

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Construction of Vehicles

REVISED PROPOSAL FOR DRAFT 06 SERIES OF AMENDMENTS TO
REGULATION No.14
(UNIFORM PROVISIONS CONCERNING THE APPROVAL OF VEHICLES WITH
REGARD TO SAFETY-BELT ANCHORAGES)

Transmitted by the French Delegation

This amendment has been prepared to introduce in Regulation n°14 the new anchorage system standard for child restraint systems (CRS) prepared by the International Organization for Standardization (ISO).

The International Standard ISO 13216-1:1999 establishes an anchorage system composed of universal anchorage to be located in vehicle and universal attachment to be located on ISOFIX child restraint systems.

Following modifications of Regulation n°14 are suggested as draft 06 amendment series in which,

- (1) "ISOFIX" will be used as a qualificative adjective in order to simplify the modification redaction and to allow child restraint system users to be able to identify ISOFIX restraints without any doubt,
- (2) words copied from the International Standard ISO 13216-1:1999 will be written in *italics*,
- (3) words removed from the original text of Regulation n°14 will be written between brackets and crossed out,
- (4) words added to the original text of Regulation n°14 will be written in **bold types**
- (5) words added (or removed) to the informal document n°6 distributed at the 28th GRSP (27 November – 2 December 2000) will be underlined (or crossed out).

- **The title of the regulation n° 14 must be rewording to read :**
Uniform provisions concerning the approval of vehicles with regard to safety-belt anchorages, **ISOFIX anchorages systems and the approval of aftermarket ISOFIX low anchorages.**

- In paragraph 1. SCOPE₂ add after the end of the sentence :

1.

It also applies to ISOFIX anchorages systems intended to ISOFIX child restraint systems installed in vehicle of category M1 and N1 and aftermarket ISOFIX low anchorages.

- In paragraph 2. DEFINITIONS,

- add in the following paragraph to read :

2.2. “Vehicle type”

...to which the **safety belts anchorages and the ISOFIX anchorages systems if any** are attached...

- insert new paragraphs to read :

2.17. “ISOFIX low anchorage”

means one 6 mm diameter rigid round horizontal bar, extending from vehicle or seat structure to accept and restraint an ISOFIX child restraint system with ISOFIX attachments.

2.18. “ISOFIX anchorages systems”

**means a system including made of two ISOFIX low anchorages which is designed for attaching an ISOFIX child restraint system.
The rotation of the ISOFIX child restraint system must be limited.**

Justification : The word “low” is added as suggested at the 28th GRSP (TRANS/WP.29/GRSP/28 - §23)

2.19. “ISOFIX *attachment*”

means one of the two connections, fulfilling the requirements ~~of regulation 44~~, extending from the ISOFIX child restraint system structure, and compatible with an ISOFIX low anchorage.

2.20. “ISOFIX child restraint systems”

means an ISOFIX child restraint systems ~~intended~~ which has to be attached to an ISOFIX anchorages systems.

2.21. **“Seat bight”**
means the area close to the intersection of the surfaces of the vehicle seat cushion and the seat back.

Justification : This definition is useless in this regulation.

2.22. **“Static force application device (S-FAD)”**
means a test fixture that engages the vehicle ISOFIX anchorages system and that is used to verify their strength and the ability of the vehicle or seat structure to limit the rotation in a static test. The test fixture is describe in the figures 1 and 2.

Justification : rewording in a more realistic manner of the S-FAD definition.

➤ In paragraph 3. APPLICATION FOR APPROVAL, add in the following paragraphs to read :

3.1. ...with regard to the belt anchorages **and the ISOFIX anchorages systems if any** shall be submitted...

3.2.1. ...showing the positions of the belt anchorages **and of the ISOFIX anchorages systems if any**, the effective belt anchorages (where appropriate), and detailed drawings of the belt anchorages **and of the ISOFIX anchorages systems if any** and of the point...

3.2.2. ...of the belt anchorages **and of the ISOFIX anchorages systems if any** ;

3.2.3. ...of the belt anchorages **and of the ISOFIX anchorages systems if any** ;

3.2.4. ...of belt anchorages **and of the ISOFIX anchorages systems if any** affixed to the seat structure ;

3.3. ...for the belt anchorage test **and for the ISOFIX anchorages systems test if any** by the technical...

