not exceed 9,5 tonnes.	26 tonnes
2,3,5	**Four-axle motor vehicles with two steering axle**s where the driving axle is fitted with twin tyres and air suspension or suspension recognized as being equivalent within the Union as defined in Annex II, or where each driving axle is fitted with twin tyres and the maximum weight of each axle does not exceed 9,5 tonnes	32 tonnes
2,3,6	**Five-axle motor vehicles with two steering axles** where the driving axle is fitted with twin tyres and air suspension or suspension recognized as being equivalent within the Union as defined in Annex II, or where each driving axle is fitted with twin tyres and the maximum weight of each axle does not exceed 9,5 tonnes.	40 tonnes
In the case of **alternatively fuelled vehicles other than zero-emission vehicles**, the maximum authorised weights provided for in points 2.3.1, 2.3.3 and 2.3.4 of Sub-section 2.3 shall be increased by the additional weight of the alternative fuel technology with a maximum of 1 tonne.		
In the case of **zero-emission vehicles,** the maximum authorised weights provided for in Sub-section 2.3 shall be increased by **2 tonnes.**		

2,3,3	Three-axle motor vehicles:	25 tonnes
2,3,4	**Three-axle motor vehicles with driving axles according to 3.5.3.2 to 3.5.3.5**	26 tonnes
2,3,5	**Four-axle motor vehicles with at least two steering axles with driving axles according to 3.5.3.2 to 3.5.3.5**	32 tonnes
2,3,6	**Five-axle motor vehicles with at least two steering axles with driving axles according to 3.5.3.2 to 3.5.3.5**	40 tonnes
In the case of **alternatively fuelled vehicles other than zero-emission vehicles**, the maximum authorised weights provided for in points 2.3.1, 2.3.3 and 2.3.4 of Sub-section 2.3 shall be increased by the additional weight of the alternative fuel technology with a maximum of 1 tonne.		
In the case of zero-emission motor vehicles, the maximum authorised weights provided for in points 2.3.1 and 2.3.3 to 2.3.6 shall be increased by 4 tonnes, for vehicles provided for in point 2.3.2 by 2 tonnes.		

2.4 Three-axle articulated buses			28 tonnes
	In the case of alternatively fuelled vehicles other than zero-emission vehicles, the maximum authorised weight of 28 tonnes provided for in Sub-section 2.4 is increased by the additional weight required for the alternative fuel technology with a maximum of **1 tonne.**		
	In the case of **zero-emission vehicles** the maximum authorised weight of 28 tonnes provided for in Sub-section 2.4 is increased by **2 tonnes**		

2.4 ~~Three-axle~~ Articulated buses			
	2,4,1	***Three axle articulated buses***	28 tonnes
	2,4,2	***Four axle articulated buses***	32 tonnes
	In the case of alternatively fuelled vehicles other than zero-emission vehicles, the maximum authorised weight of 28 tonnes provided for in Sub-section 2.4 is increased by the additional weight required for the alternative fuel technology with a maximum of **1 tonne.**		
	In the case of **zero-emission vehicles** the maximum authorised weight provided for in Sub-section 2.4.1 is increased **by 3 tonnes and the maximum authorised weight provided for in Sub-section 2.4.2 is increased by 4 tonnes**		

3 Maximum authorised axle weight of the vehicles referred to in Article 1 (1), point (b)			
3.1 Single axles			
	Single non-driving axle		10 tonnes
3.2 Tandem axles of trailers and semi-trailers			
	The sum of the axle weights per tandem axle must not exceed, if the distance (d) between the axles is:		
	3,2,1	less than 1 m (d < 1,0)	11 tonnes
	3,2,2	between 1,0 m and less than 1,3 m (1,0 ≤ d < 1,3)	16 tonnes

3 Maximum authorised axle weight of the vehicles referred to in Article 1 (1), point (b)			
3.1 Single axles			
	3,1,1	Single non-driving axle	10 tonnes
	3,1,2	**Single non-driving axle with twin tyres for buses**	**11.5 tonnes**
3.2 Tandem axles of trailers and semi-trailers			
	The sum of the axle weights per tandem axle must not exceed, if the distance (d) between the axles is:		
	3,2,1	less than 1 m (d < 1,0)	11 tonnes
	3,2,2	between 1,0 m and less than 1,3 m (1,0 ≤ d < 1,3)	16 tonnes

3,2,3	between 1,3 m and less than 1,8 m (1,3 ≤ d < 1,8)	18 tonnes
3,2,4	1,8 m or more (1,8 ≤ d)	20 tonnes
3.3 Tri-axles of trailers and semi-trailers		
	The sum of the axle weights per tri-axle must not exceed, if the distance (d) between the axles is:	
3,3,1	1,3 m or less (d ≤ 1,3)	21 tonnes
3,3,2	over 1,3 m and up to 1,4 m (1,3 <d ≤ 1,4)	24 tonnes
3.4 Driving axle		
3,4,1	Driving axle of the vehicles referred to in points 2.2, 2.3 and 2.4 other than zero-emission vehicles	11,5 tonnes
3,4,2	Driving axle of zero-emission vehicles referred to in points 2.2.1 and 2.2.2	12.5 tonnes
3,4,3	Zero-emission two-axle buses	12.5 tonnes
3.5 Tandem axles of motor vehicles		
	The sum of the axle weights per tandem axle must not exceed, if the distance (d) between the axles is:	
3,5,1	less than 1 m (d < 1,0)	11,5 tonnes
3,5,2	1,0 m or greater but less than 1,3 m (1,0 ≤ d < 1,3)	16 tonnes
3,5,3	1,3 m or greater but less than 1,8 m (1,3 ≤ d < 1,8)	18 tonnes

