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August 15, 2022

Via Electronic Mail

National Highway Traffic Safety Administration
Attn: Administrator
1200 New Jersey Avenue, S.E.
Washington, DC 20590
nhtsa.webmaster@dot.gov

RE: Evenflo Company, Inc. – Petition for Reconsideration
49 CFR Part 571
Docket No. NHTSA-2022-0051
RIN 2127-AK95
Federal Motor Vehicle Safety Standards; Child Restraint Systems,
Child Restraint Systems—Side Impact Protection

Dear Administrator:

Evenflo Company, Inc. (“Evenflo”) applauds the National Highway Traffic Safety Administration (“NHTSA”) for its development of rules for side impact testing of child restraints to further improve child passenger safety. Evenflo appreciates the opportunity to assist NHTSA in the further development of these rules and submits the following Petition for Reconsideration discussing Evenflo’s comments, questions, and proposed clarifications regarding FMVSS 213a.

The provisions addressed by Evenflo and responses follow:

1. *S4. Definitions. Contactable surface means any child restraint system surface (other than that of a belt, belt buckle, or belt adjustment hardware) that may contact any part of the head or torso of the appropriate test dummy, specified in S7, when a child restraint system is tested in accordance with S6.1.*

Clarification Requested:

Please clarify the definition of “contactable surface”. If materials such as soft goods, padding, energy absorbing materials or elements, and flexible materials are permanently affixed to another component, is the underlying component considered contactable? In a child restraint that has an adjustable headrest, is the portion of the shell that is adjacent to the headrest considered contactable (i.e., which elements of this layered construction are

considered contactable)? Does a contactable surface vary based on the size of the test dummy or is it associated with the largest dummy for a given use configuration?

2. *S5.1.1 Child Restraint System Integrity. With any padding or other flexible overlay material removed, exhibit no complete separation of any load bearing structural element and no partial separation exposing either surfaces with a radius of less than 6 millimeters or surfaces with protrusions greater than 9 millimeters above the immediate adjacent surrounding contactable surface of any structural element of the child restraint system.*

Comment:

The radius and protrusion limits in FMVSS213a are specified in inches while those limits in 571.213 are specified in metric units of measure. This may lead to confusion in application and interpretation. Evenflo anticipates that the future frontal rule will address this but wanted to highlight the discrepancy and potential for issues.

3. *S5.1.6 Installation*

Each add-on child restraint system shall be capable of meeting the requirements of this standard when installed solely by each of the means indicated in the following table:

Table 1 to S5.1.6

Type of add-on child restraint system	Means of installation	Type II seat belt assembly	Type II seat belt assembly plus a tether if needed	Lower anchorages of the child restraint anchorage system	Lower anchorages of the child restraint anchorage system plus a tether if needed
Rear-facing restraints	X		X		
Forward-facing restraints		X		X	

Comment:

The means of installation in this table are different from those indicated in S6.1.2. The table appears to incorrectly indicate the means of installation for the type of add-on child restraint system.

4. *S5.4.1 Protrusion Limitation. (a) Any portion of a rigid structural component within or underlying a contactable surface shall, with any padding or other flexible overlay material removed, have a height above any immediately adjacent restraint system surface of not more than 9 millimeters and no exposed edge with a radius of less than 6 millimeters.*

Clarification Requested:

It is Evenflo's understanding that NHTSA tentatively determined that adding energy-absorbing padding to the CRS around the head area of the child and to the side structures

(CRS side “wings”) would likely be sufficient for CRSs to meet the proposed requirements¹. In fact, many child restraints have energy-absorbing materials adhered to the side wings. Many modern seats (available in the market since 2018) have structures underneath these energy-absorbing materials that would not comply with exposed edge radius requirement prior to testing if the energy-absorbing materials were removed. NHTSA theorized without evidence, “[p]adding will compress in an impact and the load on the child would be concentrated and potentially dangerous.”² However, if the integrated energy absorbing materials are treated as part of the rigid structural component, a child occupant will not contact the edge because the energy absorbing material covering the underlying structure will prevent any contact even as the energy absorbing materials are compressed. As noted above, Evenflo requests clarification of definition the contactable surface, especially as it pertains to the interplay between padding/other flexible overlay material and the rigid components underneath those materials. For example, are the energy absorbing materials integrated to the system structures considered padding and flexible overlay materials? Will they be removed? If the energy absorbing materials are attached with mechanical fasteners (push pins, tape or glue, etc.) are they considered padding or part of the structure to be evaluated for the protrusion limitations?

