****

USACE / NAVFAC / AFCEC / NASA	**UFGS-11 70 00 (May 2020)**

Preparing Activity: NAVFAC	**Superseding**
	UFGS-11 70 00 (May 2011)
	UFGS-01 73 19 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021

****

SECTION TABLE OF CONTENTS

DIVISION 11 - EQUIPMENT

SECTION 11 70 00

GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT

05/20

PART 1 GENERAL

1.1 RELATED REQUIREMENTS
1.2 REFERENCES
1.3 LOGISTICAL CLASSIFICATION
1.4 SUBMITTALS
1.5 QUALITY ASSURANCE
1.5.1 Materials and Equipment
1.5.2 Alternative Service Record
1.5.3 Service Support
1.5.4 Manufacturer's Nameplate
1.5.5 Design Parameters
1.5.6 Contractor's Equipment Planner
1.5.7 Biomedical Equipment Technician
1.5.8 Buy American Act
1.6 STANDARDS COMPLIANCE
1.7 STANDARDS DEVIATIONS
1.8 SUBSTITUTIONS
1.9 PACKAGING, STORAGE AND PROTECTION
1.9.1 Packaging
1.9.2 Storage and Protection
1.10 WARRANTY

PART 2 PRODUCTS

2.1 MATERIALS
2.2 EQUIPMENT
2.2.1 Safety
2.2.2 Electrical Motors
2.3 COMPONENTS
2.3.1 Plumbing
2.3.2 Electrical

PART 3 EXECUTION

3.1 EXAMINATION
3.2 INSTALLATION
3.2.1 Mounting
3.2.2 Utility Connections
3.2.3 Dissimilar Metals Protection
3.3 FIELD INSPECTIONS
3.4 CLEANING AND ADJUSTING

-- End of Section Table of Contents --

****

USACE / NAVFAC / AFCEC / NASA	**UFGS-11 70 00 (May 2020)**

Preparing Activity: NAVFAC	**Superseding**
	UFGS-11 70 00 (May 2011)
	UFGS-01 73 19 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021

****

SECTION 11 70 00

GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT
05/20

****

NOTE: This guide specification covers the requirements for general requirements for medical and dental equipment and similar related specialties specified in Sections 11 71 00 STERILIZERS AND ASSOCIATED EQUIPMENT; 11 72 13 MEDICAL EQUIPMENT, MISCELLANEOUS; 11 74 00 DENTAL EQUIPMENT; 13 17 43 HYDROTHERAPY EQUIPMENT; and 13 21 48 PREFABRICATED AUDIOMETRIC ROOMS.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

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

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

****

****

NOTE: Specific product requirements are included in the technical Sections listed herein that make reference to this Section.

****

****

NOTE: On the drawings show:

1. Location of equipment

2. Installation layout, details, and space requirements.

****

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

This Section covers general requirements for medical and dental equipment specified in Sections [11 71 00 STERILIZERS AND ASSOCIATED EQUIPMENT;] [11 72 13 MEDICAL EQUIPMENT, MISCELLANEOUS;] [11 74 00 DENTAL EQUIPMENT;] [and] [13 17 43 HYDROTHERAPY EQUIPMENT;] [13 21 48 PREFABRICATED AUDIOMETRIC ROOMS;] [.]

[See Section 01 20 00 PRICE AND PAYMENT PROCEDURES for Government's procurement policy for all Category A medical and dental equipment.

]1.2 REFERENCES

****

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 Reference Identifier (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.

****

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.

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA MG 1 (2018) Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101 (2021) Life Safety Code

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1981 (2008) Seismic Restraint Manual Guidelines for Mechanical Systems, 3rd Edition

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

21 CFR 701 Cosmetic Labeling

UNDERWRITERS LABORATORIES (UL)

UL 674	(2011; Reprint Nov 2018) UL Standard for Safety Electric Motors and Generators for Use in Hazardous (Classified) Locations
UL 60601-1	(2003; Reprint Apr 2006) Medical Electrical Equipment, Part 1: General Requirements for Safety

1.3 LOGISTICAL CLASSIFICATION

****

NOTE: The logistical classification listed in this guide specification follows MIL-STD-1691, "Military Standard Construction and Material for Military Medical and Dental Equipment."

****

Methods of procurement are defined as follows:

a. Category A: Contractor furnished and Contractor installed.

b. Category B: Government furnished and Contractor installed.

c. Category C: Government furnished and Government installed.

Equipment designated Logistical Category ["B"] ["C"] will be Government provided. For equipment installed by the Government, the Contractor is required to make preparations for installation, as indicated.[See Section 01 11 00 SUMMARY OF WORK[, and drawings,] for list of Government provided equipment.]

1.4 SUBMITTALS

****

NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters 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.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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

****

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

Submittals are specified in Sections [11 71 00 STERILIZERS AND ASSOCIATED EQUIPMENT;] [11 72 13 MEDICAL EQUIPMENT, MISCELLANEOUS;] [11 74 00 DENTAL EQUIPMENT;] [and] [13 17 43 HYDROTHERAPY EQUIPMENT;] [13 21 48 PREFABRICATED AUDIOMETRIC ROOMS;] [.]

