

INCH-POUND

MIL-C-17557E(SH)

9 September 1988

SUPERSEDING

MIL-C-17557D(SHIPS)

1 September 1960

(See 6.8)

MILITARY SPECIFICATION

COOLERS, FLUID, INDUSTRIAL, NAVAL SHIPBOARD
(SAMPLE WATER COOLERS)

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers sample water coolers for Naval shipboard boiler water and feedwater sampling. Only one classification of cooler is covered by this specification.

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

- PPP-B-636 - Boxes, Shipping, Fiberboard.
- PPP-F-320 - Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.
- PPP-T-60 - Tape: Packaging, Waterproof.

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 4420

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

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MILITARY

- MIL-P-116 - Preservation, Methods of.
- MIL-S-901 - Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for.
- MIL-S-1222 - Studs, Bolts, Hex Cap Screws, Socket Head Cap Screws and Nuts.
- MIL-P-15024 - Plates, Tags and Bands for Identification of Equipment.
- MIL-P-15024/5 - Plates, Identification.
- MIL-C-15726 - Copper-Nickel Alloy, Rod, Flat Products (Flat Wire, Strip, Sheet, Bar, and Plate) and Forgings.
- MIL-T-16420 - Tube, Copper-Nickel Alloy, Seamless and Welded (Copper Alloy Numbers 715 and 706).
- MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated.
- MIL-E-22200/4 - Electrodes, Welding, Covered, Copper-Nickel Alloy.

STANDARDS

MILITARY

- MIL-STD-278 - Welding and Casting Standard.
- MIL-STD-2073-1 - DoD Materiel Procedures for Development and Application of Packaging Requirements.

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

2.1.2 Other Government drawing and publication. The following other Government drawing and publication form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those in effect on the date of the solicitation.

DRAWING

- NAVAL SEA SYSTEMS COMMAND (NAVSEA)
- B-214 - Root Connections for Attaching Pipe.

PUBLICATION

NAVSEA

- NAVSHIPS 250-634-6 - Fabrication and Inspection of Brazed Piping Systems.

(Application for copies should be addressed to the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

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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 shall be 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 NATIONAL STANDARDS INSTITUTE (ANSI)

B31.1 - Code for Pressure Piping, Power Piping.

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging.
(DoD adopted)

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

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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.4) in accordance with 4.4.

3.2 Materials. The materials for coolers shall conform to the requirements of table I.

TABLE I. Materials for coolers.

Part	Material	Specification
Shells and shell internals	Copper-nickel alloy ^{1/}	MIL-C-15726 MIL-T-16420
Coils ^{2/}	Copper-nickel alloy, composition 70-30	MIL-T-16420
Threaded fasteners	Nickel alloys	MIL-S-1222
Welding electrode	Copper-nickel	MIL-E-22200/4

^{1/} Where cooling will be by a submarine seawater system subject to submergence pressure (see 6.2), copper-nickel alloy shall be composition 70-30.

^{2/} Chemical and physical properties shall be in accordance with MIL-T-16420. Coil outside diameter and wall thickness may be as required (see 3.4.4).

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3.3 Welding and allied processes. Welding shall be in accordance with MIL-STD-278. Brazing shall be in accordance with NAVSHIPS 250-634-6, except that requirements for use of preinserted brazing rings are applicable only to pipe fittings. Brazed joints shall be constructed to permit ultrasonic inspection.

3.4 Construction. Sample coolers shall be shell and coil construction, with sample water passed through the coil, and coolant (either seawater or chilled fresh water) passed through the shell (see 6.3 and appendix).

3.4.1 Space. Unless otherwise specified (see 6.2), sample water coolers (including external fittings) shall fit a space envelope 26 inches in length and 8 inches square in cross-section (see figure 1).

