
USACE / NAVFAC / AFCEA UFGS-11702 (August 2001)

Preparing Activity: NAVFAC
Superseding
UFGS-11702N (August 2001)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 25 June 2004

Latest change indicated by CHG tags

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SECTION 11702

MEDICAL EQUIPMENT, MISCELLANEOUS

08/01

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SECTION 11702

MEDICAL EQUIPMENT, MISCELLANEOUS 08/01

NOTE: This guide specification covers the requirements for miscellaneous medical equipment.

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).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

NOTE: On the drawings, show:

1. Location of equipment.
2. Height of turntable unit and control switch box above finish floor.

PART 1 GENERAL

1.1 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A 366/A 366M	(1997e1) Commercial Steel, Sheet, Carbon, (0.15 Maximum Percent Cold-Rolled**
ASTM B 221	(2002) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B 221M	(2002) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA LD 3	(2000) High-Pressure Decorative Laminates
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UNDERWRITERS LABORATORIES (UL)

UL 768	(1999) Combination Locks
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1.2 RELATED REQUIREMENTS

Section 11700 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT applies to this section with the additions and modifications specified herein.

1.3 SUBMITTALS

NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

NOTE: Delete items that are not used and add additional items requiring drawings.

- [Specimen cabinet, pass thru; G, [____]]
- Autopsy table, tank type; G, [____]
- Autopsy table, L-shape; G, [____]
- Autopsy table, movable system with sink; G, [____]
- Narcotic cabinet, safe type; G, [____]
- Clock, elapsed time, electric; G, [____]
- [Medicine center, 1200 mm 48 inches wide; G, [____]]

SD-03 Product Data

Miscellaneous medical equipment items; G, [____]

Submit equipment lists and manufacturer's literature for each specified item. [Include manufacturer's standard colors and patterns for laminated plastic items.]

SD-10 Operation and Maintenance Data

- Autopsy table, tank type, Data Package 3; G, [____]
- Autopsy table, L-shape, Data Package 3; G, [____]
- Autopsy table, movable system with sink, Data Package 3; G, [____]
- Clock, elapsed time, electric, Data Package 3; G, [____]

Submit in accordance with Section 01781 OPERATION AND
MAINTENANCE DATA.

PART 2 PRODUCTS

2.1 MATERIALS

Items not specified otherwise shall conform to the following requirements:

- a. Aluminum alloy: Equivalent in ultimate tensile, yield, and shear strengths to Alloy 6063-T5 or 6063-T6; conforming to ASTM B 221M ASTM B 221.
- b. Carbon steel: ASTM A 366/A 366M.
- c. Laminated plastic: NEMA LD 3; colors and patterns as selected by the Contracting Officer from the manufacturer's standard colors and patterns.
- d. Stainless steel: ASTM A 167, Type 301, 302, or 304. Exposed surfaces shall have a satin finish or a minimum No. 3 polished finish.

2.2 ITEMS

[2.2.1 Specimen Cabinet, Pass Thru

NOTE: Include these items for Air Force projects only.

Unit for through-the-wall passing of specimen containers from one area to another while preventing viewing between rooms through the apparatus. Include the following:

- a. Design: Cylindrically enclosed turntable with center divider and openings allowing access into compartments. Cylinder mounted in frame housing for installation through wall.
- b. Material: Fabricate turntable and exposed housing of 1.2 mm thick 18 gage stainless steel with exposed surfaces and edges ground and polished to a No. 4 finish.
- c. Turntable: Fabricate 300 mm 12 inches in diameter; two compartments; removable and sterilizable. Provide with self-lubricating ball bearings, allowing unit to revolve freely with catches to prevent uncontrolled rotation.

NOTE: Regarding the text below, drawings shall indicate location and height of unit above the finished floor. Unit may be located 750 to 1050 mm 30 to 42 inches above finished floor in walls up to 175 mm 7 inches thick. Do not locate unit in a fire-rated partition.

- d. Housing assembly: Fabricate assembly compatible with wall thickness as indicated, enclosing turntable and incorporating an access door and trim to overlap rough opening. Locate access door on receiving side of assembly. Overall trim dimensions shall not exceed 400 by 400 mm 16 by 16 inches.
- e. Access door: Fabricate to facilitate removal of turntable; include a key lock. [Key passboxes in project the same.]
- f. Keys: Furnish two keys per passbox.

