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**Road vehicles - Methods and rules for the evaluation of the
usability of child restraint systems and their compatibility with
vehicle anchorages - Part 4: Booster seat and booster cushion**

道路车辆 儿童约束系统以及与车辆固定系统配装的使用性评价方法和规则 第4部
分：增高椅和增高垫

(English Translation)

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1 Scope

This document specifies the evaluation requirements for the usability of booster seats and booster cushions.

This document applies to booster seats and booster cushions, as well as the built-in child restraint systems.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) applies to this document.

GB 27887 Child restraint systems for power-driven vehicles

3 Terms and definitions

The terms and definitions defined in GB 27887, as well as the following terms and definitions, apply to this document.

3.1

Child restraint system; CRS

A device that enables child passengers to remain in a sitting or sleeping position. It is designed to reduce the damage to the wearer in a collision or sudden deceleration, by limiting the movement of the child's body.

3.2

Multiple modes CRS

4.1 Evaluation procedure

4.1.1

The evaluation procedure includes the evaluation of the installation and usability of booster seats, booster cushions, built-in child restraint systems, including the evaluation of whether the instruction documents are easy to obtain, the clarity and completeness of the instruction manuals and labels, the design structure of the child restraint system that affects the ease of operation when the child restraint system is installed on the vehicle.

4.1.2

The evaluation process is divided into the following two steps:

- Evaluation of the child restraint system itself;
- Evaluation of the usability of the booster seat/cushion installed on the designated seat of the vehicle and the riding of child occupant.

4.1.3

The evaluation shall be conducted for each installation mode of the child restraint system and the usability of the installation mode conversion. The evaluation procedure shall be objective and repeatable.

4.1.4

The evaluation shall be conducted by at least two persons who have basic knowledge of child restraint systems and are familiar with relevant technical terms.

4.1.5

The materials and tools used for the evaluation include:

- Usability evaluation form (electronic or paper form);
- Vehicle manual;
- Child restraint system instruction manual, including instructional videos;
- Wrench or screwdriver;
- Push-pull force gauge for measuring seat belt tension;
- Child dummy specified in GB 27887, which can also be replaced by a suitable child.

4.1.6

The initial state of the child restraint system being evaluated shall be consistent with the state when the consumer obtains it. The evaluation process includes all steps from assembling the child restraint system to installing it in the vehicle. It is best to be carried out by personnel who are not familiar with this child restraint system and vehicle.

The evaluation process does not include the process of unpacking the child restraint system, taking it out of the packaging box and plastic protective cover, taking out the instruction manual; however, other preparation processes of the child restraint system before use need to be considered and evaluated in the evaluation form.

4.1.7

The use mode of the child restraint system (with/without backrest, upright/reclined, with/without base) and the installation position on the vehicle shall be determined in advance and recorded in the evaluation form.

4.1.8 First evaluate the label and instruction manual; then evaluate the usability and

child rideability of the booster seat and booster cushion; finally evaluate the ease of installation and removal. The installation and removal evaluation does not apply to built-in child restraint systems.

4.2 Scoring rules

4.2.1

The scoring rules consist of the evaluation results and weighting coefficients of each evaluation item. All evaluators give a unified evaluation result for each evaluation item; the evaluation results are divided into good, medium, poor, with corresponding scores of 3, 1, 0 respectively; the weighting coefficients are divided into A, B, C, with corresponding scores of 3, 2, 1, respectively. The score obtained by multiplying the above two scores is the score of the evaluation item. For example: if the evaluation result is "good" and the weighting coefficient is "A", the score of this item is the highest score, that is, 9 points.

4.2.2

The final evaluation result is expressed as a score rate, which is determined by the ratio of the actual score value to the highest score value that can be obtained. See

Appendix A for details. The final evaluation results can be graded with reference to Appendix B.

Note: The highest score that can be obtained for different products may be different.

5 Usability evaluation form

The usability evaluation form for booster seats and booster cushions includes three parts:

evaluation of the child restraint system, evaluation of the adaptability of the booster seat/boost cushion installation and children riding, comprehensive evaluation. The child restraint system evaluation form is shown in Table 1, the evaluation form for booster seat/boost cushion installation and children riding adaptability is shown in Table 2, the comprehensive evaluation form is shown in Table 3.

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