MIL-P-24691/3
23 September 1987
SUPERSEDING
MIL-P-1144D(SHIPS)
20 August 1975
(See 6.3)

MILITARY SPECIFICATION

PIPE AND TUBE, CORROSION-RESISTANT, STAINLESS STEEL, SEAMLESS OR WELDED

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers seamless and welded austenitic stainless steel pipe and tube intended for elevated temperature and general corrosive service, including cryogenic applications.

1.2 Classification.

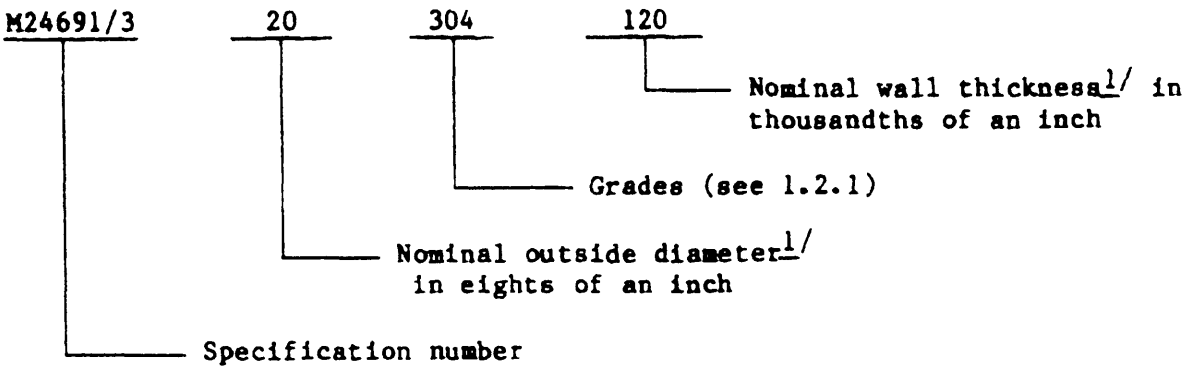
1.2.1 Grades and types. Pipe and tube covered by this specification shall be one of the following types and one of the grades specified in ASTM A 312, as specified (see 6.2 and 6.4):

Type I - seamless	Grade TP 304 - UNSS30400
Type II - welded	TP 304L - UNSS30403
	TP 304N - UNSS30451
	TP 316 - UNSS31600
	TP 316L - UNSS31603
	TP 316N - UNSS31651
	TP 317 - UNSS31700
	TP 317L - UNSS31703
	TP 321 - UNSS32100
	TP 347 - UNSS34700

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 4710

1.2.2 Part number.



1/ Pipe outside diameters and wall thickness (schedule) shall be selected from those shown in ANSI B36.10.

2. APPLICABLE DOCUMENTS

2.1 Government document.

2.1.1 Specification. The following specification forms a part of this specification to the extent specified herein. Unless otherwise specified, the issue of this document shall be that listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and the supplement thereto, cited in the solicitation.

SPECIFICATION

MILITARY

MIL-P-24691 - Pipe and Tube, Carbon, Alloy and Stainless Steel, Seamless and Welded, General Specification for.

(Copies of specifications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A 262 - Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steel. (DoD adopted)

A 312 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Pipe. (DoD adopted)

A 530 - Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe. (DoD adopted)

20.5.2 Clamps for steel pipe... The most reliable and economic...

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. Pipe and tube furnished under this specification shall be acquired to ASTM A 312 with the following additional requirements. The general requirements of MIL-P-24691 and ASTM A 530 form a part of this specification.

3.2 Flattening. When tested as specified in ASTM A 530, pipe shall withstand being flattened to the distance specified for the first step without developing cracks, breaks, or their defects. Second step flattening shall show the pipe to be sound.

3.3 Intergranular corrosion. Pipe shall be free from precipitated carbides which result in intergranular corrosion.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling.

4.1.1 Sampling shall be in accordance with MIL-P-24691.

4.1.2 Sampling for the intergranular corrosion test. Two separate pieces of pipe or tube from each lot shall be selected from which suitable samples shall be cut.

4.2 Test methods.

4.2.1 Tests shall be performed in accordance with ASTM A 312 except specimens shall be tested for intergranular corrosion as specified in ASTM A 262, practice E.

4.3 Quality conformance provisions. Table I shall be used to determine location of the quality conformance provisions.

ization should be independent of the production depart

TABLE I. Summary of quality conformance inspections.

Characterisitc	Requirement specification	Sampling specification	Examination or test specification
Group A			
Dimensions	MIL-P-24691	MIL-P-24691	MIL-P-24691
Marking	MIL-P-24691	MIL-P-24691	MIL-P-24691
Workmanship	ASTM A 312	MIL-P-24691	MIL-P-24691
Finish	MIL-P-24691	MIL-P-24691	MIL-P-24691
Group B			
Ultrasonic inspection	MIL-P-24691/3	MIL-P-24691	MIL-P-24691
Hydrostatic	ASTM A 312	MIL-P-24691	ASTM A 530
Group C			
Chemical analysis	ASTM A 312	MIL-P-24691	ASTM A 530
Mechanical properties	ASTM A 312	MIL-P-24691	ASTM A 530
Flattening	MIL-P-24691/3	MIL-P-24691	ASTM A 530
Intergranular corrosion	MIL-P-24691/3	MIL-P-24691/3	MIL-P-24691/3

5. PACKAGING

5.1 Preservation, packaging, packing and marking shall be in accordance with MIL-P-24691.

6. NOTES

6.1 Intended use. Typical applications for pipe and tube supplied under this specification include hydraulic oil, liquid oxygen and nitrogen, and gaseous nitrogen, helium, and air. It is not intended for salt water systems and high pressure main steam lines.

6.2 Ordering data. In addition to the ordering data of MIL-P-24691, acquisition documents should specify the following:

(a) Title, number, and date of this specification sheet.
(b) Type and grade of pipe required (see 1.2).
(c) Quantity required.

6.3 Supersession. This specification supersedes MIL-P-1144.

pounds without deforming beyond the elastic limit. Heavier clamps are necessary for

6.4 Grades. Grades 304N and 316N are nitrogen strengthened grades similar to 304 and 316 and should be used wherever 304 or 316 would be used but where higher pressures or strengths are required. Grade 317 is a higher molybdenum steel than 316 and is used where severe corrosion attack, especially pitting, is a concern. The "L" grades are the low carbon grades used where welding is required to prevent intergranular corrosion of the weld heat affected zone.

6.5 Subject term (key word) listing.

Corrosive service
Cryogenic
Gaseous air
Gaseous helium
Gaseous nitrogen
Hydraulic oil
Liquid nitrogen
Liquid oxygen

Custodians:
Army - ME
Navy - SH

Review activities:
Army - MR, AR, GL, EA, MI
Navy - AS
DLA - CS

User activity:
Navy - MC

Preparing activity:
Navy - SH
(Project 4710-0851)

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge *(DO NOT STAPLE)*, and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-P-24691/3	PIPE AND TUBE, CORROSION-RESISTANT, STAINLESS STEEL, SEAMLESS OR WELDED

3a. NAME OF SUBMITTING ORGANIZATION

b. ADDRESS *(Street, City, State, ZIP Code)*

4. TYPE OF ORGANIZATION *(Mark one)*

- ☐ VENDOR
- ☐ USER
- ☐ MANUFACTURER
- ☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

DD FORM 82 MAR 1426 PREVIOUS EDITION IS OBSOLETE.

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