3,2,3	between 1,3 m and less than 1,8 m (1,3 ≤ d < 1,8)		18 tonnes
3,2,4	1,8 m or more (1,8 ≤ d)		20 tonnes
3.3 Tri-axles of trailers and semi-trailers			
	The sum of the axle weights per tri-axle must not exceed, if the distance (d) between the axles is:		
3,3,1	1,3 m or less (d ≤ 1,3)		21 tonnes
3,3,2	over 1,3 m and up to 1,4 m (1,3 <d ≤ 1,4)		24 tonnes
3.4 Driving axle			
3,4,1	Driving axle of the vehicles referred to in points ~~2.2,~~ 2.3 and 2.4 other than zero-emission vehicles		11,5 tonnes
3,4,2	Driving axle of zero-emission vehicles referred to in points ~~2.2.1 and 2.2.2~~ **2.3 and 2.4**		12.5 tonnes
3.5 Tandem axles of motor vehicles			
	The sum of the axle weights per tandem axle must not exceed, if the distance (d) between the axles is:		
3,5,1	less than 1 m (d < 1,0)		11,5 tonnes
3,5,2	1,0 m or greater but less than 1,3 m (1,0 ≤ d < 1,3)		16 tonnes
3,5,3	1,3 m or greater but less than 1,8 m (1,3 ≤ d < 1,8)		
	3.5.3.1	In general	18 tonnes
	3.5.3.2	Where the driving axle is fitted with twin tyres and air suspension or suspension	19 tonnes

		recognised as being equivalent within the Union as defined in Annex II,	
	3.5.3.3	where each driving axle is fitted with twin tyres and where the maximum weight for each axle does not exceed 9,5 tonnes	19 tonnes
	3.5.3.4	***in case of a zero-emission vehicle referred to in points 2.3 and 2.4 where the driving axle is fitted with twin tyres and air suspension or suspension recognised as being equivalent within the Union as defined in Annex II,***	***20 tonnes***
	3.5.3.5	***in case of a zero-emission vehicle referred to in points 2.3 and 2.4 where each driving axle is fitted with twin tyres and where the maximum weight for each axle does not exceed 10 tonnes***	***20 tonnes***

4. Related characteristics of the vehicles referred to in Article 1(1), point (b)
4.1 All vehicles
The weight borne by the driving axle or driving axles of a vehicle o vehicle combination must not be less than 25 % of the total laden weight of the vehicle or vehicle combination, when used in international traffic
4.2 Road trains

4. Related characteristics of the vehicles referred to in Article 1(1), point (b)
4.1 All vehicles
The weight borne by the driving axle or driving axles of a vehicle or vehicle combination must not be less than 25 % of the total laden weight of the vehicle or vehicle combination, when used in international traffic
4.2 Road trains

The distance between the rear axle of a motor vehicle and the fron axle of a trailer must not be less than 3,00 m	The distance between the rear axle of a motor vehicle and the front axle of a trailer must not be less than 3,00 m
4.3 Maximum authorised weight depending on the wheelbase	*4.3 Maximum authorised weight depending on the wheelbase*
The maximum authorised weight in tonnes of a four-axle motor vehicle may not exceed five times the distance in metres between the axles of the foremost and rearmost axles of the vehicle	The maximum authorised weight in tonnes of a four-axle **or five-axle** motor vehicle may not exceed five times the distance in metres between the axles of the foremost and rearmost axles of the vehicle. **For zero-emission vehicles a factor of 5.63 is used in the calculation.**
4.4 Semi-trailers	*4.4 Semi-trailers*
The distance measured horizontally between the axis of the fifth-wheel king pin and any point at the front of the semi-trailer must not exceed 2,04 m	The distance measured horizontally between the axis of the fifth-wheel king pin and any point at the front of the semi-trailer must not exceed 2,04 m

ABOUT THE EU AUTOMOBILE INDUSTRY

- 12.9 million Europeans work in the auto industry (directly and indirectly), accounting for 6.8% of all EU jobs
- 8.3% of EU manufacturing jobs – some 2.4 million – are in the automotive sector
- Motor vehicles are responsible for €392.9 billion of tax revenue for governments across key European markets
- The automobile industry generates a trade surplus of €101.9 billion for the European Union
- The turnover generated by the auto industry represents over 7% of the EU's GDP
- Investing €59.1 billion in R&D per year, automotive is Europe's largest private contributor to innovation, accounting for 31% of the EU total

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