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MOTOR VEHICLE SAFETY ACT

Regulations Amending the Motor Vehicle Safety Regulations (Motorcycle Brake Systems — Standard 122)

P.C. 2011-1317 November 17, 2011

Whereas, pursuant to subsection 11(3) of the *Motor Vehicle Safety Act* (see footnote a), a copy of the proposed *Regulations Amending the Motor Vehicle Safety Regulations (Motorcycle Brake Systems — Standard 122)*, substantially in the annexed form, was published in the *Canada Gazette*, Part □, on October 30, 2010, and a reasonable opportunity was afforded to interested persons to make representations to the Minister of Transport with respect to the proposed Regulations;

Therefore, His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to subsection 11(1) of the *Motor Vehicle Safety Act* (see footnote b), hereby makes the annexed *Regulations Amending the Motor Vehicle Safety Regulations (Motorcycle Brake Systems — Standard 122)*.

REGULATIONS AMENDING THE MOTOR VEHICLE SAFETY REGULATIONS (MOTORCYCLE BRAKE SYSTEMS — STANDARD 122)
AMENDMENTS

1. (1) The definitions "enclosed motorcycle", "limited-speed motorcycle", "motor tricycle" and "open motorcycle" in subsection 2(1) of the *Motor Vehicle Safety Regulations* (see footnote 1) **are replaced by the following:**

"enclosed motorcycle" means a motorcycle that

(*a*) has steering handlebars that are completely constrained from rotating in relation to the axle of only one wheel in contact with the ground,

(*b*) is designed to travel on two wheels in contact with the ground,

(*c*) has a minimum driver's seat height, when the vehicle is unladen, of 650 mm, and

(*d*) has a structure partially or fully enclosing the driver and passenger that is an integral part of the vehicle chassis; (*motocyclette à habitacle fermé*)

"limited-speed motorcycle" means a motorcycle that

(*a*) has steering handlebars that are completely constrained from rotating in relation to

the axle of only one wheel in contact with the ground,

(*b*) has a maximum speed of 70 km/h or less,

(*c*) has a minimum driver's seat height, when the vehicle is unladen, of 650 mm, and

(*d*) does not have a structure partially or fully enclosing the driver and passenger, other than that part of the vehicle forward of the driver's torso and the seat backrest; (*motocyclette à vitesse limitée*)

"motor tricycle" means a motorcycle, other than an antique reproduction vehicle, that

(*a*) is designed to travel on three wheels that are in contact with the ground and symmetrically arranged in relation to the longitudinal median plane,

(*b*) has seating on which the driver and passenger must sit astride,

(*c*) has not more than four designated seating positions,

(*d*) has a GVWR of 1 000 kg or less,

(*e*) has a maximum speed of more than 70 km/h, and

(*f*) does not have a structure partially or fully enclosing the driver and passenger, other than that part of the vehicle forward of the driver's torso and the seat backrest; (*tricycle à moteur*)

"open motorcycle" means a motorcycle that

(*a*) has steering handlebars that are completely constrained from rotating in relation to the axle of only one wheel in contact with the ground,

(*b*) is designed to travel on two wheels in contact with the ground or, if the wheels are asymmetrically arranged in relation to the longitudinal median plane, three wheels in contact with the ground,

(*c*) has a minimum driver's seat height, when the vehicle is unladen, of 650 mm,

(*d*) has a maximum speed of more than 70 km/h, and

(*e*) does not have a structure partially or fully enclosing the driver and passenger, other than that part of the vehicle forward of the driver's torso and the seat backrest; (*motocyclette sans habitacle fermé*)

(2) Subsection 2(1) of the Regulations is amended by adding the following in alphabetical order:

"maximum speed" means, with respect to a motorcycle, the speed specified by the manufacturer as the highest speed that the motorcycle is capable of attaining, measured in accordance with section 5.3; (*vitesse maximale*)

2. The Regulations are amended by adding the following after section 5.2:

MAXIMUM SPEED

5.3 (1) The maximum speed of a motorcycle shall be measured in accordance with International Organization for Standardization standard ISO 7117:1995, *Motorcycles — Measurement of Maximum Speed*.

(2) Wherever the term "motorcycle" is used in International Organization for Standardization standard ISO 7117:1995, *Motorcycles — Measurement of Maximum Speed*, it shall have the same meaning as "motorcycle" in subsection 2(1) of these Regulations.