]2.2.2 Autopsy Table, Tank Type

Trough-shaped design, approximately 2500 mm long by 750 mm wide by 900 mm high 100 inches long by 30 inches wide by 36 inches high. Include the following features:

- a. General construction: Fabricate of stainless steel, joints welded and polished smooth, exposed surfaces with a satin finish, outer edges rounded, and interior corners coved to approximately 10 mm 3/8 inch radius.
- b. Table top:
 - (1) One-piece construction, 1.8 mm thick 14 gage stainless steel, with raised rim edge
 - (2) Top surface sloped to drain and provided with a removable strainer
 - (3) Top edge of table graduated in centimeters.
- c. Sink: Single compartment, 300 by 500 by 275 mm 12 by 20 by 11 inches deep, corners coved, provide knee-operated drain control, overflow, hot and cold water mixing valve with wrist blades, and gooseneck faucet.
 - (1) Locate faucet between working area of table and sink or to one side of sink. Faucet on outer end of table unacceptable.
 - (2) Manifold sink waste and waste from table shall require only one waste connection.
- d. Base frame: Tubular legs and braces with adjustable bullet feet. Intersection of legs and braces welded and polished smooth. Sharp edges unacceptable.
- e. Aspirator assembly: Water-powered, with control valve, built-in vacuum breaker, serrated nozzle outlet, 2400 mm 8 feet of flexible hose, and suction bottle.
- f. Irrigation assembly: Dual-controlled hot and cold water flow regulated by a quick-opening, knee-operated valve or standard hand control valve; provide with serrated nozzle outlet, at least 2400 mm 8 feet of flexible hose, and nozzled end piece.
- g. Head rest: Removable, rubber.
- h. Body slats: Not less than 150 mm 6 inches wide [, perforated];

provide at least five for each table.

- i. Instrument tray: With removable rubber cutting board.
- j. Perimeter table flushing system: With control valve and vacuum breaker.
- k. Electrical duplex outlet with ground fault circuit interrupter (GFCI): 120-volt, 60 Hz.
- l. Waste disposal: 370 watt 1/2 hp, with switch and solenoid valve, 120-volt, 60 Hz.

2.2.3 Autopsy Table, L-Shape

L-shaped design, with enclosed storage areas and instrument drawer; stainless steel; 100 and 200 mm 4 and 8 inch body supports; rubber headrest; hydro-aspirator with built-in vacuum breaker and table rinse hose; 175 mm 7 inch diameter by 50 mm 2 inch deep pump with removable, perforated stainless steel strainer and basket with 13 mm 1/2 inch drain; 13 mm 1/2 inch hot and cold water mixing faucet with swinging gooseneck spout, wrist-operated handles and hot and cold water inlet control valves for aspirator. Include the following features:

- a. Stainless steel specimen instrument tray.
- b. 370 watt 1/2 hp waste disposer with switch, vacuum breaker, solenoid valve, and standpipe; 120-volt, 60 Hz.
- c. Hard rubber cutting board, 450 mm wide by 600 mm long by 25 mm 18 inches wide by 24 inches long by one inch thick.
- d. Perforated viscera basket.
- e. Graduated table edge in centimeters.
- f. Autopsy scale with 325 mm 13 inch dial.

2.2.4 Autopsy Table, Movable System With Sink

Autopsy system utilizing autopsy tables in conjunction with stationary service island equipped with operator work facilities; include enclosed storage areas and instrument drawer; stainless steel; 100 and 200 mm 4 and 8 inch body supports; rubber headrest; hydro-aspirator with built-in vacuum breaker and table rinse hose; 13 mm 1/2 inch hot and cold water mixing faucet with swinging gooseneck spout, wrist-operated handles and hot and cold water inlet control valves for aspirator. Include an autopsy table, nominal 2030 by 815 by 890 mm 80 by 32 by 35 inches high, and a service island, nominal 500 by 815 mm by 890 mm 19 5/8 by 32 by 35 inches high. Stationary service island shall include cabinet unit containing plumbing. Include the following features:

- a. Stainless steel specimen instrument tray.
- b. 370 watt 1/2 hp waste disposer with switch, vacuum breaker, solenoid valve, and standpipe; 120-volt, 60 Hz.
- c. Hard rubber cutting board, 450 mm wide by 600 mm long by 25 mm 18 inches wide by 24 inches long by one inch thick.

