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World Forum for Harmonization of Vehicle Regulations (WP.29)

FORMAT OF GLOBAL TECHNICAL REGULATIONS (GTR)

Note: The text reproduced below was adopted by the Executive Committee (AC.3) of the 1998 Agreement at its fifth session, and endorsed by WP.29 at its one-hundred-and-twenty-seventh session. It is based on document TRANS/WP.29/2002/25, not amended (TRANS/WP.29/861, para. 119).

INTRODUCTION

The outline below is intended to provide guidance to the Working Parties of experts on the drafting of regulations. Two different formats are highlighted: (1) General format for regulations; and (2) Alternative format for regulations with many different requirements and test procedures. This proposal is to serve as a model. The Chairmen of the Working Parties have the flexibility to select the format and/or slightly modify these formats depending on the subject matter.

I. GENERAL FORMAT FOR REGULATIONS

A. Statement of Technical Rationale and Justification - A summary of the report that the working group is required to prepare when it recommends the global technical regulations (gtr), including a synopsis of the gtr's:

1. Technical and economic feasibility;
2. Anticipated benefits; and
3. Potential cost effectiveness.

B. Text of Regulation

1. Scope and Purpose - A simple statement that appears at the beginning of the gtr that describes the particular aspect of safety performance or environmental addressed by the gtr.
2. Application - A clear description of the types of wheeled vehicles, and/or wheeled vehicle equipment and/or parts that are subject to the gtr.

Example:

This regulation applies to vehicles types A and B with a gross vehicle weight rating of 3,855 kilograms or less.

3. Definitions - Explanation of some technical terms that are used in the body of the regulation.

Example:

Buckle: means a quick release connector which fastens a person in a seat belt assembly.

50-state engine family: means an engine family that meets both federal and California Air Resources Board motor vehicle emission control regulations and has received a federal certificate of conformity as well as an Executive Order.

Manufacturer parts: are parts produced or sold by the manufacturer of the motor vehicle or motor vehicle engine.

Low altitude: means any elevation less than or equal to 1,219 meters (4,000 feet).

4. General Requirements (if applicable) - This section should be short and apply to all vehicles and/or equipment covered by the regulation (e.g., all vehicles must have type 2 seat belts or meet specified emission standards). This section could include labeling requirements.

Example:

4. General Requirement. Vehicles must meet the requirements of paragraph 5., when tested in accordance with the conditions in paragraph 6. and the procedures of paragraph 7.

5. Performance Requirements - This section should be drafted in performance-oriented terms so as to permit design flexibility, e.g., permitting the use of not only of current designs and technologies but also possible future designs. It should also be drafted in quantified, objective terms so that compliance can be determined on the basis of scientific measurements. Depending on the regulations, labels could also be addressed in this section.

Examples:

5. Performance requirements.

5.1. Resistance to deformation. When tested in accordance with the conditions of paragraph 6.1. and the procedures of paragraph 7.1., no portion of object **A** shall move more than **B** millimeters when subjected to a force of **C** Newtons applied in the **D** direction to point **E** on the object.

5.2. Energy absorption. When surface **I** is impacted with object **J** in accordance with the conditions of paragraph 6.2. and the test procedures of S7.2, the deceleration of object **J** shall not exceed **K** g continuously for more than **L** milliseconds.)

5.3. Pass-by noise emission. When tested in accordance with the procedures set forth in paragraph 7., the noise emission of the vehicle shall not exceed **X** dBA.

6. Test Conditions - Test conditions (e.g., ambient temperature, road test surface, seat and dummy positioning, etc.) may be same for all test procedures or may be specific to each test procedure. If possible, the numbering of the paragraphs of the test conditions should track the numbering of the paragraphs of the test procedures and performance requirements.

Examples:

6. Test conditions

6.1. Test conditions for resistance to deformation

6.2. Test conditions for energy absorption

7. Test Procedures - Test procedures relate to specific performance requirements (e.g., impact vehicle into a fixed barrier at any speed, including and up to x, emission sampling done at a specified humidity range). If possible, the numbering of the paragraphs of the test procedures should track the numbering of the paragraphs of the performance requirements.

Examples:

7. Test procedures

- 7.1. Test procedure for resistance to deformation. Apply a force of **C** Newtons in **D** direction to point **E** on object **A**. Increase the force as linearly as practicable to a full force application of **C** Newtons in not less than **F** seconds and not more than **G** seconds, and maintain at **C** Newtons for **H** seconds.)

- 7.2. Test procedure for energy absorption. Accelerate object **J** in the **M** direction so that it impacts surface **I** at point **N** at a speed of not greater than **O** km/h)

- 7.3. Test procedure for exhaust gas sampling. The mass of particulate in the exhaust is determined via filtration. The particulate sampling system requires dilution of the exhaust to a temperature of **X** °C, measured upstream of a single high efficiency sample filter (as close to the filter as practical).

8. Annex (Applicable to Contracting Parties of 1958 Agreement) Conditions for granting type approval and their reciprocal recognition including any approval markings and conditions for ensuring conformity of production.

