

## **Proposal for amendment to R78 the approval of vehicles of categories L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub>, L<sub>4</sub> And L<sub>5</sub> with regard to braking**

The changes to the current text of the draft regulation are marked in **bold** and ~~strikethrough~~ characters.

### **I. Proposal**

*Insert new paragraph 5.1.14, to read:*

- 5.1.14. The effectiveness of the braking system, including the anti-lock system, shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by fulfilling the technical requirements and respecting the transitional provisions of UN Regulation 10, or by an equivalent test to be agreed between manufacturer and Technical Service.**

### **II. Justification**

1. The concern is not that R10 is difficult to apply or not applicable to motorcycles. The concern is that there is nothing in R10 that is explicitly ensures the immunity of anti-lock (or other electronic braking) systems without the agreement of a test plan between the manufacturer and Technical Service.
2. Excerpts from R10-04, Annex 6, section 2.1.1.2 states that: "Other vehicle systems, which can affect immunity related functions must be tested in a way to be agreed between manufacturer and Technical Service."

"Brake cycle" vehicle test conditions	Failure criteria
To be defined in brake cycle test plan. This must include operation of the brake pedal (unless there are technical reasons not to do so) but not necessarily an anti-lock brake system action	Stop lights inactivated during cycle Brake warning light ON with loss of function. Unexpected activation

3. The lack of specific requirements provides the opportunity for varying standards. Because of this, referencing R10 in R78 has limited value in ensuring additional requirements for immunity of the anti-lock system. Ensuring immunity comes from the test plan agreed between the manufacturer and Technical Service.
  4. Given the lack of specificity in R10 concerning immunity of anti-lock systems it may be equally effective to include language concerning anti-lock immunity within R78 itself.
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