- d. Perforated viscera basket.
- e. Graduated table edge in centimeters.
- f. Autopsy table with 325 mm 13 inch dial.
- g. Irrigation hose connection controlled by thermostatic water-mixing valve.
- h. Duplex electrical outlet with GFCI.
- i. Sink, 290 by 500 by 275 mm 11 1/2 by 20 by 11 inches deep, equipped with faucet swing spout and wrist blades. Specimen basket shall hang inside sink. Removable swing drain to receive mobile table drainage.

2.2.5 Narcotic Cabinet, Safe Type

NOTE: Coordinate with fastening details for cabinet. If fastening has not been detailed, include components necessary for tamperproof fastening.

Carbon steel cabinet for storage of controlled substances, with overall dimensions approximately 600 mm high by 600 mm across face by 300 mm 24 inches high by 24 inches across face by 12 inches front to back. Include the following:

- a. Construction: Fabricate cabinet body of at least 1.8 mm thick 14 gage steel, with door and frame fabricated to produce maximum rigidity.
- b. Door: Fabricated of minimum 2.5 mm thick 12 gage steel. Recess exterior face of door in relation to front face of cabinet so that top and bottom of cabinet overhang hinge pin. Hang door on full length piano hinge, with leaves of hinges welded to door and frame and with hinge pin fixed to stationary leaf. Hinge door [on _____] side].
- c. Combination lock: UL 768, Group 2.
- d. Indicator light: Provide red warning light [on face of exterior cabinet] [as indicated] that illuminates when door is unlocked.

2.2.6 Clock, Elapsed Time, Electric

Electrically powered, round face, dial-type, suitable for use in operating rooms. Include the following features:

- a. Elapsed time interval displayed in hours, minutes, and seconds.
- b. Flush mounting.
- c. Instantaneous reset.
- d. Time display: 12 hours in Arabic numerals.

e. Finishes:

- (1) Case: [Aluminum] [Enameled metal].
- (2) Dial face: White.
- (3) Sweep second hand: Red.
- (4) Minute indicator numerals: Black.
- (5) Hour indicator numerals: Red.

NOTE: Height of control switch box for control shall be indicated on the drawings. In rooms where explosive anesthetics are anticipated, the bottom of this box shall be at least 1500 mm 60 inches above finished floor.

- f. Control panel, 150 mm 6 inches square, for installation in a double-gang switch box, completely wired and assembled, including the following:
- (1) Indicator light that illuminates when timer is on.
 - (2) Indicator light that illuminates when timer is in reset mode.
 - (3) Switch: Start/stop.
 - (4) Switch: Reset.

2.2.7 Dispenser, Brush, Arm and Foot

Provide wall-mounted unit, fabricated of 1.8 mm thick 14 gage stainless steel, with overall dimensions approximately 50 mm deep by 535 mm long by 110 mm 2 inches deep by 21 inches long by 4 3/8 inches wide. Include the following features:

- a. Dispenser, removable for sterilization.
- b. Arm operator fabricated from 1.5 mm thick 16 gage stainless steel with automatic spring return.
- c. Foot pedal operator, fabricated from 1.8 mm thick 14 gage stainless steel with spring-loaded return and 5 mm 3/16 inch thick nonslip bottom pad.
- d. Capacity, 12 to 14 brushes of industry standard make and size.

2.2.8 Dispenser, Soap, Foot Operated

Provide foot-operated, wall-mounted dispenser suitable for dispensing liquid surgical soap. Include the following features:

- a. Dispensing tube assembly, stainless steel, with drip-proof nozzle.
- b. Foot pedal pump with flexible air tubing.

c. Jar, removable, one-quart capacity, polyethylene.

