



CONDIÇÃO ESPECIAL

CE/SC nº 23 – 008

Título: **Condição Especial Aplicável ao Assento Orientado Transversalmente, para um Único Ocupante**
Title: **Special Condition for Single-Place Side-Facing Seat**

Aprovação: Resolução nº xx, de xx de xxxxxxxx de 2010 **Origem:** SAR

APLICABILIDADE

Esta condição especial se aplica ao assento orientado transversalmente, para um único ocupante, do avião Embraer EMB-500.

CONDIÇÃO ESPECIAL

Esta condição especial complementa as seções RBHA 23.562 e RBHA 23.785, emenda 23-55.

“§ SC 23-008 Special Condition for Single-Place Side-Facing Seats.

In addition to the airworthiness standards in RBHA/14 CFR Part 23.562 and 23.785, the following proposed special condition provides injury criteria and installation/testing guidelines that represent the minimum acceptable airworthiness standard for single-place side-facing seats:

1. The Proposed Injury Criteria

- (a) **Existing Criteria:** As referenced by RBHA/14 CFR Part 23.785 (b), all injury protection criteria of RBHA/14 CFR Part 23.562(c)(1) through (c)(7) apply to the occupants of the side-facing seats. Head Injury Criteria (HIC) assessments are only required for head contact with the seat and/or adjacent structures.
- (b) **Body-to-Wall/Furnishing Contact:** The seat must be installed aft of a structure such as an interior wall or furnishing that will contact the pelvis, upper arm, chest, or head of an occupant seated next to the structure. A conservative representation of the structure and its stiffness must be included in the tests. It is required that the contact surface of this structure must be covered with at least two inches of energy absorbing protective padding (foam or equivalent), such as Ensolite.
- (c) **Thoracic Trauma:** Testing with a Side Impact Dummy (SID), as defined by 49 CFR Part 572, Subpart F, or its equivalent, must be performed in order to establish Thoracic Trauma Index (TTI) injury criteria. TTI acquired with the SID must be less than 85, as defined in 49 CFR Part 572, Subpart F. SID TTI data must be processed as defined in Federal Motor Vehicle Safety Standard (FMVSS) Part 571.214, section S11.5.

Rational analysis, comparing an installation with another installation where TTI data were acquired and found acceptable, may also be viable.

- (d) **Pelvis:** Pelvic lateral acceleration must be shown by dynamic test or by rational analysis based on previous test(s) of a similar seat installation to not exceed 130g. Pelvic acceleration data must be processed as defined in FMVSS Part 571.214, section S11.5.
- (e) **Shoulder Strap Loads:** Where upper torso straps (shoulder straps) are used for occupants, tension loads in individual straps must not exceed 1,750 pounds. If dual straps are used for restraining the upper torso, the total strap tension loads must not exceed 2,000 pounds.
- (f) **Compression Loads:** The compression load measured between the pelvis and the lumbar spine of the ATD may not exceed 1,500 pounds.
- (g) **Emergency evacuation:** When occupied, the lavatory door must be latched open for takeoff and landing and must remain latched under the RBHA/14 CFR Part 23.561(b) loads. The airplane configuration must meet the emergency evaluation requirements of its certification basis with the seat occupied.
- (h) **Lavatory door placard:** A placard specifying the lavatory door must be latched open for takeoff and landing when occupied must be displayed on the outside of the door.
- (i) **Test requirements in RBHA/14 CFR Part 23.562 dynamic loads:** The tests in § 23.562 (a)(b) and (c) must be conducted on the lavatory seat. Floor deformation is required except for a seat that is cantilevered to the bulkhead.

2. General Test Guidelines

- (a) One longitudinal test with the SID ATD or its equivalent, undeformed floor, no yaw, and with all lateral structural supports (armrests/walls) will be accomplished.

Pass/fail injury assessments: TTI and pelvic acceleration.

- (b) One longitudinal test with the Hybrid II ATD, deformed floor, with 10 degrees yaw, and with all lateral structural supports (armrests/walls) will be accomplished.

Pass/fail injury assessments: HIC and upper torso restraint load, restraint system retention and pelvic acceleration.

- (c) Vertical test (15 G's) is to be conducted with modified Hybrid II ATDs with existing pass/fail criteria.

- (d) The ATD can be tethered for the floor deformation test.”