



Council of the  
European Union

Brussels, 16 October 2014  
(OR. en)

14419/14

AGRI 638  
ENT 239  
MI 786  
DELECT 198

## COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	15 October 2014
To:	Mr Uwe CORSEPIUS, Secretary-General of the Council of the European Union
No. Cion doc.:	C(2014) 7410 final
Subject:	COMMISSION DELEGATED REGULATION (EU) No .../.. of 15.10.2014 supplementing Regulation (EU) No 167/2013 of the European Parliament and of the Council with regard to vehicle braking requirements for the approval of agricultural and forestry vehicles (Text with EEA relevance)

Delegations will find attached document C(2014) 7410 final.

Encl.: C(2014) 7410 final



EUROPEAN  
COMMISSION

Brussels, 15.10.2014  
C(2014) 7410 final

**COMMISSION DELEGATED REGULATION (EU) No .../..**

**of 15.10.2014**

**supplementing Regulation (EU) No 167/2013 of the European Parliament and of the Council with regard to vehicle braking requirements for the approval of agricultural and forestry vehicles**

**(Text with EEA relevance)**

## EXPLANATORY MEMORANDUM

### **1. CONTEXT OF THE DELEGATED ACT**

#### **(a) Grounds for, objectives and outline of the proposal**

The term ‘agricultural and forestry vehicles’ covers a wide range of different vehicle types with one or more axles and two, four or more wheels or track-laying vehicles, e.g. motorised vehicles such as wheeled tractors and track-laying tractors, as well as non-motorised ones such as trailers and interchangeable towed equipment, used for a wide variety of agricultural and forestry purposes, including special purpose works.

In the legislative process leading to the adoption of Regulation 167/2013 of the European Parliament and of the Council of 5 February 2013 on the approval and market surveillance of agricultural and forestry vehicles<sup>1</sup> which will repeal Directive 2003/37/EC with effect from 1<sup>st</sup> January 2016 the following key concerns as regards the current provisions for the type-approval of new agricultural and forestry vehicles were addressed:

- the complexity of the legal framework;
- the lack of requirements necessary in order to apply for EU whole-vehicle type- approval on a voluntary basis for other categories than T1, T2 and T3;
- the necessity to update existing aspects on vehicle braking safety;
- the establishment of EU requirements for the braking of agricultural and forestry towed vehicles; and
- the availability on the internal market of certain imported vehicles, systems, components or separate technical units which compliance with the current type-approval requirements regarding vehicle braking safety should be further assessed and monitored.

Based on the empowerments in Regulation (EU) 167/2013, this delegated act updates and supplements, in line with technical progress, current type-approval requirements regarding the braking safety of agricultural and forestry vehicles. To this aim, it refers to international requirements in this area (e.g. European and international standards and UNECE regulation 13). Consequently, this Regulation contains requirements regarding the subjects listed in its Annexes I – XIII.

#### **(b) Consistency of the proposal with the EU objectives**

This Regulation is consistent with the EU objective to make roads safer as outlined, in particular, in the White Paper on European Transport Policy<sup>2</sup>. This was adopted by the Commission in 2001 and provides an umbrella for the European Road Safety Action Programme.

As an alternative, reference is made to CEN/CENELEC, ISO standards or UNECE regulations which are directly available to the public and referenced therein.

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<sup>1</sup> OJ L60, 2.3.2013, p. 1.

<sup>2</sup> COM (2001) 370.

For these reasons, this delegated act on vehicle braking performance stipulates detailed technical provisions and test procedures, with reference to the Codecision act, Regulation (EU) No 167/2013<sup>3</sup> to help achieve the EU's goals in terms of simplification and safety.

## **2. CONSULTATIONS PRIOR TO THE ADOPTION OF THE ACT**

In the preparation of this act, the Commission carried out appropriate consultations with experts from the relevant industrial stakeholders, social partners and Member States. These were achieved by the means of Expert Group meetings and, when necessary, bilateral meetings and meetings with a limited group of highly interested parties.

