



AEROSPACE STANDARD

AS8056™**REV. A**

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Superseding AS8056

Minimum Design and Performance of Airplane Galley In-Flight Carts, Containers, and Associated Components

RATIONALE

This standard is updated to (1) address, where appropriate, comments associated with TSO C175, (2) update fire containment criteria to align with latest guidance, (3) clarify environmental requirements, (4) update material references, and (5) provide other minor updates/clarifications.

FOREWORD

The development of these criteria was jointly accomplished by SAE and EUROCAE Working Group 65 through a consensus process. This document is compatible with EUROCAE document ED-121.

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1. SCOPE

1.1 General

This SAE Aerospace Standard (AS) establishes minimum design and performance requirements for carts, containers, and associated components intended for installation in galleys and other areas of transport category airplanes. The requirements include establishing installation criteria for use by compartment designers and installers of the equipment.

1.2 Purpose

1.2.1 This standard applies to, but is not limited to, the following equipment intended for installation in galleys and other areas within transport category airplanes:

- a. Full-size and half-size carts (beverage, container, meal, sales, and waste).
- b. Folding carts.
- c. Containers (carriers, standard units, and meal box).

NOTE: This standard addresses associated components such as drawers, trays, and waste bins only as a part of a cart or container and not as stand-alone items.

1.2.2 This standard does not fully address:

- a. Carts or containers that include a self-contained mechanical refrigeration system, motors, or other electrical components or which dispense beverages through pressurized systems.
- b. Design details that provide extended service life and continued airworthiness, since these are a function of: (1) total galley and food/beverage system design, (2) human factors engineering desired by individual operators, (3) techniques of care in servicing, and (4) maintenance philosophy. However, references to these considerations are included as appropriate.
- c. Requirements that are covered by national aviation regulations, pertinent U.S. public health regulations, and/or design details that should be covered by galley operator/airplane manufacturer specifications for the subject equipment.

1.2.3 When the term “equipment” is used in this standard, it refers to all carts, containers, or associated components identified in 1.2, unless specifically identified otherwise.

1.3 Mandating and Recommendation Phrases

- a. Shall: The use of the word “shall” indicates a mandatory criterion; i.e., compliance with the particular procedure or specification is mandatory and no alternative may be applied.
- b. Should: The use of the word “should” (and phrases such as “it is recommended that ...,” etc.) indicates that although the procedure or criterion is regarded as the preferred option, alternative procedures, specifications, or criteria may be applied, provided that the manufacturer, installer, or tester can provide information or data to adequately support and justify the alternative.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (U.S. and Canada only) or +1 724-776-4970 (outside U.S. and Canada), www.sae.org.

AMS2175	Castings, Classification and Inspection of
AMS-STD-401	Sandwich Constructions and Core Materials: General Test Methods
CMH-17	Composite Materials Handbook

2.1.2 ARINC IA Publications

Available from SAE ITC, ARINC Industry Activities, 16701 Melford Boulevard, Suite 120, Bowie, MD 20715, Tel: +1 240-334-2578, <https://aviation-ia.sae-itc.com>.

ARINC 810	Definition of Standard Interfaces for Galley Insert (GAIN) Equipment Physical Interfaces
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2.1.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9500, www.astm.org.

ASTM C273	Standard Test Methods for Shear Properties of Sandwich Core Materials
ASTM C393	Standard Test Method for Flexural Properties of Sandwich Construction
ASTM D1781	Standard Test Method for Climbing Drum Peel for Adhesives

2.1.4 Code of Federal Regulations (CFR) Publications

Copies of these documents are available online at www.ecfr.gov.

14 CFR Part 1	Definitions and Abbreviations
14 CFR Part 25	Airworthiness Standards: Transport Category Airplanes
21 CFR Part 1240	Control of Communicable Diseases
21 CFR Part 1250	Interstate Conveyance Sanitation

2.1.5 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

AC 25-17 Transport Airplane Cabin Interiors Crashworthiness Handbook

HF-STD-001 Human Factors Design Standard

DOT/FAA/AR-00/12 Aircraft Materials Fire Test Handbook

PS-ANM-25.853-01-R2 Flammability Testing of Interior Materials

2.1.6 EASA Publications

Available from European Union Aviation Safety Agency, Konrad-Adenauer-Ufer 3, D-50668 Cologne, Germany, Tel: +49 221 8999 000, www.easa.europa.eu.

