

INCH-POUND

MIL-C-24707

27 January 1989

MILITARY SPECIFICATION

CASTINGS, FERROUS, GENERAL SPECIFICATION FOR

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

1. SCOPE

1.1 Scope. This specification covers the general requirements for carbon, alloy and corrosion resisting steel castings.

1.2 Classification. Castings shall be furnished in the grades and types specified in the applicable detail specifications (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards 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).

SPECIFICATIONS

FEDERAL

- QQ-S-781 - Strapping, Steel, and Seals.
- PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner.

MILITARY

- MIL-C-3774 - Crates, Wood; Open 12,000- and 16,000-Pound Capacity.
- MIL-H-6875 - Heat Treatment of Steel, Process for.
- MIL-C-16173 - Corrosion Preventive Compound, Solvent Cutback, Cold-Application.
- MIL-C-52950 - Crates, Wood, Open and Covered.

(See supplement 1 for list of associated specifications.)

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.

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STANDARDS

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-271 - Requirements for Nondestructive Testing Methods.
- MIL-STD-278 - Welding and Casting Standard.
- MIL-STD-792 - Identification Marking Requirements for Special Purpose Components.

(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.)

2.1.2 Other Government publications. The following other Government publication forms a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

PUBLICATION

NAVAL SEA SYSTEMS COMMAND (NAVSEA)

- 0900-LP-003-8000 - Surface Inspection Acceptance Standards for Metals.

(Application for copies should be addressed to 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 documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 370 - Standard Test Methods and Definitions for Mechanical Testing of Steel Products. (DoD adopted)
- A 700 - Standard Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment. (DoD adopted)
- A 703 - Standard Specification for Steel Castings, General Requirements, for Pressure-Containing Parts.
- A 751 - Standard Methods, Practices, and Definitions for Chemical Analysis of Steel Products.
- A 781 - Standard Specification for Castings, Steel and Alloy, Common Requirements, for General Industrial Use.
- A 802 - Standard Practice for Steel Castings, Surface Acceptance Standards, Visual Examination.

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

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MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS
INDUSTRY, INC. (MSS)

SP-55 - Quality Standard for Steel Castings for Valves, Flanges
and Fittings and Other Piping Components (Visual Method).

(Application for copies should be addressed to the Manufacturers
Standardization Society of the Valve and Fittings Industry, Inc., 127 Park
Street, N.E., Vienna, VA 22180.)

(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 (except for associated detail
specifications), 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 Detail specifications. The individual item requirements shall be as
specified herein and in accordance with the applicable detail specification. In
the event of any conflict between the requirements of this specification and the
detail specifications, the latter shall govern.

3.2 First article. When specified (see 6.2), a sample shall be subjected
to first article inspection (see 6.4) in accordance with 4.3.

3.2.1 Basic foundry practices. The contractor shall maintain a record of
basic foundry practices (type of melting and refining unit, molding process,
basic rigging design, location of risers and chills, and so forth) used in the
first article casting. In the event of change in the basic foundry practices in
the same or subsequent order, the contractor shall notify the contracting
activity and obtain approval of the changes. The contractor may be required to
perform specific first article tests and examinations to verify that the change
will not or has not degraded casting quality (see 6.3 and appendix A).

3.3 Material. Unless otherwise specified in the applicable detail
specification, the steel shall be made by open hearth or electric furnace
process, with or without separate refining or degassing.

3.3.1 Recovered materials. Unless otherwise specified, all products
covered by this specification shall be new and may be fabricated using materials
produced from recovered materials to the maximum extent practicable without
jeopardizing the intended use. The term "recovered materials" means materials
which have been collected or recovered from solid waste and reprocessed to become
a source of raw materials. None of the above shall be interpreted to mean that
the use of used or rebuilt products is allowed under this specification unless
otherwise specifically specified. When specified (see 6.2), virgin materials
shall be required.

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3.4 Chemical composition. Chemical composition for heat and product analysis shall be in accordance with the detail specification. Product analysis tolerances shall be in accordance with ASTM A 703 or ASTM A 781, as appropriate for the application.