## **3. LEGAL ELEMENTS OF THE DELEGATED ACT**

The legal basis of this delegated act is Regulation (EU) No 167/2013 of the European Parliament and of the Council of 5 February 2013 on the approval and market surveillance of agricultural and forestry vehicles.

As the empowering act is a Regulation, this Delegated Act should also be a Regulation and not a Directive.

### **COMMISSION DELEGATED REGULATION (EU) No .../..**

**of 15.10.2014**

**supplementing Regulation (EU) No 167/2013 of the European Parliament and of the Council  
with regard to vehicle braking requirements for the approval of agricultural and forestry  
vehicles**

**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 167/2013 of the European Parliament and of the Council of 5 February 2013 on the approval and market surveillance of agricultural and forestry vehicles<sup>4</sup>, and in particular Article 17(5),

Whereas:

- (1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured. To that end, a comprehensive EU type-

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<sup>3</sup> OJ L 60, 2.3.2013, p. 1

<sup>4</sup> OJ L 60, 2.3.2013, p. 1.

approval system and a strengthened market surveillance system for agricultural and forestry vehicles and their systems, components and separate technical units as defined by Regulation (EU) No 167/2013 apply.

- (2) The term ‘agricultural and forestry vehicles’ covers a wide range of different vehicle types with one or more axles and two, four or more wheels or track-laying vehicles, e.g. wheeled tractors, track-laying tractors, trailers and towed equipment, used for a wide variety of agricultural and forestry purposes, including special purpose works.
- (3) While the requirements of this Regulation are based on existing legislation last amended in 1997, technical progress requires in particular the adaptation of the test rules in detail, as well as the introduction of specific provisions for energy reservoirs, vehicles with hydrostatic drive, vehicles with inertia braking systems, vehicles with complex electronic control systems, anti-lock braking systems and electronically controlled braking systems.
- (4) This Regulation also includes stricter requirements on brake control of towed vehicles and brake coupling between the tractor and towed vehicles than Council Directive 76/432/EEC<sup>5</sup>, repealed by Regulation (EU) No 167/2013.
- (5) By Council Decision 97/836/EC<sup>6</sup>, the Union acceded to United Nations Economic Commission for Europe (UNECE) Regulation No 13. The substantive requirements laid down in Annex 18 to that Regulation on safety aspects of complex electronic vehicle control systems should be taken over into this Regulation, as they reflect the latest state of technology.
- (6) While anti-lock braking systems are wide-spread for vehicles with a maximum design speed of above 60 km/h and could thus be considered as appropriate and made compulsory as of its application by this Regulation, such systems are not yet widely available for vehicles with a design speed between 40 km/h and 60 km/h. For those vehicles, the introduction of anti-lock braking systems should thus be confirmed after a final assessment by the Commission of the availability of such systems. To this effect, the Commission should assess, at the latest by 31 December 2016, the availability of anti-lock braking systems for agricultural and forestry vehicles with a maximum design speed between 40 km/h and 60 km/h. Should this assessment not confirm that such technology is available or applicable, the Commission should amend this Regulation in order to provide that these requirements will not become applicable to vehicles with a design speed between 40 km/h and 60 km/h.
- (7) Where manufacturers may choose to apply for national type approval in accordance with Article 2 of Regulation (EU) No 167/2013, Member States should, for all subjects covered in this Regulation be free to set requirements for the purposes of national type approval which are different from the requirements of this Regulation.

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<sup>5</sup> Council Directive 76/432/EEC of 6 April 1976 on the approximation of the laws of the Member States relating to the braking devices of wheeled agricultural or forestry tractors (OJ L 122, 8.5.1976, p. 1).

