Results of Detailed Check of Bumper Test Area Definitions Proposed by EC (Gage Method)

8th TF-BTA Meeting
21/November/2014
Japan Automobile Standards Internationalization Center (JASIC)

Introduction

- We support the EC proposal (proposal 1) for R127.01 and GTR 9 Phase-2 as we explained at the last meeting.
- We performed detailed check of these proposals from the viewpoints described in the following slides.

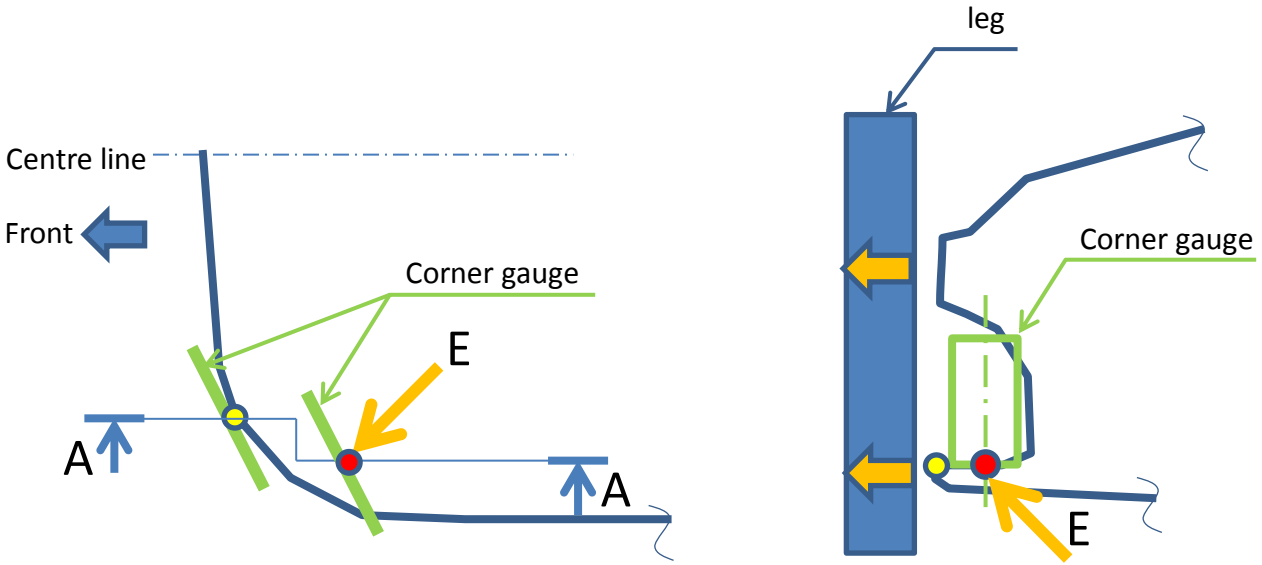
Tires and Door Mirrors

The bumper test area may be determined by a tire or a door mirror, which are both irrelevant to leg impact.

We propose to eliminate tires and door mirrors from a search for the contact points with the gage.

Concave Shapes of Bumper Face

The bumper test area may be determined by the contact points with the gage that cannot make contact with the leg.(Following figure E part)



Vehicles plan view

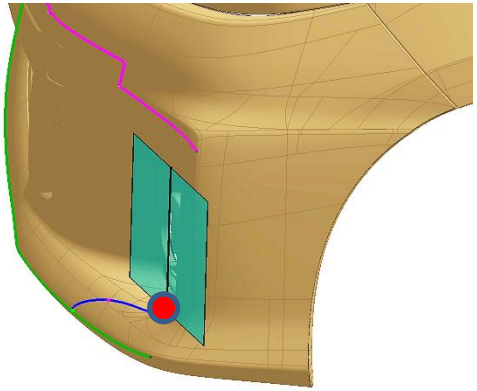
SECTION AA

- The edge of a gage contacts the concave portion, which cannot contact the leg.
- It is not appropriate to define the bumper test area using the contact points irrelevant to the leg impact.

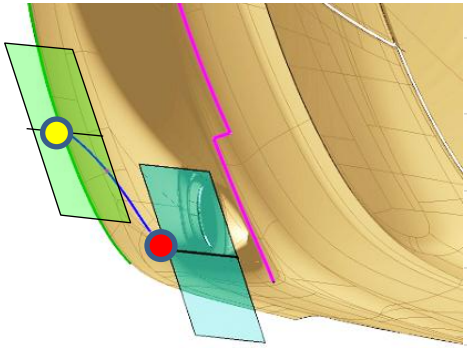
We propose to eliminate the upper and lower edges of the gage to determine the contact points.

