

Submitted by the expert from Republic of Korea

Informal document **GRSP-56-20**
(56th GRSP, 9-12 December 2014,
agenda item 16)

Clarification of Relaxation Area(s) for Flexible lower legform to bumper test

1. Current Statement
2. Open Issues
 - 2-1. Measurement methods
 - 2-2. Minimum relaxation area width

- ECE/TRANS/WP.29/2014/38 (Submitted 163rd session of WP.29)

5.1.1. Flexible Lower legform to bumper:

When tested in accordance with Annex 5, paragraph 1. (Flexible lower legform to bumper), the absolute value of the maximum dynamic medial collateral ligament elongation at the knee shall not exceed 22 mm, and the maximum dynamic anterior cruciate ligament and posterior cruciate ligament elongation shall not exceed 13 mm. The absolute value of dynamic bending moments at the tibia shall not exceed 340 Nm. **In addition, the manufacturer may nominate bumper test widths up to a maximum of 264 mm in total where the absolute value of the tibia bending moment shall not exceed 380 Nm.** A Contracting Party may restrict application of the relaxation zone requirement in its domestic legislation if it decides that such restriction is appropriate.

2. Open Issues

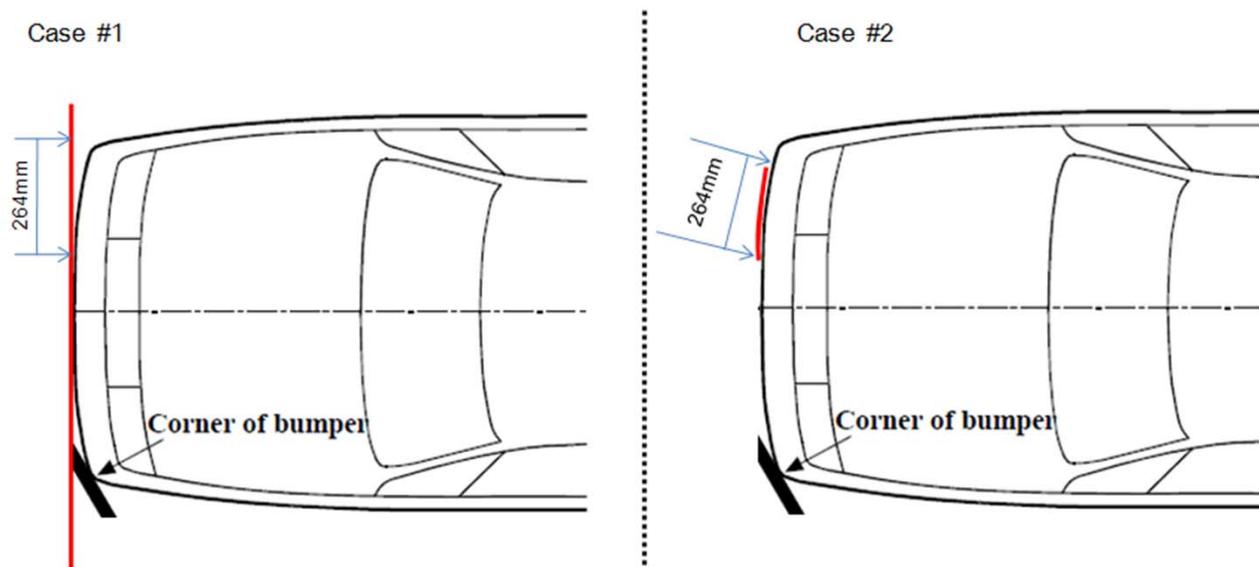
2.1. Measurement methods

(Clarification of the definition of bumper widths)

Definition of width of 264 mm is not clear in measurements

- a) It can be measured horizontally
- b) or along the bumper line

It is not clear enough the measurements of injury criteria relaxation area widths whether the length is a distance in a straight line of the bumper (Case #1) or contour line of the bumper (Case #2).



2.2 Minimum relaxation area width

(How many relaxation areas can be acceptable?)

- 2) From 5.1.1, it is allowed up to a maximum of 264 mm in total . . .
 - a) How many relaxation areas can be allowed ?
 - b) What is minimum width can be allocated as the relaxation area ?

The relaxation areas can be up to 264 mm in widths of bumper. From the current text, the manufactures can allocated as many as possible relaxation areas if the total widths is not exceed 264 mm. However, paragraph 2.14 of GRSP/2014/32 document, the minimum distinguishable distance for bumper test is 42 mm. Therefore, the text must give the clear definition of minimum width of relaxation area.

Thank you for your attention.