<sup>6</sup> Council Decision 97/836/EC of 27 November 1997 with a view to accession by the European Community to the Agreement of the United Nations Economic Commission for Europe concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted to and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions ( Revised 1958 Agreement ) (OJ L 346, 17.12.1997, p.78)

Member States should not, for the purposes of national type-approval, refuse, on ground relating to the functional safety with respect to braking performance, to approve vehicles, systems, components and separate technical units which are compliant with the requirements provided for in this Regulation, with the exception of requirements applying to hydraulic connections of the single-line type. This Regulation should introduce harmonized requirements for hydraulic connections of the single-line type under which such connections could be accepted for the purposes of EU-type approval for a limited period of time. However, as some Member States used to have stricter requirements at national level, Member States should be allowed to refuse granting national type-approvals to vehicle types equipped with hydraulic connections of the single-line type already as from the application date of this Regulation, if they consider this to be in line with their safety requirements at national level.

- (8) In order to allow for a harmonized application date of all new type-approval rules, this Regulation should apply from the same date of application as Regulation (EU) No 167/2013,

HAS ADOPTED THIS REGULATION:

## **CHAPTER I**

### **SUBJECT MATTER AND DEFINITIONS**

#### *Article 1* ***Subject matter***

This Regulation establishes the detailed technical requirements and test procedures regarding functional safety with respect to braking performance for the approval and market surveillance of agricultural and forestry vehicles and systems, components and separate technical units intended for such vehicles in accordance with Regulation (EU) No 167/2013.

#### *Article 2* ***Definitions***

The definitions of Regulation (EU) No 167/2013 shall apply. In addition, the following definitions shall apply:

- (1) ‘braking system’ means the combination of parts whose function is progressively to reduce the speed of a moving vehicle or to bring it to a halt, or to keep it stationary if it has already halted; the system consists of the control device, the transmission and the brake;
- (2) ‘service braking system’ means the braking system that enables the driver to control the movement of the vehicle and to halt it safely, speedily and effectively, for all the range of speed and load that the vehicle is approved to operate, on any up or down gradient;

- (3) 'graduated braking' means braking which, within the normal range of operation of the equipment, during either the application or the releasing of the brakes, fulfils all the following conditions:
- (a) the driver can, at any time, increase or reduce the braking force through action of the control device,
  - (b) the braking force acts in the same direction as the action on the control device (monotonic function),
  - (c) it is easily possible to make a sufficiently fine adjustment to the braking force;
- (4) 'control device' means the device actuated directly by the driver to supply to the transmission the energy required for braking or controlling it. This energy may be the muscular energy of the driver, or energy from another source controlled by the driver, or in appropriate cases the kinetic energy of a towed vehicle, or a combination of these various kinds of energy;
- (5) 'transmission' means the combination of components comprised between the control device and the brake, excluding the control lines between tractors and towed vehicles and supply lines between tractors and towed vehicles, and linking them functionally through mechanical, hydraulic, pneumatic or electric means or through the use of a combination of those means; where the braking power is derived from or assisted by a source of energy independent of the driver, the reserve of energy in the system is likewise part of the transmission;
- (6) 'control transmission' means the combination of the components of the transmission which control the operation of the brakes and of the necessary reserve(s) of energy;
- (7) 'energy transmission' means the combination of the components which supply to the brakes the necessary energy for their function;
- (8) 'friction brake' means a brake where forces are generated by the friction between two parts of the vehicle moving relatively to one another;
- (9) 'fluid brake' means a brake where forces are generated by the action of a fluid situated between two parts of the vehicle moving relatively to one another; the fluid is liquid in the case of a 'hydraulic brake' and air in the case of a 'pneumatic brake';
- (10) 'engine brake' means a brake where forces are derived from a controlled increase in the braking action of the engine transmitted to the wheels;
- (11) 'parking braking system' means a system that enables the vehicle to be held stationary on an up or down gradient even in the absence of the driver;
- (12) 'continuous braking' means the braking of vehicles constituting a combination of vehicles through an installation having all the following characteristics:
- (a) a single control device which the driver actuates progressively, by a single movement, from his driving seat,