Concave Shapes of Bumper Face

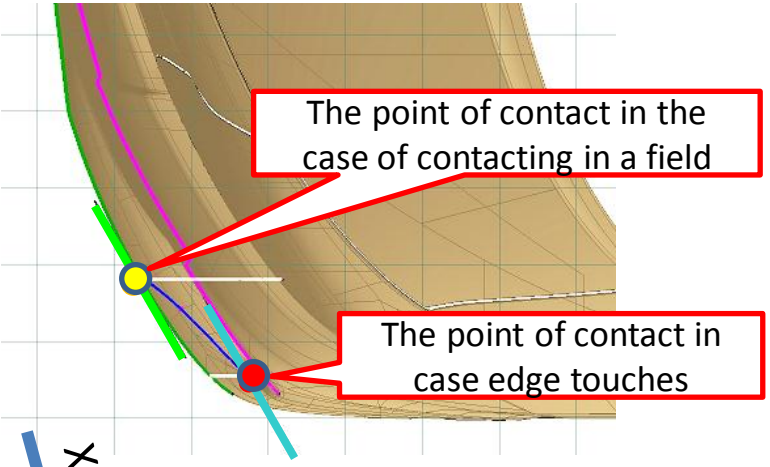
＜Example＞

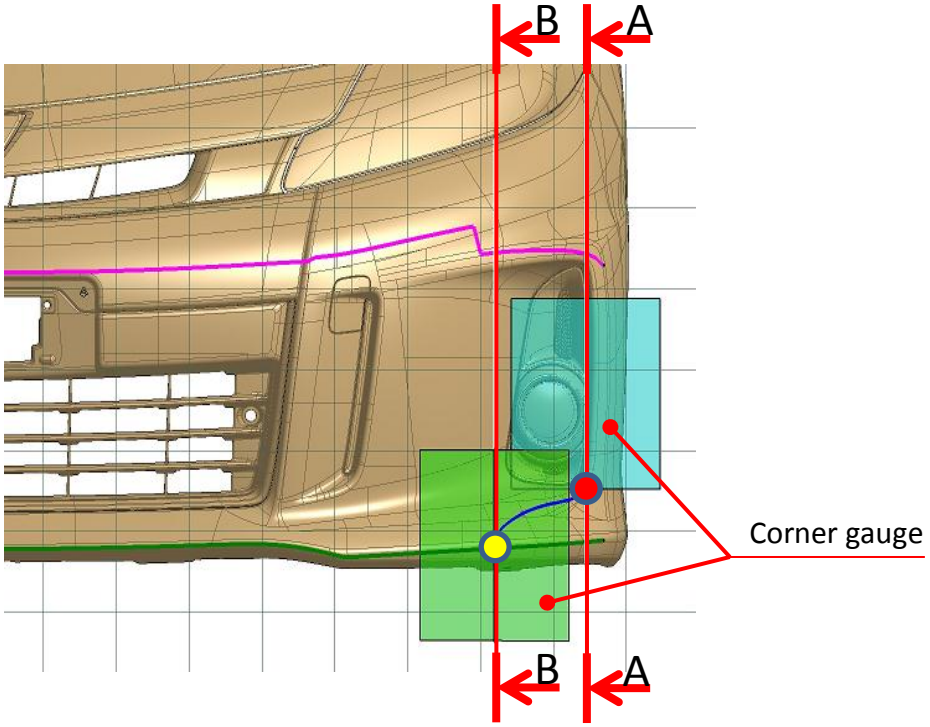


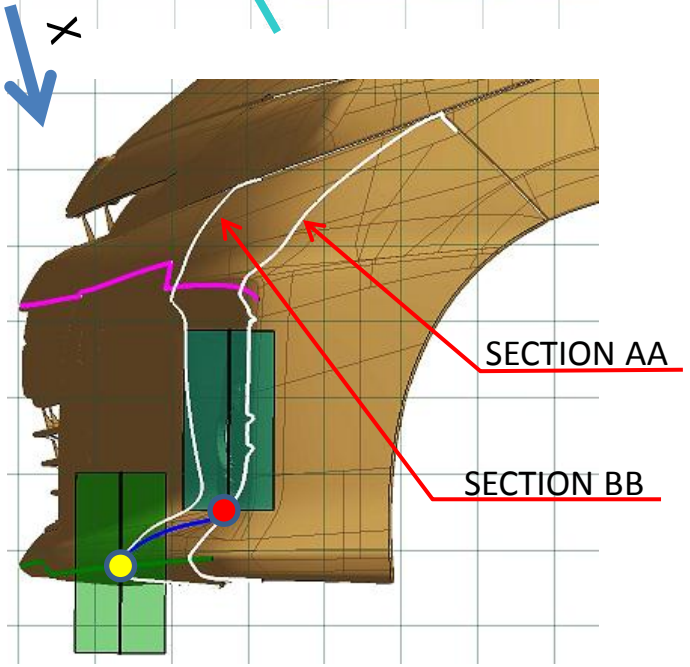
Oblique View



VIEW X







Consistency of Wording

Some inconsistencies in wording were found.

