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| Submitted from the expert from Japan | Informal document **GRSP-66-28**(66th GRSP, 10-13 December 2019 agenda item 20) |

**Proposal for Supplement 3 to 03 Series of amendments of Regulation No. 129 (Enhanced Child Restraint Systems)**

The text reproduced below is based on ECE/TRANS/WP.29/GRSP/2019/19 that defines the introduction of limit values for chest vertical acceleration of Q-dummies during dynamic testing of Enhanced Child Restraint Systems (ECRS). The modifications to the working document are marked in bold for new and strikethrough for deleted characters.

**I. Proposal**

Amend *Paragraph 6.6.4.3.1.* (insert row) to read:

"6.6.4.3.1. Injury assessment criteria for frontal and rear impact as in Table 4.

# Table 4\*\*\*\*

| *Criterion* | *Abbreviation* | *Unit* | *Q0* | *Q1* | *Q1.5* | *Q3* | *Q6* | *Q10* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Head performance criterion (only in case of contact during in-vehicle testing) | HPC\* (15) |  | 600 | 600 | 600 | 800 | 800 | 800 |
| Head acceleration 3 ms | A head Cum 3 ms \*\*\* | g | 75 | 75 | 75 | 80 | 80 | 80 |
| Upper neck tension force | Fz | N | For monitoring purpose only\*\* |  |
| Upper neck flexion moment | My | Nm |  |  |
| **Vertical chest** ~~Chest vertical~~ acceleration\*\* | Az | g | 30 | 30 | 30 |  |  |  |
| Chest acceleration 3 ms | A chest Cum 3 ms \*\*\* | g | 55 | 55 | 55 | 55 | 55 | 55 |
| Chest deflection | TBC | mm | NA | For monitoring purpose only\*\* |
| Abdominal pressure**\*\*\*\*** | P | Bar | NA | NA | 1.2 | 1.0 | 1.0 | 1.2 |

\* HPC: see Annex 17.

\*\* To be reviewed within 3 years following entry into force of the series 01 of this Regulation.

\*\*\* Cum 3 ms means cumulative 3 ms value at 02 Series and 03 Series.

**\*\*\*\* Abdominal pressure, the highest recorded value is applicable for injury assessment (i.e., when the right-handed sensors record 1.3 bar and the left-handed sensors record 1.0 bar, the recorded 1.3 bar is to be used for injury assessment)**.

Figure A

**SAE J211 sign convention**

**The vertical component of the acceleration from the abdomen towards the head, "-z", when the measurement procedures defined in paragraph 7.5. of this document are followed, shall not exceed 30 g except during periods whose sum does not exceed 3 ms. The measurement procedures defined in paragraph 7.5. of this document follow those of ISO 6487 with SAE J211 sign convention, as shown in Figure A.**

**Figure A SAE J21**

... "

Amend *Paragraph 8.1.* to read:

"8.1. The test report shall record the results of all tests and measurements including the following test data:

(a) ...

(i) The following dummy criteria: HPC, Head acceleration Cum 3 ms, Upper neck tension force, Upper neck moment, Chest acceleration Cum 3 ms, **Vertical chest acceleration,** Chest deflection, Abdominal pressure (in frontal and rear impact), and

…"

**II. Justification**

To align UN Regulation No. 129 with the description of UN Regulation No. 44, and to recover the missing part (\*\*\*\*) in the working document to Supplement 2 to 03 series.