3. Section 122 of Schedule IV to the Regulations is replaced by the following:

122. (1) Every motorcycle shall conform to

(*a*) the requirements of *Technical Standards Document No. 122, Motorcycle Brake Systems* (TSD 122), as amended from time to time; or

(*b*) the requirements set out in paragraphs 5 and 6 and Annex 3 of ECE Regulation No. 78, Revision 1, *Uniform Provisions Concerning the Approval of Vehicles of Categories L_1, L_2, L_3, L_4 and L_5 with Regard to Braking*, in the version in effect on June 24, 2008, as amended by any subsequent amendments in the 03 series of amendments (ECE Regulation No. 78).

(2) If a motorcycle is designed to operate with or without a sidecar, it shall conform to the requirements of subsection (1) in each of those configurations.

(3) Every motorcycle shall have a mark containing the symbol "DOT" followed by a reference to the type of brake fluid recommended by the manufacturer.

(4) The mark shall

(*a*) be permanently affixed and of a colour that contrasts with its background, or be engraved or embossed;

(*b*) be located, so as to be visible without obstruction, either on or within 101.6 mm of the brake-fluid reservoir filler plug or cap; and

(*c*) have letters and numbers at least 2.38 mm in height.

(5) Beginning on September 1, 2011, the English and French versions of the owner's manual shall include, respectively, the English or French version of the following warning about brake fluid:

"WARNING: Clean filler cap before removing. Use only [here insert the information contained on the mark referred to in subsection (3)] fluid from a sealed container."

« AVERTISSEMENT : Nettoyer le bouchon de remplissage avant de l'enlever. Utiliser seulement du liquide [insérer ici les renseignements figurant sur la marque visée au paragraphe (3)] provenant d'un contenant scellé. »

Technical Standards Document No. 122

(6) The term "three-wheeled motorcycle" used in TSD 122 means

(*a*) for the purposes of S5.1.4 of that document, a motorcycle that is designed to travel on three wheels in contact with the ground; and

(*b*) for the purposes of S6.7 and S7.8.2 of that document,

(i) a motorcycle that is designed to travel on three wheels in contact with the ground, or

(ii) a motorcycle that is designed to travel on two wheels in contact with the ground and that is equipped with a sidecar.

(7) Despite S5.1.3.1(d) of TSD 122, the indicator lamp shall display the identification symbol set out in Table II of section 101 of this schedule for a brake system malfunction, but the use of the legend referred to in S5.1.3.1(d) of TSD 122 is optional.

(8) The vehicle mass referred to in S6.1 of TSD 122 is limited to a maximum value equal to the GVWR of the motorcycle.

(9) Despite S5.4, S5.5, S7.6, S7.7 and S7.8 of TSD 122, a limited-speed motorcycle shall conform to the test requirements set out in those sections.

(10) Despite S6.6 of TSD 122, the wind velocity shall be not more than 5 m/s.

(11) For the purposes of S7.6.2 of TSD 122, if a motorcycle is incapable of attaining the required test speed, it shall be tested at the speed attainable in 1.6 km (1 mile).

ECE Regulation No. 78

(12) For the purposes of this section,

(*a*) a reference to vehicle category "L_1" in ECE Regulation No. 78 is a reference to a limited-speed motorcycle that is designed to travel on two wheels in contact with the ground and that has a maximum speed of 50 km/h or less;

(*b*) a reference to vehicle category "L_2" in ECE Regulation No. 78 is a reference to a limited-speed motorcycle that is designed to travel on three wheels in contact with the ground and that has a maximum speed of 50 km/h or less;

(*c*) a reference to vehicle category "L_3" in ECE Regulation No. 78 is a reference to a motorcycle that is designed to travel on two wheels in contact with the ground, that has a maximum speed of more than 50 km/h and that is not equipped with a sidecar;

(*d*) a reference to vehicle category "L_4" in ECE Regulation No. 78 is a reference to a motorcycle that is designed to travel on two wheels in contact with the ground and that is equipped with a sidecar, and to a motorcycle that is designed to travel on three wheels in contact with the ground that are asymmetrically arranged in relation to the longitudinal median plane; and

(*e*) a reference to vehicle category "L_5" in ECE Regulation No. 78 is a reference to a motorcycle that is designed to travel on three wheels in contact with the ground and symmetrically arranged in relation to the longitudinal median plane, and that has a maximum speed of more than 50 km/h.

(13) For the purposes of this section and despite the definition "three-wheeled vehicle" in subsection 2(1), the term "three-wheeled vehicle" used in ECE Regulation No. 78 means a motorcycle that is designed to travel on two wheels in contact with the ground and that is equipped with a sidecar, and a motorcycle that is designed to travel on three wheels in contact with the ground.

(14) For the purposes of paragraph 1.1.3 of Annex 3 of ECE Regulation No. 78, the peak braking coefficient shall be measured in accordance with paragraph 1.1.3(a) of that Regulation.