➤ In paragraph 4. APPROVAL, the following paragraphs must be rewording to read :

4.2. ...Its first two digits (at present 06, corresponding to the 06 series of amendments)...

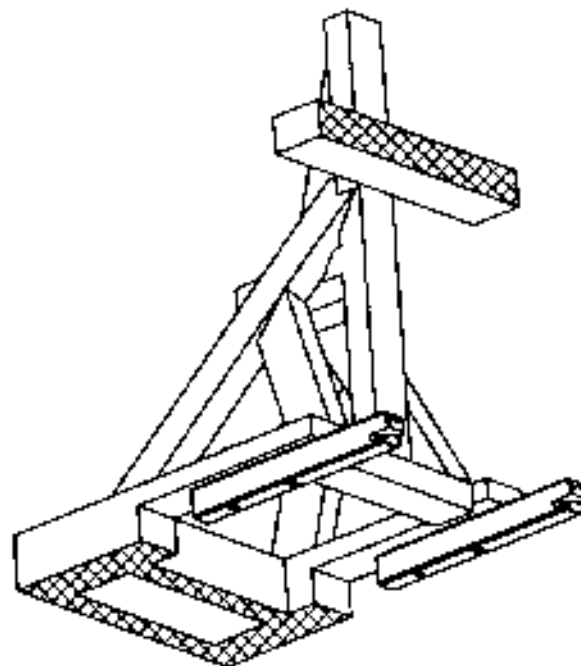
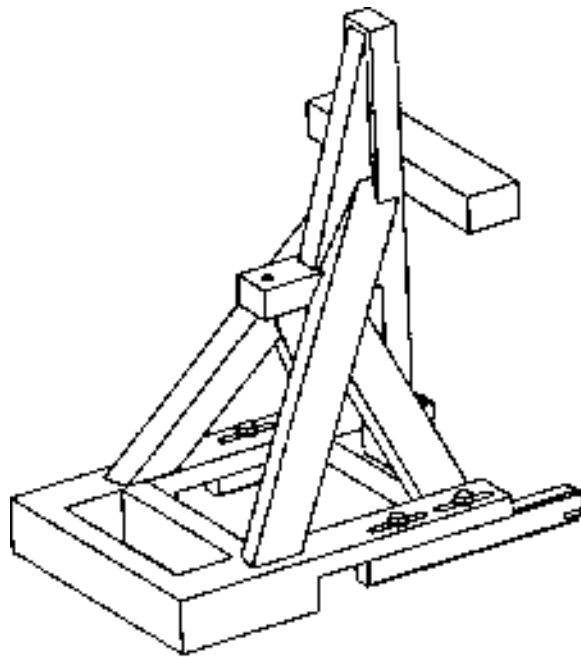