3.4.2 Shock resistance. The coolers shall withstand the high impact shock tests as specified (see 4.4.3).

3.4.3 Supports. Each cooler shall have a bracket installed for mounting.

3.4.4 Coil wall thickness. Wall thickness of coils shall be determined by use of the formula specified in ANSI B31.1, but shall be not less than 0.065 inch. For the composition 70-30 copper-nickel alloy specified, the allowable fiber stress shall be not more than 9600 pounds per square inch (lb/in^2).

3.4.5 External connections. Unless otherwise specified (see 6.2), coil external connections shall be 1/2-inch nominal pipe size (nps), and shell external connections shall be 3/4-inch nps. External connections shall terminate with 4 inches of straight length (preferred) but not less than 1 inch for attachment by socket weld and shall be in accordance with Drawing B-214.

3.4.6 Special provisions. A clearance of not less than 1/8 inch is required between adjacent turns of the coil, between coil and shell, and between coil and baffles (where used) to permit free flow of coolant. Coil supports or spacers, if used, shall be silver brazed to the coil at all points of contact or where clearance is less than 1/8 inch in order to avoid formation of crevices. Joints in the coil that may be subjected to boiler pressure shall be socket welded.

3.4.7 Capacity. The cooling surface shall be based on a 10 percent fouling factor applied to the overall heat transfer coefficient for clean tube surface. Unless otherwise specified (see 6.2), the cooler shall, at an operating gauge pressure of 1415 lb/in^2 , cool 0.125 gallon of water per minute from 590 to 75 degrees Fahrenheit ($^{\circ}\text{F}$), using chilled water as cooling medium at 55°F and at coolant flow rate not to exceed the upper limit as specified (see 6.2). These parameters shall be separately prescribed if seawater is specified as coolant (see 6.2).

3.4.8 Hydrostatic pressure. The cooler shall withstand, without leakage, rupture, bulge, or flow, the following pressures (see 4.5.1):

Coil: 2123 lb/in^2 , unless otherwise specified (see 6.2).

Shell: 225 lb/in^2 , unless otherwise specified (see 6.2) or if seawater cooled and for submarine application, the shell shall meet full submergence pressure and be hydrostatically tested to 1.5 times submergence pressure.

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3.5 Painting. Coolers shall be left unpainted.

3.6 Identification plates. Identification plates of sheet or cast brass or bronze shall be prepared in accordance with MIL-P-15024 and MIL-P-15024/5 and shall include the following:

- (a) Name "Sample Water Cooler" (without quotation marks).
- (b) Sample water cooler.
- (c) Manufacturer's service part number.
- (d) National stock number (allow 20 spaces).
- (e) Manufacturer's name.
- (f) Contract number (contract or purchase order number applying to the cooler purchase).
- (g) Date manufactured.
- (h) Serial number.
- (i) Blank space for Government inspector's stamp.
- (j) Maximum test pressure, shell side.
- (k) Maximum test pressure, coil side.
- (l) Blank space for unit number (space reserved for marking by the shipyard at time of installation).
- (m) The initials "U.S." (without quotation marks).

3.7 Workmanship. In order for the work to be considered acceptable, conformance to requirements of drawings shall be mandatory.

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 this 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 (see 6.3). The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring 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.

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

- (a) First article inspection (see 4.4).
- (b) Quality conformance inspection (see 4.5).

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4.3 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified herein.

4.4 First article inspection. First article inspection shall consist of the tests of 4.4.2 and 4.4.3.

4.4.1 Laboratory selection. The first article tests shall be conducted at a laboratory satisfactory to the acquisition activity.

4.4.2 Performance test. This test shall include accurate measurements of coolant and cooled medium flows, pressure drops, and heat transfer. The cooler shall meet the requirements as specified in 3.4.7 (see 6.3).

4.4.3 Shock test. The first article sample shall be shock tested in accordance with grade A of MIL-S-901 (see 6.3).

4.5 Quality conformance inspection. Quality conformance inspection shall consist of the test of 4.5.1.

4.5.1 Hydrostatic test. A hydrostatic test shall be performed to ensure conformance to 3.4.8 (see 6.3).

4.6 Inspection of packaging. Sample packages and packs, and the inspection of the preservation, stowage, 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. For the extent of applicability of the packaging requirements of referenced documents listed in section 2, see 6.6.)

