Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic

# COUNCIL DIRECTIVE 96/53/EC

# of 25 July 1996

laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic

# THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 75 thereof,

Having regard to the proposal from the Commission<sup>(1)</sup>,

Having regard to the opinion of the Economic and Social Committee<sup>(2)</sup>,

Acting in accordance with the procedure laid down in Article 189c of the Treaty<sup>(3)</sup>,

- (1) Whereas Council Directive 85/3/EEC of 19 December 1984 on the weights, dimensions and certain other technical characteristics of certain road vehicles<sup>(4)</sup> established, in the framework of the common transport policy, common standards permitting improved use of road vehicles in traffic between Member States;
- (2) Whereas Directive 85/3/EEC has been significantly amended on many occasions; whereas on the occasion of its further amendment it should for reasons of clarity and rationality be recast in a single text together with Council Directive 86/364/EEC of 24 July 1986 relating to proof of compliance of vehicles with Directive 85/3/EEC<sup>(5)</sup>;
- (3) Whereas differences between standards in force in the Member States with regard to the weights and dimensions of commercial road vehicles could have an adverse effect on the conditions of competition and constitute an obstacle to traffic between Member States;
- (4) Whereas, under the principle of subsidiarity, action should be taken at Community level in order to remove this obstacle;
- (5) Whereas the abovementioned standards reflect a balance between the rational and economical use of commercial road vehicles and the requirements of infrastructure maintenance, road safety and the protection of the environment and the fabric of live;
- (6) Whereas common standards on the dimensions of vehicles intended for the carriage of goods should remain stable in the long term;
- (7) Whereas additional technical requirements related to the weights and dimensions of vehicles may apply to commercial vehicles registered or put into circulation in a

Member State; whereas these requirements must not constitute an obstacle to the circulation of commercial vehicles between Member States;

- (8) Whereas the definition of 'thick-walled refrigerated vehicle' in Article 2 of Directive 85/3/EEC, as amended by Directive 89/388/EEC<sup>(6)</sup>, should be broadened in order to permit Member States to allow refrigerated vehicles no longer meeting the insulation requirements defined in that Article to circulate in their territory;
- (9) Whereas it is necessary to clarify the concept of 'indivisible load' in order to ensure uniform application of this Directive in respect of permits for vehicles or vehicle combinations carrying such loads;
- (10) Whereas the tonne is universally used and understood as the unit of measurement for vehicle weight and is, therefore, applied in this Directive whilst recognizing that the formal unit of weight is the newton;
- (11) Whereas, in implementation of the internal market, the scope of this Directive should be extended to national transport insofar as it concerns characteristics that significantly affect the conditions of competition in the transport sector and in particular the values relating to the maximum authorized length and width of vehicles and vehicle combinations intended for the carriage of goods;
- (12) Whereas, for the other vehicle characteristics, Member States are authorized to apply in their territory different values from those laid down in this Directive only to vehicles used in national traffic;
- (13) Whereas road trains using extensible coupling systems in practice attain a maximum length of 18,75 m when fully extended; whereas the same maximum length should be authorized for road trains using fixed coupling systems;
- (14) Whereas the maximum authorized width of 2,50 m for vehicles intended for the carriage of goods can leave insufficient internal space for the efficient loading of pallets, which has given rise to the application of different tolerances beyond that level in the legislation of the Member States concerning domestic traffic; whereas a general adaptation to the current situation is therefore necessary in order to provide for clarity in technical requirements, bearing in mind the road safety aspects of these characteristics;
- (15) Whereas if the maximum width of vehicles intended for the carriage of goods is increased to 2,55 m, that standard should also be applied to buses; whereas, in respect of buses, it is however necessary to provide for a transitional period to allow the manufacturers concerned to adapt industrial plant;
- (16) Whereas, to prevent excessive road damage and to ensure manoeuvrability, when authorizing and using vehicles preference should be given to pneumatic or equivalent suspension rather than mechanical suspension; whereas certain maximum axle loads should not be exceeded, and the vehicle must be capable of turning through 360° within certain limit values for the path followed;
- (17) Whereas Member States should be permitted, in national goods transport, to allow vehicles or vehicle combinations with dimensions deviating from those laid down in this Directive to circulate in their territory if the transport operations carried out by

such vehicles are defined by this Directive as not significantly affecting international competition in the transport sector, i.e. operations carried out by specialized vehicles and operations carried out according to a modular concept;

- (18) Whereas, in the case of modular concept operations, there should be provision for a transitional period to enable a Member State to adapt its road infrastructure;
- (19) Whereas vehicles or vehicle combinations constructed applying new technologies or new concepts, according to standards which deviate from those laid down by this Directive, should be allowed to carry out local transport operations for a trial period to enable profit to be drawn from technical progress;
- (20) Whereas vehicles which entered into service before the date of implementation of this Directive and which do not comply with the dimension characteristics laid down in this Directive, owing to previously differing national provisions or methods of measurement, should be allowed for a transitional period to continue to provide transport services within the Member State in which the vehicle is registered or put into circulation;
- (21) Whereas progress has been made towards adopting Type-Approval Directives for vehicle combinations with five or six axles; whereas, the requirements regarding conformity with characteristics other than weights and dimensions as laid down in Annex II of Directive 85/3/EEC should therefore be deleted;
- (22) Whereas such a modification is also necessary in order to avoid rules conflicting with international conventions on road traffic and circulation;
- (23) Whereas in order to facilitate the monitoring of compliance with this Directive, it is necessary to ensure that vehicles carry proof of such compliance;
- (24) Whereas this Directive does not affect the obligations of the Member States concerning the deadlines for transposition into national law and for application of the Directives which this Directive replaces,

HAS ADOPTED THIS DIRECTIVE:

#### Article 1

1 This Directive applies to:

- [<sup>F1</sup>a the dimensions of motor vehicles in categories M2 and M3 and their trailers in category 0 and motor vehicles in categories N2 and N3 and their trailers in categories 03 and 04, as defined in Annex II to Directive 2007/46/EC of the European Parliament and of the Council<sup>(7)</sup>;]
  - b the weights and certain other characteristics of the vehicles defined in (a) and specified in Annex I (2) to this Directive.

2 All the values of weights indicated in Annex I are valid as circulation standards and thus refer to loading conditions, not production standards, which will be defined in a later Directive.

