

ensure that the CRF is positioned correctly time after time.

However, we have decided to increase the rearward force specification to 100 N. The 5 N force level was specified in the March 1999 final rule to provide an objective means of positioning the CRF. On reconsideration, while a force specification is needed for objectivity, increasing the force level will result in a larger area provided to vehicle manufacturers for installing the LATCH lower anchorages, which facilitates the installation of the anchorages. We estimate that a 5th percentile adult female would be able to exert a 100 N force pushing back on a child restraint without problem. Accordingly, the change has been made to S9.2 of the standard.

2. Pitch, Roll and Yaw

The draft ISO specifications for LATCH lower anchorages specify that, with the CRF attached to the anchorages and resting on the seat cushion, the bottom surface of the CRF must have attitude angles within certain limits (with angles measured relative to the vehicle horizontal, longitudinal and transverse reference planes). Pitch must be $15^\circ \pm 10^\circ$, roll $0^\circ \pm 5^\circ$, and yaw $0^\circ \pm 10^\circ$. Porsche petitioned NHTSA to incorporate these pitch, roll and yaw requirements into the requirements of Standard No. 225. NHTSA agrees that the requirements are necessary to more objectively specify how the CRF is installed in the vehicle. Today's final rule incorporates the pitch, roll and yaw requirements into S9 of the standard.⁵

d. Marking the Location of Lower Anchorage Bars

The March 1999 final rule specified marking requirements for lower LATCH anchorage bars that applied to bars that could not be viewed from an angle of 30 degrees above a horizontal plane tangent to the seat cushion (S9.5). (The location of bars that were visible from that angle did not have to be marked.) Vehicles in which the bars are not visible from that angle must have a permanent mark on the vehicle seat back at each bar's location. The rule specified (S9.5(a)) that the permanent mark must be a circle that is not less than 13 mm ($\frac{1}{2}$ inch) in diameter, is in a color that contrasts with the seat material, and is located above each individual bar such that the center of the circle is not less than 50 mm and not more than 75 mm above the bar and is in the vertical

longitudinal plane that passes through the center of the bar. The purposes of marking the location of the bars were to provide a visual reminder to consumers that the LATCH system is present and to help users locate and use the bars. 64 FR at 10802.

1. Determining the Visibility of the Bars

Section S9.5(b) specifies that the vehicle seat back need not be marked to identify the presence and location of the lower LATCH anchorage bars if each anchorage bar is visible when viewed in a vertical longitudinal plane passing through the center of the bar, along a line making an upward 30 degree angle with a horizontal plane. Porsche suggested that the anchorages should be visible at angles of 30 degrees or less. The agency is declining to make this change, as the anchorages would be less visible at smaller angles.

Honda suggested that NHTSA specify that the seat back be positioned in the manufacturer's nominal design riding position when determining whether the anchorage bars are visible. The petitioner explained that the seat backs on some of its vehicles tilt far forward to allow for increased luggage capacity when the seat is unoccupied. The petitioners stated that when the seat back is adjusted in that manner, a child restraint system cannot be installed in the seating position, so visibility of the LATCH bars is not critical. NHTSA agrees and has made this change.

2. Identifying Both Bars

The Alliance and Porsche believed that only one lower anchorage bar need be required to be visible or marked, not both bars. The agency has decided against adopting this suggestion. Both bars must be identified to the consumer because, for the foreseeable future, child restraints sold in this country will typically have components that attach to the bars independently of each other. Consumers will need to know where to attach each of the two components. Knowing where one bar is located will not necessarily enable consumers to determine precisely the location of the other bar.

3. Features of the Required Circle

Solid Or Open Circle. Mitsubishi and Porsche believed that the standard should allow manufacturers flexibility in selecting the shape of the mark, rather than specify a circle. The Alliance believed that manufacturers should be permitted to have a solid or open circle with the option of including a pictogram or wording in the circle. NHTSA has decided that a circle must be used, to standardize on the symbol

used to identify the anchorages. Standardization will likely increase user recognition of the symbol. NHTSA has also decided to permit the option of using an open circle (uncolored area in the circle). The circle may include text or an easily recognizable symbol or pictogram. The symbol or pictogram must be clearly explained to the consumer in writing, such as in the vehicle owner's manual.

Contrasting Color. Porsche believed that requiring the circle to be in a contrasting color would be optically disturbing and displeasing to consumers. The Alliance stated that "a contrasting color requires a sewn on label or a painted application and these may be less durable than an embossed or woven marking which would show the marking in the color of the seat fabric but which would still be conspicuous." The agency has decided that the color of the circle need not contrast with the color of its background in order to be noticed. Thus, we have removed the requirement. However, if we find that the circles need to be more conspicuous in future vehicles, we will consider re-establishing a contrasting color requirement in the standard.

Permanency. The Alliance requested that manufacturers be permitted to—utilize the attachment means they deem best. The option for sewn on tags either onto the material or into a seam, adhesive applications, painted markings, and markings woven or embossed into the fabric should be permitted. Any of these options could be made permanent, that is, an owner would have to destroy or deface the marking to remove it.

The rule did not specify the manner in which the permanency of the mark must be achieved. However, the agency makes the following observations and conclusions on this matter. The "destroy or deface" test is suitable for situations in which a consumer is not inclined intentionally to remove a mark or label. However, the agency does not agree that a destroy-or-deface test is a good one for determining permanency with regard to the circles in question. Some consumers may not see value in having the marks on the vehicle seats. If only one side of a tag were sewn into a seam, the owner could snip it off and it would meet the "destroy or deface" test. Such a tag is not permitted, since it is foreseeable that an owner would remove it. A tag that is sewn on at least half of its border, so as to not invite snipping, would be acceptable to NHTSA. Some painted markings and adhesive applications might not be sufficient, even if they could meet a destroy-or-deface test. For instance, paint that easily flaked off would defeat

⁵ The specifications were incorporated into S15 (the ISO-based requirements of the standard that manufacturers may meet for a certain time period) of the standard by the July 2000 response to petitions for reconsideration. 65 FR at 46636.