3.5 Heat treatment. Unless otherwise specified in the contract or purchase order (see 6.2), heat treatment shall be as specified in the detail specification (see 3.1).

3.5.1 Heat treating equipment and controls. Continuous or automatic heat-treating equipment may be employed, provided such equipment produces heat-treated castings that meet the requirements of this specification. For the particular loading and size range of the pieces being heat treated, the temperature recording equipment shall correlate with the actual temperature of the castings within the accuracy specified in MIL-H-6875 or any other NAVSEA approved heat treatment standards and shall be maintained and calibrated on a regular basis. The temperature of the furnace charge shall be recorded during the heating and stress relieving cycles of the heat treatment. After the charge reaches the selected temperature control setting, furnaces for the heat treatment of castings shall maintain the temperature of the heating medium and the castings at any point in the working zone within plus or minus 25 degrees Fahrenheit (°F).

3.6 Cleaning. Unless otherwise specified in the contract or purchase order (see 6.2), heads, gates, and padding which have been added by the foundry to provide directional solidification shall be removed. When heads, gates, and padding are removed by gas cutting or scarfing, the removal shall be performed before the final heat treatment and in such a manner as to not impair the casting. Gas cutting or scarfing shall be followed by cutting, chipping, or grinding operations, as necessary, to provide the contour specified by the drawing.

3.7 Internal chills and chaplets. Internal chills shall not be used except by authorization of the Command or agency concerned. When either chaplets or internal chills that remain a permanent part of the casting are used they shall be of a composition conforming to that specified for the casting in which they are employed.

3.8 Soundness.

3.8.1 Surface soundness. Castings shall be of uniform quality and condition, visually free of cracks, burrs, sand, hard spots, tears, shrinkage, cold shuts, excessive scale, fins, porosity, and segregation to the extent they conform to the requirements of ASTM A 802, MSS SP-55, NAVSEA 0900-LP-003-8000 or other standard as specified (see 6.2) for surface inspection of castings.

3.8.2 Internal soundness. Castings shall meet the internal soundness requirements specified in 4.3.2 for first article inspection and in 4.6.5 for quality conformance inspection.

3.9 Repair of defects. Unless otherwise specified (see 6.2), weld repair shall be in accordance with MIL-STD-278. The castings shall not be peened, plugged or impregnated to stop leaks. Defects not requiring welding may be ground or chipped out provided the defective area is faired into the surrounding area and the design thickness is not violated.

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3.10 Dimensions and tolerances. Castings shall conform to shapes, tolerances, and sizes indicated by the applicable patterns or drawings as specified (see 6.2).

3.11 Identification.

3.11.1 Information required. To provide positive traceability and identification, the individual castings shall be marked with the following:

- (a) Foundry's name or trademark.
- (b) MIL-C-24707.
- (c) Pattern or part number.
- (d) Heat number.
- (e) Final heat treat lot number or equivalent traceable code.

3.11.2 Method and location of marking. The method of marking shall be by "cast-in marking", low-stress die stamps, or vibroetching. The location of marking shall be at a low stress area as shown on the casting drawing. When specified (see 6.2), marking shall be in accordance with MIL-STD-792.

3.11.3 Small castings. Where individual castings cannot be marked in accordance with 3.11.1 and 3.11.2, they may be bundled or boxed and each bundle or box shall be marked with a metal or oil-proof tag containing the information specified in 3.11.1.

3.12 Mechanical and impact properties. The minimum mechanical and impact properties shall be in accordance with the detail specification.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- (a) First article inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).

4.3 First article inspection. When first article inspection is required (see 3.2), it shall consist of the examination and tests specified in 4.3.2, 4.3.3, 4.6.1, 4.6.3, 4.6.4, and as specified in the detail specifications (see 6.3 and appendix B).

4.3.1 Sampling for first article inspection. The casting submitted for first article inspection shall be the first article casting which is representative of the proposed production castings. When required (see 6.2), first article sampling shall be in accordance with MIL-STD-105 and shall be based upon the specified first article population inspection level and acceptable quality level (AQL) as specified (see 6.2).

