



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/TRANS/WP.29/AC.3/24  
18 December 2009

Original: ENGLISH

---

**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

World Forum for Harmonization of Vehicle Regulations

Executive Committee (AC.3) of the 1998 Global Agreement

**PROPOSAL TO DEVELOP AMENDMENTS TO GLOBAL TECHNICAL  
REGULATION No. 9 CONCERNING PEDESTRIAN SAFETY\***

Technical Sponsor: Japan

The text reproduced below was adopted by the Executive Committee (AC.3) of the 1998 Global Agreement at its twenty-seventh session, in November 2009. It is based on document ECE/TRANS/WP.29/2009/124, which had been submitted by Japan, as amended by paragraph 102 of the report (ECE/TRANS/WP.29/1079, para. 102). This document shall be appended to the global technical regulation in conformity with paragraph 6.2.7. of the Agreement.

---

\* In accordance with paragraph 6.2.7. of the 1998 Agreement (ECE/TRANS/180), the proposals to develop global technical regulations or their amendments shall be appended to them in the Global Registry. The present document is submitted in conformity with that mandate.

## **I. OBJECTIVE OF THE PROPOSAL**

1. The objective of this proposal is to recommend the adoption of an amendment to the current global technical regulation (gtr No. 9) regarding Pedestrian Safety. At the November 2008 session of the Executive Committee (AC.3) of the 1998 Agreement, Contracting Parties to the 1998 Global Agreement, under the World Forum for Harmonization of Vehicle Regulations (WP.29) voted in favour of establishing a gtr on Pedestrian Safety (gtr No. 9).

2. In 2005, a Technical Evaluation Group (TEG) was settled under the UNECE WP.29 Working Party on Passive Safety (GRSP) Informal Group on Pedestrian Safety in order to evaluate its performance to adopt the impactor as a regulatory purpose test tool for a gtr on Pedestrian Safety (gtr No. 9). Acting as a chair country of the TEG the Ministry of Land, Infrastructure, Transport, and Tourism of Japan (J-MLIT) has been supporting this Flex-TEG activity,.

3. The current gtr on Pedestrian Safety (gtr No. 9) describes the necessity of the amendment for Lower legform impactor as the future consideration in the preamble. Therefore Japan proposes to amend gtr No. 9 on Pedestrian Safety (ECE/TRANS/180/Add.9) according to its paragraphs 63 and 64, reproduced below:

"(f) Future consideration

63. During the discussions, it became clear that some issues could not be fully resolved within the timeframe of the terms of reference for the informal group. The group determined that the following issues should be considered further beyond this gtr.

(i) Lower legform impactor

64. The lower legform impactor currently used for testing in Europe was designed by the Transport Research Laboratory (TRL) in the United Kingdom. However, it is known to also have certain limitations regarding the biofidelity and the repeatability of the test results. Therefore, Japan proposed to use a completely new legform, the so-called Flexible Pedestrian Legform Impactor (FlexPLI). As the FlexPLI legform is considered by some to have high biofidelity and an excellent ability to assess potential leg injuries, the FlexPLI should be considered to replace the TRL lower legform impactor in the future. However, because of the lack of experience in using the FlexPLI as a certification tool, a further confirmation process is needed. Therefore, a Technical Evaluation Group (TEG) was established to evaluate the reliability of the FlexPLI as a certification tool (TRANS/WP.29/GRSP/36). The TEG is currently assessing the FlexPLI and will advise GRSP by the end of 2007 as to the suitability of the FlexPLI for testing and compliance verification purposes (TRANS/WP.29/GRSP/37). The TEG is also expected to provide its recommendation as to the effective date of entry into force and the date on which the FlexPLI could replace the rigid lower legform impactor. TEG will also consider a transitional period during which the FlexPLI and the rigid lower legform impactor can be used as alternatives."

## II. PROPOSED AMENDMENTS

4. Japan will propose the following issues:

- (a) FlexPLI specifications
- (b) Certification test
- (c) Others: Injury criteria and threshold values
  - (i) Maximum Medial Collateral Ligament (MCL) elongation  $\leq$  [xx] mm
  - (ii) Maximum Tibia bending moment  $\leq$  [xxx] Nm
  - (iii) Maximum Anterior Cruciate Ligament (ACL) and Posterior Cruciate Ligament (PCL) elongation  $\leq$  [x.x] mm only for monitoring

5. In April 2008, FlexPLI design of the final version, type GTR (Flex-GTR), was agreed by the TEG members, and its prototype (Flex-GTR-proto) was released in November 2008. Its evaluation has been conducted by the TEG members, and the results will be gathered in the ninth TEG meeting in September 2009 in order to finalize their evaluation activities.

6. Japan would like to start a discussion about the proposal to amend gtr No. 9 at the forty-sixth session of GRSP in December 2009 on the basis of ECE/TRANS/WP.29GRSP/2009/21.

-----