

**Economic and Social Council**Distr.: General  
Date: 16 November 2020

Original: English

---

**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

Working Party on Noise and Tyres

Seventy-third session

Geneva, 26–29 January 2021

Item 5 (e) of the provisional agenda

**Tyres: UN Regulation No. 124 (Replacement wheels for passenger cars)****Proposal for amendments to UN Regulation No. 124****Submitted by the expert from Germany\***

The text reproduced below was prepared by the expert from Germany in order to adapt UN Regulation No. 124 to the current requirements for granting of type approvals. The modifications to the current text of the UN Regulation are marked bold for added text and strike through for deleted text.

---

\* In accordance with the programme of work of the Inland Transport Committee for 2021 as outlined in proposed programme budget for 2021 (A/75/6 (Sect.20), para 20.51), 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.



## I. Proposal

Paragraph 1., amend to read:

“1. This Regulation covers new replacement wheels designed for vehicles of categories M1, M1G, N1, N1G, O1 and O2 <sup>1/</sup>.

It does not apply to original equipment wheels or vehicle manufacturer’s replacement wheels as defined in paragraphs 2.3. and 2.4.1. It does not apply to "Special wheels", as defined in paragraph 2.5., which shall remain subjected to national approval.

**It does not apply to wheels with less than three wheel fixing components (studs or nuts) which are not identical replacement wheels.**

This Regulation comprises requirements for wheel manufacture and installation.”

Annex 6,

Paragraph 4., amend to read:

“Necessary tests:

<i>Number of wheels to be tested</i>	<i>Rotating bending test</i>	
	<i>Short test</i>	<i>Long test</i>
Minimum PCD	1	1
Maximum PCD	1	1
If only one PCD	2	2
<b>If a type comprises more than two versions with different PCD, additional tests on each version with PCD different to tested version:</b>		
<b>PCD difference to a tested version ≤ 6,5 mm</b>	-	-
<b>PCD difference to a tested version &gt; 6,5 mm</b>	<b>1</b>	<b>1</b>
Insert variation up to 2 mm	-	-
From 2 mm to 5 mm	1	-
> 5 mm	1	1

Paragraph 6.5., amend to read:

"6.5. The replica replacement wheels and pattern part replacement wheels shall satisfy the following tests:

**As an alternative to the test specifications in paragraph 6.5.1.1., the endurance life of replica replacement wheels can be proven in comparison to the endurance life of the vehicle manufacturer’s replacement wheels.**

**The rotation bending tests on two load levels have to be performed according annex 6 as well as rolling test according to Annex 7. These tests have always to be performed in comparison of the replica replacement wheels to the vehicle manufacturer’s replacement wheels until the required limits or failure of the wheels.**

**Replica replacement wheels must achieve in every level at least the results or better of the vehicle manufacturer’s replacement wheels.**

**The tests requirements of the vehicle manufacturer regarding vehicle manufacturer’s replacement wheels can be applied instead of test requirement 6.5.1.1. These testing requirements have to be disclosed in order to enable the verifiability. The assignment to the wheel load released by the vehicle manufacturer must be given."**

## II. Justification

### *Paragraph 1. "Scope"*

1. The current Regulation does not describe any suitable procedures to assess the relevant characteristics of special wheel attachments (such as central lock wheel nuts). Special test procedures may be necessary but are not described in the Regulation. Due to lack of test procedures, special wheel attachment systems have to be excluded from the scope of the Regulation. To do this it is suggested to allow only wheel attachments with three or more fixing components (nuts or studs) in the scope of the Regulation.

### *Annex 6, paragraph 4., table*

2. If a wheel type comprises more than two versions with different pitch circle diameter (PCD) under special conditions, it may be enough to carry out the rotating bending test with the versions having the minimum and maximum PCD. According to the current Regulation, this will always be the case if there are no other reasons to require additional tests. One reason for an additional test may be, for instance, that the insert of the versions differs more than 2 mm.

3. A wide difference of PCD of the tested versions may result in a wide difference of PCD of tested and untested versions. For safety reasons, it is necessary to restrict that difference. To do so it is suggested to carry out additional rotating bending tests on each version with a PCD difference to a tested version of more than 6.5 mm. The value of 6.5 mm is taken from the German national regulation regarding type approvals for special wheels.

### *Annex 6, paragraph 6.5.*

4. Replica wheels need to achieve at minimum the level of the vehicle manufacturer's replacement wheels. With this comparative test the minimum performance level is verified as described in 2.4.3.

### *Transitional provisions*

5. The modifications above are suggested to clarify the current provisions in order to avoid misinterpretations. For this reason, transitional provisions are not deemed to be necessary.

---