Examples:

8. Annex

- 8.1. *Modifications of the vehicle type or of any aspect of specification for a component and extension of approval*

- 8.2. *Conformity of production*

- 8.3. *Penalties for non-conformity of production*

- 8.4. *Production definitely discontinued*

II. FORMAT FOR REGULATIONS WITH MANY DIFFERENT REQUIREMENTS AND TEST PROCEDURES FOR EACH VEHICLE TYPE

C. Statement of Technical Rationale and Justification - A summary of the report that the working group is required to prepare when it recommends the gtr, including a synopsis of the gtr's:

1. Technical and economic feasibility;
2. Benefits; and
3. Potential cost effectiveness.

D. Text of Regulation

1. Scope and Purpose - A simple statement that appears at the beginning of the gtr that describes the particular aspect of safety performance or environmental by the gtr.
2. Application - A clear description of the types of wheeled vehicles, and/or wheeled vehicle equipment and/or parts that are subject to the gtr.

Example:

This regulation applies to vehicles types A and B with a gross vehicle weight rating of 3,855 kilograms or less.

3. Definitions - Explanation of some technical terms that are used in the body of the regulation.

Example:

Buckle: means a quick release connector which fastens a person in a seat belt assembly.

50-state engine family: means an engine family that meets both Federal and California Air Resources Board motor vehicle emission control regulations and has received a federal certificate of conformity as well as an Executive Order.

Manufacturer parts: are parts produced or sold by the manufacturer of the motor vehicle or motor vehicle engine.

Low altitude: means any elevation less than or equal to 1,219 meters (4,000 feet).

4. General Requirements (if applicable) - This section should be short and apply to all vehicles and/or equipment covered by the regulation (e.g., all vehicles must have type 2 seat belts or meet specified emission standards). This section could include labeling requirements.

Example:

General Requirement. Vehicles must meet the requirements of paragraph 5., when tested in accordance with the conditions in paragraph 6. and the procedures of paragraph 7.

5. Performance Requirements and Associated Test Conditions and Procedures: For regulations with multiple performance requirements, test procedures, and test conditions for each vehicle type, performance requirements could be organized by vehicle type or engine family and grouped together with the appropriate test conditions and procedures.

Example:

For Vehicle or Equipment Type A:

Requirement X and Associated Test Conditions and Procedures

(e.g., High Speed Effect on Tires)

Performance Requirement X_A (e.g., when the tire is tested in accordance with Test Procedures X_A, there shall be no evidence of tire failure.)

Test Conditions X_A (e.g., condition the tire assembly at 40 °C for not less than 2 hours.)

Test Procedures X_A (e.g., at the ambient temperature and on the test wheel, run the tire for 50 minutes at 100 km/h.)

Requirement Y and Associated Test Conditions and Procedures

(e.g., Endurance Effect on Tires)

Performance Requirement Y_A (e.g., when the tire is tested in accordance with Test Conditions Y_A, there shall be no evidence of tire failure.)

Test Conditions Y_A (e.g., condition the tire assembly at 40 °C for not less than 2 hours.)

Test Procedures Y_A (e.g., at the ambient temperature and on the test wheel, run the tire for 50 minutes at 100 km/h.)

Requirement Z and Associated Test Conditions and Procedures

(e.g., Tire Strength)

Performance Requirement Z_A (e.g., when the tire has been tested in accordance with Test Procedures Z_A, the test pressure shall not be less than the initial test pressure specified in Test Conditions Z_A.)

Test Conditions Z_A (e.g., mount the tire on a test rim and inflate it the applicable pressure.)

Test Procedures Z_A (e.g., force a steel plunger into the tread rib at a rate of two inches per minute.)

Labelling

For Vehicle or Equipment B:

Requirement XX and Associated Test Conditions and Procedures

(e.g., High Speed Effect on Tires)

Performance Requirement XX_B (e.g., when the tire is tested in accordance with Test Procedures X_B, there shall be no evidence of tire failure.)

Test Conditions XX_B (e.g., condition the tire assembly at 40 °C for not less than 2 hours.)

Test Procedures XX_B (e.g., at the ambient temperature and on the test wheel, run the tire for 50 minutes at 100 km/h.)

Requirement YY and Associated Test Conditions and Procedures
(e.g., Endurance Effect on Tires)

Performance Requirement YY_B (e.g., when the tire is tested in accordance with Test Conditions Y_B, there shall be no evidence of tire failure.)

Test Conditions YY_B (e.g., condition the tire assembly at 40 °C for not less than 2 hours.)

Test Procedures YY_B (e.g., at the ambient temperature and on the test wheel, run the tire for 50 minutes at 100 km/h.)

Requirement ZZ and Associated Test Conditions and Procedures (e.g., Bead Unseating)

Performance Requirement ZZ_B (e.g., when a tire is tested in accordance with Test Procedure Z_B, the force required to unseat the tire bead at the point of contact shall not be less than 1,500 pounds.)

Test Conditions ZZ_B (e.g., mount the tire on a test rim and inflate it the applicable pressure.)

Test Procedures ZZ_B (e.g., apply a load through a block to the tire outer sidewall at the applicable distance and wheel speed.)

Labelling

6. Annex (Applicable to Contracting Parties of 1958 Agreement)
Conditions for granting type approval and their reciprocal recognition including any approval markings and conditions for ensuring conformity of production.

Examples:

6. *Annex*
 - 6.1. *Modifications of the vehicle type or of any aspect of specification for a component and extension of approval*
 - 6.2. *Conformity of production*
 - 6.3. *Penalties for non-conformity of production*
 - 6.4. *Production definitely discontinued*
