WW-T-700/4F
29 December 1983
SUPERSEDING
WW-T-700/4E
July 7, 1972

FEDERAL SPECIFICATION SHEET

TUBE, ALUMINUM ALLOY, DRAWN, SEAMLESS, 5052

This specification was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal Agencies.

The complete requirements for procuring seamless tube drawn from aluminum alloy 5052 described herein shall consist of this document and the latest issue of WW-T-700/GEN (see 2.1).

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the specific requirements for seamless tube drawn from aluminum alloy 5052.

1.2 Classification.

1.2.1 Tempers. The drawn seamless tube shall be of the following tempers: O, H32, H34, H36, H38, and F, as specified (see 6.2 and 6.3). The definition of these tempers shall be as specified in WW-T-700/GEN.

1.2.2 Types. The tube shall be of the following types:

Type		Appearance
I	-	Round
II	-	Rectangular and square
III	-	Streamline
IV	-	Oval
V	-	Odd shapes

2. APPLICABLE DOCUMENTS

2.1 Government publications. The issues of the following documents, in effect on date of invitation for bids or solicitation for offers, form a part of this specification to the extent specified herein.

Federal Specification

WW-T-700/GEN - Tube, Aluminum and Aluminum Alloy, Drawn, Seamless, General Specification for

FSC 4710

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions, as outlined under General Information in the Index of Federal Specifications, Standards and Commerical Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from the General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

3. REQUIREMENTS

3.1 Chemical composition. The chemical composition shall conform to the requirements specified in table I.

TABLE I. Chemical composition 1/

Element	Percent	
	Minimum	Maximum
Silicon plus iron	-	0.45
Copper	-	0.10
Manganese	-	0.10
Mangesium	2.2	2.8
Chromium	0.15	0.35
Zinc	-	0.10
Others, each	-	0.05
Other, total 2/	-	0.15
Aluminum	Remainder	

1/ Except for "Aluminum" and "Others", analysis normally is made for elements for which specific limits are shown

2/ The sum of those "Others" metallic elements 0.010 percent or more each, expressed to the second decimal before determining the sum

3.2 Mechanical properties.

3.2.1 Tensile and yield strength. The tensile and yield strength mechanical properties parallel to the direction of drawing shall be as specified in table II.

TABLE II. Tensile and yield strength properties

Temper	Wall thickness, inch	Tensile strength, minimum, ksi	Yield strength, minimum, ksi
0	0.010 thru 0.450	25.0 1/	10.0
H32	0.010 thru 0.450	31.0	23.0
H34	0.010 thru 0.450	34.0	26.0
H36	0.010 thru 0.450	37.0	29.0
H38	0.010 thru 0.450	39.0	31.0
F	All	2/	2/

1/ Maximum tensile strength is 35.0 ksi
2/ No requirements

3.2.2 Flattening. When specified (see 6.2), round tube (type 1) in O, H32 and H34 tempers shall withstand, without cracking, the flattening test or the alternative bend test specified in WW-T-700/GEN. The values for flattening factor "F" are specified in table III.

TABLE III. Flattening factor

Temper	Wall thickness, inch	F
0	0.010 thru 0.450	3
H32	0.010 thru 0.450	6
H34	0.010 thru 0.450	8

3.2.2.1 Alternative bending factor "N". The values for the alternative bending factor "N" are specified in table IV.

TABLE IV. Bending factor

Temper	N
0	1
H32	4
H34	6

3.2.3 Leak. When specified (see 6.2), round tube (type I) shall withstand either the pressure test or the electromagnetic (eddy current) test specified in WW-T-700/GEN.

3.2.4 Flaring. When specified (see 6.2), round tube (type I) in the O temper shall be capable of being flared as specified in WW-T-700/GEN.

4. QUALITY ASSURANCE PROVISIONS (see WW-T-700/GEN)

5. PREPARATION FOR DELIVERY (see WW-T-700/GEN)

6. NOTES

6.1 Intended use. This tube is intended for use when good workability, high fatigue strength and moderate static strength are desired. This tubing is applicable for use in transfer of hydraulic/pneumatic mediums up to a maximum of 1500 psi.

6.2 Ordering data. Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

(a) Title, number and date of this specification
(b) Temper of material required (see 1.2.1)
(c) Type of tube required (see 1.2.2)
(d) Whether tube in O, H32, H34 tempers should withstand flattening (see 3.2.2)
(e) Whether round tube (type I) should withstand leak test (see 3.2.3)
(f) Whether O temper tubes should withstand flaring test (see 3.2.4)
(g) Dimensions required
(h) Requirements for sizes not specifically covered (see WW-T-700/GEN)
(i) Selection of applicable levels of preservation and packing (see WW-T-700/GEN)

6.3 Availability of the types. Types II through V are only available in the O and F tempers. Type I is available in all tempers.

MILITARY INTEREST:

Custodians

Army-MR
Navy-AS
Air Force-20

Review Activities

Army-AR, EA
Navy-OS, SH
Air Force-99
DLA-CS

User Activities

Army-MI
Navy-MC

CIVIL AGENCY COORDINATING ACTIVITIES:

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HEW-FEC
NASA-KSC, MSF
USDA-AFS

PREPARING ACTIVITY:

NAVY-AS

DoD Project 4710-0710

Orders for this publication are to be placed with the General Services Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein.

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

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1

3a. NAME OF SUBMITTING ORGANIZATION

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