 $[^{F2}3$  This Directive shall not apply to articulated buses comprising more than one articulated section.]

#### **Textual Amendments**

- **F1** Substituted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- F2 Inserted by Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic.

#### Article 2

For the purposes of this Directive:

- 'motor vehicle' shall mean any power-driven vehicle which travels on the road by its own means,
- 'trailer' shall mean any vehicle intended to be coupled to a motor vehicle excluding semi-trailers, and constructed and equipped for the carriage of goods,
- -- 'semi-trailer' shall mean any vehicle intended to be coupled to a motor vehicle in such a way that part of it rests on the motor vehicle with a substantial part of its weight and of the weight of its load being borne by the motor vehicle, and constructed and equipped for the carriage of goods,
- 'vehicle combination' shall mean either:
  - a road train consisting of a motor vehicle coupled to a trailer; or
  - an articulated vehicle consisting of a motor vehicle coupled to a semi-trailer,
- 'conditoned vehicle' shall mean any vehicle whose fixed or movable superstructures are specially equipped for the carriage of goods at controlled temperatures and whose side walls, inclusive of insulation, are each at least 45 mm thick,
- 'bus' shall mean a vehicle with more than nine seats including the driver's seat, constructed and equipped to carry passengers and their luggage. It may have one or two decks and may also draw a luggage trailer,
- 'articulated bus' shall mean a bus consisting of two rigid sections connected to each other by an articulated section. On this type of vehicle the passenger compartments in each of the two rigid sections shall be intercommunicating. The articulated section shall permit the free movement of travellers between the rigid sections. Connection and disconnection of the two sections shall be possible only in a workshop,
- 'maximum authorized dimensions' shall mean the maximum dimensions for use of a vehicle, as laid down in Annex I to this Directive,
- 'maximum authorized weight' shall mean the maximum weight for use of a laden vehicle in international traffic,
- 'maximum authorized axle weight' shall mean the maximum weight for use in international traffic of a laden axle or group of axles,
- 'indivisible load' shall mean a load that cannot, for the purpose of carriage by road, be divided into two or more loads without undue expense or risk of damage and which owing to its dimensions or mass cannot be carried by a motor vehicle, trailer, road train or articulated vehicle complying with this Directive in all respects,
- 'tonne' shall mean the weight executed by the mass of a tonne and shall correspond to 9,8 kilonewtons (kN),
- [<sup>F3</sup> alternative fuels' shall mean fuels or power sources which serve, at least partly, as a substitute for fossil oil sources in the energy supply to transport and which

have the potential to contribute to its decarbonisation and enhance the environmental performance of the transport sector, consisting of:

- (a) electricity consumed in all types of electric vehicles;
- (b) hydrogen;
- (c) natural gas, including biomethane, in gaseous form (Compressed Natural Gas CNG) and liquefied form (Liquefied Natural Gas LNG);
- (d) Liquefied Petroleum Gas (LPG);
- (e) mechanical energy from on-board storage/on-board sources, including waste heat,
- 'alternatively fuelled vehicle' shall mean a motor vehicle powered wholly or in part by an alternative fuel and which has been approved under the framework of Directive 2007/46/EC,
- "[<sup>F4</sup>zero-emission vehicle' shall mean a zero-emission heavy-duty vehicle as defined in point (11) of Article 3 of Regulation (EU) 2019/1242 of the European Parliament and of the Council<sup>(8)</sup>,]
- 'intermodal transport operation' shall mean:
  - (a) the combined transport operations defined in Article 1 of Council Directive 92/106/EEC<sup>(9)</sup> engaged in the transport of one or more containers or swap bodies, up to a total maximum length of 45 feet; or
  - (b) transport operations engaged in the transport of one or more containers or swap bodies, up to a total maximum length of 45 feet, using waterborne transport, provided that the length of the initial or the final road leg does not exceed 150 km in the territory of the Union. The distance of 150 km referred to above may be exceeded in order to reach the nearest suitable transport terminal for the envisaged service in the case of:
    - (i) vehicles complying with point 2.2.2(a) or (b) of Annex I; or
    - (ii) vehicles complying with point 2.2.2(c) or (d) of Annex I, in cases where such distances are permitted in the relevant Member State.

For intermodal transport operations, the nearest suitable transport terminal providing a service may be located in a Member State other than the Member State in which the shipment was loaded or unloaded,

-- 'shipper' shall mean a legal entity or a natural or legal person who is named on the bill of lading or on an equivalent transport document, such as a 'through' bill of lading, as the shipper and/or in whose name or on whose behalf a contract of carriage has been concluded with the transport company.]

All maximum authorized dimensions specified in Annex I shall be measured in accordance with Annex I to [ $^{F1}$ Directive 2007/46/EC], with no positive tolerances.

# **Textual Amendments**

**F1** Substituted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

- **F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- F4 Inserted by Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO2 emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (Text with EEA relevance).

# Article 3

- 1 A Member State may not reject or prohibit the use in its territory:
- in international traffic, of vehicles registered or put into circulation in any other Member State for reasons relating to their weights and dimensions,
- [<sup>F5</sup>in national traffic, of vehicles registered or put into circulation in any other Member State for reasons relating to their dimensions,]

provided that such vehicles comply with the limit values specified in Annex I.

This provision shall apply notwithstanding the fact that:

- a the said vehicles are not in conformity with the requirements of that Member State with regard to certain weight and dimension characteristics not covered by Annex I;
- b the competent authority of the Member State in which the vehicles are registered or put into circulation has authorized limits not referred to in Article 4 (1) exceeding those laid down in Annex I.

2 However, paragraph 1 (a) shall not affect the right of Member States, with due regard to Community law, to require vehicles registered or put into circulation in their own territory to be in conformity with their national requirements on weight and dimension characteristics not covered by Annex I.

3 Member States may require conditioned vehicles to carry an ATP certificate or ATP certification plate provided for in the Agreement of 1 September 1970 on the international carriage of perishable foodstuffs and on the special equipment to be used for such carriage.