5.1 General.

5.1.1 Navy fire-retardant requirements.

- (a) Lumber and plywood. Unless otherwise specified (see 6.2), all lumber and plywood including laminated veneer material used in shipping container and pallet construction, members, blocking, bracing, and reinforcing shall be fire-retardant treated material conforming to MIL-L-19140 as follows:

Level A and B	- Type II - weather resistant.
	Category 1 - general use.
Level C	- Type I - non-weather resistant.
	Category 1 - general use.

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- (b) Fiberboard. Unless otherwise specified (see 6.2), fiberboard used in the construction of class-domestic, non-weather resistant fiberboard, and cleated fiberboard boxes including interior packaging forms shall meet the flame spread index and specific optic density requirements as specified in PPP-F-320 and amendments thereto.

5.2 Preservation. Preservation shall be at level A, C or commercial as specified (see 6.2).

5.2.1 Level A. Coolers shall be preserved (unit protected) in accordance with method III of MIL-P-116. Dry air shall be circulated through the cooler to eliminate residual moisture. Openings shall be sealed with tape conforming to type III or type IV, class 1, of PPP-T-60. Each cooler shall then be packed in a fiberboard box conforming to PPP-B-636, class-weather resistant. Unless otherwise specified (see 6.2), selection of the box options such as variety, grade, and style shall be the contractor's option. Box closure shall be in accordance with method V and reinforced with nonmetallic or tape banding in accordance with the appendix to the box specification.

5.2.2 Level C. Coolers shall be preserved (unit protected) as specified for level A, except the fiberboard box shall conform to class-domestic or class-domestic/fire retardant (see 5.1.1(b)), as specified (see 6.2). Box closure shall be in accordance with method I, using pressure sensitive tape.

5.2.3 Commercial. Commercial packaging (cleaning, preservation, cushioning, and the unit pack) shall be in accordance with ASTM D 3951.

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

5.3.1 General requirements for levels A, B, and C. Containers selected (see 5.3.2) shall be of minimum weight and cube consistent with the protection required, and of uniform size.

5.3.2 Levels A, B, and C containers. Coolers, preserved as specified (see 5.2), shall be packed in exterior shipping containers for the level of packing specified (see 5.3), in accordance with exterior shipping container requirements of MIL-STD-2073-1, appendix C, and herein. Unless otherwise specified (see 6.2), container selection and options shall be at the contractor's option.

5.3.2.1 Caseliners, closure and gross weight.

5.3.2.1.1 Caseliners. Unless otherwise specified (see 6.2), level A shipping containers containing coolers preserved level C or commercial shall be provided with waterproof caseliners in accordance with MIL-STD-2073-1.

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5.3.2.1.2 Closure. Container closure, reinforcing, or banding shall be in accordance with the applicable container specification or appendix thereto except that weather-resistant fiberboard boxes shall be closed in accordance with method V and reinforced with nonmetallic or tape banding, and domestic or fire retardant fiberboard boxes shall be closed in accordance with method I using pressure sensitive tape.

5.3.2.1.3 Weight. Wood, plywood, and cleated type containers exceeding 200 pounds gross weight shall be modified by the addition of skids in accordance with MIL-STD-2073-1 and the applicable container specification or appendix thereto.

5.3.3 Commercial. Coolers, preserved as specified (see 5.2), shall be packed for shipment in accordance with ASTM D 3951 and herein.

5.3.3.1 Container modification. Shipping containers exceeding 200 pounds gross weight shall be provided with a minimum of two 3- by 4-inch nominal wood skids laid flat, or a skid- or sill-type base which will support the material and facilitate handling by mechanical handling equipment during shipment and storage.

