

WLTP-25-04e

Proposal for amendments to ECE-TRANS-WP29-GRPE-2019-02e

The text reproduced below was prepared by the IWG on Worldwide harmonized Light vehicles Test Procedure (WLTP). The modifications to the current text of Amendment 5 of GTR 15 are marked in bold for new or struck through for deletion.

Proposal

II. Text of the global technical regulation, 3. Definitions, amend to read:

"3.5.9. "*Predominant mode*" for the purpose of this UN GTR means a single **driver-selectable** mode that is always selected when the vehicle is switched on, regardless of the ~~driver-selectable operating mode in operation selected~~ when the vehicle was previously shut down, and **which** cannot be redefined or switched to another mode. **After the vehicle is switched on, the predominant mode can only be switched to another driver-selectable mode by without** an intentional action of the driver.

Correction/justification: Clarifies when a predominant mode can be switched to another driver-selectable mode.

Proposal

II. Text of the global technical regulation, 5. General requirements, amend to read:

"5.4. ~~Petrol~~ **Fuel** tank inlet orifices"

Correction/justification: The title has been amended to include not just petrol but also ethanol.

Proposal

II. Text of the global technical regulation, 5. General requirements, amend to read:

"5.5.1. The manufacturer shall authorise modifications if ~~these~~ **those** modifications are necessary for the diagnosis, servicing, inspection, retrofitting or repair of the vehicle."

Correction/justification: Minor language improvement.

Proposal

II. Text of the global technical regulation, 5.8. General requirements, amend to read:

"5.8. Road load matrix family

The road load matrix family may be applied for vehicles ~~designed for~~ **with** a technically permissible maximum laden mass $\geq 3,000$ kg.

Vehicles with a technically permissible maximum laden mass ≥ 2500 kg may be part of the road load matrix family provided the driver seat R-point height is above 850 mm from the ground.

“R-point” means “R” point or “seating reference point” as defined in paragraph 2.4. of Annex 1 to the Consolidated Resolution on the Construction of Vehicles (R.E.3).”

Correction/justification: The road load matrix method was intended to cover vehicles that have a maximum permissible laden mass just below 3 tons, e.g. for administrative reasons. The wording "designed for" was open to interpretation by some authorities. A solution was reached by deleting "designed for" and including vehicles with a maximum permissible laden mass of ≥ 2500 kg but satisfying the requirement that the R point of such vehicles must be at least 850 mm above ground in the road load matrix method.

Proposal

Annex 2, paragraph 2.(j)., amend to read:

"MC is the **technically permissible maximum laden mass of the combination (see paragraph 3.2.27. of this GTR)**~~gross train mass (gross vehicle mass + max. trailer mass)~~, kg."

Correction/justification: MC may not necessarily be the sum of gross vehicle mass and maximum trailer mass. For example, a vehicle may have a technical permissible maximum laden mass of 3500 kg and may be able to tow a 3500 kg trailer but the clutch can only take a combination of 6000 kg (on e.g. a 12% gradient).

Proposal

Annex 2, paragraph 4.(a)., amend to read:

"Gears used during accelerations **or constant speed sections** at vehicle speeds ≥ 1 km/h shall be used for a period of at least 2 seconds."

Correction/justification: From the WLTC and gear shift task force. Eliminates the use of a gear for only one second.

Proposal

Annex 4, paragraph 4.3.1.4.2., amend to read:

$$"p_j = \frac{h \times \sigma_j}{\sqrt{n \times \Delta t_{pj} \times \sqrt{n} \times \Delta t_{pj}}} \leq 0.030"$$

Correction/justification: The original equation led to an incorrect dimensional analysis.

Proposal

Annex 4, paragraph 4.3.1.3.5., new paragraph:

"4.3.1.3.5. It is recommended that coastdown runs should be conducted successively without undue delay between runs. If there is a delay between runs (e.g. for a driver break, checking vehicle integrity, etc.), the vehicle shall be warmed up again as

described in paragraph 4.2.4. and the coastdown runs shall be re-commenced from this point."