#### **Textual Amendments**

**F5** Substituted by Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic.

#### Article 4

[<sup>F5</sup>1 Member States shall not authorise the normal circulation within their territories:

- a of vehicles or vehicle combinations for the national transport of goods which are not in conformity with the characteristics set out in points 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 1.8, 4.2 and 4.4 of Annex I;
- b of vehicles for national passenger transport, which are not in conformity with the characteristics set out in points 1.1, 1.2, 1.4a, 1.5 and 1.5a of Annex I.
- 2 Member States may nonetheless authorise the circulation within their territories:

- a of vehicles or vehicle combinations for the national transport of goods which are not in conformity with the characteristics set out in points 1.3, 2, 3, 4.1 and 4.3 of Annex I;
- b of vehicles for national passenger transport, which are not in conformity with the characteristics set out in points 1.3, 2, 3, 4.1 and 4.3 of Annex I.]

3 Vehicles or vehicle combinations which exceed the maximum dimensions may only be allowed to circulate on the basis of special permits issued without discrimination by the competent authorities, or on the basis of similar non-discriminatory arrangements agreed on a case-by-case basis with those authorities, where these vehicles or vehicle combinations carry or are intended to carry indivisible loads.

4 Member States may allow [<sup>F5</sup>vehicles or vehicle combinations used for transport which] carry out certain national transport operations that do not significantly affect international competition in the transport sector to circulate in their territory with dimensions deviating from those laid down in points 1.1, 1.2, 1.4 to 1.8, 4.2 and 4.4 of Annex I.

Transport operations shall be considered not significantly to affect international competition in the transport sector if one of the conditions under (a) and (b) is fulfilled:

- a the transport operations are carried out in a Member State's territory by specialized vehicles or specialized vehicle combinations in circumstances in which they are not normally carried out by vehicles from other Member States, e.g. operations linked to logging and the forestry industry;
- b the Member State which permits transport operations to be carried out in its territory by vehicles or vehicle combinations with dimensions deviating from those laid down in Annex I also permits motor vehicles, trailers and semi-trailers which comply with the dimensions laid down in Annex I to be used in such combinations as to achieve at least the loading length authorized in that Member State, so that every operator may benefit from equal conditions of competition (modular concept).

[<sup>F6</sup>....

<sup>F6</sup>....]

5 Member States may allow vehicles or vehicle combinations incorporating new technologies or new concepts which cannot comply with one or more requirements of this Directive to carry out certain local transport operations for a trial period. Member States shall inform the Commission thereof.

<sup>F6</sup>6 .....

[ $^{F2}7$  Until 31 December 2020 Member States may authorise buses that were registered or put into circulation before the implementation of this Directive but the dimensions of which exceed those laid down in points 1.1, 1.2, 1.5 and 1.5a of Annex I to circulate within their territories.]

#### **Textual Amendments**

- **F2** Inserted by Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic.
- **F5** Substituted by Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic.

F6 Deleted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# [<sup>F1</sup>Article 5

Articulated vehicles put into circulation before 1 January 1991 which do not comply with the specifications contained in points 1.6 and 4.4 of Annex I shall be deemed to comply with such specifications for the purposes of Article 3 if they do not exceed a total length of 15,50 m.]

# **Textual Amendments**

**F1** Substituted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

### Article 6

1 Member States shall take the necessary measures to ensure that Article 1 vehicles referred to in Article 1 and complying with this Directive carry one of the proofs referred to in (a), (b) and (c):

- a a combination of the following two plates:
  - the 'manufacturer's plate' established and attached in accordance with Directive  $76/114/\text{EEC}^{(10)}$ ,
  - the plate relating to dimensions, in accordance with Annex III, established and attached in accordance with Directive 76/114/EEC;
- b a single plate established and attached in accordance with Directive 76/114/EEC and containing the information on the two plates referred to in (a);
- c a single document issued by the competent authorities of the Member State in which the vehicle is registered or put into circulation. Such document shall bear the same headings and information as the plates referred to in (a). It shall be kept in a place easily accessible to inspection and shall be adequately protected.

2 If the characteristics of the vehicle no longer correspond to those indicated on the proof of compliance, the Member State in which the vehicle is registered shall take the necessary steps to ensure that the proof of compliance is altered.

3 The plates and documents referred to in paragraph 1 shall be recognized by the Member States as the proof of vehicle compliance provided for in this Directive.

- 4 Vehicles carrying proof of compliance may be subject:
- as regards common standards on weights, to random checks,
- as regards common standards on dimensions, only to checks where there is a suspicion of non-compliance with this Directive.

5 The middle column of the proof of compliance relating to weights shall contain, where appropriate, the Community weight standards applicable to the vehicle in question. As regards vehicles referred to in point 2.2.2 (c) of Annex I, the entry '44 tonnes' shall be included in brackets under the maximum authorized weight of the vehicle combination.

6 Each Member State may decide, in respect of any vehicle registered or put into circulation in its territory, that the maximum weights authorized by its national legislation shall be indicated in the proof of compliance in the left-hand column and the technically permissible weights in the right-hand column.

# [<sup>F5</sup>Article 7

This Directive shall not preclude the application of road traffic provisions in force in each Member State which permit the weight and/or dimensions of vehicles on certain roads or civil engineering structures to be limited, irrespective of the State of registration of such vehicles or the State where such vehicles were put into circulation.

This includes the possibility to impose local restrictions on maximum authorised dimensions and/or weights of vehicles that may be used in specified areas or on specified roads, where the infrastructure is not suitable for long and heavy vehicles, such as city centres, small villages or places of special natural interest.]

#### **Textual Amendments**

F5 Substituted by Directive 2002/7/EC of the European Parliament and of the Council of 18 February 2002 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic.

<sup>F6</sup>Article 8

#### **Textual Amendments**

F6 Deleted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

<sup>F6</sup>Article 8a

#### **Textual Amendments**

F6 Deleted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# [<sup>F3</sup>Article 8b

1 With the aim of improving their energy efficiency, vehicles or vehicle combinations which are equipped with aerodynamic devices meeting the requirements laid down in paragraphs 2 and 3, and which comply with Directive 2007/46/EC, may exceed the maximum lengths provided for in point 1.1 of Annex I to this Directive, to allow the addition of such devices to the rear of vehicles or vehicle combinations. Vehicles or vehicle combinations

equipped with such devices shall comply with point 1.5 of Annex I to this Directive, and any exceeding of the maximum lengths shall not result in an increase in the loading length of those vehicles or vehicle combinations.

