Proposal to amend gtr7 annex4

Backset measurement test procedure using HRMD method

CLEPA/OICA Proposal
19th March 2012 GTR7 phase II inf
HRMD measurement method

• currently HRMD in combination with HPM described as one method to measure backset
• original HPM based on specification on SAE J826 and developed to measure H-points (seat adjustment and dummy positioning)
• HRMD headform tool developed by ICBC to measure the backset

HRMD – Head Restraint Measuring Device
HPM – Hip Point Manikin based on SAE J826
ICBC - The Insurance Corporation of British Columbia, Canada
HRMD measurement method

- current text in gtr 7 annex 4:
  - dimensions of HRMD described in table of figure 4-1, but tolerances missing
  - dimensions (including tolerances) of HPM in combination with HRMD missing

- reliable test tools guarantee reproducible and repeatable test results
- acumulating of tolerances shall be avoided
- tolerances of test tool must be smaller than tolerances for backset criteria
HRMD measurement method

Proposal:
1. Definition of general tolerances for the test tool
HRMD measurement method

Proposal:
2. Definition of tolerances for relevant dimensions

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Dimension</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Distance between weight hangers and Z-probe</td>
<td>441.0 mm</td>
<td>±0.5 mm</td>
</tr>
<tr>
<td>B</td>
<td>Distance between weight hangers and backset probe</td>
<td>48.0 mm</td>
<td>±0.3 mm</td>
</tr>
<tr>
<td>C</td>
<td>Distance between weight hangers and HRMD axis in Z</td>
<td>148.0 mm</td>
<td>±0.5 mm</td>
</tr>
<tr>
<td>D</td>
<td>Distance between weight hangers and HRMD axis in X</td>
<td>23.0 mm</td>
<td>±0.3 mm</td>
</tr>
<tr>
<td>E</td>
<td>Maximal distance of weight hanger adapter to HPM hook</td>
<td>&lt; 101.5 mm</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Distance between the apex of X-probe and the H-Point axis</td>
<td>333.5 mm</td>
<td>±0.5 mm</td>
</tr>
<tr>
<td>G</td>
<td>Distance between weight hangers and contact surface</td>
<td>25.0 mm</td>
<td>±0.3 mm</td>
</tr>
</tbody>
</table>
Proposal:
3. Definition of whole mass of HRMD including probes

The mass of the HRMD including the probes will be 8300 g ±50g. Each single ballast weights shall have a mass of 4800 g ±10 g.
HRMD measurement method

Proposal:

4. Definition of relevant dimensions for combination of HRMD and HPM (due to task of backset measurement)

<table>
<thead>
<tr>
<th>Condition: X adjusted at 90°</th>
<th>Dimension</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y Distance between Z-probe and H-Point axis</td>
<td>797.4 mm</td>
<td>±1.5 mm</td>
</tr>
<tr>
<td>Z Distance between backset probe and H-Point axis</td>
<td>48.0 mm</td>
<td>±0.3 mm</td>
</tr>
</tbody>
</table>
HRMD measurement method

General:
• Dimension inclusive tolerances have to be checked by OEM, suppliers and technical services

• Existing proposal could be used for finalisation in IG on Head Restraints

• Further comments are welcome