SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS7721 | REV. C

Issued 1957-07
Revised 2007-05
Reaffirmed 2012-09

Superseding AMS7721B

Lead Alloy Sheet and Extrusions
93Pb - 6.5Sb - 0.50Sn
As Fabricated

(Composition similar to UNS L53131)

RATIONALE

AMS7721C has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE

1.1 Form

This specification covers a lead alloy in the form of sheet and extrusions.

1.2 Application

These products have been used typically for balance weights in airframe control surfaces and control columns, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM E 8	Tension Testing of Metallic Materials
ASTM E 10	Brinell Hardness of Metallic Materials
ASTM E 87	Chemical Analysis of Lead, Tin, Antimony, and Their Alloys (Photometric Method)

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS7721C

3. TECHNICAL REQUIREMENTS:

3.1 Composition

Shall conform to the following percentages by weight shown in Table 1, determined by photometric methods in accordance with ASTM E 87 or by spectrochemical or other analytical methods approved by purchaser:

TABLE 1 - COMPOSITION

Element	min	max
Antimony	6.00	7.00
Tin	0.25	0.75
Bismuth	--	0.10
Arsenic	--	0.10
Other Impurities, total	--	0.08
Lead	remainder	

3.2 Condition

As fabricated, having an as-fabricated surface.

3.3 Properties

The product shall conform to the following requirements:

3.3.1 Density

Shall be 0.390 pounds per cubic inch ± 0.003 (11.0 gm/cm^3 ± 0.08).

3.3.2 Hardness

Shall be 8 to 13 HB/10/100/30, or equivalent, determined in accordance with ASTM E 10.

3.3.3 Tensile Properties

Shall be as follows, determined in accordance with ASTM E 8 at a rate of strain of 1/4 inch per inch (1/4 mm/mm) of gage length per minute.

TABLE 2 - MINIMUM TENSILE PROPERTIES

Property	Value
Tensile Strength, min	3,000 psi (20.5 MPa)
Elongation in 2 inches (50 mm), min	40%

3.4 Quality

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

3.5 Tolerances

Shall be as agreed upon by purchaser and vendor.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to specified requirements.

4.2 Classification of Tests

4.2.1 Acceptance Tests

Composition (3.1), density (3.3.1), hardness (3.3.2), quality (3.4), and tolerances if specified (3.5) are acceptance tests and shall be performed on each heat or lot as applicable.

4.2.2 Periodic Tests

Tensile properties (3.3.3) are periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.

4.3 Sampling

Shall be in accordance with the following; a lot shall be all product of the same nominal thickness or cross-section from the same heat of alloy:

4.3.1 For Acceptance Tests

4.3.1.1 Composition and Density

One sample from each heat.

4.3.1.2 Hardness, Quality, and Tolerances if Specified

One sample from each lot.

4.3.2 For Periodic Tests

As agreed upon by purchaser and vendor.

4.4 Reports

4.4.1 The vendor of the product shall furnish with each shipment a report showing the results of tests for composition and density of each heat and for hardness of each lot and stating that the product conforms to the other technical requirements of this specification. This report shall include the purchase order number, heat number, AMS 7721C, size or part number, and quantity.

4.4.2 The vendor of finished or semi-finished parts shall furnish with each shipment a report showing the purchase order number, AMS 7721C, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification and shall include in the report either a statement that the material conforms or copies of laboratory reports showing the results of tests to determine conformance.

4.5 Resampling and Retesting

If any specimen used in the above tests fails to meet the specified requirements, disposition of the product may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the product represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY

5.1 Identification

The product shall be identified as follows:

5.1.1 Sheet

Each sheet shall be marked near one end, coils being marked near the outside end, with not less than AMS 7721C, heat number, manufacturer's identification, and nominal thickness using any suitable marking fluid. As an alternate method, individual sheets or bundles shall have attached a durable tag marked with the above information or shall be boxed and the box marked with the same information.

5.1.2 Extrusions

All extrusions shall be securely bundled and identified by a durable tag marked with not less than the purchase order number, AMS 7721C, heat number, nominal size or part number, and manufacturer's identification and attached to each bundle or shall be boxed and the box marked with the same information.

5.2 Packaging:

5.2.1 The product shall be packaged in such a manner as to ensure that the product, during shipment and storage, will not be permanently distorted and will be protected against damage from exposure to weather or any other normal hazard.

5.2.2 The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.

6. ACKNOWLEDGMENT

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS

Material not conforming to this specification or to modifications authorized by purchaser will be subject to rejection.

8. NOTES

8.1 A change bar (|) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of a specification. An (R) symbol to the left of the document title indicates a complete revision of the specification, including technical revision. Change bars and (R) are not used in original publications, nor in specifications that contain editorial changes only.

8.2 Terms used in AMS are clarified in ARP1917.

8.3 Dimensions and properties in inch/pound units and the Fahrenheit temperatures are primary; dimensions and properties in SI units and the Celsius temperatures are shown as the approximate equivalents of the primary units and are presented only for information.