4.3.2 Radiographic inspection. The first article casting or castings shall be radiographically inspected to the acceptance criteria for the specified criticality level of MIL-STD-278 or other standard as specified (see 6.2). When approved by the Command or agency concerned, other inspection methods may be employed.

4.3.3 Mechanical and impact property tests. The first article mechanical and impact test coupons shall be taken from the castings as specified in 4.5.2.2.2. These mechanical and impact properties shall meet the minimum properties specified in the contract or order for the designated sections of the castings and shall be related to the properties obtained from separately cast coupons of 4.5.2.2.2 prepared with the first article casting for assurance that production castings meeting test coupon requirements shall have the specified properties in the designated sections.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with 4.5 through 4.7 (see 6.3 and appendix A).

4.5 Lot size. Unless otherwise specified (see 6.2), for the purposes of inspection and tests, lot sizes are defined as follows:

4.5.1 Chemical analysis. Each heat or melt of steel is a lot. A single ladle charge made up of smaller, mixed heats or melts shall be considered a lot. For metal separately refined or degassed, each vessel charge is considered a lot.

4.5.1.1 Mechanical property or intergranular corrosion tests. Castings produced from one heat or melt, heat treated, if required, in the same heat treatment batch, or in a continuous heat treating process under the same conditions of temperature and atmosphere and offered for inspection at one time, shall constitute a lot.

4.5.2 Sampling for quality conformance inspection.

4.5.2.1 Chemical analysis. Unless otherwise specified (see 6.2), one sample shall be taken from each lot for analysis.

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4.5.2.2 Mechanical and impact property tests.

4.5.2.2.1 Number of specimens. Unless otherwise specified (see 6.2), for single castings estimated to weigh 500 pounds or more in the rough, at least one tension test specimen and one set of three impact specimens shall be taken to represent each casting. For single castings estimated to weigh less than 500 pounds in the rough, at least two tension test specimens and one set of impact specimens shall be taken to represent the lot.

4.5.2.2.2 Preparation of test coupons. When specified (see 6.2), coupons shall be taken from a designated part of the casting, in which case the required mechanical properties shall also be specified. When coupons are not required to come from a specific part of the casting, they may be cast integral with the casting or separately. Coupons shall be heat treated with the castings they represent. Chilling of test coupons shall be prohibited. Extra castings or test coupons may be made to provide test specimens.

4.5.2.2.2.1 Coupons cast integral with the casting. When coupons are taken from the casting, mechanical and impact test coupons shall be taken from the designated region or the thickest section of the casting at a depth bounded by the section thickness divided by four and the mid-thickness of the section of the casting as heat treated. When insufficient thickness is available to meet this requirement, the test coupon shall be centered in the section thickness.

4.5.2.2.2.2 Separately cast coupons. Separate coupons shall be cast from the same melt as the castings they represent. They shall be cast in keel block molds. The minimum thickness of the keel block casting where the coupons will be removed shall be equal to the maximum thickness of the casting when the maximum thickness is 8 inches or less and within 1 inch of the maximum thickness of the casting when the maximum thickness is more than 8 inches. When separately cast coupons are permitted to represent designated casting areas, they shall be cast and heat treated with the thickness in the area from which the coupons are to be removed as close as possible to the thickness of the casting in the designated area.

4.5.2.3 Nondestructive inspection. When required by the detailed specification or when specified in the contract or order (see 6.2), each casting shall be inspected for soundness by the specified method. When specified (see 6.2), sampling shall be in accordance with MIL-STD-105 general inspection level III, AQL 1.0.

4.6 Examination and test procedures.

4.6.1 Chemical analysis. Chemical analysis shall be performed in accordance with ASTM A 751. Melts not in conformance with the chemical composition requirements of the applicable detail specification shall be rejected.