2 Before being placed on the market, the aerodynamic devices referred to in paragraph 1 exceeding 500 mm in length shall be type-approved in accordance with the rules on typeapproval within the framework of Directive 2007/46/EC.

By 27 May 2017, the Commission shall assess the need to adopt or amend any technical requirements for type-approval of aerodynamic devices laid down within that framework taking into account the need to ensure road safety and the safety of intermodal transport operations, and in particular:

- a the secure attachment of the devices in such a way as to reduce the risk of their becoming detached over time, including during an intermodal transport operation;
- b the safety of other road users, especially vulnerable road users, by ensuring, inter alia, the visibility of contour markings when aerodynamic devices are fitted, by adapting the indirect vision requirements and, in the event of a collision with the rear of a vehicle or a vehicle combination, by not compromising rear underrun protection.

To that end, the Commission shall submit, as appropriate, a legislative proposal to amend the relevant rules on type-approval within the framework of Directive 2007/46/EC.

3 The aerodynamic devices referred to in paragraph 1 shall fulfil the following operational conditions:

- a in circumstances where the safety of other road users or of the driver is at risk, they shall be folded, retracted or removed by the driver;
- b their use on urban and inter urban road infrastructures shall take into account the special characteristics of areas where the speed limit is less than or equal to 50 km/h and where vulnerable road users are more likely to be present; and
- c their use shall be compatible with intermodal transport operations and, in particular, when retracted/folded, they shall not exceed the maximum authorised length by more than 20 cm.

4 The Commission shall adopt implementing acts laying down detailed provisions ensuring uniform conditions for the implementation of paragraph 3. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 10i(2).

5 Paragraph 1 shall apply from the date of transposition or application of the necessary amendments to the instruments referred to in paragraph 2, and after the adoption of the implementing acts referred to in paragraph 4, as appropriate.]

### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

<sup>F6</sup>Article 9

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# **Textual Amendments**

F6 Deleted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# [<sup>F3</sup>Article 9a

1 With the aim of improving energy efficiency, in particular as regards the aerodynamic performance of cabs, as well as road safety, vehicles or vehicle combinations which fulfil the requirements laid down in paragraph 2 and which comply with Directive 2007/46/EC may exceed the maximum lengths laid down in point 1.1 of Annex I to this Directive provided that their cabs deliver improved aerodynamic performance, energy efficiency and safety performance. Vehicles or vehicle combinations equipped with such cabs shall comply with point 1.5 of Annex I to this Directive and any exceeding of the maximum lengths shall not result in an increase in the load capacity of those vehicles.

2 Before being placed on the market, the vehicles referred to in paragraph 1 shall be approved in accordance with the rules on type-approval within the framework of Directive 2007/46/EC. By 27 May 2017, the Commission shall assess the need to develop the technical requirements for type-approval of vehicles equipped with such cabs as laid down within that framework, taking into account the following:

- a the improved aerodynamic performance of vehicles or vehicle combinations;
- b vulnerable road users, and improvement of their visibility to drivers, in particular by reducing drivers' blind spots;
- c the reduction in damage or injury caused to other road users in the event of a collision;
- d the safety and comfort of drivers.

[<sup>F7</sup>To that end, the Commission shall take the measures necessary, within the framework of Directive 2007/46/EC, to provide for the type-approval of vehicles or vehicle combinations referred to in paragraph 1 of this Article by 1 November 2019.]

[<sup>F7</sup>3 Paragraph 1 shall apply from 1 September 2020.]]

# **Textual Amendments**

- **F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- **F7** Substituted by Decision (EU) 2019/984 of the European Parliament and of the Council of 5 June 2019 amending Council Directive 96/53/EC as regards the time limit for the implementation of the special rules regarding maximum length for cabs delivering improved aerodynamic performance, energy efficiency and safety performance.

# Article 10

The Directive listed in Annex IV, Part A, shall be repealed with effect from the date in Article 11, without prejudice to the obligations of the Member States concerning the deadlines for transposition set out in Annex IV, Part B.

References to the repealed Directives shall be construed as references to this Directive and shall be read in accordance with the correlation table set out in Annex V.

# F6Article 10a

#### **Textual Amendments**

**F6** Deleted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# [<sup>F3</sup>[<sup>F8</sup>Article 10b

The maximum authorised weights of alternatively fuelled or zero-emission vehicles shall be those set out in points 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.3.1, 2.3.2 and 2.4 of Annex I.

Alternatively fuelled or zero-emission vehicles shall also comply with the maximum authorised axle weight limits set out in point 3 of Annex I.

The additional weight required by alternatively fuelled or zero-emission vehicles shall be defined on the basis of the documentation provided by the manufacturer when the vehicle in question is approved. That additional weight shall be indicated in the official proof required in accordance with Article 6.

The Commission shall be empowered to adopt delegated acts in accordance with Article 10h to update, for the purposes of this Directive, the list of alternative fuels referred to in Article 2 that require additional weight. It is of particular importance that the Commission follow its usual practice and carry out consultations with experts, including Member States' experts, before adopting those delegated acts.]

#### Textual Amendments

- **F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- F8 Substituted by Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO2 emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (Text with EEA relevance).

#### Article 10c

The maximum lengths laid down in point 1.1 of Annex I, subject where applicable to Article 9a(1), and the maximum distance laid down in point 1.6 of Annex I, may be exceeded by 15 cm for vehicles or vehicle combinations engaged in the transport of 45-foot containers or 45-foot swap bodies, empty or loaded, provided that the road transport of the container or swap body in question is part of an intermodal transport operation.

# **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# Article 10d

1 By 27 May 2021, Member States shall take specific measures to identify vehicles or vehicle combinations in circulation that are likely to have exceeded the maximum authorised weight and that should therefore be checked by their competent authorities in order to ensure compliance with the requirements of this Directive. Those measures may be taken with the aid of automatic systems set up on the road infrastructure, or by means of on-board weighing equipment installed in vehicles in accordance with paragraph 4.

A Member State shall not require on-board weighing equipment to be installed on vehicles or vehicle combinations which are registered in another Member State.

Without prejudice to Union and national law, where automatic systems are used to establish infringements of this Directive and to impose penalties, such automatic systems shall be certified. Where automatic systems are used only for identification purposes, they need not be certified.

