Motor Vehicle Seat Belt Anchorages —Performance Requirements—SAE J385

SAE Recommended Practice
Approved May 1976

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Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

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MOTOR VEHICLE SEAT BELT ANCHORAGES—PERFORMANCE REQUIREMENTS—SAE J385

SAE Recommended Practice

Report of Body Engineering Committee approved May 1976. SAE J787b has been discontinued and replaced by this report, SAE J383, and SAE J384.

1. Scope—This SAE Recommended Practice specifies performance requirements for either static or dynamic testing of seat belt anchorages attached to vehicle structure or to the seat assemblies as installed in the motor vehicle (This SAE Recommended Practice supersedes the Performance Requirements Section of SAE J787b). Design Requirements and Test Procedures are specified in Recommended Practice SAE J383, Motor Vehicle Seat Belt Anchorages—Design Recommendations and Recommended Practice SAE J384, Motor Vehicle Seat Belt Anchorages—Test Procedure.

2. Definitions

2.1 Anchorage—The final point of attachment for transferring seat belt assembly loads to the vehicle structure.

2.2 Dynamic Test—A test of anchorages through application of forces at onset rates which result from a barrier impact or equivalent sled simulation.

2.3 Static Test—A test in which loads are applied to the anchorage(s) at a rate less than the dynamic test through the use of hydraulic, pneumatic, etc. power.

2.4 Seat Belt Assembly—Any strap, webbing or similar device designed to secure a person in a motor vehicle with the intention of reducing the risk of bodily harm in an accident, including all buckles, adjusting mechanisms, fasteners, and related hardware. This SAE Recommended Practice covers anchorages for the following type of assemblies:

Type 1—Pelvic restraint belt (lap belt)

Type 2—Combination of Pelvic (lap) and upper torso (shoulder) restraint belts

Type 2a—Upper torso restraint (shoulder) belt for use only in conjunction with a lap belt as a Type 2 seat belt assembly.

3. General

3.1 Simultaneous Testing—A simultaneous test of all anchorages shall be made separately for each full width seat or each set of laterally adjacent seats. A static load for dynamic load simulation shall be applied for each designated seating position for which the individual seat (front, rear, etc.) is designed using the original equipment seat belt assemblies or equivalent attachment hardware. The test shall be conducted in accordance with either the static or Dynamic Testing in paragraph 3 or 4 of SAE J384. Anchorages or attachment points may be tested separately, provided they are structurally remote from other anchorages.

3.2 Anchorages for Seat Belt Assemblies Attached to the Seat Structure—The seat assembly, seat adjusters, and attachments which are part of the occupant restraint system shall sustain the performance requirements statically as in paragraph 4 or dynamically as in paragraph 3 of SAE J384. However, when tested statically in accordance with paragraph 4 of SAE J384, the static equivalent of the seat inertia force in the forward direction (which is 20X the weight of the seat systems as referenced in J879) will be applied to the cg of the seat simultaneously with the belt anchorage load.

3.3 Common Seat Belt Anchorages for Forward and Rearward Facing Seats—Common anchorages for forward and rearward facing seating positions need not be tested simultaneously.

4. Static Test Requirements

4.1 Strength

4.1.1 ANCHORAGES FOR TYPE 1 SEAT BELT (OR PELVIC PORTION OF TYPE 2)—When testing in accordance with paragraph 3 above, loadings for anchorages to the pelvic body block(s) shall be 5,000 lb (2268 kg) applied within 30 s and held for a duration of 10 s.

4.1.2 ANCHORAGES FOR A TYPE 2 SEAT BELT ASSEMBLY (OR A COMBINATION TYPE 1 AND 2a)—When testing in accordance with paragraph 3 above, loadings for a anchorage to the pelvic and upper torso body block(s) shall be 3000 lb (1361 kg) each applied within 30 s and held for a duration of at least 10 s.

4.2 Anchorages Mounted to Body Structure—Permanent deformation (or rupture) of any anchorage or the surrounding area shall not constitute failure providing it withstands the loads specified in Section 4.1 above.

4.3 Anchorages Attached to Seat Frames—Permanent deformation (or rupture) of any anchorage or the surrounding area including the seat structure shall not constitute failure providing it withstands the loads referenced in paragraph 3.2 above. There must be no failure or release of the seat adjuster mechanism or other locking device. The seat adjuster or locking device need not be operable after application of the test load.

5. Dynamic Test Requirements—The anchorage is to be considered satisfactory providing it withstands the forces resulting from a 30 miles/h (48.3 km/h) crash simulation following the test procedure outlined in paragraph 3.2 of SAE J384. The seat adjuster or locking device need not be operable.