Examples of underlying structures with exposed radii less than 6 mm.



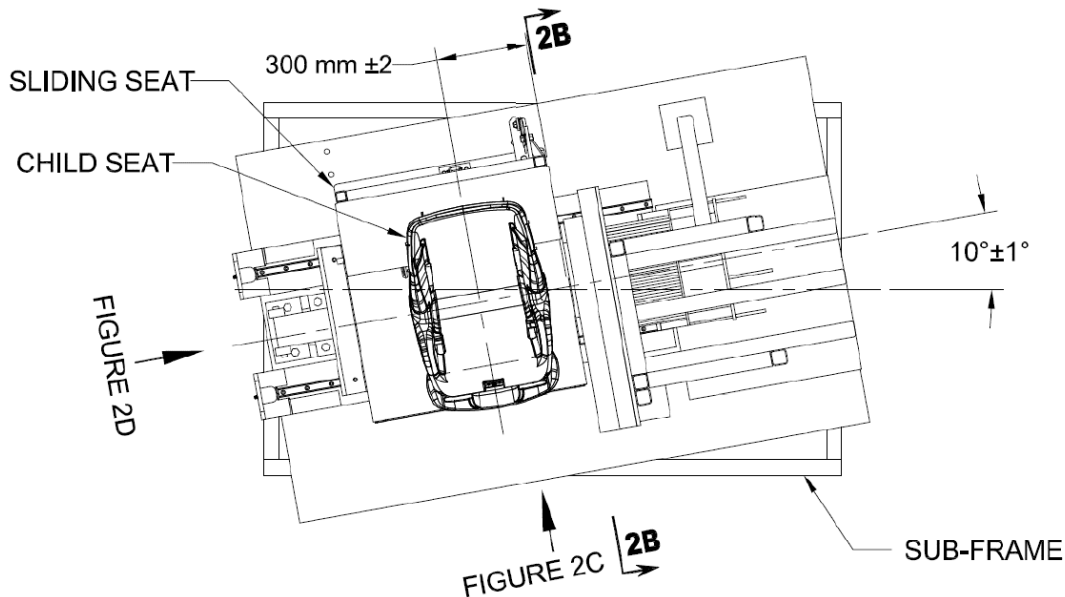
5. *(c) If a front facing child restraint system, not allow the angle between the system's back support surfaces for the child and the system's seating surface to be less than 45 degrees at the completion of the test.*

Clarification Requested:

Is this requirement intended to apply to side impact testing? The frontal crash component in this test is small compared to the side component and small compared to the frontal component of the frontal crash of FMVSS 213 which has the same requirement.

6. *S6.1.1 Test Conditions*

The SISA is mounted on a dynamic test platform so that the SORL of the seat is 10 ± 0.1 degrees from the perpendicular direction of the test platform travel.



Clarification Requested:

The tolerance specified in the written description of the dynamic test platform orientation does not match the tolerance found in the drawing. The specification, $10^\circ \pm 0.1^\circ$, would require additional controls in the test procedure compared to a specification of $10^\circ \pm 1^\circ$. The drawing tolerance is more appropriate. Please clarify the apparent discrepancy between the text and the drawing.

7. *S6.1.2 Dynamic Test Procedure. (a) The child restraint centerline is positioned 300 ± 2 millimeters from the SISA sliding seat edge (impact side). The child restraint system is attached in any of the following manners, at NHTSA's option.*

Clarification Requested:

Please clarify what "at NHTSA's option" in the description of a Dynamic Test Procedure refers to. The test procedure is followed for each of the attachment methods indicated. None of the attachments is optional for a manufacturer when it is certifying compliance with FMVSS 213 and FMVSS 213a. If "at NHTSA's option" refers to test options available to NHTSA as part of its annual test compliance program, Evenflo respectfully submits that this

language appropriately belongs in NHTSA's test procedure documentation and not in the regulation.

Thank you for your consideration of Evenflo's comments and requests for clarification. Evenflo would be happy to schedule a follow-up call to discuss this information and any questions you may have.

Best Regards,

DocuSigned by:
Jessica L. S. Kimes
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Jessica L.S. Kimes