Figure 1 : *Static force application device (S-FAD), isometric views*

Dimensions in millimetres

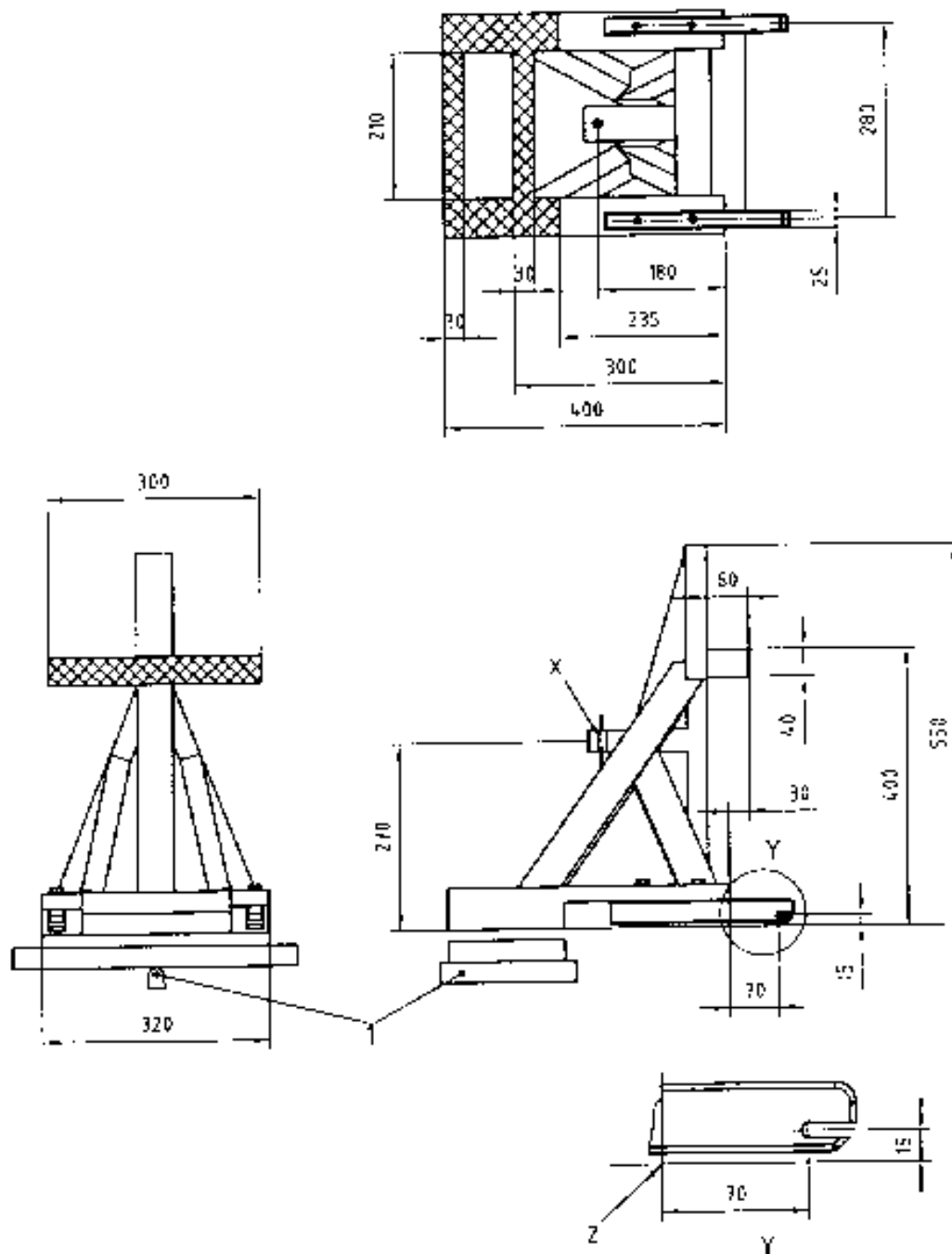


Figure 2 : Static force application device (S-FAD), dimensions

Stiffness of S-FAD : When attached to rigid anchorage bar(s) with the front cross member of the S-FAD supported by a rigid bar that is held at the centre by a longitudinal pivot 25mm below the S-FAD base (to allow bending and twisting of the S-FAD base) the movement of point X shall not be greater than 2 mm in any direction when forces are applied in accordance with table n°1 of paragraph 6.6.4. of this regulation. Any deformation of the ISOFIX anchorages system shall be excluded from the measurements (e.g. the stiffness requirements will be fulfilled when using a securely welded construction consisting of rectangular 3mm steel tubing, and 6mm thick load application plate).

➤ In paragraph 5. SPECIFICATIONS,

➤ insert new paragraphs to read :

5.2.2 Any ISOFIX anchorages systems for ISOFIX child restraint systems shall be designed, made and situated as to :

5.2.2.1. ~~The Any ISOFIX anchorages systems~~ shall be 6 mm ± 0,1 mm diameter transverse horizontal¹ rigid bar(s) which cover(s) two zones of 25 mm minimum effective length located on the same axis.

For any ISOFIX anchorages systems, the distance between the centres of the two zones is 280 mm ± [to be defined] mm.

~~Any The ISOFIX anchorages systems~~ shall be supported so as to extend from the adjacent vehicle or seat structure.

5.2.2.2. For any ISOFIX anchorages system installed in the vehicle, it shall be verify the possibility to attach the ISOFIX child restraint systems according to Regulation 16.

5.2.2.3. Any ISOFIX anchorages systems shall be designed such as enable the vehicle, in normal use, to comply with the provisions of this regulation. Aftermarket ISOFIX low anchorages shall also comply, for all the vehicle types for which they are intended to, with the provisions of this regulation.

