

EEVC WG20

Rear Impact test procedure(s) and the mitigation of neck injury



Progress, December 2003

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Members:

Chairman	SVENSSON Mats, Sweden
France	VERRIEST Jean-Pierre, INRETS MINNE François, UTAC
Germany	LORENZ Bernd, BAST SFERCO Raimondo, Ford
Italy	LA ROCCA Massimo, FIAT Auto
Netherlands	CAPPON Hans, TNO
Spain	Ricardo Satué, IDIADA
Sweden	KULLGREN Anders, FOLKSAM BOSTROM Ola, AUTOLIV
UK	Adrian ROBERTS, TRL Matthew AVERY, Thatcham

Terms of reference - EEVC WG20

1. Develop test procedure(s) for rear-end collisions, with a prime focus on neck injury reduction (Whiplash).
2. Draft proposal(s) and report to the Steering Committee within one year of the first meeting.
3. Evaluate the proposed test procedure(s) in laboratory conditions and, if needed, make appropriate adjustments to the procedure(s).
4. Write final test procedure proposal(s) and report to the Steering Committee within two years of the group's first meeting.

Terms of reference - EEVC WG20

Explanatory comments 1

- The test procedure(s) should include a dynamic sled based test using generic crash pulses, unless it can be shown to be inappropriate.
- Test conditions should be appropriate with regard to real world accident data.
- Appropriate injury criteria, to be measured in the dummy, will be selected in association with EEVC WG12.
- In order to ensure that one injury risk (neck) is not reduced with an increase in other injuries (e.g. spine, or soft tissue), due regard should be given to a holistic approach to rear impact injury risk reduction.
- The test procedure(s) must address the range of vehicle properties that can influence occupant loading as a function of the vehicle crash pulse, e.g. use of the seat-belt system and the seat system with vehicle body attachment points.

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Explanatory comments 2

- The procedure must include consideration of active safety systems that are triggered by crash sensor information, pre-crash sensor information or occupant interaction(s) and position.
- The test procedure(s) assessment parameters must correlate to injury risk.
- A close relationship should be established with EEVC WG12, the Biomechanics group, regarding the selection of the most appropriate dummy, injury criteria and injury risk probability relationships. WG20 will be responsible for co-ordination with WG12.
- WG20/WG12 will select the most appropriate size of dummy for the test procedure(s).
- WG20 will supply WG12 with all the necessary input data regarding crash conditions, instrumentation and requirements and the interface between dummy and test set-up.
- Any procedure(s) must have regard to other impact conditions and impacts severities, to avoid sub-optimisation of safety system design, as well as existing standards and regulations.

EEVC WG20

Started on March 26, 2003

- 1st meeting on March 26, 2003, in Stockholm, Sweden
- 2nd meeting on June 11-12, 2003, in Delft, Holland
- 3rd meeting on October 6-7, 2003, in Thacham, England
- 4th meeting on November 26-27, 2003 in Madrid on. Joint meeting with WG12

Activities (1):

The WG20 Terms of Reference transformed into a Work Plan.

The EEVC WG12 has been formally contacted.
Joint meeting WG20 - WG12 November 26, 2003, in Madrid.

Ad-Hoc Working Group Report upgrade, expected finalised in February 2004.

Activities (2):

Eight Tasks have been defined:

Task 1) Crash pulse selection	UK
Task 2) Crash pulse feasibility on sled	IT
Task 3) Test set-up definition	GE
Task 4) Seating position selection	NL
Task 5) Posture/Seat adjustment selection	FR
Task 6) Injury criteria selection	SE
Task 7) Cost effectiveness	ES
Task 8) WG12 co-ordination,	Chairman

A number of presentations of various external groups have been given on test procedures for car rating, evaluation of crash dummies, neck injury criteria etc.