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Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Passive Safety

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Item 12 of the provisional agenda
UN Regulation No. 127 (Pedestrian safety)

Proposal for supplements 1, 2 and 4 to the 02, 03 and 04 series of amendments to UN Regulation No. 127 (Pedestrian safety)

Submitted by the experts from Germany and Japan *

The text reproduced below was initially prepared by the experts from Germany and Japan to correct an inconsistency in the 02, 03 and 04 series of amendments to UN Regulation No. 127 (see informal document GRSP-76-07). Following an initial discussion in its seventy-sixth session, the Working Party on Passive Safety supported the amendments but indicated a preference for incorporating them as supplements to the relevant series of amendments rather than as corrigenda (see also paragraph 26 of ECE/TRANS/WP.29/GRSP/76). Amendments to UN Regulation No. 127 are marked in bold for new and strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

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I. Proposal

Annex 4, Paragraph 1.4., amend to read:

"1.4. The masses of the femur and the tibia without the flesh and skin, including the connection parts to the knee joint, shall be 2.46 kg ± 0.12 kg and

2.64 kg ± 0.13 kg respectively. The mass of the knee joint without the flesh and skin shall be 4.28 kg ± 0.21 kg. The assembled mass of the femur, the knee joint and the tibia without the flesh and skin shall be 9.38 kg ± 0.3 kg.

The centres of gravity of the femur and tibia without the flesh and skin, including the connection parts to the knee joint, shall be as defined in Figure 1. The centre of gravity of the knee joint shall be as defined in Figure 1.

The moment of inertia of the femur and the tibia without the flesh and skin, including the connection parts inserted to the knee joint, about the X-axis through the respective centre of gravity shall be 0.03**39**~~25~~ kgm² ± 0.0016 kgm² and 0.04**86**~~67~~ kgm² ± 0.0023 kgm² respectively. The moment of inertia of the knee joint about the X-axis through the respective centre of gravity shall be 0.0180 kgm² ± 0.0009 kgm²."

II. Justification

The purpose of this proposal is to correct an inconsistency. The moments of inertia of the femur and the tibia of the flexible lower legform impactor in UN Regulation No. 127 and in UN Global Technical Regulation No. 9 Phase 2 and addendum 3 of Mutual Resolution No. 1 are different. This is because in the 10th meeting of the Informal Group on Global Technical Regulation No. 9 –Phase 2, which made the draft of UN Global Technical Regulation No. 9 Phase 2 and addendum 3 of Mutual Resolution No. 1, the moment of inertia of the flexible lower legform impactor were corrected because of the manufacturer's request, however UN Regulation No. 127 was not amended.