Justification : Aftermarket ISOFIX low anchorages could be fitted, at the request of the car owner, in addition to the ones fitted by construction to comply with the present Regulation. For safety aspect, aftermarket ISOFIX low anchorages need to present the same performance as the original ones.

5.2.2.4. ISOFIX low anchorages shall be permanently in position or storable. In case of storable anchorages, the requirements relating to ISOFIX anchorages system shall be fulfilled in the deployed position.

Justification : New paragraph added as agreed at the 28th GRSP (TRANS/WP.29/GRSP/28 - §23)

5.2.2.5. At least one anchorage bar (when deployed for use), one guidance fixture (when installed), or one seat marking feature shall be readily visible to the CRS installer.

Justification : introduction of provisions to make easier the installation of the ISOFIX child restraint systems.

¹ According to the vehicle reference system as described in annex 4, appendix 2.

5.2.2.6. ISOFIX low anchorages resistance is designed for any ISOFIX child restraint systems of group of mass 0 ; 0+ and 1. Whatever ISOFIX child restraint system class is integral or non-integral as defined in Regulation 44. The ISOFIX anchorages systems may be used for group of mass 2 and 3 only in case of non-integral class ISOFIX child restraint systems.

Justification : For non-integral class, the main forces of the children are transferred through the adult seat belt.

5.3.10. Minimum number of ISOFIX anchorages systems to be provided.

5.3.10.1. Any vehicle of category M1 must be equipped at least with two ISOFIX anchorages systems which satisfy the requirements of this regulation.

5.3.10.1. If an ISOFIX anchorages system is installed at a front seating position protected with a frontal airbag, a de-activation device for this airbag shall be fitted.

Justification : Proposal in accordance with several comments tabled at the 28th GRSP. It is derived from the draft amendment of Directive 91/671/CEE.

5.3.10.1.2. Notwithstanding with 5.3.10.1. only one ISOFIX anchorages system shall be provided on the front seat row in the case of the two following vehicle concepts :

- Either, no rear seat row is provided or,
- There is not enough sufficient space available between two seat rows measured as follows : with the seats and seat backs adjusted as specified in paragraph 5.3.10.1.2.1., the distance measured along a longitudinal horizontal line tangent to the highest point of the rear seat bottom cushion in the suitable longitudinal vertical plane, describe in paragraph 5.3.10.1.2.2., between the rearward surface of the front seat back and the forward surface of the rear seat back is less than 720 mm.

5.3.10.1.2.1 Adjustable front seats are in the adjustment position midway between the forwardmost and rearmost positions, and if separately adjustable in a vertical direction, are at the lowest position. If an adjustment position doesn't exist midway between the forwardmost and rearmost positions, the closest adjustment position to the rear of the midpoint is used. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer

5.3.10.1.2.2. In a vehicle equipped with front separate side by side seats, the vertical plane to be taken into account in paragraph 5.3.10.1.2. is located at the centreline of the driver's seat cushion. In a vehicle equipped with front bench seating, the reference vertical plane mentioned above passes through the centre of the steering wheel rim.

5.3.10.1.3. Notwithstanding with 5.3.10.1. in case of integrated “built in” child restraint system(s) the number of ISOFIX anchorages systems to be provided shall be at least two minus the number of the integrated “built in” child restraint system(s).

➤ Renumber paragraph 5.3.10. (former) as paragraph 5.3.11.

➤ In paragraph 6.TESTS :

➤ The following sub-paragraph must be rewording as follow :

6.1. General for seat belt anchorages tests.

6.2. Securing the vehicle for seat belt anchorages tests and for ISOFIX anchorages systems tests.

6.2.1. ...as to strengthen the seat belt anchorages or the ISOFIX anchorages systems and their anchorage area...

6.3. General test requirements for seat belt anchorages.

6.4 Particular test requirements for seat belt anchorages.

➤ Insert new paragraphs to read :

6.6. *Static test requirements ~~for ISOFIX anchorages systems.~~*

6.6.1. **The strength of the ISOFIX anchorages systems and the ability of the vehicle or seat structure to limit the rotation shall be tested applying the forces, as prescribed in paragraph 6.6.4., to the static force application device (S-FAD) with ISOFIX attachments well engaged. In case of several ISOFIX anchorages systems are installed on a seat row, the test shall be carried out simultaneously with all the ISOFIX anchorages systems fitted on this seat row.**

Justification : consequence of the rewording of the S-FAD definition as tabled in § 2.22.