2.2.9 Medicine Center, 1200 mm 48 Inches Wide

NOTE: Include these items for Air Force projects only.

Self-contained station for storing, preparing, and dispensing medicines; 525 mm 21 inch minimum to 600 mm 24 inch maximum width (front to back) by 1200 mm 48 inch length (across face) by 1800 mm 72 inch minimum to 2085 mm 82 inch maximum height. Front surface of station in one plane, allowing station to be recessed. Provide station completely assembled, with one service connection for each utility. Include the following features:

- a. Construction: Fabricate as an integral unit with exposed-to-view metal cabinet surfaces, both interior and exterior, of satin-finished or a minimum No. 3 polished finish stainless steel. Use heli-arc welding process with precautions taken to ensure noncorrosive condition. Grind smooth and polish exposed welds and edges to match finish, including inside cabinets. Provide countertop full width of cabinet with raised rim edge and integral sink. Provide removable access panel on back wall of utility compartment under sink for access to service connections. Assembly shall permit servicing from front without disassembling unit.
- b. Sink: Stainless steel, minimum 1.5 mm thick 16 gage, approximately 240 by 288 by 150 mm 9 1/2 by 11 1/2 by 6 inches deep, equipped with waste strainer and tailpiece.
- c. Faucet: Gooseneck with hot and cold water fittings with indexed cross handles or wrist blade handles.
- d. Illumination: Provide a recessed fluorescent lighting fixture with bulbs and translucent diffusing shield. Locate switch in splash area above countertop.
- e. Electrical outlet: Provide 120-volt, 60 Hz duplex electrical outlet with GFCI, located in splash area above countertop and accessible without reaching over sink.
- f. Storage Shelves: Provide stepped shelves directly over countertop.
- g. Door: Double-pan hinged door at storage cabinets.
- h. Drawers: Stainless steel construction, removable, with double-pan front for storage of syringe kits. Extends fully on ball bearings and slides; provide with key lock.
- i. Medicine card rack: 24-hour.
- j. Medicine cup dispenser and waste container: For disposable, one-ounce medicine cups. Provide opening for disposal of used paper cups into a removable waste container concealed in lower cabinets. Provide waste container.

- k. Narcotic cabinet: Locate in upper section of cabinet; provide with one pair of successive locking doors, each door requiring a separate key. Insertion of key in outer lock shall automatically light a red warning light located [on face of cabinet] [as indicated] that remains on until lock is secured and both keys are removed.
- l. Refrigerator: Insulated, self-defrosting biological type, with minimum 0.125 cubic meter 4.5 cubic foot capacity. Provide with three adjustable, moisture-proof shelves designed to allow air circulation. Door to include gaskets, latch, and key lock. Stainless steel interior surfaces.
- m. Security door: Provide a roll-type security door with lock to enclose medicine shelves.
- n. Trim: Provide stainless steel closure strips for recessed locations.
- o. Dust cap: Provide stainless steel sloping dust cap for each nonrecessed unit.
- p. Keys: Provide at least two keys for each lock on unit. Key units separately.
- q. Service characteristics:
 - (1) Hot and cold water supply: 13 mm 1/2 inch.
 - (2) Waste: 38 mm 1 1/2 inches.
 - (3) Electrical: 120-volt, 60 Hz.

[2.2.10 Item [____ - ____]

 NOTE: Insert identification number, name, and
 description with salient features for item not
 covered in this guide specification.

Unit shall be [____]. Include the following features:

- a. [____]
- b. [____]
- c. [____].

] PART 3 EXECUTION

3.1 INSTALLATION

Install items at locations indicated. Conform to installation provisions of Section 11700 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT. Provide final utility connections and utility service to equipment, including waste, under Sections 15050N BASIC MECHANICAL MATERIALS AND METHODS, 15400N PLUMBING SYSTEMS, 15217N MEDICAL GAS AND VACUUM PIPING, 16050N BASIC ELECTRICAL MATERIALS AND METHODS, and 16402 INTERIOR

DISTRIBUTION SYSTEM.

3.2 FIELD QUALITY CONTROL

3.2.1 Tests

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

3.2.2 Inspection

Examine each item for visual defects and conformance to specifications.

-- End of Section --