5.4 Marking, levels A, B, C, and commercial. In addition to any special marking required (see 6.2), interior (unit) packs and shipping containers shall be marked including bar coding for shipment, stowage, and storage in accordance with MIL-STD-2073-1, appendix F.

6. NOTES

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

6.1 Intended use. The sample water coolers specified herein are normally used for cooling water samples as drawn from shipboard boilers or feedwater systems for chemical testing.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1 and 2.2).
- (c) Whether first article testing is required (see 3.1).
- (d) Whether the normally allowed space envelope may be exceeded (see 3.4.1).
- (e) Whether nps external connections differ from those specified (see 3.4.5).
- (f) Sample water operating pressure, temperatures, and flow rate, if other than as specified (see 3.4.7).
- (g) Whether seawater or chilled fresh water shall be used as coolant, and if seawater, alternative parameters to be met (see 3.4.7).
- (h) Temperature and permissible upper limit of flow rate of the coolant (see 3.4.7).

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- (i) Coil hydrostatic test pressure, if other than as specified (see 3.4.8).
- (j) Shell side hydrostatic test pressures, if seawater cooled and if other than as specified (see table I and 3.4.8).
- (k) When fire retardant requirements are not required (see 5.1.1).
- (l) Levels of preservation and packing required (see 5.2, 5.2.2 and 5.3).
- (m) Selection of box and options if other than contractor's option (see 5.2.1 and 5.3.2).
- (n) When caseliners are not required (see 5.3.2.1.1).
- (o) Special marking required (see 5.4).

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>
3.4 and appendix	DI-DRPR-80651	Engineering drawings	Level 3
4.1.1	DI-R-4803	Inspection system program plan	----
4.4.2	DI-S-3619	Technical performance measurement report	----
4.4.3	UDI-T-23753	Reports, equipment shock test	----
4.5.1	UDI-A-23264	Certification data/report	-----

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.

6.4 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a preproduction sample, a first article sample, a first production item, a sample selected from the first production items, a standard production item from the contractor's current inventory (see 3.1), and the number of items to be tested as specified in 4.4. 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

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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 Cross-reference of classification. This revision eliminates the need for different types and classes of coolers. Sample coolers made to previous revisions of this specification may continue to be used for their respective purposes until stocks are exhausted. New acquisitions will be made in accordance with this specification.