2 Each Member State shall carry out each calendar year an appropriate number of checks on the weight of vehicles or vehicle combinations in circulation, proportionate to the total number of vehicles inspected each year in its territory.

3 Member States shall, in accordance with Article 18 of Regulation (EC) No 1071/2009 of the European Parliament and of the Council<sup>(11)</sup>, ensure that their competent authorities exchange information about infringements and penalties relating to this Article.

4 The on-board weighing equipment referred to in paragraph 1 shall be accurate and reliable, fully interoperable and compatible with all vehicle types.

5 By 27 May 2016, the Commission shall adopt implementing acts, laying down detailed provisions ensuring uniform conditions for the implementation of the rules on interoperability and compatibility set out in paragraph 4.

In order to ensure interoperability, those detailed provisions shall enable the weight data to be communicated at any time from a moving vehicle to the competent authorities, as well as to its driver. That communication shall be done through the interface defined by the CEN DSRC standards EN 12253, EN 12795, EN 12834, EN 13372 and ISO 14906. In addition, such communication shall ensure that the competent authorities of the Member States can communicate and exchange information in the same way with vehicles and vehicle combinations registered in any Member State and using on-board weighing equipment.

In order to ensure compatibility with all vehicle types, on-board systems of motor vehicles shall have the capability to receive and process any data coming from any type of trailer or semi-trailer attached to the motor vehicle.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 10i(2).

#### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# Article 10e

Member States shall lay down rules on penalties applicable to infringements of this Directive and shall take all measures necessary to ensure that they are implemented. Those penalties shall be effective, non-discriminatory, proportionate and dissuasive. Member States shall notify those rules to the Commission.

#### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# Article 10f

1 For the transport of containers and swap bodies, Member States shall lay down rules that require:

- a the shipper to give to the haulier to whom it entrusts the transport of a container or swap body a statement indicating the weight of the container or swap body transported; and
- b the haulier to provide access to all relevant documentation provided by the shipper.

2 Member States shall lay down rules on the liability of both the shipper and the haulier as appropriate in cases where the information referred to in paragraph 1 is missing or is incorrect and the vehicle or vehicle combination is overloaded.

#### **Textual Amendments**

F3 Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

## Article 10g

Every 2 years, and at the latest by 30 September of the year following the end of the 2-year period concerned, Member States shall send to the Commission the necessary information concerning:

- (a) the number of checks carried out in the previous 2 calendar years; and
- (b) the number of overloaded vehicles or vehicle combinations detected.

This information may be part of the information submitted under Article 17 of Regulation (EC) No 561/2006 of the European Parliament and of the Council<sup>(12)</sup>.

The Commission shall analyse the information received pursuant to this Article, and shall include such analysis in the report to be forwarded to the European Parliament and to the Council pursuant to Regulation (EC) No 561/2006.

#### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

# Article 10h

1 The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.

2 The power to adopt delegated acts referred to in Article 10b shall be conferred on the Commission for a period of 5 years from 26 May 2015. The Commission shall draw up a report in respect of the delegation of power not later than 9 months before the end of the 5-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than 3 months before the end of each period.

3 The delegation of power referred to in Article 10b may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.

4 As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

5 A delegated act adopted pursuant to Article 10b shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of 2 months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by 2 months at the initiative of the European Parliament or of the Council.

#### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

#### Article 10i

1 The Commission shall be assisted by the Road Transport Committee referred to in Article 42 of Regulation (EU) No 165/2014 of the European Parliament and of the Council<sup>(13)</sup>. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011 of the European Parliament and of the Council<sup>(14)</sup>.

2 Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

3 Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

#### **Textual Amendments**

**F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

#### Article 10j

By 8 May 2020, the Commission shall submit, as appropriate, a report to the European Parliament and the Council on the implementation of the amendments to this Directive introduced by Directive (EU) 2015/719 of the European Parliament and of the Council<sup>(15)</sup>, including taking into consideration specific characteristics of certain market segments. On the basis of that report, the Commission shall, if appropriate, make a legislative proposal duly accompanied by an impact assessment. The report shall be made available at least 6 months prior to the submission of any legislative proposal.]

#### **Textual Amendments**

F3 Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).

#### Article 11

1 Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 17 September 1997. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2 Member States shall communicate to the Commission the text of the main provisions of domestic law which they adopt in the field covered by this Directive.

Article 12

This Directive shall enter into force on the day of its publication in the *Official Journal* of the European Communities

Article 13

This Directive is addressed to the Member States.

#### ANNEX I

#### MAXIMUM WEIGHTS AND DIMENSIONS AND RELATED CHARACTERISTICS OF VEHICLES

1.	Maximum authorized dimensions for the vehicles referred to in Article 1 (1) (a)	
[ <sup>F5</sup> 1.1	maximum length:	
	— motor vehicle other than a bus 12,00 m	12,00 m
	— trailer	12,00 m
	— articulated vehicle	16,50 m
	— road train	18,75 m
	— articulated bus	18,75 m
	— bus with two axles	13,50 m
	— bus with more than two axles	15,00 m
	— bus + trailer	18,75 m]
1.2	Maximum width:	
	[ <sup>F1</sup> (a) all vehicles except the vehicles referred to in point (b)	2,55 m]
	[ <sup>F1</sup> (b) superstructures of conditioned vehicles or conditioned containers or swap bodies transported by vehicles	2,60 m]
1.3	Maximum height (any vehicle)	4,00 m
1.4	Removable superstructures and standardized 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	
[ <sup>F2</sup> 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	
[ <sup>F2</sup> 1.5a	Additional requirements for busesWith 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 	
1.6	Maximum distance between the axis of the fifth-wheel king pin and the rear of a semi-trailer	12,00 m
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	15,65 m

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	16,40 m
2.	Maximum authorized vehicle weight (in tonnes)	
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 [ <sup>F4</sup> In the case of vehicle combinations including alternatively fuelled or zero-emission vehicles, the maximum authorised weights provided for in this section shall be increased by the additional weight of the alternative fuel or zero- emission technology with a maximum of 1 tonne and 2 tonnes respectively.]	
	(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 [ <sup>F4</sup> In the case of vehicle combinations including alternatively fuelled or zero-emission vehicles, the maximum authorised weights provided for in this section shall be increased by the additional weight of the alternative fuel or zero- emission technology with a maximum of 1 tonne and 2 tonnes respectively.]	

