

INCH-POUND
MIL-C-24707/2
27 January 1989

MILITARY SPECIFICATION

CASTINGS, FOR PRESSURE CONTAINING PARTS SUITABLE FOR HIGH TEMPERATURE SERVICE

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

1. SCOPE

1.1 Scope. This specification covers alloy steel castings for machinery, structural, and pressure containing parts for high temperature applications.

1.2 Classification. Alloy steel castings shall be of the following grades, as specified (see 6.2):

Grade WC1 of ASTM A 217
WC6 of ASTM A 217
WC9 of ASTM A 217
C23 of ASTM A 389

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specification and standard. The following specification and standard form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATION

MILITARY

MIL-C-24707 - Castings, Ferrous, General Specification for.

STANDARD

MILITARY

MIL-STD-278 - Welding and Casting Standard.

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

AREA MECA

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Naval Publications and Forms Center (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 217 - Standard Specification for Steel Castings, Martensitic Stainless and Alloy, for Pressure Containing Parts, Suitable for High-Temperature Service. (DoD adopted)
- A 389 - Standard Specification for Steel Castings, Alloy, Specially Heat-Treated, for Pressure-Containing Parts, Suitable for High-Temperature Service.

(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 that prepare or 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 document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General. The requirements for castings covered by this specification shall be in accordance with MIL-C-24707, ASTM A 217 and A 389, and as specified.

3.2 Stress relief heat treatment. When specified (see 6.2), the stress relieving temperature shall be at least 50 degrees Fahrenheit (°F) (30 degrees Celsius (°C)) but not more than 100°F (60°C) below the tempering temperature. The mechanical properties shall be determined after the stress relief heat treatment.

4. QUALITY ASSURANCE PROVISIONS

4.1 Quality assurance provisions shall be in accordance with MIL-C-24707.

4.2 Nondestructive test. Unless otherwise specified (see 6.2), castings shall be radiographed and magnetic particle inspected to the requirements of MIL-STD-278.

4.3 Sampling. Unless otherwise specified (see 6.2), sampling shall be in accordance with MIL-C-24707.

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5. PACKAGING

5.1 Packaging shall be in accordance with MIL-C-24707.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. These castings are intended for use in high temperature service in machinery, structural, and pressure containing applications. The following maximum operational temperatures apply:

ASTM A 217, Grade WC1 - 850°F
 ASTM A 217, Grade WC6 - 950°F
 ASTM A 217, Grade WC9 - 1050°F
 ASTM A 389, Grade C23 - 1050°F

6.2 Acquisition requirements. In addition to the acquisition requirements of MIL-C-24707, acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Grade of steel required (see 1.2).
- (c) Issue of DoDISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- (d) If a stress relief heat treatment is required (see 3.2).
- (e) If radiograph and magnetic particle inspection are not required (see 4.2).
- (f) If sampling is other than specified (see 4.3).

6.3 Supersession data. The supersession data are as follows:

Previous specificationReplacement specification

MIL-S-870B
 (single grade)

MIL-C-24707/2
 ASTM A 217, grade WC1

MIL-S-15464B(SHIPS)
 Grade 1
 Grade 2
 Grade 3

ASTM A 217, grade WC6
 ASTM A 217, grade WC9
 ASTM A 389, grade C23

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6.4 Subject term (key word) listing.

Stress relief heat treatment

Custodians:

Army - MR

Navy - SH

Air Force - 20

Preparing activity:

Navy - SH

(Project MECA-0330)

Review activities:

Army - AR, MI

Navy - AS, YD, OS

Air Force - 84

User activities:

Navy - MC

Army - ME