6.6.2. *The test may be carried out either on a completely finished vehicle or on sufficient parts of the vehicle so as to be representative of the strength and rigidity of the vehicle structure.*

Windows and doors may be fitted or not and closed or not.

Any fitting normally provided and likely to contribute to the vehicle structure may be fitted.

The test may be restricted to the ISOFIX anchorages systems relating to only one seat or group of seat on the condition that :

-The ISOFIX anchorages systems concerned have the same structural characteristics as the ISOFIX anchorages systems relating to the other seats or group of seats and,

-Where such ISOFIX anchorages systems are fitted totally or partially on the seat or group of seats, the structural characteristics of the seat or group of seats are the same as those for the other seats or groups of seats.

6.6.3. If the seats and head restraint are adjustable, they shall be placed in the position recommended specified by the car manufacturer as specified by the paragraph 11 of this regulation.

6.6.4. *Forces, directions and excursion limits.*

6.6.4.1. A force of 135N \pm 15N shall be applied to the centre of the lower front crossbar of the S-FAD in order to adjust the fore-aft position of the S-FAD rearward extension to remove any slack or tension between the S-FAD and its support.

6.6.4.2 *Forces shall be applied to the static force application device (S-FAD) in forward and lateral directions according to table 1.*

Table 1 : Directions of test forces

<i>Forward</i>	$0^\circ \pm 5^\circ$	$8 \text{ kN} \pm 0,25 \text{ kN}$
<i>Lateral</i>	$75^\circ \pm 5^\circ$ (to both sides of straight forward or if any worst case side)	$5 \text{ kN} \pm 0,25 \text{ kN}$

Each of these test may be performed on different structures if the manufacturer so requests.

Justification : Paragraph derived from test procedure used for anchorage safety belt.

Forces in the forward direction shall be applied with an initial force application angle of $10 \pm 5^\circ$ above the horizontal. Lateral forces shall be applied horizontally $0^\circ \pm 5^\circ$. A pre-load force of $500 \text{ N} \pm 25 \text{ N}$ shall be applied at the prescribe loading point X indicated in figure 2. Full application of the force shall achieved within a period of 2 s or less. The force shall be maintained for a minimum period of 0,2 s.

6.6.4.3. Horizontal excursion (after pre-load) of point X during application of the 8 kN and 5 kN forces shall be within the limits specified in Table 2. Rotation (yaw) of the fixture during application of the 8 kN forward force shall not exceed [15°]. All measurements shall be made according to ISO6487 with CFC of 60 Hz or any equivalent method.

Table 2 : Excursions limits

<i>Force direction</i>	<i>Maximum excursion of point X of S-FAD</i>
Forward	125 mm (longitudinal)
Lateral	125 mm (transversal)

- 6.6.4.4. **Permanent deformation including partial rupture or breakage of any ISOFIX low anchorage or surrounding area shall not constitute failure if the required force is sustained for the specified time and if the maximum horizontal excursion are not exceeding the specified one's.**

Justification : The excursions limits criteria need to be introduced in this paragraph in addition to the table 2.

- 6.6.5 *Additional forces.*

- 6.6.5.1. *Seat inertia forces.*

For the installation position where the load is transferred into a vehicle seat assembly, and not directly into the vehicle structure, a test shall be carried out to ensure that the strength of the vehicle seat attachment to the vehicle structure is sufficient. In this test, in addition to the force of 8 kN \pm 0,25 kN applied to point X, a force equal to 20 times the mass of the relevant parts of the seat assembly shall be applied horizontally and longitudinally in a forward direction to the seat or the relevant part of the seat assembly corresponding to the physical effect of the mass of the seat in question to the seat anchorages. The determination of the additional applied load or loads and the load distribution shall be made by the manufacturer and agreed by the Technical Service. No breakdown shall occur.

NOTE This test does not have to be performed in case any anchorage of the vehicle seat belt system is integrated to the vehicle seat structure, and the vehicle seat is already tested and approved to meet at least the above requirement.

Justification : the previous wording of this paragraph led to remove the additional test that has to be performed in case of seat inertia forces, as provided in ISO 13216-1.

The second part of this paragraph used the wording introduced by the Regulation 14-05 Supplement 2 for safety seat belt.