- (b) the energy used for braking the vehicles constituting the combination of vehicles is supplied from the same source,
  - (c) the braking installation ensures simultaneous or suitably phased braking of each of the constituent vehicles of the combination, whatever their relative positions;
- (13) 'semi-continuous braking' means the braking of vehicles constituting a combination of vehicles through an installation having all the following characteristics:
  - (a) a single control device which the driver actuates progressively, by a single movement, from his driving seat,
  - (b) the energy used for braking the vehicles constituting the combination of vehicles is supplied from two different sources,
  - (c) the braking installation ensures simultaneous or suitably phased braking of each of the constituent vehicles of the combination, wherever their relative positions;
- (14) 'automatic braking' means braking of the towed vehicle or towed vehicles occurring automatically in the event of separation of any of the vehicles constituting the combination of vehicles, including such separation through coupling breakage, without the effectiveness of the remainder of the combination being affected;
- (15) 'inertia braking' means braking by utilising the forces generated by the towed vehicle's moving up on the tractor;
- (16) 'non-disengageable transmission' means the transmission for which either pressure or force or torque are continuously transmitted at any time during travelling of the vehicle in the drive train between the vehicle engine and the wheels and in the braking system between the brake control device and the wheels;
- (17) 'laden vehicle' means a vehicle loaded at its technically permissible maximum laden mass;
- (18) 'wheel load' means the vertical static force of the road surface in the contact area on the wheel;
- (19) 'axle load' means the sum of the vertical static forces of the road surface in the contact area on the wheels of the axle;
- (20) 'maximum stationary wheel load' means the stationary wheel load achieved under the condition of the technically permissible maximum laden mass of the vehicle;
- (21) 'maximum stationary axle load' means the stationary axle load achieved under the condition of the technically permissible maximum laden mass of the vehicle;
- (22) 'towed vehicle' means a trailer as defined in Article 3(9) of Regulation (EU) No 167/2013 or an interchangeable towed equipment as defined in Article 3(10) of that Regulation;
- (23) 'drawbar towed vehicle' means a towed vehicle of category R or S with at least two axles of which at least one is a steered axle, equipped with a towing device which can move vertically in relation to the towed vehicle and which transmits no significant static vertical load to the tractor;



- (24) 'centre-axle towed vehicle' a towed vehicle of category R or S where one or more axles are positioned close to the centre of gravity of the vehicle when uniformly loaded so that only a small static vertical load, not exceeding 10 % of that corresponding to the maximum mass of the towed vehicle or a load of 1000 daN, whichever is less, is transmitted to the tractor;
- (25) 'rigid drawbar towed vehicle' means a towed vehicle of category R or S with one axle or one group of axles fitted with a drawbar which transmits a significant static load to the tractor due to its construction and which does not meet the definition of a centre-axle towed vehicle; the coupling to be used for a vehicle combination shall not consist of a king pin and a fifth wheel; some slight vertical movement may occur at a rigid drawbar; a hydraulically adjustable articulated drawbar is considered to be a rigid drawbar;
- (26) 'endurance braking system' means an additional braking system having the capability to provide and to maintain a braking effect over a long period of time without a significant reduction in performance, including the control device which may comprise a single device or a combination of several devices each of which may have its own control;
- (27) 'electronically controlled braking system' ('EBS') means a braking system where the control is generated and processed as an electrical signal in the control transmission and electrical output signals to devices which generate actuating forces produced from stored or generated energy;
- (28) 'automatically commanded braking' means a function within a complex electronic control system where actuation of the braking system or brakes of certain axles is made for the purpose of generating vehicle retardation with or without a direct action of the driver, resulting from the automatic evaluation of on board initiated information;
- (29) 'selective braking' means a function within a complex electronic control system where actuation of individual brakes is made by automatic means and where vehicle retardation is secondary to vehicle behaviour modification;
- (30) 'electric control line' means the electrical connection between two vehicles which provides the braking control function to a towed vehicle within a combination; it comprises the electrical wiring and connector and includes the parts for data communication and the electrical energy supply for the towed vehicle control transmission;
- (31) 'spring compression chamber' means the chamber where the pressure variation that induces the compression of the spring is actually produced;
- (32) 'hydrostatic drive' means a type of vehicle propulsion which uses a hydrostatic transmission, with open or closed circuit, in which fluid circulates as the energy medium between one or more hydraulic pumps and one or more hydraulic motors;
- (33) 'complex electronic vehicle control system' is an electronic control system which is subject to a hierarchy of control in which a controlled function may be overridden by a higher level electronic control function or by a function performed by higher level electronic control system;
- (34) 'anti-lock braking system' means the part of a service braking system which automatically controls the degree of slip, in the direction of rotation of the wheel, on one or more wheels of the vehicle during braking;