	(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
	[ <sup>F1</sup> (c) two-axle motor vehicle with three-axle semi-trailer carrying, in intermodal transport operations, one or more containers or swap bodies, up to a total maximum length of 45 feet	42 tonnes]
	[ <sup>F3</sup> (d) three-axle motor vehicle with two- or three- axle semi-trailer carrying, in intermodal transport operations, one or more containers or swap bodies, up to a total maximum length of 45 feet	44 tonnes]
2.2.3	Road trains with four axles consisting of a two-axle motor vehicle and a two-axle trailer [ <sup>F4</sup> In the case of vehicle combinations including alternatively fuelled or zero-emission vehicles, the maximum authorised weights provided for in this section shall be increased by the additional weight of the alternative fuel or zero- emission technology with a maximum of 1 tonne and 2 tonnes respectively.]	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: [ <sup>F4</sup> In the case of vehicle combinations including alternatively fuelled or zero-emission vehicles, the maximum authorised weights provided for in this section shall be increased	

	by the additional weight of the alternative fuel or zero- emission technology with a maximum of 1 tonne and 2 tonnes respectively.]	
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 + 2 tonnes margin when the maximum authorized 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 recognized as being equivalent within the Community as defined in Annex II
2.3	Motor vehicles	
[ <sup>F1</sup> 2.3.1	Two-axle motor vehicles other than buses: 18 tonnes Two-axle alternatively fuelled motor vehicles other than buses: the maximum authorised weight of 18 tonnes is increased by the additional weight required for the alternative fuel technology with a maximum of 1 tonne [ <sup>F4</sup> Zero-emission vehicles: the maximum authorised weight of 18 tonnes is increased by the additional weight of the zero-emission technology with a maximum of 2 tonnes.]	Two-axle buses: 19,5 tonnes]
[ <sup>F1</sup> 2.3.2	Three-axle motor vehicles	25 tonnes, or 26 tonnes 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. Three-axle alternatively fuelled motor vehicles: the maximum authorised weight of 25 tonnes, or 26 tonnes 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, is increased by the additional weight required for the alternative fuel technology with a maximum of 1 tonne [ <sup>F4</sup> Three-axle zero-emission vehicles: the maximum authorised weight of 25 tonnes, or 26 tonnes 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, is increased by the additional weight of the zero-emission technology with a maximum of 2 tonnes.]]
2.3.3	Four-axle motor vehicles with two steering axles	32 tonnes where the driving axle is fitted with twin tyres and air suspension or suspension recognized as being equivalent within the Community 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

[ <sup>F1</sup> 2.4	Three-axle articulated buses	28 tonnes Three-axle articulated buses alternatively fuelled: the maximum authorised weight of 28 tonnes is increased by the additional weight required for the alternative fuel technology with a maximum of 1 tonne [ <sup>F4</sup> Three-axle articulated buses that are zero-emission vehicles: the maximum authorised weight of 28 tonnes is increased by the additional weight of the zero- emission technology with a maximum of 2 tonnes.]]
3.	Maximum authorized axle weight of the vehicles referred to in Article 1 (1) (b) (in tonnes)	
3.1	Single axles Single non-driving axle	10 tonnes
3.2	Tandem axles of trailers andsemi-trailersThe sum of theaxle weights pertandem axle mustnot exceed, ifthe distance (d)between the axlesis:	
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 $(1,0 \le d < 1,3)$	16 tonnes
3.2.3	between 1,3 m and less than 1,8 m $(1,3 \le d < 1,8)$	18 tonnes
3.2.4	1,8 m or more $(1,8 \le d)$	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 $\le$ 1,3)	21 tonnes
3.3.2	over 1,3 m and up to 1,4 m $(1,3 < d \le 1,4)$	24 tonnes
3.4	Driving axle	
3.4.1	Driving axle of the vehicles referred to in 2.2.1 and 2.2.2	11,5 tonnes
3.4.2	Driving axle of the vehicles referred to in points 2.2.3, 2.2.4, 2.3 and 2.4	11,5 tonnes
3.5	Tandem axles of motor vehiclesThe sum of the axle weights per tandem axle must not exceed, if the distance (d) between the axles 	
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 $(1,0 \le d < 1,3)$	16 tonnes
3.5.3	1,3 m or greater but less than 1,8 m $(1,3 \le d < 1,8)$	-18 tonnes -19 tonnes where the driving axle is fitted with twin tyres and air suspension or suspension recognized as being equivalent within the Community as defined in Annex II, or where each driving axle is fitted with twin tyres and where the maximum weight for each axle does not exceed 9,5 tonnes
4.	Related characteristics of the vehicles referred to in Article 1 (1) (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 front axle of a trailer must not be less than 3,00 m.	
4.3	Maximum authorized weight depending on the wheelbase The maximum authorized weight in tonnes of a four- axle motor vehicle may not exceed five times the distance in metres between the axes of the foremost and rearmost axles of the vehicle	
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	

# ANNEX II

# CONDITIONS RELATING TO EQUIVALENCE BETWEEN CERTAIN NON-AIR SUSPENSION SYSTEMS AND AIR SUSPENSION FOR VEHICLE DRIVING AXLE(S)

# 1. DEFINITION OF AIR SUSPENSION

A suspension system is considered to be air suspended if at least 75 % of the spring effect is caused by the air spring.

