



September 2008

History of Roof Crush Regulation

1971 Regulation (FMVSS 216)

Originally applied to 1974 passenger cars. Applied to 1994 light trucks up to 6,000 pounds gross vehicle weight rating (GVWR), which excludes many larger SUVs and pickup trucks.

This static test pushes a large metal plate against one corner of the roof at 5 degree pitch and 25 degree roll. The test requires that the resistance exceed 1.5 times the vehicle weight (with a maximum of 5,000 pounds for passenger cars only) before the roof crushes 5 inches.

NHTSA also promulgated a dolly rollover (dynamic) test as part of FMVSS 208 in March 1971 but made the test optional to FMVSS 216. The 208 dolly rollover test was aimed at reducing ejections. FMVSS 216 was to be revoked in August 1977 when FMVSS 208 became mandatory.

2005 Proposed Rule

Would extend application to light trucks and vans up to 10,000 pounds GVWR.

Would use the same test procedure, but would require a vehicle roof to resist 2.5 times its curb weight before the vehicle interior contacts a seated 50th percentile male dummy.

Dynamic test was rejected because the agency is “unaware of any dynamic test procedures that provide a sufficiently repeatable test environment” NHTSA believes changing the test plate angle is not necessary. Agency plans to evaluate two-sided testing.

2008 Supplementary Proposed Rule

Would extend application to light trucks and vans up to 10,000 pounds GVWR.

Would use the same test procedure but may require a vehicle roof to resist 2.5 or 3.0 times its curb weight before the vehicle interior contacts a seated 50th percentile male dummy and may require sequential testing on both sides of the roof.

No mention of dynamic testing.

NHTSA completed 26 two-sided FMVSS 216 tests that showed up to 25 percent reduction in strength on the second side.

August 2005 SAFETEA-LU, Pub. L. 109-59

Requires NHTSA to extend the roof crush standard to vehicles up to 10,000 pounds GVWR.

NHTSA must “establish performance criteria to upgrade Federal Motor Vehicle Safety Standard No. 216 relating to roof strength for driver and passenger sides.”

“The Secretary may consider industry and independent dynamic tests that realistically duplicate the actual forces transmitted during a rollover crash.”