

The Development of FMVSS 216 - ROOF CRUSH RESISTANCE

January 6, 1971

National Highway Safety Bureau (NHSB) proposes Roof Intrusion Protection Standard *requiring testing on BOTH FRONT CORNERS of the roof with a static roof crush test device measuring 12" x 12"*.

NHSB PROPOSED STANDARD

A 12" x 12" rigid test device oriented at 10 degrees horizontally and 25 degrees laterally gradually applies a load concentrated at the upper surface of the roof at the "A" pillar until reaching a force of 1 1/2 times the empty weight of the tested vehicle or 5,000 pounds, whichever is less, to *EACH SIDE* of the vehicle's roof.

The roof may show no more than 5 inches of intrusion as measured by the movement of the test device.

April 5, 1971

GM and Automobile Manufacturers Association (AMA) advise NHTSA (formerly NHSB) that testing both sides of roof is unnecessary.

GM also recommended that NHTSA change the size of the test device to 30" x 72" and change the horizontal orientation to 5 degrees.

December 8, 1971



NHTSA revises Roof Crush Resistance Standard *according to GM's recommendations*.

FMVSS 216 requires a 30" x 72" test device oriented at 5 degrees horizontally and requires testing on only ONE SIDE of the roof.

The TWO-SIDED test requirements would have resulted in roofs that were more than 200% STRONGER.

Since then, it is estimated that 100,000 deaths and 160,000 catastrophic injuries due to the crushing of the roof could have been prevented.

January 11 - early April, 1971

GM begins testing production car bodies on *BOTH SIDES* of the roof according to the proposed standard.



Virtually ALL GM VEHICLES TESTED FAILED to meet the proposed roof intrusion requirement.

GM WITHHELD INFORMATION FROM THE GOVERNMENT THAT GM VEHICLES FAILED TO MEET TWO-SIDED ROOF INTRUSION REQUIREMENT

1971

See Safety Review Board Meeting Minutes of January, April, June, July, August, September and December 1971

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