

Draft Proposal for Amendment of Regulation No. 13

A. PROPOSAL

Annex 19

The title, amend to read:

"PERFORMANCE TESTING OF ~~TRAILER~~ BRAKING SYSTEM COMPONENTS"

After the title, insert a new section heading, to read:

"A. PERFORMANCE TESTING OF TRAILER BRAKING COMPONENTS"

Paragraph 1., amend to read:

"1. General

This ~~annex~~ **section** defines the test procedures applicable in defining the performance of the following:"

After paragraph 6.6.1., add a new section B, to read:

"B. PERFORMANCE TESTING OF MOTOR VEHICLE BRAKING COMPONENTS

1. General

**This section defines the procedures applicable in defining the performance of the following:**

1.1. A vehicle stability function

1.2. A test report for the above may be used in conjunction with the procedures defined in section B of Annex 20 to this Regulation or at the time of evaluating a motor vehicle which is being subject to actual performance requirements defined for the respective motor vehicle

## **2. Vehicle stability function**

### **2.1. General**

**2.1.1. This section defines the procedure to determine the dynamic characteristics of a vehicle equipped with a vehicle stability function as specified in paragraph 5.2.1.32. of this Regulation.**

### **2.2. Information document**

**2.2.1. The system/vehicle manufacturer shall supply to the Technical Service an information document of the control function(s) for which performance verification is required. This document shall contain at least the information defined in Appendix 11 to this annex.**

### **2.3. Definition of test vehicle(s)**

**2.3.1. Based on the stability control function(s) and their application(s) defined in the manufacturer's information document, the Technical Service shall carry out a vehicle based performance verification. This shall include one or more dynamic manoeuvres as defined in paragraph 2.1.3. of Annex 21 to this Regulation on a motor vehicle(s) which is representative of the application(s) defined in paragraph 2.1. of the manufacturers information document.**

**2.3.2. When selecting the motor vehicles(s) for evaluation, consideration shall also be given to the following:**

- (a) Vehicle configuration e.g. 4x2, 6x2 etc.**
- (b) Wheelbase, track centre of gravity**
- (c) Wheel type (single or twin) and tyre type**
- (d) Suspension type**
- (e) Gearbox type**
- (f) Engine management system**
- (b) Braking system: the braking system of the motor vehicle(s) to be evaluated shall comply with all of the relevant requirements of this Regulation.**
- (c) Brake type: evaluation shall be limited to motor vehicles with pneumatically or hydraulically operated drum brakes, disc brakes or a combination of either of these brakes but should other types become available, then comparative testing may be required.**

### **2.4. Test schedule**

**2.4.1. To evaluate the vehicle stability control function the tests used shall be agreed between the system/vehicle manufacturer and the Technical Service and shall include conditions, appropriate to the function being evaluated, that would without the intervention of the stability control function result in loss of directional control**

**or roll-over control. The dynamic manoeuvres, test conditions and results shall be included in the test report.**

**2.5. Test report**

**2.5.1. A test report shall be produced, the content of which shall be at least that defined in Appendix 12 of this annex."**

Add new Appendices 11 and 12 to Annex 19, to read:

**"Annex 19 – Appendix 11**

**VEHICLE STABILITY FUNCTION INFORMATION DOCUMENT**

- 1. General**
  - 1.1. Name of manufacturer**
  - 1.2. System**
  - 1.3. System variants**
  - 1.4. System options**
    - 1.4.1. Control function (directional / roll-over / both) including an explanation of the basic function and/or philosophy of the control**
  - 1.5. System configurations (where appropriate)**
  - 1.6. System identification including software level identifier.**
- 2. Applications**
  - 2.1. List of motor vehicle types and configurations for which approval is required**
  - 2.2. Schematic diagrams of the respective configurations installed on the motor vehicles defined in item 2.1. above with consideration given to the following:**
    - (a) Lift axles**
    - (b) Steering axles**
    - (c) Anti-lock braking configurations**
  - 2.3. Scope of application with respect to suspension type:**
    - (a) Air suspension:**
    - (b) Mechanical suspensions**
    - (c) Mixed suspensions comprising of a combination of (a) and (b) above**
  - 2.4. Additional information (if applicable) to the application of the directional control and roll-over control function(s) for example:**
    - (a) Wheelbase, track centre of gravity**
    - (b) Wheel type (single or twin) and tyre type**
    - (c) Gearbox type**
    - (d) Engine management system**
    - (e) Brake type**

