

**Comment of The Netherlands on document TRANS/WP.29/GRRF/2005/18 from 3 August 2005**

**Par. 4.1.2.**

The reason to restrict the ambient temperature is unclear. The road surface should afford good adhesion. That is possible even with temperatures below 0 °C.

Par. 4.1.1.1 states that the surface shall have a nominal peak friction coefficient of [0,9 **or less**]. That text is no obstacle to do a test below 0 °C.

Proposal: use the following text;

"the ambient conditions shall not affect the friction coefficient"

A compromise could be the text;

"The ambient temperature shall not exceed 38 °C"

**Par. 4.2.3.**

The text describes the exact spot where the force must be applied. That is not practical because the force is applied by a hand and therefore is not applied at an exact point.

Proposal: use the following text;

"The centre of the applied input force shall be located 50 mm from the outermost point of the lever, ...".

**Par. 4.2.5.**

The prescribed vehicle deceleration for the categories 3-1, 3-2 and 3-5, 3.0 to 3,5 m/s<sup>2</sup>, front wheel braking only, are higher than the performance requirements for those categories (par 4.3.3).

**Par. 4.6.1.**

- "The test comprises two parts that shall be carried out consecutively for each brake system"

The reason why a vehicle with three symmetrically wheels should do the wet performance test is unclear. It is not required in R78 and those three wheeled vehicles can be compared to vehicles with four wheels. Wet performance is not a point in R13.

- "Drum brakes are exempt from this test unless ventilation or open inspection ports are present".

The text is unclear; vehicles with drum brakes, or disc brakes, protected against incoming waterspray don't need to carry out the wet performance test.

**Par. 4.6.5.**

The prescribed procedure for the wet brake stop is very difficult, if not impossible. To adjust the required control force within half a second is nearly impossible.

During the baseline test the control force to generate the required deceleration is determined between 80% and 10% of the initial speed. That is generally more than 1 second after brake control application.

The purpose of the wet performance test is to assure that the characteristic of the brake does not change too much shortly after applying the brakes when they are wet.

Proposal;

- the baseline test; determination of the control force necessary to generate a deceleration of 2,5 - 3 m/s<sup>2</sup> between [85%] and [70%] of the initial speed,
- the wet performance test; assessment of the deceleration between [85%] and [70%] of the initial speed using the same control force as in the baseline test.

**Par. 4.9.3.2.**

- The requirement for the ABS-test, on high-mu surface, mentioned in par 4.9.3.2 is too low.

R78 requires 70% of the maximum theoretical achievable deceleration, i.e. the k-value (R78 Annex 4 par 4.1.1).

Par. 4.9.3.2 requires only 70% of the minimum requirement for the dry stop test. That is not acceptable.

Proposal: "with the ABS cycling the minimum requirement for the dry stop test must be fulfilled."

Justification; similar to the PVGTR requirement for ABS on a high-mu surface.

- In addition to the above mentioned requirement a low-mu performance should also be part of the requirements. An ABS that reduces the brake force in such a way that there is hardly any brake force at all can be dangerous.

An alternative for the current procedure as meant in R78 could be to require a minimum deceleration or stopping distance on a low-mu surface. The required stopping distance can be related to the pfc-value. The pfc value can be assessed according to ASTM.

A minimum stopping distance on a low mu surface has to be one of the requirements.

The problems with a required stopping distance on low-mu surface are basically the same as on a high-mu surface. If the difference between the requirement and the achievable deceleration is large enough problems are not to be expected.