- (35) 'directly controlled wheel' means a wheel whose braking force is modulated according to data provided at least by its own sensor;
- (36) 'hydraulic connection of the single line type' means the connection of the brakes between the tractor and the towed vehicle through a single line of hydraulic fluid.

## **CHAPTER II**

### **REQUIREMENTS APPLYING TO BRAKING DEVICES AND TRAILER BRAKING COUPLINGS**

#### *Article 3*

#### *Fitting and demonstration requirements related to braking performance*

1. Manufacturers shall equip agricultural and forestry vehicles with systems, components and separate technical units affecting their braking performance that are designed, constructed and assembled so as to enable the vehicle in normal use and maintained according to the prescriptions of the manufacturer to comply with the detailed technical requirements and testing procedures laid down in Articles 4 to 17.
2. Manufacturers shall demonstrate by means of physical demonstration testing to the approval authority that the agricultural and forestry vehicles made available on the market, registered or entering into service in the Union comply with the detailed technical requirements and test procedures laid down in Articles 4 to 17.
3. Manufacturers shall ensure that spare parts that are made available on the market or are entering into service in the Union comply with the detailed technical requirements and test procedures laid down in this Regulation.
4. Instead of complying with the requirements of this Regulation, the manufacturer may present in the information folder the test report of a component or relevant documentation that proves the compliance of a system or of a vehicle with the requirements of UNECE Regulation No 13, as referenced in Annex X.
5. Instead of complying with the requirements of this Regulation, the manufacturer may present in the information folder relevant documentation that proves the compliance of Anti-lock Braking Systems for towed vehicles, if fitted, with the requirements in Annex 19, paragraph 5, of UNECE Regulation No 13, as referenced in Annex X.
6. The components and systems mentioned in paragraphs 4. and 5. will be referenced in the implementing act adopted in accordance with Article 68 of Regulation (EU) No 167/2013.

#### *Article 4*

### ***Requirements applying to construction and fitting of braking devices and trailer braking couplings***

The test procedures and requirements applying to the construction and fitting of braking devices and trailer braking couplings shall be conducted and verified in accordance with Annex I.

#### *Article 5*

### ***Requirements applying to testing and performance of braking systems and trailer braking couplings and of vehicles fitted with them***

The test procedures and performance requirements applying to braking systems and trailer braking couplings and to vehicles fitted with them shall be conducted and verified in accordance with Annex II.

#### *Article 6*

### ***Requirements applying to the measurement of the response time***

The test procedures and performance requirements applying to the response time of braking devices and trailer braking couplings shall be conducted and verified in accordance with Annex III.

#### *Article 7*

### ***Requirements applying to energy sources and energy storage devices of braking systems and trailer braking couplings and to vehicles fitted with them***

The test procedures and performance requirements applying to energy sources and energy storage devices of braking systems and trailer braking couplings and to vehicles fitted with them shall be conducted and verified in accordance with Annex IV.

#### *Article 8*

### ***Requirements applying to spring brakes and to vehicles fitted with them***

The test procedures and performance requirements applying to spring brakes and to vehicles fitted with them shall be conducted and verified in accordance with Annex V.

#### *Article 9*

### ***Requirements applying to parking braking systems equipped with a mechanical brake-cylinder locking device***

The performance requirements applying to parking braking systems equipped with a mechanical brake-cylinder locking device shall be verified in accordance with Annex VI.