- In paragraph 7. INSPECTION DURING AND AFTER STATIC TESTS, add at the end of the title to read :

7. INSPECTION DURING AND AFTER STATIC TESTS FOR SAFETY BELT ANCHORAGES.

- In paragraph 9. CONFORMITY OF PRODUCTION, add in the following paragraphs to read :

9.1. ...with regard to details affecting the characteristics of the **safety belt anchorages and the ISOFIX anchorages systems**.

- In paragraph 10. PENALTIES FOR NON CONFORMITY OF PRODUCTION, add in the following paragraphs to read :

10.1. ...complied with or if its **safety belt anchorages or the ISOFIX anchorages systems** failed to pass the checks prescribed ...

- In paragraph 11. OPERATING INSTRUCTIONS,
 - The first sentence has to be numbered as follow :

11.1. The national authorities may require...

- Renumber paragraph 11.1.. (former) as paragraph 11.1.1.
- Renumber paragraph 11.2.. (former) as paragraph 11.1.2.
- insert new paragraphs 11.2 to read :

11.2. The vehicle owner's handbook shall indicate :
-The different ISOFIX anchorage systems, including any restrictions on the groups of mass (as defined in Regulation 44) for ISOFIX child restraint system that can be fitted,
-Where applicable any restrictions on the simultaneous use of ISOFIX child restraint systems on adjacent seating positions,
-Where applicable any restrictions on the adjustments of vehicle seats resulting from the fitting of an ISOFIX child restraint system.

Justification : Instructions for installation are transferred in Regulation 16.

- In paragraph 12. PRODUCTION DEFINITELY DISCONTINUED, add in the following paragraphs to read :

12.1. ...a type of safety belt anchorages **or a type of ISOFIX anchorages systems** approved in accordance with this Regulation...

- In paragraph 14. TRANSITIONAL PROVISIONS, the following sub-paragraph must be rewording as follow :

14.1 As from the official date of entry into force of the [05] **06** series of amendments, no contracting Party...as amended by the [05] **06** series of amendments.

14.2 As from [**2 years after the publication of the amendment**] after the date of entry into force of the [05] **06** series of amendment to this Regulation, Contracting Parties applying this Regulation shall grant ECE approvals only if the requirements of this Regulation, as amended by the [05] **06** series of amendments are satisfied.

14.3 As from [**5 years after the date for NT**] after the date of entry into force of the [05] **06** series of amendment to this Regulation, Contracting Parties applying this Regulation may refuse to recognise approvals which were not granted in accordance with the [05] **06** series of amendments to this regulation.

➤ In Annex 1. COMMUNICATION, add in the following paragraphs to read :

...of a vehicle type with regard to safety belt anchorages **and ISOFIX anchorages systems if any pursuant to... or of aftermarket ISOFIX low anchorages pursuant to Regulation n° 14^{3/}**

1. **Trade name or mark of the power-driven vehicle, or of the aftermarket Isofix low anchorages manufacturer...**

10. **Vehicle or aftermarket ISOFIX low anchorages submitted for approval ...**

15. **Position of approval mark on vehicle or on aftermarket ISOFIX low anchorages...**

19. ...drawings, diagrams and plans of the belt anchorages, **of the – aftermarket - ISOFIX anchorages systems, if any**, and of the vehicle structure ;

20. ...photographs of the belt anchorages, **of the – aftermarket - ISOFIX anchorages systems, if any**, and of the vehicle structure.

➤ In Annex 2. ARRANGEMENTS OF THE APPROVAL MARK,

➤ Replace the current reference :

[“~~14R—052439~~”] situated on the right of the first drawing of the approval mark by the following one “**14R –062439**”

➤ Add or replace in the following paragraphs to read :

The above approval mark affixed to a vehicle type **or aftermarket ISOFIX anchorages type** with regard to safety-belt anchorages **and or – aftermarket - ISOFIX anchorages systems, if any...**

...under the number [052439] **062439**...

...already included the [05] **06** series of amendments...(two time)

➤ Replace the current reference [“~~14R—052439~~”] situated on the right of the second drawing of the approval mark by the following one “**14 062439**”.

^{3/} Only if the **belt anchorage and the – aftermarket - ISOFIX anchorage systems, if any, are** affixed on the seat or if the seat supports...