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Preparing Activity:   NAVFAC           Replacing without change  
                                  UFGS-11706 (August 2004)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2010

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### SECTION 44 44 46

#### HYDROTHERAPY EQUIPMENT

04/06

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NOTE: This guide specification covers the requirements for prefabricated hydrotherapy equipment and required accessories.

Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of Technical Proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

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## PART 1   GENERAL

### 1.1   REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically  
be deleted from this section of the project  
specification when you choose to reconcile  
references in the publish print process.

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The publications listed below form a part of this specification to the  
extent referenced. The publications are referred to within the text by the  
basic designation only.

ASTM INTERNATIONAL (ASTM)

- ASTM A 167 (1999; R 2009) Standard Specification for  
Stainless and Heat-Resisting  
Chromium-Nickel Steel Plate, Sheet, and  
Strip
- ASTM B 221 (2008) Standard Specification for Aluminum  
and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes
- ASTM B 221M (2007) Standard Specification for Aluminum  
and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes (Metric)
- ASTM E 162 (2009) Surface Flammability of Materials  
Using a Radiant Heat Energy Source
- ASTM E 84 (2009c) Standard Test Method for Surface  
Burning Characteristics of Building  
Materials

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS  
(IAPMO)

- IAPMO Z124.1.2 (2005) Plastic Bathtub and Shower Units

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 70 (2008; AMD 1 2008) National Electrical  
Code - 2008 Edition
- NFPA 99 (2005; Errata 2005; AMD 2009) Health Care  
Facilities

UNDERWRITERS LABORATORIES (UL)

- UL 544 (1998; Rev thru Jul 1999) Medical and  
Dental Equipment
- UL 723 (2008) Standard for Test for Surface  
Burning Characteristics of Building  
Materials

1.2 RELATED REQUIREMENTS

Conform to Sections 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL  
EQUIPMENT; 23 03 00.00 20 BASIC MECHANICAL MATERIALS AND METHODS; 22 00 00

PLUMBING SYSTEMS; 22 60 70 GAS AND VACUUM SYSTEMS FOR HEALTHCARE FACILITIES; 26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS; and 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

### 1.3 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

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Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-02 Shop Drawings

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NOTE: Delete any items that are not used; add any additional items requiring shop drawings.

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Bath, Whirlpool, Arm Treatment[; G][; G, [\_\_\_\_]]

Bath, Whirlpool, Leg Treatment[; G][; G, [\_\_\_\_]]

Bath, Hydrotreatment[; G][; G, [\_\_\_\_]]

Bath, Hydrotherapy, Burn Treat[; G][; G, [\_\_\_\_\_]]

Bath, Hydrotherapy Treatment, Sitting[; G][; G, [\_\_\_\_\_]]

#### SD-03 Product Data

Bath, Whirlpool, Arm Treatment[; G][; G, [\_\_\_\_\_]]

Bath, Whirlpool, Leg Treatment[; G][; G, [\_\_\_\_\_]]

Bath, Hydrotreatment[; G][; G, [\_\_\_\_\_]]

Bath, Hydrotherapy Burn Treat[; G][; G, [\_\_\_\_\_]]

Bath, Hydrotherapy Treatment, Sitting[; G][; G, [\_\_\_\_\_]]

Valve, Thermostic Mixing[; G][; G, [\_\_\_\_\_]]

### PART 2 PRODUCTS

#### 2.1 MATERIALS

##### 2.1.1 Stainless Steel

ASTM A 167, Class 301, 302, or 304. Satin finish for exposed surfaces and No. 4 finish for interior surfaces.

##### 2.1.2 Aluminum Alloy

ASTM B 221MASTM B 221 equivalent in ultimate tensile, yield, and shear strengths to Alloy 6063-T5 or 6063-T6, as applicable.

#### 2.2 COMPONENTS

Provide:

- a. Tank construction, stainless steel
- b. Tank fittings
- c. Dial thermometer
- d. Thermostatic water-mixing valve
- e. Electric turbine ejector and aerator
- f. Screening or similar protective devices
- g. Turbine-ejector elevator

#### 2.3 ITEMS

##### 2.3.1 Bath, Whirlpool, Arm Treatment

Provide stainless steel pedestal mounted hydrotherapy unit suitable for arm treatment. Include:

- a. Treatment tank: Welded construction, approximately 900 mm 36

inches high, 375 mm 15 inches wide, and 710 mm 28 inches long with a depth of 450 mm 18 inches.

