LAND SEA AIR SPACE

AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

AMS 7225D
Superseding AMS 7225C
Issued 12-5-39
Revised 12-1-73

RIVETS, CARBON STEEL

1. SCOPE:

1.1 Type: This specification covers rivets made of carbon steel.

1.2 Application: Primarily for joining steel parts where a low shear strength joint is adequate and destruction of the fastener for repair or replacement is permissible.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York 10001.

2.1.1 Aerospace Material Specifications:

AMS 2259 - Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steel
AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

ASTM E18 - Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials
ASTM E350 - Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

2.3 Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.

2.3.1 Federal Standards:

Federal Test Method Standard No. 151 - Metals; Test Methods

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Rivets shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E350, by spectrographic methods in accordance with Federal Test Method Standard No. 151, Method 112, or by other approved analytical methods:

	min	max
Carbon	0.05	0.15
Manganese	0.20	0.50
Phosphorous	--	0.040
Sulfur	--	0.050

3.1.1 Check Analysis: Composition variations shall meet the requirements of AMS 2259, paragraph titled "Carbon Steels, Wire Other Than Flat".

3.2 Condition: Cold-headed from cold-drawn wire or bar and annealed, unless purchaser permits machining.

3.3 Properties:

3.3.1 Hardness: Shall be not higher than 60 HRB or equivalent, determined in accordance with ASTM E18 on a flat, smooth, filed or ground surface near the midlength of the shank.

3.3.2 Formability: Solid-shank rivets shall be capable of being driven cold satisfactorily with a full head free from cracks and with expansion of the shank to the full diameter of the hole in which it is installed.

3.3.3 Flarability: Hollow-end rivets shall be capable of being flared to a diameter of 1.5 times the nominal shank diameter without bending the shank and without cracking in the flared end.

3.4 Quality: Rivets shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external imperfections detrimental to their performance.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of the parts shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.4. Purchaser reserves the right to perform such confirmatory testing as he deems necessary to assure that parts conform to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to composition (3.1) and hardness (3.3.1) requirements are classified as acceptance or routine control tests.

4.2.2 Qualification Tests: Tests to determine conformance to formability (3.3.2) or flarability (3.3.3) requirements are classified as qualification or periodic control tests.

4.3 Sampling:

4.3.1 Acceptance Tests:

4.3.1.1 Composition: One sample from bars or wire from each heat.

4.3.1.2 Hardness: One sample, consisting of five rivets, from each lot. A lot shall be all rivets of the same part number annealed in one furnace charge.

4.3.2 Qualification Tests: As agreed upon by purchaser and vendor.

4.4 Reports: The vendor of parts shall furnish with each shipment three copies of a report of the results of tests for chemical composition and hardness of each lot in the shipment. This report shall include the purchase order number, this specification number and its revision letter, part number, and quantity.

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

5. PREPARATION FOR DELIVERY:

5.1 Identification: Rivets of each different part number shall be packed in separate containers. Each container shall be marked to give the following information: