SAE International

SURFACE VEHICLE RECOMMENDED PRACTICE

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Motor Vehicle Seat Belt Anchorages - Performance Requirements

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE Seat Belt Systems Standards Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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1. ***Scope***—This SAE Recommended Practice specifies performance requirements for the strength of seat belt anchorages attached to vehicle structure or to the seat assemblies as installed in the motor vehicle. (This document supersedes the Performance Requirements Section of SAE J787b.) Design recommendations and test procedures are specified in SAE J383 and SAE J384, respectively.

2. ***References***

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the lastest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J383—Motor Vehicle Seat Belt Anchorages—Design Recommendations
SAE J384—Motor Vehicle Seat Belt Anchorages— Test Procedure
SAE J879—Motor Vehicle Seating Systems

3. ***Definitions***

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

3.2 D-Ring, or Turning Loop—A load bearing device through which the seat belt webbing passes and changes direction. It is typically located in the shoulder portion of the belt system, but may be applicable wherever the webbing changes direction.

3.3 Adjustable D-Ring, Adjustable Turning Loop, or Adjustable Upper Anchorage—A D-Ring which can be positioned by the occupant for optimal fit of the belt to improve comfort.

3.4 Attachment Hardware—All load-bearing hardware designed for securing the webbing portion of a seat belt assembly to a motor vehicle structure or intermediate structural component including but not limited to retractors, end fittings, bolts, studs, nuts or other attachment means, but not including those components permanently fixed to the vehicle.

NOTE—If the seat belt is attached to a seat, the seat is not attachment hardware.

3.5 Seat Belt Assembly—Any strap, webbing, or similar device designed to secure a person in a motor vehicle with the intention of minimizing the risk of bodily harm in a collision (other than a system designed solely to accommodate children), including all buckles, adjusting mechanisms, fasteners, and related hardware.

3.6 Type 1 Seat Belt Assembly—A seat belt assembly that provides pelvic restraint.

3.7 Type 2 Seat Belt Assembly—A seat belt assembly that provides pelvic and upper torso restraint.

3.8 Type 2A Seat Belt Assembly—A seat belt assembly consisting of either a separate upper torso restraint intended for use only with a Type 1 seat belt assembly or knee bolster or an upper torso restraint which may be connected to a Type 1 seat belt assembly for use as a Type 2 seat belt assembly.

3.9 Type 4 Seat Belt Assembly—An automatic seat belt system.

4. General

4.1 Simultaneous Testing—All anchorages in a seat row shall be tested simultaneously, however, anchorages shall be tested separately for each seat row. A force 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 force application means and attachment hardware. The test shall be conducted in accordance with SAE J384. All anchorages or attachment points for each seating position shall be tested simultaneously, but may be tested separately from those for other seating positions, provided that an analysis determines that they are structurally independent from those other anchorages.

4.2 Anchorages for Seat Belt Assemblies Attached to the Seat Structure—The seat assembly, seat adjusters, and attachments which are part of the occupant restraint systems when tested in accordance with SAE J384, must simultaneously sustain the seat inertia force of SAE J879.

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

4.4 Adjustable Anchorages—Adjustable anchorages shall meet the requirements of 5.1 in any position to which they can be adjusted.

5. Test Requirements

5.1 Strength

5.1.1 ANCHORAGES FOR A TYPE 1 SEAT BELT (OR THE PELVIC PORTION OF A TYPE 4 SEAT BELT ASSEMBLY)—When tested in accordance with Section 4, the force applied to the pelvic body block(s) shall be 22.2 kN (5000 lbf) applied in as short a time as possible and held for a duration of at least 0.2 s.

5.1.2 ANCHORAGES FOR A TYPE 2 SEAT BELT ASSEMBLY (OR A COMBINATION TYPE 1 AND 2A SEAT BELT ASSEMBLY, OR THE PELVIC AND UPPER TORSO PORTIONS OF A TYPE 4 SEAT BELT ASSEMBLY)—When tested in accordance with Section 4, the force applied to the pelvic and upper torso body blocks shall be 13.3 kN (3000 lbf) each, applied in as short a time as possible and held for a duration of at least 0.2 s.