



PN Levels in UN Regulation N°83.07

Presented to GRPE 77th session – June 2018



UN Regulation 83.07 is sub-divided into 3 sets of approval characters (here just those for category M vehicles as an example). The content of these approvals is described in the table of limit values and the table of test requirements on the following pages:

Table A3/1

Letters with reference to fuel, engine and vehicle category

Character	Vehicle category and class	Engine type	Emission standard	OBD standard
W	M, NI Class I.	PI CI	A	Preliminary OBD threshold limits (see Table A11/2)
ZA	M, NI Class I.	PI CI	B	Preliminary OBD threshold limits (see Table A11/2)
ZD	M, NI Class I.	PI CI	B	Final OBD threshold limits (see Table A11/1)

Emissions standard key

A Emission requirements according to the limits in Table 1 of paragraph 5.3.1.4. of this Regulation, but allowing the preliminary values for particulate numbers for PI vehicles as detailed in footnote 2 to that table;

B Emission requirements according to the limits in Table 1 of paragraph 5.3.1.4. of this Regulation, including the final particulate number standards for PI vehicles and use of E10 and B7 reference fuel (where applicable).

Table A of paragraph 5.2.3. describes which vehicle configurations must perform which tests on which reference fuels.

For those engines at least partially powered by petrol or diesel, the footnote 7 is referenced:

⁷ Upon the choice of the manufacturer vehicles with positive and compression ignition engines may be tested with either E5 or E10 and either B5 or B7 fuels, respectively. However:

- not later than sixteen months after the dates set out in point 12.2.1., new type approvals shall only be performed with E10 and B7 fuels;
- not later than as from dates set out in point 12.2.4., all new vehicles shall be approved with E10 and B7 fuels.



Table 1 of paragraph 5.3.1.4. contains the limit values.

The column for the PN limit for positive ignition engines contains the value 6.0×10^{11} #/km but also refers to footnote 2:

² Until three years after the dates specified in paragraphs 12.2.1. and 12.2.2. of this Regulation for new type approvals and new vehicles respectively, a particulate number emission limit of 6.0×10^{12} #/km shall apply to PI direct injection vehicles upon the choice of the manufacturer.

Paragraphs 12.2.1. and 12.2.2. start with the following wording:

12.2.1. Contracting Parties applying this Regulation shall, from the 1 September 2014 for vehicles of category M or N1 (Class I) and 1 September 2015 for vehicles of category N1 (Classes II or III) and category N2,

12.2.2. Contracting Parties applying this Regulation shall, from the 1 September 2015 for vehicles of category M or N1 (Class I) and 1 September 2016 for vehicles of category N1 (Classes II or III) and category N2,



Once these footnotes expire (latest September 2016 plus 3 years = September 2019), the PN limit is 6.0×10^{11} #/km and the reference fuels are E10 and B7.

This would mean that there is no difference between emission standard A and standard B and thus between level W and level ZA

The footnotes were introduced correctly to protect the EU from having to accept vehicle approvals which were not compliant with local legislation.

However:

- The EU is currently not subject to mutual recognition in UNR 83 due to the WLTP transitional provisions
- A working paper adopted at GRPE 78 in January 2019 would go to WP.29 in June 2019 and would not be published and in force before September

OICA therefore proposes to amend the footnotes referenced in this paper as shown on the following slide:



Emissions standard key

- A Emission requirements according to the limits in Table 1 of paragraph 5.3.1.4. of this Regulation, complying with the values for particulate numbers for PI vehicles as detailed in footnote 2 to that table and using any applicable reference fuel;
- B Emission requirements according to the limits in Table 1 of paragraph 5.3.1.4. of this Regulation, complying with the particulate number standards for PI vehicles in the table without reference to footnote 2 and using E10 or (where applicable) B7 reference fuel.

Footnote 7 to table of test requirements

⁷ Upon the choice of the manufacturer vehicles with positive and compression ignition engines may be tested with either E5 or E10 and either B5 or B7 fuels, respectively. This decision shall be reflected where applicable in the approval character as described in Table A3/1

Footnote 2 to table of emission limits

² A particulate number emission limit of 6.0×10^{12} #/km shall apply to PI direct injection vehicles upon the choice of the manufacturer. This decision shall be reflected in the approval character as described in Table A3/1