

Enhanced Child Restraint Systems Legislation issues UN R129 and UN R145

May 2022

Background

- The Type Approval Authorities Meeting (TAAM) is a platform where EU/EEA Type Approval Authorities informally discuss interpretation issues with legislation.
- The outcome of a discussion on a certain topic, could be:
 - general consensus about how to interpret something
 - different point of views; ask the EU Commission in case of EU legislation via FORUM or present issue in Geneva, in the relevant GR.
 - legislation not clear or inconsistent: bring under the attention of the EU Commission in case of EU legislation or present a proposal in Geneva in the relevant GR, in case of UN ECE legislation.

Background (cont.)

- In the January 2022 session of TAAM, the Dutch Type Approval Authority (RDW) brought forward some questions related to the way UN R129 shall be interpreted with regard to:
 - applications for approval of an ECRS with lower tether anchorages
 - relation between the responsibility of the vehicle manufacturer versus the ECRS manufacturer
- Also NL would like to discuss the use of a support leg for applications other than i-Size

N.b. manufacturers of UN R44.04 approved CRSs are converting their CRSs to meet the requirements of UN R129 because of the phasing out of UN R44 by September 2023

Requirements on Lower Tether Anchorages & Attachments GRSP-71-19

Issues:

- UN R129.03 only has the location defined for lower strap anchorages (see Annex 6, Appendix 2, figure 5)
- There is no definition of “lower strap anchorages” or “lower tether anchorages”
- There are no specific strength requirements for the straps, the tethers and possible retractors used.
- There are no requirements on a vehicle level (e.g. UN R145) where the lower tethers are to be attached to in the vehicle
- There is no consent from the vehicle manufacturer required in order to approve a vehicle specific ECRS for a certain vehicle type using lower straps.

Requirements on Lower Tether Anchorages & Attachments GRSP-71-19

Questions:

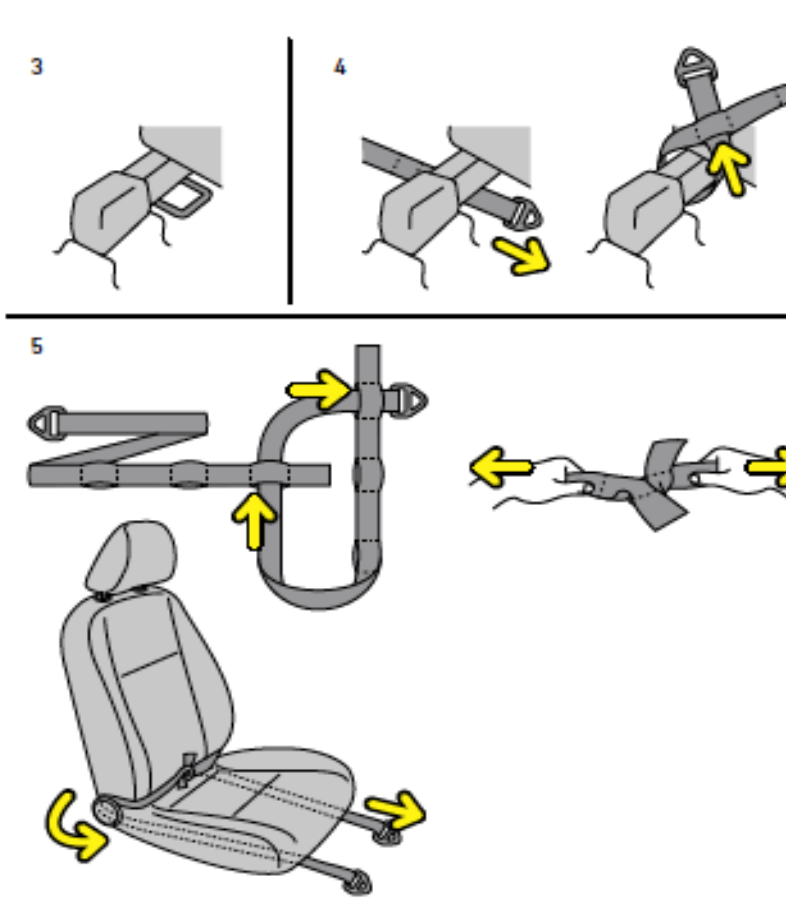
- Can an ECRS be approved under UN R129.03 including the lower strap anchorages ?
n.b. Several ECRSs have already been approved to UN R129.03. Different interpretations exist.