CM-S-002 Application of CS 25.561 (c)(2) 1-33 'Wear and Tear' Factor - Frequent Removal of Interior Structures

2.1.7 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

MIL-STD-889 Galvanic Compatibility Of Electrically Conductive Materials

2.1.8 U.S. Food and Drug Administration (FDA) Publications

Copies of these documents are available online at <https://www.fda.gov/>.

Attachment 3 to Guide to Inspections of Interstate Carriers and Support Facilities

2.1.9 NSF Publications

Available from National Sanitation Foundation International, PO Box 130140, 789 N Dixboro Road, Ann Arbor, MI 48105, Tel: 734-769-8010, Toll Free (USA): 800-NSF-MARK, www.nsf.org.

NSF/ANSI Standard 51 Food Equipment Materials

2.1.10 International Aerospace Environmental Group (IAEG) Publications

Copies of these documents are available online at <https://www.iaeg.com/chemicalrpt/addsl>.

AD-DSL Aerospace and Defense Declarable Substances List

2.1.11 AWS Publications

Available from American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166-6672, Tel: 1-800-443-9353 or 305-443-9353, www.aws.org.

AWS D17.1 Specification for Fusion Welding for Aerospace Applications

2.1.12 NASA Publications

Copies of these documents are available online at <https://ntrs.nasa.gov>.

NASA-STD-3001 Volume 2 Human Factors, Habitability, and Environmental Health

2.1.13 RTCA Publications

Available from RTCA, Inc., 1150 18th Street NW, Suite 910, Washington, DC 20036, Tel: 202-833-9339, www.rtca.org.

RTCA DO-160G Environmental Conditions and Test Procedures for Airborne Equipment

2.1.14 Battelle Memorial Institute Publications

Copies of these documents are available online at <https://www.mmpds.org/>.

MMPDS Metallic Materials Properties Development and Standardization

2.2 Definitions

ASSOCIATED COMPONENTS: Defined as both of the following:

1. Items such as drawers, trays, waste bins, or other similar components that are stowed in carts and/or galley compartments.
2. Items that need to meet 14 CFR Part 25 in order to be included as part of the airplane's type design.

BEVERAGE CART: A cart designed for the purpose of transporting and storing beverages such as liquors, soft drinks, juices, water, and their associated condiments.

CARRIER: For the purpose of this document, the word "carrier" is synonymous with "container."

CART: A movable enclosure on wheels designed for the purpose of transporting and storing various items used for cabin service activities. A cart is maneuvered inside the cabin.

CONTAINER: A movable enclosure (without wheels) designed for the purpose of transporting and storing various items used for cabin service activities. A container is typically carried by hand or in carts and is not typically removed from the galley work area during cabin service activities.

CONTAINER CART: An open-sided unit on wheels used to stow and transport containers.

DETRIMENTAL PERMANENT DEFORMATION: Deformation that could or would allow equipment or its contents to become unrestrained from the stowage compartment, protrude into exit paths, hinder evacuation, or prevent equipment stowage prior to landing.

FOLDING CART: A shelf or shelves on wheels designed for the purpose of transporting various items during cabin service activities but not designed for content stowage. A folding cart will collapse or fold into a smaller configuration for stowage.

FULL-SIZE CART: A cart that is typically stowed as a single item in a stowage compartment. Typical full-size cart dimensions are identified in ARINC 810.

HALF-SIZE CART: A cart that can be stowed as a single item or, in a full-size compartment, can be stowed together with another half-size cart. Typical half-size cart dimensions are identified in ARINC 810.

INDUSTRY SPECIFICATION: A specification that is accepted industry wide - e.g., SAE (AS, ARP, and AMS), military (MIL and MS), and National Aerospace Standard (NAS).

INTERCHANGEABILITY: That quality which allows an assembly or part to substitute or be substituted for another and to meet physical, functional, and structural requirements. No alterations except designed adjustments are allowed to install the item.

INTERFACE: The fit and functional relationships of the equipment with the galley or with other structure (e.g., a cart and its stowage compartment).

INTERFACE CONTROL DOCUMENT (ICD): A drawing, document, or combination thereof created for the purpose of communicating installation information.

LATCH: A retaining device (e.g., hand-operated quarter turn or a spring-actuated latch for a door) that secures an item(s) during structural loading.

MEAL CART: A cart designed for the purpose of transporting and storing used and/or unused food tray setups. Provisions for interfacing with the galley refrigeration system may be provided in the cart. This type of cart is called an “air through” refrigerated meal cart.