6.6 Sub-contracted material and parts. The packaging requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

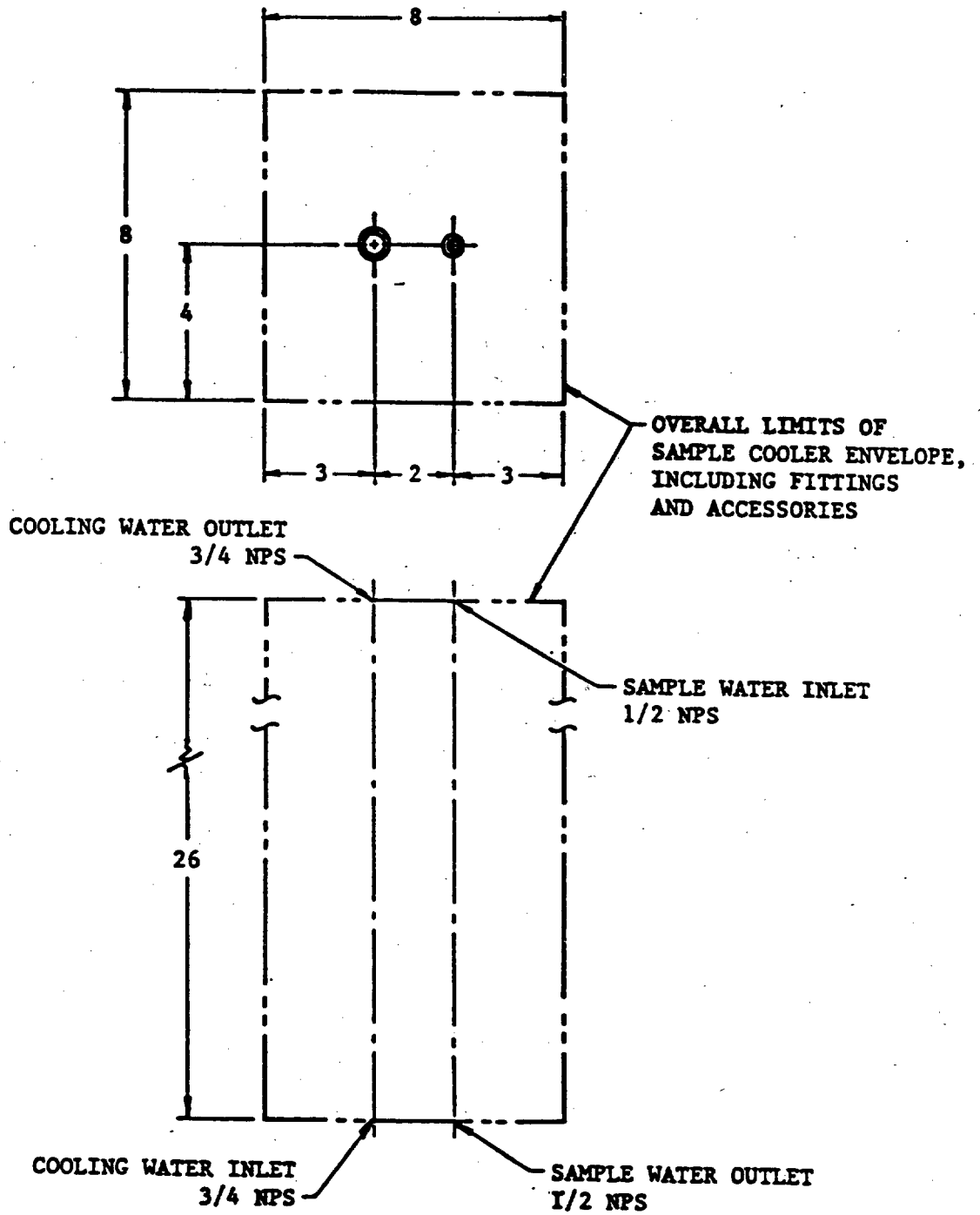
6.7 Subject term (key word) listing.

Brazing
Coil wall
Hydrostatic pressure
Shells
Shock resistance
Welding electrode

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
Navy - SH
(Project 4420-N060)

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NOTE:

1. Dimensions and pipe sizes are in inches.

SH 13202954

FIGURE 1. Sample cooler space envelope.

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APPENDIX

ENGINEERING DRAWINGS TECHNICAL CONTENT REQUIREMENTS

10. SCOPE

10.1 Scope. This appendix covers information that should be included in the drawings when specified in the contract or order. This appendix is applicable only when data item description DI-DRPR-80651 is cited on the DD Form 1423.

20. APPLICABLE DOCUMENTS

20.1 Government documents.

20.1.1 Specification. The following specification forms a part of this document to the extent specified herein. Unless otherwise specified, the issue of this document is that 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

DOD-D-1000 - Drawings, Engineering and Associated Lists.

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

30. SUGGESTED DRAWING CONTENTS

30.1 Drawing content. Drawings shall be furnished in accordance with DOD-D-1000. Drawings of the types described in 30.1.1 through 30.1.3, and the ship's drawing described in 30.2, are required. Outline, assembly, and detail drawings may be combined on one sheet if desired and practical. Drawings shall be sufficiently detailed to:

- (a) Demonstrate conformance to this specification, including compatibility with ship and ship systems.
- (b) Allow evaluation of suitability of design for intended Naval use.
- (c) Allow evaluation of performance and maintenance capability.
- (d) Enable shipyard installation without contractor's assistance.
- (e) Enable Naval ship and shore activities to repair and maintain the item without assistance from the original contractor.