- What are the strength requirements which apply for them ?
 1. same requirements that in general apply for straps and retractors ?
 2. no specific requirements – responsibility of the ECRS manufacturer ?n.b. both interpretations were received

- What kind of anchorages are allowed and who decides ?
(ECRS manufacturer versus vehicle manufacturer)

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Examples:



The additional anchorages to secure the ECRS to the bodywork of the vehicle are to be made by:

- Picture 3 hooking a strap with Top-Tether-hook direct onto the clamp on the rail of the Vehicle Seat.
- Or according to picture 4 strap around rail of Vehicle Seat.
- Or according to picture 5 strap around the Vehicle Seat.

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Questions (cont.):

- How does this fit into the objective of UN R129 ?
- How is the strength of the attachments guaranteed ?
- How is it guaranteed that there are no sharp edges in the seat structure or electronic components which may interfere with the straps?
- How is misuse prevented ?

Requirements on Lower Tether Anchorages & Attachments GRSP-71-19

Annex 24 - Additional attachment points required for securing rearward facing Enhanced Child Restraint System, of category Specific vehicle Belted, to motor vehicles

1. This annex applies only to the additional anchorages for attaching Enhanced Child Restraint in the Specific vehicle Belted category or to bars or other special items used to secure child-restraining devices to the bodywork, whether or not they make use of UN Regulation No. 14 or UN Regulation No. 144 (*meant is UN Regulation No. 145*) on ISOFIX anchorage systems, ISOFIX top tether anchorages and i-Size seating positions.
2. **The anchorages shall be determined by the manufacturer of the child restraint system and details shall be submitted for approval to the Technical Service** conducting the tests.
The Technical Services may consider information obtained from the vehicle manufacturer.
3. The manufacturer of the child restraint shall provide the necessary parts for fitting the anchorages and a special plan for each vehicle showing their exact location.
4. The child restraint manufacturer shall indicate if the anchorages required for attaching the restraint to the vehicle structure are in accordance with **the position and strength requirements of paragraph 3. onwards in the recommendation given to Governments intending to adopt specific requirements relating to anchorages for child restraints used in passenger cars.**

Why not vehicle manufacturer

Who does that and how ?

??

history

1. In the IWG-CRS, it seems that the attendees were aware of the situation with regard to lower tether anchorages and attachments but it was not taken on board of UN R129.03 not to further delay its adoption.

See:

- [CRS-68-09](#) by CLEPA
- [CRS-68-10](#) by CLEPA
- [CRS-68-13](#) meeting minutes 18 October 2017

2. ISO 13216-4 has been developed to test the strength of lower tether anchorages in the vehicle.

Way forward

- NL suggests to continue and finish the work initiated by the IWG-CRS
- To develop new requirements under UN R129 and UN R145 to allow for the use of lower tether anchorages
- To only provide for fixed attachments in the vehicle (see figure 3 page 6), which are approved to UN R145 in order to prevent misuse.
- To only allow ECRS manufacturers to include ECRSs using lower tether anchorages in the vehicle list for vehicles with the anchorages approved to UN R145

use of a support leg for applications other than i-Size

UN R129.03:

2.12. "Anti-rotation device"

Means a device intended to limit the rotation of the Enhanced Child Restraint System during a vehicle impact and consisting of:

- (a) A top-tether strap; or
- (b) **A support-leg.**

Meeting the requirements of this Regulation and **fitted to** an ISOFIX anchorage system and ISOFIX top tether anchorages or **vehicle floor contact surface meeting the requirements of UN Regulation No. 14 or UN Regulation No. 145.**

An "Anti-rotation device" for a "specific vehicle " Enhanced Child Restraint System may comprise a top tether, a support-leg or any other means capable of limiting the rotation

use of a support leg for applications other than i-Size

Questions:

1. how can it be guaranteed that the vehicle floor contact surface is sufficiently strong, provides enough room and is used in agreement with the vehicle manufacturer for seating positions not being i-Size !?
2. When testing ISOFIX lower anchorages + support leg using the SFAD at 8 kN, the load acting on the vehicle floor contact surface is about 3,0 – 3,4 kN. Is this still sufficient for current constructions bearing in mind actual and future vehicle constructions where the floor contact surface at the same time serves as the upper boundary of the REESS ?

use of a support leg for applications other than i-Size

Proposal:

1. In future, when sled testing the ECRS acc. to UN R129, the load on the support leg shall be measured.
2. A test at vehicle level is performed under UN R145, whereby a separate test of the support leg is performed.
3. The ECRS incl. support leg as anti-rotation device may be recommended for a vehicle type which is approved as such under UN R145.

Thank you for your attention !