#### *Article 10*

### ***Alternative test requirements for vehicles for which Type-I, Type-II or Type-III tests are not mandatory***

1. The conditions under which test Type I, Type II or Type III are not mandatory for certain types of vehicles are laid down in Annex VII.
2. The test procedures and performance requirements applying to vehicles and their braking devices for which Type-I, Type-II or Type-III tests are not mandatory in accordance with paragraph 1 shall be conducted and verified in accordance with Annex VII.

#### *Article 11*

### ***Requirements applying to the testing of inertia braking systems, braking devices and trailer braking couplings and of vehicles fitted with them as regards braking***

The procedures and requirements applying to the testing of inertia braking systems, braking devices and trailer braking couplings and of vehicles fitted with them as regards braking shall be conducted and verified in accordance with Annex VIII.

#### *Article 12*

### ***Requirements applying to vehicles with hydrostatic drive and their braking devices and braking systems***

The test procedures and performance requirements applying to vehicles with hydrostatic drive and their braking devices and braking systems shall be conducted and verified in accordance with Annex IX.

#### *Article 13*

### ***Requirements applying to the safety aspects of complex electronic vehicle control systems***

The test procedures and performance requirements applying to the safety aspects of complex electronic vehicle control systems shall be conducted and verified in accordance with Annex X.

#### *Article 14*

### ***Requirements and test procedures applying to anti-lock braking systems and to vehicles fitted with them***

The test procedures and requirements applying to anti-lock braking systems and to vehicles fitted with them shall be conducted and verified in accordance with Annex XI.

#### *Article 15*

### ***Requirements applying to EBS of vehicles with compressed-air braking systems or of vehicles with data communication via pin 6 and 7 of ISO 7638 connector and to vehicles fitted with such EBS***

The test procedures and performance requirements applying to EBS of vehicles with compressed-air braking systems or of vehicles with data communication via pin 6 and 7 of ISO 7638 connector and to vehicles fitted with such EBS shall be conducted and verified in accordance with Annex XII.

#### *Article 16*

### ***Requirements applying to hydraulic connections of the single-line type and to vehicles fitted with them***

1. The performance requirements applying to hydraulic connections of the single-line type of braking devices and trailer braking couplings and to vehicles fitted with hydraulic connections of the single-line type are laid down in Annex XIII.
2. Vehicle manufacturers shall not fit hydraulic connections of the single-line type to new types of vehicles of category T and C after 31 December 2019 and to new vehicles of those categories after 31 December 2020.

## **CHAPTER III OBLIGATIONS OF THE MEMBER STATES**

#### *Article 17*

### ***Type-approval of vehicles, systems, components and separate technical units***

Pursuant to Article 6(2) of Regulation (EU) No 167/2013, with effect from 1 January 2016, approval authorities shall not refuse, on grounds relating to functional safety with regard to braking performance, to grant EU type-approval to agricultural and forestry vehicle types which comply with the requirements of this Regulation.

With effect from 1 January 2020 and in accordance with Article 6(2) of Regulation (EU) No 167/2013 and Article 17 of this Regulation, type-approval authorities shall refuse to grant type-approval to vehicle types of categories T and C fitted with hydraulic connections of the single-line type.

With effect from 1 January 2018, national authorities shall, in the case of new vehicles that do not comply with Regulation (EU) No 167/2013 and the provisions of this Regulation on functional safety with regard to braking performance, prohibit the making available on the market, registration, or entry into service of such vehicles.

With effect from 1 January 2021, for new vehicles of categories T and C fitted with hydraulic connections of the single-line type set out in Article 16, national authorities shall prohibit the making available on the market, registration, or entry into service of such vehicles.

*Article 18*

***National type-approval of vehicles, systems, components and separate technical units***

National authorities shall not refuse to grant national type-approval to a type of vehicle, system, component or separate technical unit on grounds relating to the functional safety with regard to braking performance where the vehicle, system, component or separate technical unit complies with the requirements set out in this Regulation, with the exception of the requirements applying to hydraulic connections of the single-line type.

**CHAPTER IV  
FINAL PROVISION**

*Article 19*

***Entry into force and application***

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply as of 1 January 2016.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 15.10.2014

*For the Commission  
The President  
José Manuel BARROSO*