(1) Full Requirements

(i) Latch/striker assemblies. Each door latch and striker assembly must have a fully latched position and a secondary latched position. The secondary latched position serves as a backup to the fully latched position in the event the fully latched position is not properly engaged.

The standard requires that the latch and striker assembly, when in the fully latched position, must not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) or a transverse load of 8,900 Newtons (2,000 pounds) is applied to the latch. A "longitudinal" load is applied parallel to the vehicle's longitudinal, or lengthwise, centerline and perpendicular to the latch face. A "transverse" load is applied perpendicular to the vehicle's longitudinal centerline, in the direction of door opening. Further, a door latch must not disengage from the fully latched position when an inertia load of 30g is applied to the latch/striker system in either the longitudinal or the transverse direction.1 Finally, the standard requires that the latch/striker assembly must not separate when a longitudinal or a transverse load of 4,450 Newtons (1,000 pounds) is applied to the latch while in the secondary latched position.

(ii) Hinges. The standard requires each hinge system to support the door and not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. Further, each hinge system must not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

(iii) Locks. Each door must be equipped with a locking mechanism that has an operating means on the interior of the vehicle. Further, when the locking mechanism is engaged in front side door locks, the outside handle or other outside latch release mechanism must be inoperative. In passenger cars and MPVs, when the locking mechanisms are engaged in rear side door locks, both the inside and outside door handles or other latch release mechanisms must be inoperative.

(2) Abbreviated Requirements

(i) Hinged cargo-type doors. "Cargotype door" is defined in the standard as "a door designed primarily to accommodate cargo loading including, but not limited to, a two-part door that latches to itself." These doors are required to have only the fully latched position, not the secondary latched position. Each latch system must not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) or a transverse load of 8,900 Newtons (2,000 pounds) is applied. The hinges on these doors are required to support the door and shall not separate when a longitudinal load of 11,000 Newtons or a transverse load of 8,900 Newtons is applied.

(ii) Sliding doors. The track and slide combination or other supporting means for each sliding door shall not separate when a total transverse load of 17,792 Newtons (4,000 pounds) is applied with the door in the closed position.

(3) Test Procedures

Under Standard No. 206, latch and hinge assemblies are tested individually as components and not as part of the vehicle structure to which they are attached. The standard incorporates the test procedures set forth in Society of Automotive Engineers (SAE) Recommended Practice J839b, Passenger Car Side Door Latch Systems, May 1965 (SAE J839b), and SAE Recommended Practice J934, Vehicle Passenger Door Hinge Systems, July 1965 (SAE J934). The provisions of SAE J934 do not apply to piano-type hinges, however. For those hinges, the arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

(b) Agency Review of Back Door Openings

Although Standard No. 206 applies only to side doors of passenger cars, MPVs, and trucks, NHTSA has reviewed the potential safety problems associated with back door openings on vehicles so equipped several times in recent years. An agency report entitled Hatchback, Tailgate, and Back Door Opening in Crashes and Occupant Ejection through the Back Area issued on April 5, 1990 (1990 report) (NHTSA docket no. 90-08-GR-001) concluded that the back doors of vehicles so equipped opened in 5–6 percent of crashes that required towing from the scene (hereinafter referred to as "towaway crashes"), while side doors opened in 1-3 percent of such crashes. The report was based on 1982-1986 and 1988 data from the National Accident Sampling System (NASS) and the 1988 Fatal Accident Reporting System (FARS). Further, a hatchback or tailgate was found to be about 3 times as likely to open as one of the front side doors and 7-8 times as likely to open as one of the rear side doors. The data also showed that rollovers accounted for about 53 percent

of back door openings, 23 percent of left front door openings and 40 percent of right front door openings. However, although back doors opened more frequently than side doors, only 1 percent of back door openings resulted in occupant ejection, as opposed to 8– 13 percent occupant ejections through front side door openings. Finally, depending on the methodology used to analyze the data, NHTSA calculated the fatalities due to back door ejections in 1988 to be between 93 and 130.

Also on April 5, 1990, NHTSA wrote to 9 manufacturers: Chrysler, Ford, General Motors, Honda, Mazda, Nissan, Toyota, Volkswagen, and Volvo asking their comments on the issue of back door openings and requesting information on their back door latch/ lock designs. Of the 8 that responded, only Mazda reported that some of its models had back doors that met the requirements of Standard No. 206. All indicated, however, that they did not consider back door openings to be a significant safety problem and argued that the proper use of seat belts is the best way to prevent occupant ejections.

By Federal Register notice dated November 20, 1990 (55 FR 48261), the agency denied a June 19, 1990 petition for rulemaking from the Insurance Institute for Highway Safety (IIHS) to extend the requirements of Standard No. 206 to back doors. Citing the 1990 report and the comments of the 8 manufacturers responding to NHTSA's April 5, 1990 letter, the agency stated that of the 25 people ejected through back doors as reported in the 1982–1988 NASS data, only one was using a seat belt. Thus, the agency agreed at that time that the increased use of seat belts in rear seats would be a more effective means of reducing back door ejections. The agency determined, therefore, that there was not a safety need significant enough to justify the suggested rulemaking, and that extending the then-current side door requirements to back doors would not be the most effective means of reducing back door ejections.

On January 21, 1994, the agency issued a report entitled *Door Opening and Occupant Ejection through Rear Hatches, Tailgates, and Other Back Doors* (1994 report) (NHTSA docket no. 90–06–N03–001), which updated the 1990 report. Based on NASS and FARS data from 1988–1992, NHTSA estimated that there are 147 fatalities and 189 serious injuries annually resulting from ejections through hatches, tailgates, and other back doors. About 95 percent of those victims were not properly belted and about 10 percent of the improperly belted victims were children under 10.

¹ "Inertia" is the property of matter that requires that a load be applied on a body to accelerate it, calculated by multiplying the mass of a body by its acceleration.