4.6.2 Mechanical and impact tests. Mechanical and impact tests shall be performed in accordance with ASTM A 370.

4.6.3 Visual examination. Each casting shall be visually examined for conformance to the soundness and marking requirements of 3.8.1 and 3.11.

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4.6.4 Dimensional examination. The castings shall be dimensionally examined for conformance to the requirements of 3.10.

4.6.5 Nondestructive testing. Unless otherwise specified (see 6.2), nondestructive test methods shall be in accordance with MIL-STD-271. The required tests, extent of coverage and acceptance criteria shall be in accordance with MIL-STD-278, other fabrication document or drawing specified in the contract or purchase order (see 6.2), or as specified in the detailed specification.

4.7 Rejection and test. If any test fails to conform to this specification, the castings represented by those tests shall be rejected. When a sampling plan is being used in accordance with 4.5.2, each casting that fails shall be rejected. If the number of rejected castings exceeds that allowed by the sampling plan or ordering data, the entire lot shall be rejected. Injurious defects in castings revealed after acceptance shall be cause for rejection. When a reheat treatment may correct a deficiency, a second heat treatment will be permitted. Castings which exhibit serious defects which are not repairable by welding or have been unsatisfactorily welded shall be rejected.

4.8 Inspection of packaging. Sample packages and packs, and the inspection of the preservation, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Preservation.

5.1.1 Preservation. Preservation shall be level A or commercial as specified (see 6.2).

5.1.2 Level A.

5.1.2.1 Preservation application. Unless otherwise specified (see 6.2), machined surfaces of castings shall be protected with an application of preservative conforming to grade 1 or grade 4 of MIL-C-16173.

5.1.2.2 Wrapping. Castings weighing less than 50 pounds each without preservative application shall be individually wrapped with a minimum of two thicknesses of 40 pound basis weight kraft paper. For castings with preservative application, two thicknesses of equal weight grease-proof paper shall be used for wrapping.

5.1.3 Commercial. Commercial preservation shall be that provided by the contractor in accordance with ASTM A 700.

5.2 Packing. Packing shall be level A, B, or commercial, as specified (see 6.2).

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5.2.1 Level A.

5.2.1.1 Small castings. Small castings weighing less than 200 pounds each shall be packed individually, or in multiple units with blocking and bracing in nailed wood boxes conforming to PPP-B-621, class 2, with box closure and strapping in accordance with the appendix to the box specification. Small castings may also be bundled utilizing steel strapping conforming to QQ-S-781, class 1, finish A. The gross weight of boxes shall not exceed 200 pounds. The gross weight of bundles shall not exceed 250 pounds.

5.2.1.2 Large castings. When castings exceed the boxed gross weight of 200 pounds and have projections which may be damaged in handling or shipping, they shall be packed individually, or in multiple units with adequate blocking and bracing in an unsheathed crate conforming to MIL-C-3774 or MIL-C-52950. Type, style, and crate selection shall be at the option of the contractor. The gross weight of the crates shall not exceed 500 pounds unless individual castings exceed this weight. Steel strapping shall be applied in accordance with the applicable crate specification. Castings weighing more than 200 pounds each and not subject to damage in shipment may be shipped unpacked.

5.2.2 Level B. Small and large castings shall be packed as specified in 5.2.1, except that wood boxes shall be of the domestic type and class. Steel strapping is not required.

5.2.3 Commercial. Commercial packing shall be as specified by the contractor in accordance with ASTM A 700.

5.3 Marking. In addition to any special marking required (see 6.2), unit and exterior containers and shipments shall be marked in accordance with MIL-STD-129. Commercial marking shall be in accordance with ASTM A 700.

6. NOTES

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

6.1 Intended use. This specification is intended for steel castings for structural, machinery or piping applications.

6.1.1 The mechanical and impact properties between various areas of the castings and the test bars may vary from each other and may even vary between various locations in the castings. When the properties of the casting are critical for the application or the casting design depends upon specific minimum properties, the relationship between the test sections and actual casting properties must be considered for the operational component.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification and applicable detail specifications.
- (b) Grade and type required by the applicable detail specification (see 1.2).

