AEROSPACE MATERIAL SPECIFICATION

AMS5075™	REV. G

Issued 1942-03
Revised 2001-10
Reaffirmed 2015-12
Stabilized 2020-07

Superseding AMS5075F

Steel Tubing, Seamless
0.22 - 0.28C (SAE 1025)
Cold Drawn and Stress Relieved
(Composition similar to UNS G10250)

RATIONALE

AMS5075G has been declared stabilized based on the results of a survey of aerospace users and producers.

STABILIZED NOTICE

AMS5075G has been declared "STABILIZED" by AMS Committee E. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because this document is no longer state of the art and other documents contain similar, but not necessarily equivalent, requirements. Previously, this document was reaffirmed. The last technical update of this document occurred in October 2001. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this specification, including exceptions listed on the certification.

NOTE: In many cases, the purchaser may represent a sub-tier supplier and not the cognizant engineering organization.

AMS Committee E recommends that the following similar, but not identical, specification may be considered for future procurement. This listing does not constitute authority to substitute this specification for the “STABILIZED” specification.

ASTM A519/A519M Standard Specification for Seamless Carbon and Alloy Steel Mechanical Tubing (SAE 1025)

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**

For more information on this standard, visit
https://www.sae.org/standards/content/AMS5075G/

1. SCOPE:

1.1 Purpose:

This specification covers a carbon steel in the form of seamless tubing.

1.2 Application:

This tubing has been used typically for parts requiring tubing of moderate strength suitable for forming, welding, and brazing, 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 canceled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2253	Tolerances, Carbon and Alloy Steel Tubing
MAM 2253	Tolerances, Metric, Carbon and Alloy Steel Tubing
AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2370	Quality Assurance Sampling and Testing, Carbon and Low-Alloy Steel Wrought Products and Forging Stock
AMS 2807	Identification, Carbon and Low-Alloy Steels, Corrosion and Heat Resistant Steels and Alloys, Sheet, Strip, Plate, and Aircraft Tubing

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM E 8 Tension Testing of Metallic Materials
ASTM E 8M Tension Testing of Metallic Materials (Metric)
ASTM E 350 Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the percentages by weight shown in Table 1, determined by wet chemical methods in accordance with ASTM E 350, by spectrochemical methods, or by other analytical methods acceptable to purchaser.

TABLE 1 - Composition

Element	min	max
Carbon	0.22	0.28
Manganese	0.30	0.60
Silicon	0.10	0.30
Phosphorus	--	0.040
Sulfur	--	0.050

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2259.

3.2 Condition:

Cold drawn and stress relieved.

3.3 Properties:

Tubing shall conform to the following:

3.3.1 Tensile Properties As Received: Shall be as shown in Table 2, determined in accordance with ASTM E 8 or ASTM E 8M:

TABLE 2 - Minimum Tensile Properties

Property	Value
Tensile Strength	55 ksi (379 MPa)
Yield Strength at 0.2% Offset	36.0 ksi (248 MPa)
Elongation in 2 Inches (50.8 mm) or 4D	22%

3.3.1.1 For each 2 ksi (13.8 MPa) in excess of 55 ksi (379 MPa) tensile strength, a reduction in elongation of 1% is permissible to a minimum elongation of 10%.

3.3.2 Response to Heat Treatment: Tubing shall develop the tensile properties specified in 3.3.1 after being normalized by heating to 1625 °F ± 10 (885 °C ± 6) and cooling at a rate equivalent to still air cooling.

3.4 Quality:

Tubing, as received by purchaser, shall be uniform in quality and condition and shall have a finish conforming to the best practice for high-quality aircraft tubing. It shall be smooth and free from heavy scale or oxide, burrs, seams, tears, grooves, lamination, slivers, pits, and other imperfections detrimental to usage of the tubing. Surface imperfections such as handling marks, straightening marks, light mandrel and die marks, shallow pits, and scale pattern will not be considered injurious if the imperfections are removable within the tolerances specified for wall thickness, but removal of such imperfections is not required.

3.5 Tolerances:

Shall conform to AMS 2253 or MAM 2253.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of the tubing 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 perform any confirmatory testing deemed necessary to ensure that the tubing conforms to specified requirements.

4.2 Classification of Tests:

All technical requirements of this specification are acceptance tests and shall be performed on each heat or lot as applicable.