(15) For the purposes of paragraph 2.4 of Annex 3 of ECE Regulation No. 78, the brake temperature shall be measured in accordance with paragraph 2.4(b) of that Regulation.

(16) Despite the second sentence of paragraph 5.1.6 of ECE Regulation No. 78, sidecar wheels are never required to be equipped with a brake.

(17) The warning lamp referred to in paragraph 5.1.12 of ECE Regulation No. 78 shall display the identification symbol set out in Table II to section 101 of this schedule that corresponds to a brake system malfunction.

(18) The warning lamp referred to in paragraph 5.1.13 of ECE Regulation No. 78 shall display the identification symbol set out in Table II to section 101 of this schedule that corresponds to an antilock brake system malfunction.

Expiry Date

(19) This section expires on April 1, 2015.

COMING INTO FORCE

4. These Regulations come into force on the day on which they are published in the *Canada Gazette* , Part □.

REGULATORY IMPACT ANALYSIS STATEMENT

(*This statement is not part of the Regulations*.)

Issue and objectives

This amendment to section 122 of Schedule IV of the *Motor Vehicle Safety Regulations*, hereafter referred to as the Canadian safety standard, recognizes, as an alternative requirement, the performance requirements of the United Nations Economic Commission for Europe (UN/ECE) Regulation No. 78 on motorcycle brake systems, hereafter referred to as the European safety standard. The Canadian safety standard continues to be harmonized with the United States safety standard on motorcycle brake systems. Offering the performance requirements of the European safety standard as an alternative, while also maintaining harmony with the United States safety standard, will facilitate the importation and exportation of motorcycles.

Description and rationale

As part of its efforts toward harmonization of motor vehicle safety regulations, the Government of Canada supports and participates in the development of global technical regulations. These regulations are developed under the auspices of the UN/ECE in accordance with the Agreement Concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts Which Can Be Fitted and/or Be Used on Wheeled Vehicles, also known as the Global Agreement. (see footnote 2)

During the March 2002 UN/ECE meeting, approval was given for Canada to chair the development of a global technical regulation on motorcycle brake systems. In November 2006, consensus among all participating countries was reached and the global technical regulation on "Motorcycle Brake Systems" became the third such regulation to be established under the Global Agreement. Effective June 2007, the global technical regulation on motorcycle brake systems was adopted as the new European safety standard, to which many countries around the world currently subscribe, including the 27 Member States of the European Union (France, Germany, Italy, United Kingdom, etc.) and Japan, among others.

This amendment includes the performance requirements of the European safety standard as an alternative within the Canadian safety standard. Referencing the European safety standard is advantageous; it provides manufacturers another globally recognized compliance option and, as it includes all the requirements of the global technical regulation, it maintains the current high level of safety.

The European safety standard includes two alternative testing requirements in the matter of determining the road surface friction at which the tests are conducted, and measurement of the motorcycle's brake temperatures. The reason for these alternatives is that, during the development of the global technical regulation, it was not possible to arrive at a consensus on the best means of testing by all participating countries.

Regarding the determination of road surface friction, this amendment accepts only the alternative published by the American Society for Testing and Materials (ASTM), which utilizes a testing apparatus specifically designed for that purpose. This is consistent with current practice in Canada and the United States, and is also a testing procedure that is utilized abroad. The second alternative is not supported, as it requires the application of the motorcycle's brakes to the limits of adhesion. This dynamic test requires a rider to perform a highly unstable braking manoeuvre on the subject motorcycle, which would pose an unnecessary safety risk to the motorcycle test rider as well as yielding questionable results.

Regarding measurement of the motorcycle's brake temperature, this amendment accepts only the use of imbedded thermocouples, as is the current practice in Canada and the United States, and is also a recognized method abroad. The alternative of using rubbing thermocouples is not recognized, as temperature readings will differ and an increasing number of motorcycle brake designs will not accommodate their use.

Finally, the European safety standard includes requirements for a motorcycle equipped with a sidecar. The Canadian safety standard previously treated the sidecar as an accessory item and therefore it was not regulated. Providing the European safety standard as an alternative has prompted the Government of Canada to include minor changes to the definition of an open motorcycle in order to address this variance in design. If a manufacturer produces a motorcycle designed to operate with or without a sidecar, then both vehicle configurations must be tested to the brake requirements.

This amendment also introduces a definition for maximum speed, which is further referenced to better define the classes of motorcycle and to correlate these prescribed classes with the vehicle categories within the European safety standard.