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- (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 first article inspection is required (see 3.2 and 4.3.1).
- (e) When virgin materials are required (see 3.3.1).
- (f) If heat treatment is other than specified in the detail specification (see 3.5).
- (g) If heads, gates and padding need not be removed (see 3.6).
- (h) Standard cited for surface texture and severity level for surface discontinuities (see 3.8.1).
- (i) Weld repair standard if other than specified (see 3.9).
- (j) Shapes, tolerances, and sizes for castings (see 3.10).
- (k) When marking is required (see 3.11.2).
- (l) First article population inspection level and AQL (see 4.3.1).
- (m) Acceptance criteria for specified criticality level for radiography inspection if other than specified (see 4.3.2).
- (n) Lot size if other than specified (see 4.5).
- (o) Sampling for chemical analysis if other than specified (see 4.5.2.1).
- (p) Sampling for mechanical and impact property test if other than specified (see 4.5.2.2.1).
- (q) Preparation of test coupons if other than specified (see 4.5.2.2.2).
- (r) When soundness inspection is required (see 4.5.2.3).
- (s) When sampling for nondestructive testing is as specified (see 4.5.2.3).
- (t) Standard for nondestructive testing if other than specified (see 4.6.5).
- (u) Level of preservation required (see 5.1.1).
- (v) Level A of preservation application if required (see 5.1.2.1).
- (w) Level of packing required (see 5.2).
- (x) When special marking is required (see 5.3).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DIDs) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/ provided and that the DIDs are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

<u>Reference paragraph</u>	<u>DID number</u>	<u>DID title</u>	<u>Suggested tailoring</u>
3.2.1, 4.4 and appendix A	DI-MISC-80678	Certification/data report	-----
4.3 and appendix B	DI-MISC-80653	Test reports	-----

The above DIDs were those cleared as of the date of this specification. The current issue of DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DIDs are cited on the DD Form 1423.

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6.4 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item should be a first article sample and the number of items to be tested as specified in 4.3. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.5 Supersession data. The following detail specifications have been issued for carbon steel, alloy steel and stainless steel castings:

MIL-C-24707/1 - supersedes MIL-S-15083.
 MIL-C-24707/2 - supersedes MIL-S-870 and MIL-S-15464.
 MIL-C-24707/3 - supersedes MIL-S-867 and MIL-S-17509.
 MIL-C-24707/4 - supersedes MIL-S-17249.
 MIL-C-24707/5 - supersedes MIL-I-24137.
 MIL-C-24707/6 - supersedes MIL-S-16993.

6.5.1 Cross reference. The grades, classes and types in this specification are listed in table I. Grade 150-125 of MIL-S-15083 and grades 150-125 and 175-145 of QQ-S-681 should be deleted from all Naval specifications. For Navy systems, castings equivalent to these grades should only be used with the specific approval of NAVSEA or the Command or agency concerned.

TABLE I. Specification cross reference data.

Previous specification				Replacement specification		
Number	Grade	Class	Type	Number	Grade	Type/Class
MIL-S-15083	CW (ASTM A 217, WC 1)	-	-	MIL-C-24707/1	ASTM A 757 A1Q, ASTM A 216, WCA	-
	B (ASTM A 217, WC 1)	-	-		ASTM A 757 A1Q, ASTM A 216, WCA	-
	65-35 (ASTM A 217, WC 1)	-	-		ASTM A 757 A1Q, ASTM A 216, WCB	-
	70-36	-	-		ASTM A 757 A2Q, ASTM A 216, WCB, WCC	-

See footnotes at end of table.

