

the purpose of the requirement. In contrast, the agency anticipates that weaved, embossed, stamped, and engraved marks would be permanent.

#### *Vertical Position Of The Circle.*

Mitsubishi believed that consumers would be better assisted in locating the anchorage bar if the 50 mm lower limit for location of the anchorage bar mark were eliminated. The Alliance believed that the vertical position of the marking should be less restrictive than what the rule required. "It should be visible at a 30 degree viewing angle and be located no more than 100 mm from the horizontal centerline of the anchorage bar in the vertical longitudinal plane." Mitsubishi and the Alliance asked where the "seat back" begins for the purpose of marking the lower anchorages on highly contoured seats. Mitsubishi stated that the bottom cushion of some of its seats curves toward the vertical and supports a portion of an occupant's lower back before a separate seat back begins. Petitioner stated that if the agency considers a portion of a vehicle seat to be the seat back solely by reference to a physical separation between the bottom seat cushion and the seat back, the circle markings would be more than 75 mm above the anchorage bars, which is not permitted by S9.5(a)(3).

The agency is not eliminating the 50 mm lower limit for the location of the bars because without it, the mark might be too low to be seen. The agency is not increasing the 75 mm upper limit to 100 mm because it might be difficult for some consumers to align the child restraint attachments with the circles when the circles are 100 mm from the bars. The 75 mm limit also harmonizes with Transport Canada's requirements for the location of the markings, as further discussed below.

To make it easier to find where the circles should be placed, the agency is amending S9.5(a) to use reference planes developed by Transport Canada in Regulation 210.2, "Lower Universal Anchorage Systems for Restraint Systems and Booster Cushions" (Standard 210.2). That standard requires the markings to be on the seat back between 50 and 75 mm above or on the seat cushion  $100 \pm 25$  mm forward of the intersection of the vertical transverse and horizontal longitudinal planes intersecting at the horizontal centerline of each lower anchorage. This approach is not only clearer in where the circles should be, but also permits the markings to be located either on the seat back or the seat cushion, which allows flexibility to manufacturers such as Mitsubishi with atypical seat designs. The area  $100 \pm 25$  mm forward of the

intersection of the planes is specified to account for the lower anchorage bars being recessed in the padding of the seat back or recessed in the seat bight. This final rule incorporates a figure (Figure 22) into the standard that illustrates the intersection of the vertical transverse and horizontal longitudinal planes.

*Lateral Position Of The Circle.* The Alliance stated that a tolerance needs to be provided for centering the circle over the anchorage bar to account for production variation and seat cover configuration. Petitioner suggested that the centerline of the marking should be located  $\pm 25$  mm from the vertical centerline of the anchorage bar. We agree to provide a tolerance for centering the circle over the bar. However, the 25 mm tolerance that petitioner suggested is too large. If an anchorage is the minimum length (25 mm) and the centerline of the circle is 25 mm from the centerline of the bar, the centerline of the circle would not be over the bar. The tolerance is  $\pm 12$  mm from the vertical centerline of the bar. A tolerance of  $\pm 12$  mm ensures that, even with the shortest bars (those only 25 mm long), the centerline of the circle is over a part of the anchorage bar to which a child restraint would connect.

#### 4. Covering Otherwise Visible Bars

Several petitioners asked about anchorage bar covers. Porsche asked whether easily removable caps or covers for otherwise visible LATCH lower anchorages may be provided. Honda stated that it is considering using a guide to make it easier to attach a child restraint. "With this guide, we would like to use a cover to prevent contaminating the anchorage by foreign substances falling or being inserted into the guide." Honda suggested adding a provision to S9.5 that would specify that, if the vehicle has a guide and cover for a bar: (1) the vehicle shall comply with S9.5(b) when the cover is removed; and (2) the cover shall be marked permanently with a circle according to S9.5(a) of the standard. Our answer to these petitioners is that caps and covers may be provided on these vehicles that meet S9.5(b), if the cap or cover is permanently marked. Marking the cap or cover alerts the consumer to the presence and location of the LATCH bars. The meaning of the words, symbols or pictograms must be explained to the consumer in the owner's manual. The standard has been amended to make these requirements clear.

#### 5. Guide Devices

Volkswagen (VW) asked about use of an anchorage locator such as a guide

device installed onto the anchorage at the seat bight. VW suggested that a guide device "would be clearly visible even if the bar itself is not visible," and that visible guidance devices should therefore meet S9.5's marking and conspicuity requirements. We have decided that the seat back need not be marked if the visible guide device is permanently attached to each anchorage bar and is not removable. The standard has been amended to allow this. If the device were removable, it could be lost or misplaced. Without the device, the bar will be hidden from the consumer, and as such, less likely to be used.

#### *e. Location of Flexible Routing Devices*

Section S6.2.1.2(b)(1) of Standard No. 225 specifies that any flexible or deployable tether strap routing device must be not less than 65 mm behind the torso line for that seating position, measured horizontally and in a vertical longitudinal plane. This provision is intended to keep the routing device far enough back to remove slack from the tether strap, particularly a tether strap that is mounted high on the back of a child restraint.

In its petition for reconsideration, Ford noted that S6.2.1.2 does not specify the conditions under which this dimension is to be measured. Ford believed that the provision is intended to measure the position of the routing device in actual use, while a tether strap is routed through it and tensioned.

Ford suggested that a procedure be developed using the SFAD 2.<sup>6</sup> Such a procedure would install the SFAD 2 on the anchor bars (with the length of the anchor attaching bars properly adjusted) and the front part of the SFAD 2 base touching the seat cushion. A 40 mm wide nylon tether strap would be routed through the tether routing device and hooked to the appropriate tether anchor, following the vehicle owner's manual instructions. The forwardmost contact point between the strap and the routing device should be 65 mm or more behind the torso line when the tether strap is clamped flat against the top surface of the SFAD with a tension of 55 to 65 N in the strap. For seating positions without lower anchorages, the SFAD 2 must be held with its central lateral plane in the central vertical longitudinal plane of the designated seating position. For this measurement, the adjustable anchor attaching bars of SFAD 2 would be replaced by spacers that end flush with the back surface of the SFAD base.

<sup>6</sup> If SFAD 1 were used for this test measurement, that fixture might contact the routing device and push it rearward of the 65 mm limit in some seats.