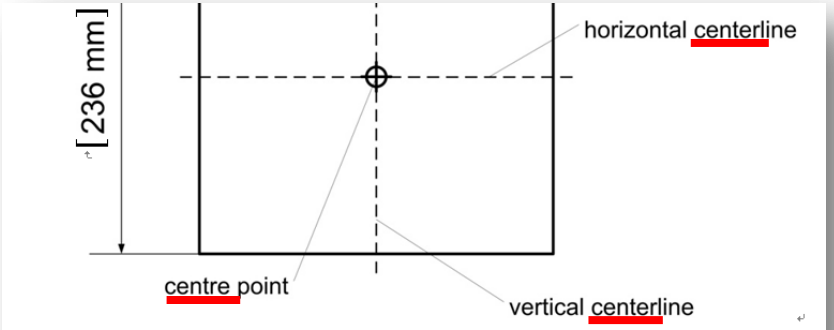
“bumper corner” and “corner of bumper”

"Bumper test area" means ~~the frontal surface of the bumper limited by two longitudinal vertical planes intersecting the corners of the bumper and moved 66 mm parallel and inboard of the corners of the bumpers.~~**the front vehicle fascia between the bumper corners as defined in paragraph 3.13., minus the areas covered by the distance of 42 mm inboard of the bumper corners, as measured perpendicular to the longitudinal median plane of the vehicle on both sides**

"Corner of bumper" means **the transversal position** of the vehicle's point of contact with a ~~vertical plane which makes an angle of 60° with the vertical longitudinal plane of the car and is tangential to the outer surface of the bumper (see Figure 5).~~**corner gauge as defined in Figure 5B.**

For determination of the corner of bumper, the front surface of the corner gauge is moved parallel to a vertical plane with an angle of 60° to the vertical longitudinal centre plane of the vehicle (see Figures 5A and 5C) at any height of the centre point of the corner gauge in the following area:

“center” and “centre”



The front surface of the corner gauge is flat.
The centre point is the intersection of the vertical and horizontal centrelines on the front surface.

We propose to modify some words for consistency.

Selection of Measuring Points

TF-BTA-8-03r1

For UN R127.01
(ECE/TRANS/WP.29/2014/38)

Annex 5

Test procedures

132mm→84mm

66mm→42mm

1.5. A minimum of three lower legform to bumper tests shall be carried out, one each to the middle and the outer thirds of the bumper at positions judged to be the most likely to cause injury. Tests shall be to different types of structure, where they vary throughout the area to be assessed. The selected measuring points shall be a minimum of 132 mm apart horizontally, and a minimum of 66 mm inside the defined corners of the bumper. These minimum distances are to be set with a flexible tape held tautly along the outer surface of the vehicle. The positions tested by the laboratories shall be indicated in the test report.

Definition of Bumper Test Area

TF-BTA-8-03r1

UN R127.01
(ECE/TRANS/WP.29/2014/38)

2.13. "*Bumper test area*" means the frontal surface of the bumper limited by two longitudinal vertical planes intersecting points 66 mm inside the defined corners of the bumper. This distance is to be set with a flexible tape held tautly along the outer surface of the vehicle.

Modifications shared by EC on Sept. 16

2.13. "*Bumper test area*" ~~means the frontal surface of the bumper limited by two longitudinal vertical planes intersecting points 66 mm inside the defined corners of the bumper.~~ **the front vehicle fascia between the left and right corner of bumper as defined in paragraph ~~3.13~~. 2.17., minus the areas covered by the distance of 42 mm inboard of each corner of bumper, as measured perpendicular to the longitudinal median plane of the vehicle on both sides**.

Proposed Modifications

2.13. "*Bumper test area*" ~~means the frontal surface of the bumper limited by two longitudinal vertical planes intersecting points 66 mm inside the defined corners of the bumper.~~ **the front vehicle fascia between the left and right corner of bumper as defined in paragraph ~~3.13~~. 2.17., minus the areas covered by the distance of 42 mm inboard of each corner of bumper~~, as measured perpendicular to the longitudinal median plane of the vehicle on both sides~~**.This distance is to be set with a flexible tape held tautly along the outer surface of the vehicle.

Consistency of Justification

- Different justifications are given to GTR9 and R127
- Justification for GTR9 reads more objective as to the description of TF-BTA discussions

Comment by JASIC on the two proposals for GTR9 and R127:

We believe the justification for the amendment should be the same between UN R127 01 and UN GTR9 because both proposals contain exactly the same amendment. It would be suggested to harmonize the two different justifications. The current justification described in UN R127 01 amendment proposal focuses only on particular results of accident data analysis and it would be suggested to mention other studies presented at TF-BTA meetings, if this approach is preferred. However, the justification specified in the GTR9 amendment proposal looks like more generic and seems more appropriate for both proposals.

Reference: email to the chair and the secretary from JASIC on September 17

We propose to use the justification described in the GTR9 amendment proposal to the R127 amendment proposal for consistency

Conclusion

We propose reflecting the followings in the EC proposal (proposal 1) for R127.01 and GTR 9 Phase-2 .

- Eliminate tires and door mirrors from a search for the contact points with the gage
- Eliminate the upper and lower edges of the gage to determine the contact points
- Modify some words for consistency
- Use the justification described in the GTR9 amendment proposal to the R127 amendment proposal for consistency