- 3. Component Description**
- 3.1. Sensors external to the controller**
  - (a) Function**
  - (b) Limitations on the location of the sensors**
  - (c) Identification, e.g. part numbers**
- 3.2. Controller(s)**
  - (a) General description and function**
  - (b) Functionality of internal sensors (if applicable)**
  - (c) Hardware identification e.g. part numbers**
  - (d) Software identification**
  - (e) Limitations on the location of the controller(s)**
  - (f) Additional features**
- 3.3. Modulators**
  - (a) General description and function**
  - (b) Hardware identification e.g. part numbers**
  - (c) Software identification (if applicable)**
  - (c) Limitations**
- 3.4. Electrical Equipment**
  - (a) Circuit diagrams**
  - (b) Powering methods**
- 3.5. Pneumatic circuits**

**System schematics including anti-lock braking configurations associated with the motor vehicle types defined in paragraph 2.1. of this appendix**
- 3.6. Safety aspects of the electronic system in accordance with Annex 18 to this Regulation**
- 3.7. Electro-magnetic compatibility**
- 3.7.1. Documentation demonstrating compliance with ECE Regulation No. 10 including the 03 series of amendments.**

*Comment: R13 makes reference to the 02 series of amendments to ECE Regulation 10 however the 03 series became effective in July 2008 therefore R13 should be amended accordingly.*

Annex 19 –Appendix 12

**VEHICLE STABILITY FUNCTION TEST REPORT**

**Test Report No: .....**

- 1. Identification:**
  - 1.1. Manufacturer of the vehicle stability function (name and address)**
  - 1.2. Applicant (if different from the manufacturer)**
  - 1.3. Systems platform**
    - 1.3.1. System variants**
    - 1.3.2. System options**
      - 1.3.2.1. Control functions**
  
- 2. System(s) and installations:**
  - 2.1. Anti-lock braking configurations (where appropriate)**
  - 2.2. Vehicle applications**
    - 2.2.1. Vehicle category (e.g. N<sub>2</sub>, N<sub>3</sub>, etc):**
    - 2.2.2. Vehicle type(s)( e.g. Tractor, bus, etc.):**
    - 2.2.3. Vehicle configuration(s) (e.g. 4x2, 6x2 etc):**
    - 2.2.4. End of line programming**
  - 2.3. System identification**
  - 2.4. Functional description**
    - 2.4.1. Directional control**
    - 2.4.2. Roll-over control**
    - 2.4.3. Low speed operation**
    - 2.4.4. Off road mode**
    - 2.4.5. Drive train options**
  - 2.5. Components**
  - 2.6. Trailer detection and functionality**
  - 2.7. Intervention warning**
  - 2.8. Failure warning**
  - 2.9. Stop lamp illumination**
  
- 3.0 Assessed vehicle variables**
  - 3.1. General**
  - 3.2 Brake system type**

- 3.3. Brake type
  - 3.4. Centre of gravity
  - 3.5. Engine management
  - 3.6. Gearbox type
  - 3.7. Installation configurations
  - 3.8. Lift axles
  - 3.9. Effect of load variations
    - 3.9.1. Roll-over control
    - 3.9.2. Directional control
  - 3.10. Drive orientation (Left or right hand drive)
  - 3.11. Steering ratio
  - 3.12. Steering or steered axles
  - 3.13. Suspension
  - 3.14. Track width
  - 3.15. Tube sizes
  - 3.16. Tyre type
  - 3.17. Vehicle type
  - 3.18. Yaw rate and acceleration sensor
  - 3.19. Vehicle configuration
  - 3.20. Wheelbase
  - 3.21. Wheel type
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- 4. Limits of Installation
    - 4.1. Suspension type
    - 4.2. Brake type
    - 4.3. Location of Components
      - 4.3.1. Yaw sensor position
    - 4.4. Anti-lock braking configuration(s)
    - 4.5. Additional steered axles
    - 4.6. Additional recommendations and limitations
      - 4.6.1. Brake system type
      - 4.6.2. Engine management
      - 4.6.3. Lifting axles