30.1.1 Outline drawing. An external arrangement drawing, called an outline drawing, shall be furnished. This drawing shall show necessary external views of the cooler and shall include the external dimensions necessary for guidance of the shipyard in installing the cooler.

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30.1.2 Assembly drawing. A drawing showing complete longitudinal and transverse cross-sectional views of the cooler, called an assembly drawing, shall be furnished. This drawing shall be such that a thorough understanding of the design and construction of the cooler may be obtained without reference to related detail drawings. The assembly drawing shall contain a list of materials showing names and materials of parts along with their identifying numbers. These identifying numbers shall also be shown adjacent to the parts depicted in the various views, with arrows pointing to the parts.

30.1.3 Detail drawings. Detail drawings completely dimensioned and with welding symbols indicated shall be furnished as required for manufacturing.

30.2 Ship's drawing. One drawing shall be a ship's drawing. It shall be titled "DRAWING LIST AND PERFORMANCE DATA FOR ... SAMPLE WATER COOLER" (source of sample, such as boiler or deaerating feed tank, to be entered to complete the title). A list of materials is not required for this drawing.

30.2.1 List of drawings. The drawing list tabulation on the ship's drawing shall include the following columns:

- (a) Drawing title.
- (b) Manufacturer's drawing number.
- (c) Command or agency drawing number.
- (d) Revision symbol.

This list shall include all drawings that make up the given design. The revision symbol column shall be kept up to date to the time of manufacture so that it will finally indicate the latest revision of each drawing applicable to the equipment as built.

30.2.2 List of performance data. The performance data tabulation on the ship's drawing shall include the following (the phrase "cooling medium" means "coolant"):

- (a) Identification of cooled and cooling mediums.
- (b) Flow rates of cooled and cooling mediums, in gallons per minute.
- (c) Inlet temperatures of cooled and cooling mediums, °F.
- (d) Outlet temperatures of cooled and cooling mediums, °F.
- (e) Velocities of cooled and cooling mediums through coil and shell, in feet per second.
- (f) Working pressures of cooled and cooling mediums, lb/in² gauge.
- (g) Test pressure, shell side, lb/in² gauge.
- (h) Test pressure, coil side, lb/in² gauge.
- (i) Logarithmic mean temperature difference, °F.
- (j) Heat transfer rates for both service and clean tube conditions, in Btu per hour per square foot per °F logarithmic mean temperature difference.
- (k) Cooling surface, in square feet.
- (l) Heat transfer capacity at design point, in Btu per hour.

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30.2.3 Ship's drawing notes. The ship's drawing shall include notes identifying the contract or order; the application (service) of the unit, the number of coolers per ship and per unit of parent equipment (such as boiler or deaerating feed tank), and the dry and wet weights of the cooler.

30.2.4 Identification plate depiction. The ship's drawing shall include a view of the identification plate with all data entered, except date of manufacture and serial number. This view shall be enlarged where necessary to ensure that data entries will meet lettering size requirements of DOD-D-1000.

30.2.5 Ships to be cited. Above the title block of the ship's drawing shall be entered the designations of the ships to which it applies.

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-C-17557E(SH)		2. DOCUMENT TITLE COOLERS, FLUID, INDUSTRIAL, NAVAL SHIPBOARD (SAMPLE WATER COOLERS)	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION <i>(Mark one)</i> <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER <i>(Specify):</i> _____	
b. ADDRESS <i>(Street, City, State, ZIP Code)</i>			
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER <i>(Last, First, MI)</i> - Optional		b. WORK TELEPHONE NUMBER <i>(Include Area Code)</i> - Optional	
c. MAILING ADDRESS <i>(Street, City, State, ZIP Code)</i> - Optional		8. DATE OF SUBMISSION (YYMMDD)	

TO DETACH THIS FORM, CUT ALONG THIS LINE.

DD FORM 82 MAR 1962 1426

PREVIOUS EDITION IS OBSOLETE.