

Proposal for supplement 01 to the 03 series of amendments to UN Regulation No. 100 (Electric power-train vehicles)

The text reproduced below was prepared by the expert from CLEPA the European Association of Automotive Suppliers to clarify specific conditions concerning a clear interpretation of an AC voltage (rms). The modifications to the formal document are marked in **bold** for new and strikethrough for deleted characters.

I. Proposal

Add a second note to paragraph 2.42., to read:

*"Note 2: **For pulsating DC voltages (alternating voltages without change of polarity) the DC threshold shall be applied.**"*

II. Justification

1. The voltages between "a DC life part and an AC life part" can be composite voltages means a 'pure' AC including a DC offset voltage. These voltages are alternating, but without a change of polarity. These pulsating/switched DC voltages can be miss-interpreted as an AC voltage.
 2. The AC (rms) threshold have to be applied to the 'pure' AC voltage and the DC threshold to the DC voltages. Applying the AC (rms) threshold to a pulsating/switched DC voltage is inappropriate.
 3. Pulsating DC voltages (sometimes also called 'switched' DC) are a special case of alternating voltages without change of polarity. For these voltages the DC threshold has to be applied (see also EVS-06-24).
 4. The 03 series of amendments to Regulation 100 slightly changed the definition 2.42, added a new definition for "special voltage condition" and a the isolation resistance test after exposure to water. In case of misinterpretation the new "special voltage condition" would not be fulfilled and the new isolation resistance test after exposure to water has to be passed successfully. 48V air cooled motor generators having and integrated AD/DC voltage circuit are expected not to fulfill this test and cannot be used any more.
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