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TABLE I. Specification cross reference data. - Continued

Previous specification				Replacement specification		
Number	Grade	Class	Type	Number	Grade	Type/Class
	80-40	-	-		ASTM A 757 A2Q, ASTM A 487, 2	A, B, C
	80-50	-	-		ASTM A 757 C1Q, ASTM A 487, 2	A, B, C
	90-60	-	-		ASTM A 757 E1Q, ASTM A 487, 4	A
	100-70	-	-		ASTM A 757 E2N1/E2Q1	-
	105-85	-	-		ASTM A 757 E2N2/E2Q2, ASTM A 487, 4	B
	120-95	-	-		ASTM A 757 E2N3/E2Q3, ASTM A 487, 14	A
	150-125	-	-		See 6.5.1 1/	-
	120-95	-	-		ASTM A 757, E2N2/E2Q3	-
	150-125	-	-		See 6.5.1 1/	-
	175-145	-	-		See 6.5.1 1/	-
MIL-S-870	-	-	-	MIL-C-24707/2	ASTM A 217 WC1	-
MIL-S-15464	1	-	-	MIL-C-24707/2	ASTM A 217 WC6	-
	2	-	-		ASTM A 217 WC9	-
	3	-	-		ASTM A 389 C23	-
MIL-S-17509	-	I	-	MIL-C-24707/3	ASTM A 744 CF-8	-
	-	II	-		ASTM A 744 CF-8C	-
	-	III	-		ASTM A 744 CF-8M	-

See footnotes at end of table.

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TABLE I. Specification cross reference data. - Continued

Previous specification				Replacement specification		
Number	Grade	Class	Type	Number	Grade	Type/Class
MIL-S-867	-	I	-	MIL-C-24707/3	ASTM A 744 CF-8	-
	-	II	-		ASTM A 744 CF-8C	-
		III			ASTM A 744 CF-8M	-
MIL-S-17249	-	-	A	MIL-C-24707/4	ASTM A 128, A	A
	-	-	B		ASTM A 128, A	B
MIL-S-24137	-	A	-	MIL-C-24707/5	ASTM A 395, 60-45-15	-
	-	B	-		ASTM A 439, D-2	-
	-	C	-		ASTM A 439, D-2C	-
MIL-S-16993	-	1	-	MIL-C-24707/6	ASTM A 217, CA-15	-
	-	2	-		ASTM A 487, CA-15M	A
					ASTM A 757, E3N <u>2</u> /	-

1/ Special application; only use with concurrence of Command or agency concerned (see 6.5.1).

2/ Grade E3N castings are intended for use where either CA-15 or CA-15M is used. It has better weldability, corrosion and erosion resistance, and improved soundness and casting characteristics over CA-15 and CA-15M.

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6.6 Subject term (key word) listing.

Alloy steel
Carbon steel
Corrosion resisting steel

Custodians:

Army - MR
Navy - SH
Air Force - 20

Preparing activity:

Navy - SH
(Project MECA-0328)

Review activities:

Army - AR, MI
Navy - AS, YD, OS
Air Force - 84

User activities:

Navy - MC
Army - ME

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APPENDIX A

CERTIFICATION/DATA REPORT TECHNICAL CONTENT REQUIREMENTS

10. SCOPE

10.1 Scope. This appendix covers the technical content requirements that should be included on certification/data reports when required by the contract or order. This appendix is mandatory only when data item description DI-MISC-80678 is cited on the DD Form 1423.

20. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

30. REPORTS

30.1 Certification/data reports. When required by the contract or order, the certification/data report shall include qualitative results of nondestructive tests and other inspections and tests. The certification shall also state that each lot has been sampled, tested, and inspected in accordance with the specification and meets all specification requirements. The certificate shall state for each order that the basic foundry practice was the same as that used for the first article casting and that any change, if made, has been approved. The certificate shall be signed by a responsible representative of the contractor.

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APPENDIX B

TEST REPORT TECHNICAL CONTENT REQUIREMENTS

10. SCOPE

10.1 Scope. This appendix covers the technical content requirements that should be included on test reports when required by the contract or order. This appendix is mandatory only when data item description DI-MISC-80653 is cited on the DD Form 1423.

20. APPLICABLE DOCUMENTS

This section is not applicable to this appendix.

30. REPORTS

30.1 First article inspection report. When required by the contract or order, the first article inspection report shall include results of first article testing, including non-proprietary information on basic foundry practice.