1.5 QUALITY ASSURANCE

1.5.1 Materials and Equipment

Provide standard products of a manufacturer regularly engaged in the manufacture of products which are of a similar material, design, and workmanship and are offered for sale on the commercial market through advertisements, manufacturer's catalogs, or sales brochures, and are in commercial or industrial use under similar circumstances and of similar size for 2 years prior to the bid opening.

1.5.2 Alternative Service Record

Products having less than a 2-year field service record will be acceptable if a certified record of the manufacturer's factory or laboratory tests demonstrating performance compliance is provided to the Contracting Officer.

1.5.3 Service Support

Provide equipment items supported by service organizations located near the equipment installation, and able to service the equipment on a regular basis and respond immediately on emergency calls throughout the warranty period.

1.5.4 Manufacturer's Nameplate

Provide each piece of equipment with the manufacturer's name, address, model number, and serial number utility ranges or capacities, including voltage and amperage rating if electrically powered on the nameplate, securely affixed in a conspicuous place. The name of only the distributing agent on the plate is not acceptable.

1.5.5 Design Parameters

Provide equipment meeting each of the following parameters specified in the cited Sections under RELATED REQUIREMENTS.

a. Size of equipment

b. Function of equipment

c. Standard and listed accessories

d. Equipment controls and performance of equipment

e. Construction of equipment.

[1.5.6 Contractor's Equipment Planner

Engage a full-time Equipment Planner. The Equipment Planner will be responsible to evaluate equipment specifications and requirements and to provide guidance on the proper installation and testing of equipment. The Equipment Planner must be present at the medical equipment Pre-Installation/Preparatory Conference with contractors, vendors, and installers and is responsible to provide written sign-off of medical equipment installations. The Equipment Planner must have a minimum of 5-years of experience with medical equipment planning and management.

][1.5.7 Biomedical Equipment Technician

[Engage a full-time Biomedical Equipment Technician.][The Government will provide a Biomedical Equipment Technician.] The Biomedical Equipment Technician must be present at the medical equipment Pre-Installation/Preparatory Conference with contractors, vendors, and installers and is responsible to provide written sign-off of medical equipment installations after thorough inspection.[The Biomedical Equipment Technician must have a minimum of 5-years of experience in Biomedical Equipment management.]

]1.5.8 Buy American Act

Provide "domestic end products" under the Buy America Act (i.e. end-product equipment is manufactured in the United States and, more than 50 percent of the cost of all the components of the equipment are manufactured in the United States).

1.6 STANDARDS COMPLIANCE

Submit the following, as applicable, as evidence of proof of conformance for materials or equipment specified to conform to the standards of organizations such as the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), ASME INTERNATIONAL (ASME), American Gas Association (AGA), Air Conditioning and Refrigeration Institute (ARI), and Underwriters Laboratories (UL).

a. If an organization uses a label or listing to indicate compliance with a particular standard, the label or listing will be acceptable evidence, unless otherwise specified in the individual sections.

b. In lieu of the label or listing, submit a certificate from an

independent testing organization which is competent to perform acceptable testing and is approved by the Contracting Officer. The certificate includes statement that the item has been tested in accordance with the specified organization's test methods and that the item conforms to the specified organization's standard.

c. For materials and equipment whose compliance with organizational standards or specifications is not regulated by an organization using its own listing or label as proof of compliance, submit a certificate of compliance from the manufacturer for approval, identifying the manufacturer, product, and referenced standard and certification stating that the product conforms to the requirements of the project specification and the referenced standards listed.

1.7 STANDARDS DEVIATIONS

Submit for approval a record of deviations from the following standards established for the specified product, before ordering equipment.

a. Size of equipment

b. Function of equipment

c. Standard and listed accessories

d. Equipment controls and performance of equipment

e. Construction of equipment.

1.8 SUBSTITUTIONS

Submit before ordering equipment.

a. Size: Layouts are based on the unit specified. If the size of a substituted unit differs from the item specified and is accepted, submit to the Contracting Officer for approval a revised layout, design calculations, drawings, and specifications for changes in the building to accommodate the substituted equipment.

b. Function: Additional functions and accessories of substituted equipment will not be considered as an improvement over the unit specified. If such functions are standard equipment of a substituted item but the function is not desired by the Government, then it is the Government's discretion to either have the Contractor completely remove that function from the unit, if the unit is otherwise acceptable, or allow the Contractor to retain that function on the unit under the following conditions:

(1) The additional function is fully operational and its performance complies with the terms and conditions of this specification, including product quality and warranty;

(2) The additional function does not eliminate or modify those functions required by the Government on the specified unit. Refinement in control or accessibility of the substituted unit will be considered an improvement over the specified unit.

c. Appearance: Only the following aesthetic qualities of design will be considered an improvement:

(1) Uniformity of finish

(2) Variety of finish selections

(3) Compatibility with substituted item.

