

# European Aviation Safety Agency

## European Technical Standard Order

Subject: SAFETY BELTS

### 1 - Applicability

This ETSO gives the requirements that safety belts which are manufactured on or after the date of this ETSO, must meet in order to be identified with the applicable ETSO marking.

### 2 - Procedures

#### 2.1 - General

Applicable procedures are detailed in CS-ETSO Subpart A.

#### 2.2 - Specific

None.

### 3 - Technical Conditions

#### 3.1 - General

##### 3.1.1 - Minimum Performance Standard

Standards set forth in Society of Automotive Engineers, Inc. (SAE) Aerospace Standard (AS) Document No. AS 8043, „Torso Restraint Systems,“ dated March 1986, with the exceptions and revisions covered in subparagraphs 3.1.1.(3) and 3.1.1.(4) of this ETSO. Through these exceptions and additions, this ETSO only uses those paragraphs of SAE AS 8043 applicable to the pelvic restraint (seat belt) portion of the torso restraint system.

##### (1) Exceptions.

- (i) Wherever SAE AS 8043 refers to torso restraint system(s) or pelvic restraint it shall be considered to be applicable to safety-belt restraint system(s).
- (ii) The information contained in Sections 1., 2.1, 2.3, and 2.9 of SAE AS 8043 is not relevant to safety belt restraint systems and shall be disregarded.
- (iii) Compliance with Sections 3.2, 3.2.2, 3.8, 5.9, 6.1, 6.1.2, 8.9, 9.3 and 9.4 of SAE AS 8043 is not required.
- (iv) Disregard references to breaking strength of upper torso restraint webbing and attachment hardware specified in Sections 4.2, 4.4, and 5.3 of SAE AS 8043 respectively.

##### (2) Additions.

- (i) The definition in Section 2.2 of SAE AS 8043 shall read as follows: Safety Belt Restraint System: Consists of any webbing or similar device including all buckles or other fasteners, and all integral hardware designed to restrain movement of the pelvis, commonly referred to as a lap belt or safety belt.
- (ii) The requirements of Section 3.2.1 of SAE AS 8043 shall read as follows: Safety Belt Restraint System: A safety belt restraint system shall provide pelvic restraint and shall not incorporate emergency locking retractors (inertia reels).
- (iii) Section 9.1 of SAE AS 8043 is revised and shall read as follows: Installation: All components of three seat belt restraint systems shall be tested using a rigid test block, as shown in Figures 2 and 3, or a modified test block incorporating only the first 6 inches of the test block shown in Figure 3, or the equivalent, using the procedures in paragraph 9.2, as appropriate. Install the seat belt restraint system on the test block, as shown in Figure 2 and adjust to a length of 1220-1270 mm (48-50 inches), or as near as possible. An automatic

locking retractor should be locked at the start of the test with a force on the webbing just sufficient to keep the retractor locked.

- (3) Environmental Standards. SAE AS 8043 incorporates as reference the following environmental standards, for which a more recent version of these standards may be substituted, if approved by the Agency .
  - (i) American Society for Testing Materials (ASTM) G23-81, Standard Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
  - (ii) ASTM B117-73, Standard Method of Salt Spray (Fog) Testing.
  - (iii) ASTM D756-78, Standard Practice for Determination of Weight and Shape Changes of Plastics Under Accelerated Service Conditions.
- (4) Test Methods. SAE AS 8043 incorporates as a reference the following test standards, for which a more recent version of these standards may be substituted, if approved by the Agency .
  - (i) American Association of Textile Chemist and Colorists (AATCC) Standard Test Method 8-1981, Colorfastness to Crocking.
  - (ii) AATCC Standard Test Method 107-1981, Colorfastness to Water.
  - (iii) Federal Test Method Standard 191, Method 5906.
  - (iv) AATCC Chart for Measuring Transference of Color.

#### **4 - Marking**

##### 4.1 - General

Marking is detailed in CS-ETSO Subpart A paragraph 1.2.

##### 4.2- Specific

None.

#### **5 - Availability of Referenced Document**

- See CS-ETSO Subpart A paragraph 3.
- Copies of AATCC 8-1981 and 107-1981 may be purchased from the American Association of Textile Chemists and Colorists, PO Box 12215, Research Triangle Park, NC 27709, USA.
- Copies of Federal Test Method Standard 191 Method 5906 may be purchased from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120, USA.