

PROPOSAL FOR CHANGES IN ECE R21 – interior fitments

1.0 Use of “R” point in place of “H” point

- 1.1 The standard refers to H point of the seat as the basis for evaluation of the interior fitments.
- 1.2 Generally H point references should be used while evaluating seats and/or when R point information is not available. R point references are used when vehicle layout related evaluations are carried out (e.g forward visibility, rear visibility etc.).
- 1.3 As per the standard practices, as long as seat H point & vehicle R point are within a specified zone (within a square of side 50mm with diagonals intersecting at R point), R point and H points are not referred separately.
- 1.4 Interior fitments are evaluated for a given occupant position which is represented only by R point.

2.0 Correction to cl 1.2.2 of Annex 4 – head impact test

- 2.1 The clause should be corrected by deleting the words as follows :
The head form shall be fitted with two accelerometers & a speed transducer, all capable of measuring values in the impact direction.
- 2.2 **Justification** – In all the head impact tests, speed measuring device is not a part of headform. It is an external stationary system with optical / non optical beams being used popularly.

3.0 Inclusion of text to cl 1.3.2 to Annex 4 – head impact test

- 3.1 Include the following text – *an external speed measurement system shall be placed to record the impactor speed before the impact. The accuracy of the recording instrument should be as follows :*

4.0 Inclusion of a new test method for the head impact test

- 4.1 ECE R21, annex 4 specifies the head impact test to assess the energy dissipation ability of the interior fitments.
- 4.2 While conducting the head impact test, the standard specifies that – *“at every point of contact on the surface to be tested the direction of impact is the tangent to the trajectory of the headform of the measuring apparatus defined in Annex 1”.*
- 4.3 With this requirements, the test can be conducted in 2 ways :

- 4.3.1 Method 1 – use an impactor which is pivoted at the bottom & impacts upside down in a plane simulating an occupant impact as it would happen.
 - 4.3.2 Method 2 – use a linear pendulum. Orient the interior fitment in compound angle such that the pendulum would impact the part the way an occupant head would have hit the same satisfying the test condition explained in 2.2 above.
- 4.4 Proposal is to include a test method in line with 2.3.2 above which described in paper no. 2003-26-0013 as an approved test method in the standard.