1.9 PACKAGING, STORAGE AND PROTECTION

1.9.1 Packaging

Package each piece of equipment to ensure protection from damage during shipment and delivery. Legibly indicate on the exterior of each container or crate, the shipping address and a brief description of its contents. Outside of the container, fasten a waterproof envelope containing a packing list and complete instructions for uncrating and setting the equipment in place.

1.9.2 Storage and Protection

During storage and until completion and acceptance by the Contracting Officer, protect materials and equipment from damage. Before acceptance by the Contracting Officer, remove all protective coverings, thoroughly clean the inner and outer surfaces, and ensure that the equipment is free from defects.

1.10 WARRANTY

Equipment manufacturer agrees to repair or replace equipment or components that fail in materials or workmanship within specified warranty period.

a. Warranty Period: [One] [_____] year[s] from date of final acceptance of the work.

[b. Other Warranty Periods: As specified in Section[s] [11 71 00 STERILIZERS AND ASSOCIATED EQUIPMENT;] [11 72 13 MEDICAL EQUIPMENT, MISCELLANEOUS;] [11 74 00 DENTAL EQUIPMENT;] [and] [13 17 43 HYDROTHERAPY EQUIPMENT;] [13 21 48 PREFABRICATED AUDIOMETRIC ROOMS;] [.]

]PART 2 PRODUCTS

2.1 MATERIALS

Provide materials of the same quality used for the intended purpose in commercial practice, unless otherwise specified or indicated on drawings. Provide new equipment and materials incorporated in the work.

2.2 EQUIPMENT

2.2.1 Safety

Provide medical and dental equipment meeting the requirements of OSHA 21 CFR 701, NFPA 101, and UL 60601-1. In lieu of UL approval, consideration will be given to certified test reports from an approved laboratory meeting UL 60601-1 requirements.

2.2.2 Electrical Motors

****
NOTE: Conform to UL 674 if motors and generators are used in hazardous locations.
****

Provide motors of sufficient size for the duty to be performed and not exceeding the nameplate rating when driven equipment is operating at specified capacity under the most severe conditions. Provide fractional horsepower motors conforming to [NEMA MG 1] [UL 674].

2.3 COMPONENTS

2.3.1 Plumbing

Provide components, such as piping, valves, and controls, conforming to the requirements specified in Section [22 00 00 PLUMBING GENERAL PURPOSE.] [22 00 70 PLUMBING, HEALTHCARE FACILITIES.]

2.3.2 Electrical

Provide components of equipment and systems, such as motors, starters, and controls as specified for complete operable systems. Extended voltage-range motors are prohibited. Provide interconnecting wiring for components of packaged equipment as an integral part of the equipment. Provide interconnecting power wiring and conduit for field-erected equipment and control wiring and conduit as specified in Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM. Provide motor control equipment forming part of the motor control centers or switchgear assemblies, and the necessary conduit and wiring connecting such assemblies, centers, or other power sources to the equipment as specified in Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

PART 3 EXECUTION

3.1 EXAMINATION

Before laying out the equipment, inspect the site of work. Report to the Contracting Officer damage to the building, including piping and wiring systems related to and affecting the installation of the equipment.

3.2 INSTALLATION

Set and connect the equipment plumb and level in accordance with the manufacturer's written instructions. Attach items and accessories as indicated and as required. Make connections between equipment and other work in a neat manner, and install the equipment so as not to damage other work.

3.2.1 Mounting

Provide equipment supports as required to suit conditions in accordance with equipment manufacturer's written instructions.[Mount the equipment according to SMACNA 1981 seismic restraints guidelines. See also requirements specified in Section 13 48 73 SEISMIC CONTROL FOR MECHANICAL EQUIPMENT.]

3.2.2 Utility Connections

Provide final utility connections and service to equipment, including waste, under Section[s] [23 03 00.00 20 BASIC MECHANICAL MATERIALS AND METHODS[.][;]] [22 00 00 PLUMBING, GENERAL PURPOSE[.][;]] [22 00 70 PLUMBING, HEALTHCARE FACILITIES[.][;]] [22 60 70 GAS AND VACUUM SYSTEMS FOR HEALTHCARE FACILITIES[.][;]] [and] [26 20 00 INTERIOR DISTRIBUTION SYSTEM.]

3.2.3 Dissimilar Metals Protection

Make provisions to prevent electrolysis where dissimilar metal parts are welded or otherwise fastened together.

3.3 FIELD INSPECTIONS

Notify the Contracting Officer [and Contractor's Equipment Planner] [and] [the Contractor's Biomedical Equipment Technician,] [the Government's Biomedical Equipment Technician,] 5 days before the scheduled inspection. Perform acceptance inspection of the finished work with the Contracting Officer to examine each item to ensure that the equipment is operational.

3.4 CLEANING AND ADJUSTING

Clean and adjust equipment. Lubricate moving parts, as required, and test the equipment in accordance with the manufacturer's written instructions. Clean the medical equipment, both inside and outside. Ensure that equipment is free from construction related defects.

-- End of Section --