Correction/justification: Allowing for interruptions during coastdown runs using stationary anemometry.

Proposal

Annex 4, paragraph 4.3.2.4.4., new paragraph:

"4.3.2.4.4. It is recommended that coastdown runs should be conducted successively without undue delay between runs. If there is a delay between runs (e.g. for a driver break, checking vehicle integrity, etc.), the vehicle shall be warmed up again as described in paragraph 4.2.4. and the coastdown runs shall be re-commenced from this point."

Correction/justification: Allowing for interruptions during coastdown runs using on-board anemometry.

Proposal

Annex 4, paragraph 4.3.2.6.3., amend to read:

"Using a linear least squares regression technique, all data points shall be analysed at once to determine A_m , B_m , C_m , a_0 , a_1 , a_2 , a_3 and a_4 given M_e , $\left(\frac{dh}{ds}\right)$, $\left(\frac{dv}{dt}\right)$, v , v_r , and ρ ."

Correction/justification: In the name of consistency, the variable for the effective mass of the vehicle shall be written m_e and not M_e .

Proposal

Annex 4, paragraph 4.3.2.6.7., amend to read:

"Given M_e , $\left(\frac{dh}{ds}\right)$, $\left(\frac{dv}{dt}\right)$, v , v_r , and ρ , A_m , B_m , C_m , a_0 , a_1 , a_2 , a_3 and a_4 shall be determined."

Correction/justification: See above for paragraph 4.3.2.6.3.

Proposal

Annex 4, paragraph 4.5.5.2.1., amend to read:

" c_1 is the coefficient of the first order term as determined in paragraph 4.4.4. of this annex, $Nm/(km/h)$ ~~$Nm \cdot (h/km)$~~ ;

c_2 is the coefficient of the second order term as determined in paragraph 4.4.4. of this annex, $Nm/(km/h)^2$ ~~$Nm \cdot (h/km)^2$~~ "

Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 5.1.2.1., amend to read:

" c_1 is the first order running resistance coefficient, $\text{Nm}/(\text{km}/\text{h})$ ~~$\text{Nm}/(\text{h}/\text{km})$~~ , and shall be set to zero;

c_2 is the second order running resistance coefficient, $\text{Nm}/(\text{km}/\text{h})^2$ ~~$\text{Nm}/(\text{h}/\text{km})^2$~~ as defined by the equation:"

Furthermore in the same paragraph:

" c_{2r} is the second order running resistance coefficient of the representative vehicle of the road load matrix family, $\text{N}/(\text{km}/\text{h})^2$ ~~$\text{N}/(\text{h}/\text{km})^2$~~ ;"

Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 5.2.2, amend to read:

" f_1 is the first order road load coefficient, $\text{N}/(\text{km}/\text{h})$, and shall be set to zero;

f_2 is the second order road load coefficient, $\text{N}/(\text{km}/\text{h})^2$ ~~$\text{N}/(\text{h}/\text{km})^2$~~ , defined by the following equation:"

Correction/justification: Consistency and clarity of units.

Proposal

Annex 4, paragraph 6.5.2.3.2., amend to read:

"**If** ~~coasting~~ coasting down in opposite directions is not possible, ~~and~~ the equation used to calculate Δt_{ji} in paragraph 4.3.1.4.2. of this annex shall not apply."

Correction/justification: Minor language improvement.

Proposal

Annex 4, paragraph 7.3.2., amend to read:

"The **vehicle** coastdown mode shall be approved ~~and recorded~~ by the responsible authority **and its use shall be recorded.**"

Correction/justification: Minor language improvement.

