

Proposal for draft amendments to ECE Regulation No. 13-H

I. Proposal

Annex 9, Appendix 4, paragraph 1.3., amend to read:

"1.3. The full deceleration must be reached within the timeframe of 2.0 ± 0.5 s. The deceleration curve, recorded against time, must be within a corridor of ± 0.5 s around the centre line of the deceleration curve corridor. The example in Figure 3 has its origin at the time t_0 crossing the a_{ABS} line at 2 seconds. Once full deceleration has been achieved, ~~the pedal travel S_p shall not be decreased for at least 1 s~~ **the brake pedal shall be operated so that the ABS can continue fully cycling**. The time of full activation of the ABS system is defined as the time when pedal force F_{ABS} is achieved. The measurement shall be within the corridor for variation of increase in deceleration (see Figure 3)."

II. Justification

Annex 9 contains the provisions for ESC and BAS, Appendix 4 describes the procedure for obtaining F_{ABS} and a_{ABS} where:

- F_{ABS} "is the minimum pedal force that has to be applied for a given vehicle in order to achieve maximum deceleration which indicates that ABS is fully cycling", and
- a_{ABS} is the deceleration for a given vehicle during ABS deceleration.

The aim of the original requirement "*Once full deceleration has been achieved ...*" is to maintain ABS at fully cycling for at least 1 second so as to obtain steady value of a_{ABS} .

However, in actual tests, there are some cases where it is difficult to conduct the test according to this requirement because the brake pedal travel or force is momentarily decreased by the influence on the pedal operation of the test driver caused by the frequent change of brake line pressure while ABS is fully cycling.

Therefore, it is more realistic to prescribe directly "*the pedal should be operated so that ABS can continue fully cycling*" than indirectly "*the pedal travel should not be decreased*". In this case, based on the time change of brake pedal stroke, force or vehicle deceleration as appropriate, it can be demonstrated that ABS continues fully cycling.

It is believed this amendment can lead to appropriate test result and expand the realistic choice of test method.
