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Alliance OF AUTOMOBILE MANUFACTURERS

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NHTSA-02-11398-5

August 27, 2002

The Honorable Jeffrey W. Runge, M.D.
Administrator
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Dr. Runge:

Subject: Petition for Rulemaking, FMVSS No. 214 "Side Impact Protection" (Modification of Quasi-Static Door Crush Test Loading Device Travel Distance)

The Alliance of Automobile Manufacturers (Alliance) whose members are BMW Group, DaimlerChrysler, Fiat, Ford Motor Company, General Motors, Isuzu, Mazda, Mitsubishi Motors, Nissan, Porsche, Toyota, and Volkswagen submits this petition for rulemaking relating to the travel distance of the loading device in the quasi-static door crush test of Federal Motor Vehicle Safety Standard No. 214, "Side Impact Protection" (FMVSS 214).

Background

In 1971, NHTSA published the quasi-static door crush test in S3 and S4 of FMVSS 214 as a means for evaluating door intrusion resistance. A dynamic lateral crash test that included further structural as well as occupant injury requirements was added to the standard in 1990. In addition, side impact crash performance is evaluated in the NCAP consumer information test program in the United States and under similar test programs of other countries. In general, the dynamic crash test requirements, especially the consumer information tests, have driven vehicle designs with stiffer side structures. These stiffer side structures have improved the injury criteria results in the dynamic tests and enhanced vehicle safety performance in lateral crashes in the field.

Issue

The test procedure prescribed in S4 (d) of FMVSS 214 requires the loading device in the quasi-static door crush test to be moved over a full 18 inches of travel. In vehicles with stiffer side structures designed for dynamic side impact protection, the peak

force is typically attained before 18 inches of travel. In fact, Alliance member company test experience indicates that in most cases, peak crush resistance is attained within 12 inches of loading device travel. Continuation of side structure loading after the peak force is reached results in unrepresentative deformation and loading of the door components.

The requirements for determining the initial crush resistance apply only over the first 6 inches of crush and the intermediate crush resistance is measured only over the initial 12 inches of crush. If the peak crush resistance is attained in the initial 12 inches of travel, the Alliance contends the requirement to apply the full 18 inches of travel as stated in S4 (d) is unnecessary. This fact has been recognized in Section 12 (C) in the OVSC Test Procedure which states that "if after 12 inches of loading device travel, the peak crush resistance has been obtained, the test may be stopped if prior approval has been obtained from the OVSC Contract Officer's Technical Representative (COTR)".

Recommendation

In order to make S4 (d) of FMVSS 214 consistent with the provisions in the OVSC Test Procedure in vehicles with the modern stiffer side structures, and to eliminate unrepresentative deformation and loading, the Alliance petitions the Agency to amend S4 (d) by rewording the second sentence as follows:

> *Apply the load continuously such that the loading device travel rate does not exceed ½ inch per second until the loading device travels 12 inches. If the peak crush resistance of either S3.1.3 or S3.2.3 is not attained within 12 inches of loading device travel, continue the loading device application until the peak crush resistance is attained or until 18 inches of travel is reached, whichever comes first.*

The Alliance believes that this amendment is consistent with the actual intent of the Standard as recognized in the Test Procedure and removes the unrealistic requirement for 18 inches of loading device travel. The provision in the Test Procedure for stopping the test may present logistical problems if the OVSC representative is not physically present at the test site. Amending the Standard as requested would remove an inconsistency between the binding language of the regulation and the language of the Test Procedure.

To be consistent with the proposed change to S4 (d), the Alliance petitions that S4 (f)(4) of FMVSS 214 also be amended as follows:

> *The peak crush resistance is the largest force recorded over the entire distance traveled to comply with S4 (d).*

The Alliance believes that its requested amendments would improve the objectivity and practicability of the Standard and are consistent with motor vehicle safety. The earliest possible action by the Agency in the matter would be appreciated.

The Alliance and its members would be pleased to meet with agency staff to further elaborate on the details and rationale for our petition to amend FMVSS 214 Side Impact Protection.

Sincerely,

Robert S. Strassburger
Vice President
Vehicle Safety & Harmonization
Alliance of Automobile Manufacturers

cc: Mr. Stephen R. Kratzke, Esq.
Associate Administrator for Safety Performance Standards