PERIODIC TESTING: Testing conducted on each batch of material or product used to determine conformance to the process specification. When consistent conformance has been demonstrated, reduced testing may be implemented in accordance with a quality assurance sampling plan.

PROCESS SPECIFICATION: A specification used by the equipment manufacturer that controls manufacturing processes (such as bonding or welding) or materials (such as sandwich panels) that are dependent on preparation, application, and procedure. These specifications ensure repeatability of the process or material for which it is written.

RETAINING DEVICES: Any device such as a latch, stop, detent, guide, or other mechanical configuration used to retain items such as doors, drawers, carts, modules, containers, equipment items, or any other movable galley component.

SALES CART: A cart designed for the purpose of transporting and storing onboard, often “duty free,” sale items such as cigarettes, perfumes, liquors, and gift items.

STANDARD UNIT: For the purposes of this document, the word “standard unit” is synonymous with “container.”

STOWED: Placed and retained in a stowage location for taxi, takeoff, landing, and turbulence.

TROLLEY: For the purposes of this document, the word “trolley” is synonymous with “cart.”

WASTE BIN: A separate item, also known as a waste container, installed in either a waste cart or galley waste compartment intended to assist in the easy removal of collected waste or for fire containment.

WASTE CART: A cart designed for the purpose of transporting and storing waste generated by cabin service.

3. REQUIREMENTS

3.1 Introduction

Table 1 is the guide that defines applicable requirements. To use the table, find the galley equipment in question along the top row, and then read down that column; wherever a mark appears in the column, this indicates a grouping of requirements that shall be addressed.

Table 1 - Applicable requirements

Requirements	AS Section	Carts, Containers	Folding Carts, Container Carts	Associated Equipment (Drawers, Trays, Waste Bin)
General	3.2	x	x	x
Structural	3.3	x	x	x
Operational	3.4	x	x	
Fire Properties	3.5	x	x	x
Fire Containment	3.6	x		
Placards	3.7	x	x	

3.2 General

3.2.1 Materials and Materials Control

Materials shall be proven by test to have strength and durability per 14 CFR 25.603 and 25.613.

3.2.1.1 Sandwich Panels

- a. The mechanical properties of sandwich panels shall be controlled by process specification, and the specification shall require periodic testing to assure conformance to the specification. At minimum, the specification shall contain requirements for the following, per AMS-STD-401 (or equivalent):
 1. Core shear or sandwich shear (refer to ASTM C273).
 2. Sandwich flexure (refer to ASTM C393).
 3. Sandwich climbing drum peel (refer to ASTM D1781).
- b. Fasteners and inserts installed into or through core shall be potted or sealed to prevent entry of moisture or water.
- c. Aluminum honeycomb core shall be finished for corrosion resistance at the time of fabrication.

3.2.1.2 Materials

Each batch, roll, or sheet of nonmetallic materials or finished metal (including finishes or decorative surfaces applied to the materials) shall meet the applicable test criteria prescribed in 14 CFR Part 25, Appendix F, parts I, IV, V and VI.

3.2.1.3 Magnesium Alloys

Magnesium alloys may be used in equipment covered by this standard provided they are tested to and meet the flammability performance requirements in the FAA Fire Safety Branch document: Aircraft Materials Fire Test Handbook - DOT/FAA/AR-00/12, Chapter 25, Oil Burner Flammability Test for Magnesium Alloy Seat Structure.

3.2.1.4 Fasteners

Fasteners shall be in accordance with industry specifications.

3.2.1.5 Castings

Castings shall be Class 3 per AMS2175 (or equivalent) and shall be clean, sound, and free from blowholes, porosity, or surface defects. Imperfections may be removed if strength and serviceability would not be impaired as a result. Castings shall comply with 14 CFR 25.621.

3.2.1.6 Forgings/Extrusions

Forgings and extrusions shall be of uniform condition, free from blisters, fins, folds, seams, laps, cracks, segregation, and other defects. Imperfections may be removed if strength and serviceability would not be impaired as a result.

3.2.1.7 Storage and Shelf Life

Perishable materials (e.g., prepreg, finishes, sealants, resins, adhesives, and potting compounds) shall be controlled by process specification, which shall define minimum strength properties, storage control, shelf life, and retest requirements of properties to assure that only acceptable material is used.

3.2.1.8 Hazardous Materials

Materials, including sealants used in food contact areas, shall meet the requirements of NSF/ANSI Standard 51 or equivalent. Materials that are classified as restricted (R1 or R2) in IAEG's Aerospace and Defense Declared Substances List (AD-DSL) shall not be used.