The Canadian safety standard continues to incorporate by reference Technical Standards Document (TSD) No. 122, *Motorcycle Brake Systems*, which reproduces the United States safety standard. As part of this regulatory initiative, the Department of Transport also updates certain subsections within this TSD, and the new version becomes Revision 2.

Consultation

Canada is committed to consulting with stakeholders during all phases of the global technical regulation development process. Prior to the November 16, 2006, voting at the United Nations, copies of the proposed global technical regulation on motorcycle brake systems were distributed to stakeholders, including motorcycle and other vehicle manufacturers, for comments. The Government solicited opinions on the content of the global technical regulation and the Government's intention to propose this as an alternative requirement.

The Motorcycle and Moped Industry Council (MMIC), representing the major motorcycle distributors and importers in Canada, commended the Department for its efforts and contribution in the development of this global technical regulation, citing that all member companies would benefit from globally harmonized regulations. No other comments were received.

At the semi-annual MMIC meeting with the Department held December 14, 2006, the motorcycle manufacturers showed further support for the Government's proposal to provide the global technical regulation on motorcycle brake systems as an alternative requirement. The benefits of referencing the European safety standard were also recognized at the June 2008 meeting. The motorcycle manufacturers requested continued collaborative efforts when addressing the finer details of implementing such requirements as part of the Canadian safety standard.

The proposed amendment to the Canadian safety standard was pre-published in the *Canada Gazette*, Part □, on October 30, 2010, and interested persons were given 75 days to comment. One written response to the pre-publication was received, from the MMIC. The MMIC expressed

general support for the amendment, with one request, that the Department reconsider its position with respect to the determination of road surface friction.

As stated earlier, this amendment accepts the test method published by ASTM to determine the surface friction of the roadway on which the tests are conducted. The second alternative test method that is provided in the European safety standard and requested by the MMIC is considered by the Department as a highly unstable test which poses an unnecessary safety risk to the motorcycle test rider as well as yielding questionable results.

In response to the Department's concerns, the MMIC indicated that manufacturers have been practicing the second alternative test method for many years, without experiencing safety concerns. They further represented that this alternative method, when properly conducted, yields similar results to the ASTM method. Finally, the MMIC noted that the ASTM method requires very expensive and specialized test equipment, in which many companies would have to invest if no other option is provided. Providing the flexibility of both methods to evaluate road surface friction would therefore be more practical in implementing the new regulation.

The alternative method for characterizing road surface friction is of particular concern to the Department for reasons of rider safety and reliability of the test results. With the alternative method, the performance of the test rider is key to characterising the road surface. Given the same road surface and motorcycle, there would necessarily be differences in performance and results between test riders. This is especially true since the motorcycle must be braked at the limits of adhesion and an impending loss of control and fall. Furthermore, without an objective means with which to assess a rider's results, there is no way to verify that the results achieved are in fact equal to, or close to, the actual road surface peak friction coefficient. This single important parameter provides the basis for comparison and verification of all braking performance test results. Thus, it is beneficial to exclude the variability that comes with a test rider.

On the subject of safety, under the self-certification system in Canada, motor vehicle manufacturers are responsible for ensuring and demonstrating that their products comply with the *Motor Vehicle Safety Regulations*. The Department monitors compliance with the Regulations by, among other things, conducting compliance testing to the applicable standards. If options are provided in a standard, the Department would follow the same option selected for certification purposes by the manufacturer. Therefore, if a manufacturer certified the road surface friction by way of the alternate method (i.e. by way of a test rider attempting to find the limits of adhesion on the subject motorcycle), the government testing program would verify compliance in the same manner. The Department is not willing to place a test rider at such a risk.

Given the above considerations, the Department maintains its position not to provide the alternative method for determining road surface friction in this regulatory project. Should this prevent certification to the European safety standard, a manufacturer will continue to have the option to meet the requirements of the United States safety standard, as it has in the past.

Implementation, enforcement and service standards

Motor vehicle manufacturers and importers are responsible for ensuring that their products conform to the requirements of the *Motor Vehicle Safety Regulations*. The Department of Transport monitors self-certification programs of manufacturers and importers by reviewing their test documentation, inspecting vehicles, and testing vehicles obtained in the open market. In addition, when a defect in a vehicle or equipment is identified, the manufacturer or importer must issue a Notice of Defect to the owners and to the Minister of Transport. Any person or company who contravenes a provision of the *Motor Vehicle Safety Act* is guilty of an offence, and liable to the applicable penalty set out in the Act.

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Footnote a
S.C. 1993, c. 16

Footnote b
S.C. 1993, c. 16

Footnote 1
C.R.C., c. 1038

Footnote 2
Available at www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29glob/tran132.pdf.

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