

CIRCULAR 68/00-2-1

SELECTION OF TEST VEHICLES FOR DEMONSTRATION OF COMPLIANCE WITH ADR 68/00

INTRODUCTION

1. This Circular should be read in conjunction with Circular 0-2-11 "*General Procedures for Selection of Vehicles and Components for ADR Compliance Testing*" containing requirements applicable to all ADRs.
2. The intention of the criteria in this circular is to assist manufacturers in selecting the "worst case" - i.e. to identify the 'Seats', 'Seat' anchorages, seat belt 'Anchorages', 'Child Restraint Anchorages', seat belt fittings, adjusters, hinges and linkages which are likely to produce the worst results and the lowest level of occupant protection when tested in accordance with the ADR. It is recognised that some of the criteria appear to conflict and that there may be vehicle/seat configurations requiring consideration of different criteria, and it is emphasised that in such cases these criteria must be seen as guidelines only. Manufacturers must be able to demonstrate that all variants in a group are represented by the configuration(s) selected for test.

- Selection Requirements - Dynamic Test for 'Seats' and 'Seat' Anchorages ADR 68/00 Clause 7

3. For dynamic tests on 'Seats' and 'Seat' anchorages, the Administrator will accept a test on one 'Seat' as representative of another for the purposes of demonstrating compliance with the requirements for dynamic test, provided the following criteria are met:

When compared with the untested seat, the test seat shall:

- a) be the heaviest seat;
- b) be the most structurally rigid seat;
- c) Have the highest center of gravity (including head restraint if specified);
- d) have the highest 'Seating Reference Plane';
- e) have the lowest seat and seat anchorage strength;
- f) where seatbelt 'Anchorages' are incorporated in seats, the weakest 'Anchorage' design and position must be selected;
- g) Have the 'Child Restraint Anchorage' location giving the maximum angle of deflection of the 'Upper Anchorage Strap'.

4. The test seat shall be mounted on a testing platform whose rigidity is at least representative of the most rigid body structure.
5. Where additional dynamic tests are conducted because of other shrinkable structure in front of the seats, as required by ADR 68/00 Clause 5.7.1, all discrete shrinkable structures must be tested. Where such tests on a particular seat type have shown that the shrinkable structure is outside the locus of the test dummy, the requirement of Clause 5.7.1 will be deemed to have been met.

Selection Requirements - Static Tests on 'Seats' and 'Seat' Anchorages ADR 68/00 Clause 8 and Appendices 1 and 2

6. The Administrator will accept a static test on a 'Seat' as representative of another for the purposes of demonstrating compliance with the requirements for static test, provided the following criteria are met:

When compared with the untested seat, the test seat shall:

- a) be the least structurally rigid seat;
 - b) be mounted on a testing platform representative of the least rigid body structure, i.e. that which will cause the highest deflection;
 - c) have the lowest seat and seat anchorage strength;
 - d) For seat anchorage tests in accordance with ADR 68/00 Clause 8, compliance may be demonstrated by applying a minimum static force F of 24 kN for each seating position, for a duration of at least 1 second. This static test load only applies for those bus seats which have been dynamically tested on a rigid platform, or where the stiffness of the vehicle floor structure and seat mount system is shown to be less than that of the platform on which the seats were dynamically tested.
7. The Administrator will accept a static test on a 'Seat' back or other contactable structure or component as representative of another for the purposes of demonstrating compliance with the requirements for energy dissipation test, provided the following criteria are met:

When compared with the untested seat/component, the test seat/component shall:

- a) be the heaviest seat/component;
- b) be the most structurally rigid seat/component;
- c) Have the lowest energy dissipation characteristics, ADR 68/00 Appendix 2 Clauses 1.2.2 and 1.2.3 also refer.

Selection Requirements - Tests on Seatbelt 'Anchorages' ADR 68/00 Clause 5.5

8. The Administrator will accept a static test on a seatbelt 'Anchorage' as representative of another for the purposes of demonstrating compliance with the requirements for static test, provided the following criteria are met:
 - a. Where seatbelt anchorages are incorporated in seats, the weakest anchorage design and position must be selected.
 - b. Seat belts. All types provided in the range must be tested e.g. (for rear facing seats) lap belt with ELR, lap/sash with ELR.
 - c. Seats. Where the seatbelt anchorages are not mounted in the seats, all structural seat variants must be tested if they contact the line of pull.
 - d. Adjustable anchorages. If the weakest design and position can be identified it should be tested. Otherwise, several tests plus analysis may be necessary to demonstrate compliance over the range of adjustment.
 - e. Anchorage pairs. Each anchorage must be tested by a strap connected to it and to the one (or more) anchorage(s) to which it is normally connected when the seat belt is correctly worn (ADR 68/00 Appendix 1 Clause 2.4.1).
 - f. Adjacent and multiple anchorages. Where two anchor fittings are located not more than 200 mm apart they should be tested simultaneously, except where one seating position faces forward and one rearward.
 - g. Symmetrical anchorages (anchorages not mounted on seats). Except for adjacent anchorages, only one hand need be tested.

Selection Requirements - Seat Back and Restraining Device Tests ADR 68/00 Clause 10.

9. The Administrator will accept a static test on a seat as representative of another for the purposes of demonstrating compliance with the requirements for seat back moment test, provided the following criteria are met:

When compared with the untested seat, the test seat shall:

- a) be the weakest seat as regards seat back moment strength;
- b) Have the highest seat reference plane.