

MIL-P-24691/2  
 23 September 1987  
 SUPERSEDING  
 MIL-T-18165B(SHIPS)  
 22 January 1963  
 (See 6.3)

## MILITARY SPECIFICATION

### PIPE AND TUBE, CHROMIUM-MOLYBDENUM STEEL, SEAMLESS

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

#### 1. SCOPE

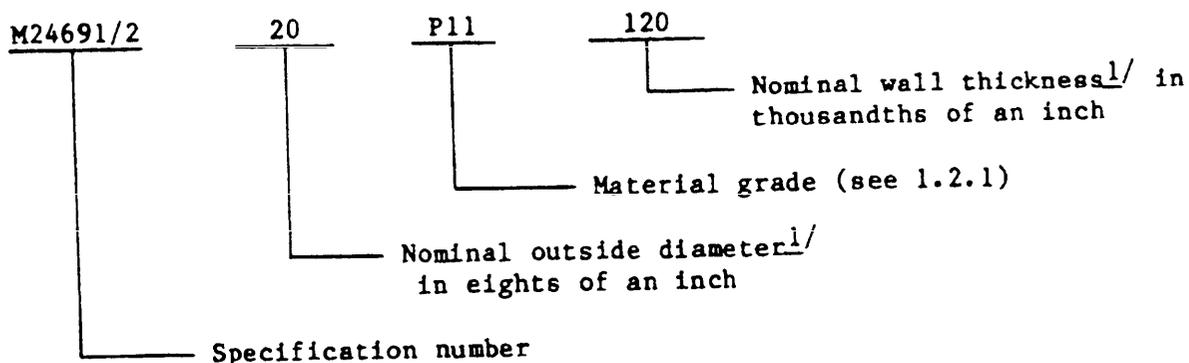
1.1 Scope. This specification covers seamless chromium-molybdenum alloy steel pipe and tube for high temperature service.

#### 1.2 Classification.

1.2.1 Grades. Pipe and tube covered by this specification shall be one of the following grades identified in ASTM A 335, as specified (see 6.2):

Grade P11 - UNSK11597  
 Grade P22 - UNSK21590  
 Grade P5 - UNSK41545

#### 1.2.2 Part number.



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

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 5523, 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

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FSC 4710

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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 335 - Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service.
- A 530 - Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe. (DoD adopted)

(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 335 with the following additional requirement. The general requirements of MIL-P-24691 and ASTM A 530 form a part of this specification.

3.2 Flattening test. The supplementary flattening test of ASTM A 335 shall be performed on a sample taken in accordance with MIL-P-24691.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Quality assurance provisions shall be in accordance with MIL-P-24691 and as specified herein.

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

TABLE I. Summary of quality conformance inspections.

| Characteristic        | Requirement specification | Sampling specification | Examination or test specification |
|-----------------------|---------------------------|------------------------|-----------------------------------|
| Group A               |                           |                        |                                   |
| Dimensions            | MIL-P-24691               | MIL-P-24691            | MIL-P-24691                       |
| Finish                | MIL-P-24691               | MIL-P-24691            | MIL-P-24691                       |
| Workmanship           | ASTM A 335                | MIL-P-24691            | MIL-P-24691                       |
| Marking               | MIL-P-24691               | MIL-P-24691            | MIL-P-24691                       |
| Group B               |                           |                        |                                   |
| Hydrostatic test      | ASTM A 335                | MIL-P-24691            | ASTM A 530                        |
| Ultrasonic test       | MIL-P-24691/2             | MIL-P-24691            | MIL-P-24691                       |
| Group C               |                           |                        |                                   |
| Chemical composition  | ASTM A 335                | MIL-P-24691            | ASTM A 530                        |
| Mechanical properties | ASTM A 335                | MIL-P-24691            | ASTM A 530                        |
| Flattening            | MIL-P-24691/2             | MIL-P-24691            | ASTM A 530                        |

#### 5. PACKAGING

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

#### 6. NOTES

6.1 Intended use. Pipe covered by this specification is intended for high temperature service, such as steam lines.

Grade P11 has a maximum service temperature of 1050°F

Grade P22 has a maximum service temperature of 1100°F

Grade P5 has a maximum service temperature of 1200°F

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

- (a) Grade required (see 1.2).
- (b) Quantity required.

6.3 Supersession. This specification supersedes MIL-T-18165 as follows:

| <u>MIL-T-18165</u> | <u>MIL-P-24691/2</u> |
|--------------------|----------------------|
| Class 1            | Grade P11            |
| Class 2            | Grade P22            |

6.4 Subject term (key word) listing.

High temperature service  
Steam lines

**Custodians:**

Army - ME  
Navy - SH

**Preparing activity:**

Navy - SH  
(Project 4710-0850)

**Review activities:**

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

**User activity:**

Navy - MC

**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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DEPARTMENT OF THE NAVY  
WASHINGTON, DC 20362-5101



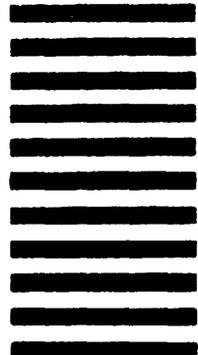
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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

|   |  |   |  |
|---|--|---|--|
| 1. DOCUMENT NUMBER<br>MIL-P-24691/2                           |  | 2. DOCUMENT TITLE<br>PIPE AND TUBE, CHROMIUM-MOLYBDENUM STEEL, SEAMLESS |  |
| 3a. NAME OF SUBMITTING ORGANIZATION                           |  | 4. TYPE OF ORGANIZATION (Mark one)                                      |  |
| b. ADDRESS (Street, City, State, ZIP Code)                    |  | <input type="checkbox"/> VENDOR   |  |
|   |  | <input type="checkbox"/> USER   |  |
|   |  | <input type="checkbox"/> MANUFACTURER                                   |  |
|   |  | <input type="checkbox"/> 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)  |  |
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