2. EQUIVALENCE TO AIR SUSPENSION

A suspension recognized as being equivalent to air suspension must conform to the following:

- 2.1. during free transient low frequency vertical oscillation of the sprung mass above a driving axle or bogie, the measured frequency and damping with the suspension carrying its maximum load must fall within the limits defined in points 2.2 to 2.5;
- 2.2. each axle must be fitted with hydraulic dampers. On tandem axle bogies, the dampers must be positioned to minimize the oscillation of the bogies;
- 2.3. the mean damping ratio D must be more than 20 % of critical damping for the suspension in its normal conditions with hydraulic dampers in place and operating;
- 2.4. the damping ratio D of the suspension with all hydraulic dampers removed or incapacitated must be not more than 50 % of D;
- 2.5. the frequency of the sprung mass above the driving axle or bogie in a free transient vertical oscillation must not be higher than 2,0 Hz;
- 2.6. the frequency and damping of the suspension are given in paragraph 3. The test procedures for measuring the frequency and damping are laid down in paragraph 4.
- 3. DEFINITION OF FREQUENCY AND DAMPING

In this definition a sprung mass M (kg) above a driving axle or bogie is considered. The axle or bogie has a total vertical stiffness between the road surface and the sprung mass of K Newtons/ metre (N/m) and a total damping coefficient of C Newtons per metre per second (N.s/m). The vertical displacement of the sprung mass is Z. The equation of motion for free oscillation of the sprung mass is:

 $M\frac{d^2Z}{dt^2} + C\frac{dZ}{dt} + kZ = 0$ 

The frequency of oscillation of the sprung mass F (rad/sec) is:

$$F = \sqrt{\frac{K}{M} - \frac{C^2}{4M^2}}$$

The damping is critical when  $C = C_o$ ,

where  $C_o = 2\sqrt{KM}$ 

The damping ratio as a fraction of critical damping is  $\frac{c}{c}$ 

 $\overline{C_{\theta}}$ 

During free transient oscillation of the sprung mass the vertical motion of the mass will follow a damped sinusoidal path (Figure 2). The frequency can be estimated by measuring the time for as many cycles of oscillation as can be observed. The damping can be estimated by measuring theheights of successive peaks of the oscillation in the same direction. If the peak amplitudes of the first and second cycles of the oscillation are  $A_1$  and  $A_2$ , then the damping ratio D is;

 $D = \frac{C}{C_a} = \frac{1}{2\pi} \times \ln \frac{A_1}{A_2}$ 

'ln' being the natural logarithm of the amplitude ratio.

4. TEST PROCEDURE

To establish by test the damping ratio D, the damping ratio with hydraulic dampers removed, and the frequency F of the suspension, the loaded vehicle should either:

(a) be driven at low speed (5 km/hr + 1 km/hr) over an 80 mm step with the profile shown in Figure 1. The transient oscillation to be analyzed for frequency and damping occurs after the wheels on the driving axle have left the step;

or

(b) be pulled down by its chassis so that the driving axle load is 1,5 times its maximum static value. The vehicle held down is suddenly released and the subsequent oscillation analyzed;

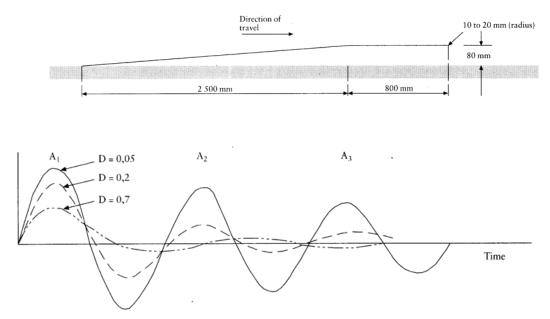
or

(c) be pulled up by its chassis so that the sprung mass is lifted by 80 mm above the driving axle. The vehicle held up is suddenly dropped and the subsequent oscillation analyzed;

or

(d) be subjected to other procedures insofar as it has been proved by the manufacturer, to the satisfaction of the technical department, that they are equivalent.

The vehicle should be instrumented with a vertical displacement transducer between driving axle and chassis, directly above the driving axle. From the trace, the time interval between the first and second compression peaks can be measured to obtain the frequency F and the amplitude ratio to obtain the damping. For twin-drive bogies, vertical displacement transducers should be fitted between each driving axle and the chassis directly above it.



#### ANNEX IV

# PLATE RELATING TO DIMENSIONS REFERRED TO IN ARTICLE 6 (1) (a)

I.

The plate relating to dimensions, as far as possible affixed next to the plate referred to in Directive 76/114/EEC, must contain the following data:

- 1. name of the manufacturer<sup>(16)</sup>;</sup>
- 2. vehicle identification number<sup>(17)</sup>;
- 3. length of the motor vehicle, trailer or semi-trailer (L);
- 4. width of the motor vehicle, trailer or semi-trailer (W);
- 5. data for the measurement of the length of vehicle combinations:
  - the distance (a) between the front of the motor vehicle and the centre of the coupling device (coupling hook or fifth wheel); in the case of a fifth wheel with several coupling points, the minimum and maximum values must be given (a<sub>min</sub> and a<sub>max</sub>),
  - -- the distance (b) between the centre of the coupling device of the trailer (fifth wheel ring) or of the semi-trailer (kingpin) and the rear of the trailer or of the semi-trailer; in the case of a device with several coupling points, the minimum and maximum values must be given (b<sub>min</sub> and b<sub>max</sub>).

The length of vehicle combinations is the length of the motor vehicle and trailer or semi-trailer placed in a straight line behind each other.

II. The values given on the proof of compliance shall reproduce exactly the measurements carried out directly on the vehicle.

#### ANNEX IV

#### PART A

# **REPEALED DIRECTIVES**

#### (referred to in Article 10)

- Directive 83/3/EEC on the weights, dimensions and certain other technical characteristics of certain road vehicles and its successive amendments:
  - Directive 86/360/EEC
  - Directive 88/218/EEC
  - Directive 89/338/EEC
  - Directive 89/460/EEC
  - Directive 89/461/EEC
  - Directive 91/60/EEC
  - Directive 92/7/EEC
- Directive 86/364/EEC relating to proof of compliance of vehicles with Directive 85/3/ EEC on the weights, dimensions and certain other technical characteristics of certain road vehicles.

