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PROPOSAL FOR DRAFT AMENDMENTS TO REGULATIONS 44
Child Restraint System

Transmitted by the Expert from Japan

- Note The text reproduced below was prepared by expert from Japan in order to propose the following items, so that Japan might adopt the ECE 44.
- (1) To amend paragraph 7.2.1.1 in order to improve the comfort in handling of buckle and tongue.
 - (2) To amend paragraph 7.2.3.2.1.1 7.2.3.2.1.2 7.2.3.2.1.4 and 7.2.3.2.4 in order to enable the webbing sensitive retractor to be used.
 - (3) To amend paragraph 7.1.4.4.1.2.2 7.1.4.2.1 and 7.1.4.2.2 in order to enable rear-facing child restraint system installed with vehicle seats by two point belts, which are widely used in Japan and United States, to be approved.

A. Proposal

Paragraph 7.2.1.1., amend to read

This means, inter/alia, that it must not be in a partially closed position ; it must not be possible to exchange the buckle parts inadvertently when the buckle is being locked. The buckle must only lock when all parts are engaged. This shall not apply, however, for Y-shaped belt or for cases in which shoulder belt and waist belt are linked. Wherever the buckle is in contact with the requirements of paragraphs 7.2.1.1 to 7.2.1.9 inclusive.

Paragraph 7.2.3.2.1.1., amend to read

It shall be locked when the deceleration of the vehicle reaches 0.45g, and/or when strap acceleration reaches 0.7g as measured in the axis of strap extraction.

Paragraph 7.2.3.2.1.2., amend to read

It shall not lock for strap accelerations of less than 0.3g as measured in the axis of strap extraction.

Paragraph 7.2.3.2.1.4., amend to read

In the case of a vehicle-deceleration-sensor-type retractor, it shall lock when its sensing device is tilted by more than 27° in any direction from the installation position specified by its manufacturer.

Paragraph 7.2.3.2.4., amend to read

In the tests referred to in paragraphs 7.2.3.2.1.1 and 7.2.3.2.3 above, the amount of strap extraction occurring before the retractor locks shall not exceed 50 mm in the case of vehicle-deceleration-sensor-type retractor, and 25mm in the case of strap-acceleration-sensor-type retractor, starting at the length of unwinding specified in paragraph 8.2.4.3.1. In the test referred to in paragraph in paragraph 8.2.4.3.1 below.

Paragraph 7.1.4.4.1.2.2., amend to read

Child restraints in group O not supported by the dashboard, and carrycots:

In the case of child restraints in group O not supported by the dashboard, either condition 1 or condition 2 indicated below shall be satisfied.

In the case of carrycot, condition 1 below shall be satisfied.

Condition 1

The head of the manikin shall not pass the planes AB, AD and DE as shown in Figure 3

below.

Condition 2

The head of the manikin shall not pass the planes AD and DE as shown in Figure 3 below.

In addition, the angle forming a perpendicular with the child restraint seat back shall not

exceed 60°, and the center of mass of the manikin's head shall be positioned straight along the seat back surface and it shall not surpass this surface beyond the seat back upper edge.

Paragraph 7.1.4.2.1., The following statement is to be added

In 7.1.4.4.1.2.2, this condition shall be exempted from application only in cases where condition 2 has been applied.

Paragraph 7.1.4.2.2., The following statement is to be added

In 7.1.4.4.1.2.2, this condition shall be exempted from application only in cases where condition 2 has been applied.

B. Justification

Paragraph 7.2.1.1

1. Under current regulations, the composition is such that unless the right and left tongue plates are inserted into the buckle simultaneously, the lock cannot be completely engaged. Such a mechanism is very hard for the user to employ. This requirement is not stipulated in Japan's Safety Regulations, which are based on years of experience, nor in FMVSS213. The requirement is too burdensome on the user.
2. In the case of harness belt combining shoulder and lap strap, or Y-shaped belt, it is not predictable for users to insert the harness belt tongue plate on only one side and not insert the other tongue plate. While in the case of harness separating shoulder and lap strap, it is feared that the system is used inserting only the lap belts or the shoulder belts. In this case, the number of tongue plate is more than two, and it might cause misuse of them.

Paragraphs 7.2.3.2.1.1., 7.2.3.2.1.2., 7.2.3.2.1.4. and 7.2.3.2.4.

1. The seating surface angle of the vehicle seat is not constant and when it is set reclining against the child restraint system (CRS), there is no establishment with a

regular vehicle-deceleration-sensor-type retractor because the retractor installation angle varies.

A special device, such as a gimbal mechanism, must be added.

This incurs additional costs and increases the burden on the user.

In the Japan market, a CRS with emergency locking retractor (ELR) attached is predominant and user demand for ELR is high.

The retractorless format is not readily acceptable in the market.

2. With respect to safety, it is mandatory that the dynamic tests of paragraph 8.1.3 be satisfied.

In the case of rollover, it is mandatory that the overturning test of paragraph 8.1.2 be satisfied.

Even with a webbing-sensor-type retractor, if the aforesaid conditions are satisfied, safety is equivalent to that with vehicle deceleration-sensor-type retractor.

3. The proposed level of strap sensitivity is the same as in Japan's Safety Regulations and in FMVSS209, which have been enforced for years without problems.

Paragraphs 7.1.4.4.1.2.2., 7.1.4.2.1., and 7.1.4.2.2.

1. With respect to rear-facing CRS, a 3-point-type seat belt is necessary for satisfying the conditions given in the current regulation, but in Japan, the U.S. type CRS, with which a 2-point-type seat belt can also be used, has been disseminated. If the European type (3-point-type seat belt only) rear-facing CRS is brought into the Japanese market, the following problems could arise.
 - (1) Because the 2-point-type seat belt is installed at a high rate, the CRS cannot be attached to the rear center seat.
 - (2) In attempting to satisfy the conditions given in the current regulation, it will not be possible to install the CRS so that the seat back can be reclined to the sitting posture adequate for infants.
 - (3) The CRS cannot be installed because the three-point-type seat belt is inadequate in length. And because of this, it is feared that the CRS will be used at the passenger seat next to driver's seat, which is equipped with an air bag, or that the CRS will be attached with only the lap portion of the seat belt, which is an extremely dangerous form of misuse.
 - (4) In attempting to satisfy the conditions given in the current regulation it will not be possible to install the CRS firmly with no slack because the lap belt of the three-point-type seat belt cannot be tightened.
2. Accordingly, performance requirements should be revised so that the U.S. type rear-facing CRS, with which a 2-point-type seat belt can be used, will be acceptable when tested.

3. For this reason, respecting the dynamic test requirements for rear-facing CRS in group O not supported by the dashboard, the requirements of FMVSS213 should be acknowledged as an alternative.
4. In light of the experience in the United States applying FMVSS213, this proposed revision should not present any problems in safety.
5. With respect to seat back angle, however, whereas 70° is stipulated in FMVSS213, 60° is proposed in consideration of differences in the test seats for ECE R44 and for FMVSS213, and conformity with Japanese regulations.