- b. Drain system: 50 mm 2 inch, handle-operated with 50 mm 2 inch overflow for positive water overflow and water surface scum clearance.
- c. Electric turbine ejector and aerator with motor and turbine ejector raising and lowering device.
- d. Dial thermometer: 85 mm 3 1/2 inches in diameter, tank mounted.
- e. Chromium-plated water inlet assembly for connection to thermostatic valve, complete with vacuum breaker, volume control valve, piping, and fittings.
- f. Thermostatic valve (38 lpm10 gpm) designed for wall mounting.
- g. Armrest: One each, fabricated of stainless steel, for supporting arm inside tank during treatment.
- h. Electrical characteristics: 110-volt, 60 Hz.
- i. Electrical convenience outlets: Duplex-type, grounded, 3-wire, 20A, 110-volt, 60 Hz, two each, tank-mounted by manufacturer.

#### 2.3.2 Bath, Whirlpool, Leg Treatment

Provide stainless steel floor mounted unit approximately 1500 mm 60 inches long, 600 mm 24 inches wide, and 450 mm 18 inches (long and low), tank complete with 245 watt 1/3 hp, high-speed motor, 3,450 rpm, 110 vac, 60 Hz. Thermostatic mixing valve.

#### 2.3.1 Bath, Hydrotreatment

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**NOTE: Coordinate hoist assembly requirements with structural conditions and building service on the drawings. Unit requires an exposed steel I-beam located above tank. Cord reel is designed for use with hoist to keep power cable reeled up and out of way. Indicate location on drawings. It should be positioned midpoint in travel of hoist. Verify that drawings include necessary power to reel.**  
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Stainless steel tank, 1.8 mm thick 14 gage, seamlessly welded; two electric turbine ejectors; two ejector carriages; two turbine ejector elevators; a 85 mm 3 1/2 inch dial thermometer for tank; tank fittings, headrest; body hammock; body plinth; steel base supported by chromium-plated legs to include thermostatic water mixing valve assembly; hoist and trolley; water stretcher with two canvas crossbars and suspensions; and two canvas body slings. Overall dimensions approximately 2700 mm 8 feet 10 inches long, 1980 mm 6 feet 6 incheswide, 865 mm 34 inches high. Inside measurement of tank approximately 2185 mm 7 feet 2 inches long, 1800 mm 6 feetwide at head end, 1345 mm 4 feet 5 inches wide at foot end, and middle inset 875 mm 35 inches wide, 550 mm 22 inches deep, including related accessories.

### 2.3.2 Bath, Hydrotherapy Burn Treat

Rectangular treatment bath with water hydraulic lift cylinder and armlift for patient transfer. Control panel with separate thermostat mixers for filling and shower. Disinfection unit with flowmeter for variable concentration of disinfection. Flexible connection hoses with shutoff valve for incoming hot water (hw) and cold water (cw). Bath is with a hydrotherapy unit. Pump capacity is 190 lpm 50 gpm. Outside dimensions are approximately 3025 mm 9 feet 11 inches long, 1000 mm 3 feet 4 inches wide, and 350 mm 14 inches deep inside tub.

### 2.3.3 Bath, Hydrotherapy Treatment, Sitting

IAPMO Z124.1.2, ASTM E 84, ASTM E 162 and UL 723. Gel-coated fiberglass. Tank shall have seat and footrest for sitting body treatment. Electric turbine ejector and aerator with motor. Includes dial thermometer for tank and built-in thermostatic mixing valve. Tank dimensions approximately 875 mm 35 inches high by 1420 mm 56 inches long, 750 mm 30 inches deep at the footrest, and 600 mm 24 inches deep at the seat. Electrical characteristics: 110-volt, 60 Hz, single phase.

### 2.3.4 Valve, Thermostatic Mixing

Assembly with washout hose for use with portable whirlpool equipment. Thermostatic valve to maintain temperature between 21 and 43 degrees C 70 and 110 degrees F with a flow rate of 38 liters 10 gallons per minute.

## PART 3 EXECUTION

### 3.1 WORKMANSHIP

Comply with UL 544. Surfaces to be welded are to be free from gease, oil, dirt or other foreign materials. Grind exposed welds smooth to blend with adjacent surfaces. Welds to be continuous, sound, unbroken, clean, and free from pitting, splatter and discoloration.

Exposed corners and edges to be rounded to eliminae sharp edges. All exposed surfaces, including inside of tank, to be free from pit-marks, weld seams, and scale. Finish to be No. 4 commercial, uniform and free of course grind marks or scratched areas.

### 3.2 INSTALLATION

Install items at locations indicated. Conform to Section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT, NFPA 70 and NFPA 99.

#### 3.2.1 Inspection

Examine each item for visual defects and conformance to specifications.

#### 3.2.2 Test

Test each item to ensure that equipment is operational and conforms to specification requirements.

-- End of Section --