- 5 Test data and results:**
  - 5.1. Test vehicle data (including the specification and functionality of any trailer(s) used during the test(s))**
  - 5.2. Test surface information**
    - 5.2.1. High adhesion surface**
    - 5.2.2. Low adhesion surface**
  - 5.3. Measurement and data acquisition**
  - 5.4. Test conditions and procedures**
    - 5.4.1. Vehicle tests**
      - 5.4.1.1. Directional control**
      - 5.4.1.2. Roll-over control**
  - 5.5. Additional Information**
  - 5.6. Test results**
    - 5.6.1. Vehicle tests**
      - 5.6.1.1. Directional control**
      - 5.6.1.2. Roll-over control**
  - 5.7. Assessment in accordance with Annex 18 to this Regulation**
  - 5.8. Compliance with ECE Regulation No. 10**
- 6. Attachments**
- 7. Date of test:**
- 8. This test has been carried out and the results reported in accordance with Annex 19, Section B to ECE Regulation No. 13 as last amended by the ..... series of amendments.**



Technical Service <sup>1/</sup> conducting the test

Signed: ..... Date: .....

9. Approval Authority 1/

Signed: ..... Date: .....

Annex 20

The title, amend to read:

"ALTERNATIVE PROCEDURE FOR USE IN TYPE APPROVAL ~~OF TRAILERS~~"

After the title, insert a new section heading, to read:

"A. ALTERNATIVE PROCEDURE FOR USE IN THE TYPE APPROVAL OF TRAILERS"

Paragraph 1., amend to read:

"1. General

This ~~annex~~ **section** defines an alternative procedure for use in the type approving trailers, utilizing information from test reports issued in accordance with Annexes 11 and 19.

After paragraph 9.1.9.1., add a new section B, to read:

"B. ALTERNATIVE PROCEDURE FOR USE IN THE TYPE APPROVAL OF MOTOR VEHICLES

1. General

1.1. This section defines an alternative procedure for use in the type approving motor vehicles or demonstrating compliance with specific requirements within

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<sup>1/</sup> To be signed by different persons even when the Technical Service and Approval Authority are the same or alternatively, a separate Approval Authority Authorisation issued with the report."

**Regulation No. 13, utilizing information from test reports issued in accordance with section B of Annex 19.**

**1.2. On completion of the verification procedures described in paragraph 3. of this section, the Technical Service / Approval Authority shall issue an ECE type approval certificate conforming to the model specified in Annex 2, Appendix 1 to this Regulation.**

**2. Application for type approval**

**2.1. The application for ECE type approval of a motor vehicle type with regard to the braking equipment shall be submitted by the motor vehicle manufacturer. In support of the approval the motor vehicle manufacturer shall supply to the Technical Service at least the following:**

**2.1.1. Copies of the Annex 19 section B test report(s).**

**2.1.2. A documentation package that contains the relevant verification information including the relevant calculations for the following:**

<b>Performance Requirements</b>	<b>Annex 20 reference</b>
<b>Vehicle stability function</b>	<b>3</b>

**3. Alternative procedure for demonstrating the performance of a motor vehicle equipped with a vehicle stability function.**

**3.1. Evaluation of a motor vehicle in accordance with paragraph 2. of Annex 21 to this Regulation may be waived at the time of motor vehicle type approval provided following are fulfilled:**

- The vehicle stability function complies with the relevant requirements of Annex 19 section B to this Regulation.**
- The vehicle for which type approval is falls within scope of those specified within the test report**

**3.2. Verification**

**3.2.1. Verification of components and installation**

**The specification of the braking system, in which the stability control function is integrated and installed on the trailer to be type approved shall be verified by satisfying each of the following criteria:**

	<b>Condition</b>	<b>Criteria</b>
<b>3.2.1.1.</b>	(a) Sensor(s) (b) Controller(s) (c) Modulator(s)	No change allowed No change allowed No change allowed
<b>3.2.1.2.</b>	Motor vehicle types and variables as defined in the test report	No change allowed
<b>3.2.1.3.</b>	Installation configurations as defined in the test report	No change allowed
<b>3.2.1.4.</b>	For other limitations refer to paragraph 4. of the test report as described in Appendix 12 of Annex 19 to this Regulation.	No change allowed

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