Directive	Deadline for transposition
85/3/EEC (OJ No L 2, 3. 1. 1985, p. 14)	1 July 1986

#### PART B

	1 January 1990
86/360/EEC (OJ No L 217, 5. 8. 1986, p. 19)	1 January 1992
86/364/EEC (OJ No L 221, 7. 8. 1986, p. 48)	29 July 1987
88/218/EEC (OJ No L 98, 15. 4. 1988, p. 48)	1 January 1989
89/338/EEC (OJ No L 142, 25. 5. 1989, p. 3)	1 July 1991
89/460/EEC (OJ No L 226, 3. 8. 1989, p. 5)	1 January 1993
89/461/EEC (OJ No L 226, 3. 8. 1989, p. 7)	1 January 1991
91/60/EEC (OJ No L 37, 9. 2. 1991, p. 37)	30 September 1991
92/7/EEC (OJ No L 57, 2. 3. 1992, p. 29)	31 December 1992

# ANNEX V

## CORRELATION TABLE

This Directiv	85/3/ veEEC	86/360/ EEC	86/364/ EEC	88/218/ EEC	89/338/ EEC	89/460/ EEC	89/461/ EEC	91/60/ EEC	92/7/ EEC
Article 1 (1)	Article 1 (1)								
Article 1 (1) (a)									
Article 1 (1) (b)	Article 1 (1) (b)								
Article 1 (2)	Article 1 (2)								
Article 2 1st to 4th and 6th to 10th indents					Article 1 (2)				
Article 2 5th, 11th and 12th indents									
Article 2 last paragrap	— h								

	1	1	1	1	1		1	1	
Article 3 (1)									
Article 3 (1) (a) (b)	Article 3 (1) (a) (b)								
Article 3 (2)	Article 3 (2)								
Article 3 (3)									
Article 4									
Article 5 (a)							Article 1 (1)		
Article 5 (b)								Article 1 (1)	
Article 6 (1 to 4)			Article 1 (1 to 4)						
Article 6 (5 to 6)			Article 2 (1 to 2)						
Article 7	Article 6								
Article						Article 1			
8									
8 Articles 9 to 12									
Articles	Article 9								
Articles 9 to 12 Article	Article								
Articles 9 to 12 Article 13 Annex	Article 9 Annex								
Articles 9 to 12 Article 13 Annex I	Article 9 Annex I							Article 1 (2)	
Articles 9 to 12 Article 13 Annex I Point 1 Point 1 Point 1 Point 1 St to 3rd and 5th	Article 9 Annex I								

Point 1.2 (b)							
Point 1.3 to 1.5	Point 1.3 to 1.5						
Point 1.6					Article 1 (3)		
Point 1.7						Article 1 (3)	
Point 1.8							
Point 2 to 2.2.1 (b)	Point 2 to 2.2.1 (b)						
Point 2.2.2 (a to c)	Point 2.2.2 (a to c)						
Point 2.2.3 Point 2.2.4.1				Article 1 (5) (b)			
Point 2.2.4.2							Article 1 (1) (a)
Point 2.3 to 2.3.1				Article 1 (5) (c)			
Point 2.3.2 to 2.3.3							Article 1 (1) (b to c)
Point 2.4				Article 1 (5) (c)			
Point 3 to 3.3.2	Point 3 to 3.3.2						
Point 3.4 to 3.4.1		Article 1 (3)					
Point 3.4.2 to 3.5.2				Article 1 (5) (d)			
Point 3.5.3							Article 1 (1) (d)

Point 4 to 4.2	Point 4 to 4.2				
Point 4.3			Article 1 (5) (e)		
Point 4.4				Article 1 (4)	
Annex II					Annex III
Annex III		Annex			

- (1) OJ No C 38, 8. 2. 1994, p. 3 and OJ NO C 247, 23. 9. 1995, p. 1.
- (2) OJ No C 295, 22. 10. 1994, p. 72.
- (3) Opinion of the European Parliament delivered on 15 November 1994 (OJ No C 341, 5. 12. 1994, p. 39), Council common position of 8 December 1995 (OJ No C 356, 30. 12. 1995, p. 13), and Decision of the European Parliament of 14 March 1996 (OJ No C 96, 4. 4. 1996, p. 233).
- (4) OJ No L 2, 3. 1. 1985, p. 14. Directive as last amended by Directive 92/7/EEC (OJ No L 57, 2. 3. 1992, p. 29).
- (5) OJ No L 221, 7. 8. 1986, p. 48).
- (6) OJ No L 142, 25. 5. 1989, p. 3.
- (7) [<sup>F1</sup>Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive) (OJ L 263, 9.10.2007, p. 1).]
- (8) [<sup>F3</sup>[<sup>F4</sup>Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202).]]
- (9) [<sup>F3</sup>Council Directive 92/106/EEC of 7 December 1992 on the establishment of common rules for certain types of combined transport of goods between Member States (OJ L 368, 17.12.1992, p. 38).]
- (10) OJ No L 24, 30. 1. 1976, p. 1. Directive as amended by Commission Directive 78/507/EEC (OJ No L 155, 13. 6. 1978, p. 31).
- (11)
  - (F<sup>3</sup>(1)\* Regulation (EC) No 1071/2009 of the European Parliament and of the Council of 21 October 2009 establishing common rules concerning the conditions to be complied with to pursue the occupation of road transport operator and repealing Council Directive 96/26/EC (OJ L 300, 14.11.2009, p. 51).
- (12) [<sup>F3</sup>(<sup>2</sup>)\* Regulation (EC) No 561/2006 of the European Parliament and of the Council of 15 March 2006 on the harmonisation of certain social legislation relating to road transport and amending Council Regulations (EEC) No 3821/85 and (EC) No 2135/98 and repealing Council Regulation (EEC) No 3820/85 (OJ L 102, 11.4.2006, p. 1).
- (13) I<sup>F3</sup>(<sup>3</sup>)\* Regulation (EU) No 165/2014 of the European Parliament and of the Council of 4 February 2014 on tachographs in road transport, repealing Council Regulation (EEC) No 3821/85 on recording equipment in road transport and amending Regulation (EC) No 561/2006 of the European Parliament and of the Council on the harmonisation of certain social legislation relating to road transport (OJ L 60, 28.2.2014, p. 1).
- (14) [<sup>F3</sup>(<sup>4</sup>)\* Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).
- (15) [<sup>F3</sup>(<sup>5</sup>)\* Directive (EU) 2015/719 of the European Parliament and of The Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (OJ L 115, 6.5.2015, p. 1).
- (16) This information need not be repeated where the vehicle carries a single plate containing data on both weights and dimensions.

(17) This information need not be repeated where the vehicle carries a single plate containing data on both weights and dimensions.

#### **Textual Amendments**

- F1 Substituted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- **F3** Inserted by Directive (EU) 2015/719 of the European Parliament and of the Council of 29 April 2015 amending Council Directive 96/53/EC laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (Text with EEA relevance).
- F4 Inserted by Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO2 emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (Text with EEA relevance).