



Technical Standard Order

Subject: TSO-C114, TORSO RESTRAINT SYSTEMS

a. Applicability.

(1) Minimum Performance Standards. This technical standard order (TSO) prescribes the minimum performance standards that torso restraint systems must meet to be identified with the applicable TSO marking. When an application for a TSO authorization is made on or after the date of this TSO, the torso restraint system must meet the standards set forth in Society of Automotive Engineers, Inc. (SAE), Aerospace Standard (AS) 8043, "Aircraft Torso Restraint System," dated March 1986.

(2) Environmental Standards.

(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.

(3) Test Methods.

(i) American Association of Textile Chemists 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.

b. Marking. Each torso restraint system must be marked in accordance with Federal Aviation Regulation (FAR) § 21.607.

DISTRIBUTION: AVS-326; A-W(WS)-3; A-X(FS)-3; A-FFS-1,2,7,8(LTD); A-FAC-0(MAX); A X(CD)-4; AVN-1(2 copies)

c. Data Requirements. The manufacturer shall furnish the manager of the aircraft certification office (ACO), Federal Aviation Administration, having geographical purview of the manufacturer's facilities, one copy each of the following technical data:

(1) A complete description of the torso restraint system, including material identification and specification.

(2) Operating instructions and limitations.

(3) A report of the tests conducted in accordance with SAE AS 8043 for qualification and approval of torso restraint systems.

(4) Maintenance instructions .

(5) The quality control test specification to be used to test each production article to ensure compliance with this TSO.

d. Data to be Furnished with Manufactured Units. One copy of the data and information, specified in paragraphs c.(2) and c.(4) of this TSO that are necessary for continued airworthiness must go to each person receiving for use one or more articles manufactured under this TSO. In addition, a note with the following statement must be included:

“The conditions and test required for TSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install the article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. If not within the TSO standards, the article may be installed only if further evaluation by the applicant documents an acceptable installation and is approved by the Administrator.”

e. Availability of Referenced Documents.

(1) Copies of SAE AS 8043 may be purchased from the Society of Automotive Engineers, Inc., Department 331, 400 Commonwealth Drive, Warrendale, PA 15096.

(2) Copies of ASTM B117-73, D756-78, and G23-81 may be purchased from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

(3) Copies of AATCC Chart for measuring Transference of Color and Standard Test Materials 8-1981 and 107-1981 may be purchased from the American Association of Textile Chemists and Colorists, P. O. Box 12215, Research Triangle Park, NC 27709.

(4) 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.

(5) Federal Aviation Regulations, Part 21, Subpart O, and Advisory Circular 20-110, "Index of Aviation Technical Standard Orders," may be reviewed at FAA Headquarters in the Office of Airworthiness, Aircraft Engineering Division, (AWS-120), and at all regional ACO's.

/S/ William J. Sullivan
Acting Director of Airworthiness