Proposal

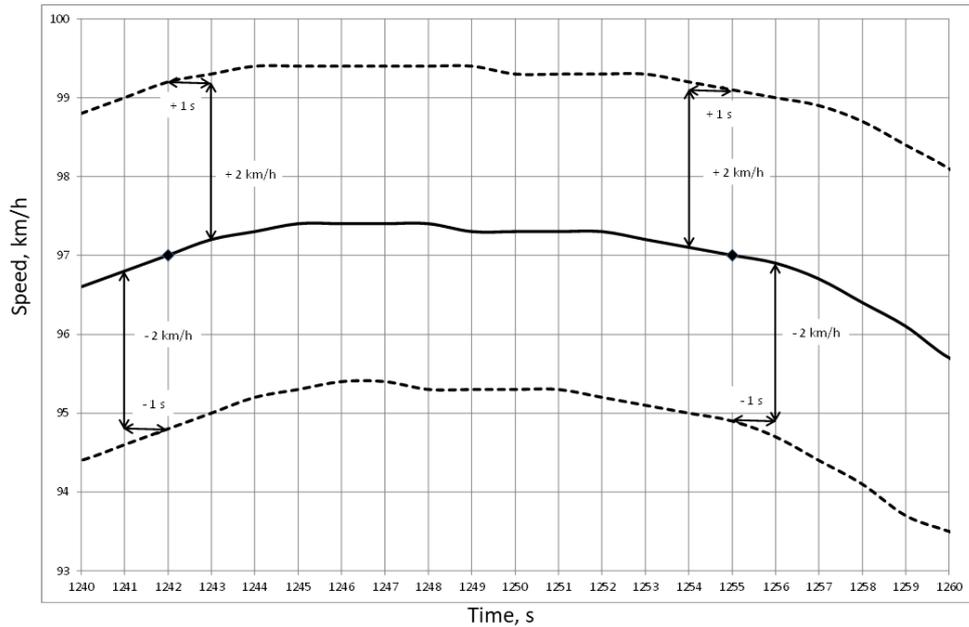
Annex 6, paragraph 2.6.4.3., amend to read:

"The extent of such additional preconditioning shall be recorded ~~by the responsible authority.~~"

Correction/justification: The responsible authority will record numerous procedural items and as such they must not be listed individually.

Proposal

Annex 6, Figure A6/6, amend to read:



Correction/justification: The original diagram did not have x and y axes labeled.

Proposal

Annex 6, Appendix 1, paragraph 3.2., amend to read:

"Calculation of exhaust and CO₂ emissions, and fuel consumption of multiple periodically regenerating systems"

Correction/justification: Language improvement (correctness, consistency).

Proposal

Annex 6, Appendix 1, paragraph 3.2., amend to read:

"The calculation of K_i for multiple periodically regenerating systems is only possible after a certain number of regeneration events for each system."

Correction/justification: Language improvement (correctness, consistency).

Proposal

Annex 7, paragraph 3.2.3.2.2.3.1., amend to read:

"For the purpose of the interpolation method, the aerodynamic drag of optional equipment within one road load family shall be measured at the same wind speed, either v_{low} or v_{high} , preferably v_{high} , as defined in paragraph 6.4.3. of Annex 4. In the case that v_{low} or v_{high} does not exist, (e.g. the road load of V_L and/or V_H are measured using the coastdown method), the aerodynamic force shall be measured at the same ~~one~~ wind speed within the range $\geq 80 \text{ km/h} \leq$ and $\leq 150 \text{ km/h}$. For Class 1 vehicles, it shall be measured at the same wind speed ~~lower than or equal to~~ $\leq 150 \text{ km/h}$."

Correction/justification: For consistency with the rest of GTR 15, the terms v_{low} and v_{high} are not italicised. Furthermore, the second and third sentences have been rewritten in the sake of clarity.

Proposal

Annex 8, paragraph 3.4.4.2.1.2.(b), amend to read:

" d_{DS1} is the length of dynamic **speed** segment 1, km;

d_{DS2} is the length of dynamic **speed** segment 2, km;"

Correction/justification: Consistency in the use of dynamic speed segment.

Proposal

Annex 8, paragraph 4.5.1.5., amend to read:

"The linearity of charge-sustaining CO₂ mass emission for vehicle M shall be verified against the linearly interpolated charge-sustaining CO₂ mass emission between vehicle L and H over the applicable cycle by using the corrected measured values referring to ~~the~~ step 6 ~~used~~ $M_{\text{CO}_2,\text{CS},6}$ of Table A8/5 of this annex.

Correction/justification: Error in transferring text from the author.