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USACE / NAVFAC / AFCEA / NASA            UFGS-11 31 13 (April 2006)  
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Preparing Activity:    NAVFAC            Replacing without change  
   UFGS-11401 (August 2004)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 9 October 2006

Latest change indicated by CHG tags

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### SECTION 11 31 13

#### ELECTRIC KITCHEN EQUIPMENT 04/06

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NOTE: This guide specification covers the requirements for electric kitchen equipment for family housings, child care centers, and other similar facilities.

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.

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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.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2005) National Electrical Code
NFPA 96	(2001) Ventilation Control and Fire Protection of Commercial Cooking Operations

NSF INTERNATIONAL (NSF)

NSF 2	(2002e) Food Equipment
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UNDERWRITERS LABORATORIES (UL)

UL 1086	(2005) Household Trash Compactors
UL 197	(2003) Commercial Electric Cooking Appliances
UL 250	(1993; Rev thru Aug 2000) Household Refrigerators and Freezers
UL 430	(2004) Waste Disposers
UL 710	(1995; Rev thru Apr 1999) Exhaust Hoods for Commercial Cooking Equipment
UL 749	(1997; Rev thru Mar 2003) Household Dishwashers
UL 858	(2005) Household Electric Ranges
UL 921	(2006) Commercial Electric Dishwashers
UL 923	(2002; Rev thru Jan 2003) Microwave Cooking Appliances

1.2 RELATED REQUIREMENTS

Section 23 03 00.00 20 BASIC MECHANICAL MATERIALS AND METHODS, applies to  
this section, with additions and modifications specified herein.

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-03 Product Data

Kitchen equipment

SD-08 Manufacturer's Instructions

Kitchen equipment

Exhaust hood

SD-10 Operation and Maintenance Data

Kitchen equipment, Data Package 2[; G][; G, [\_\_\_\_]]

Submit in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

## PART 2 PRODUCTS

### 2.1 KITCHEN EQUIPMENT

#### 2.1.1 Materials

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NOTE: In drawings, include information on  
quantities, physical dimensions, colors, and  
electrical characteristics of kitchen equipment.  
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Except as modified herein, provide manufacturer's standard materials for kitchen equipment. Provide quantities, physical dimensions, colors, and electrical characteristics as indicated.

#### 2.1.2 Cooking Top

[UL 197] [UL 858], spill catching, seamless, with [cast-iron] [or] [tubular plug-in] surface elements. Provide indicating "on" lights.

#### 2.1.3 Freezer

UL 250, minimum [0.28] [ ] cubic meter [10] [ ] cubic feet, [chest model with manual defrost,] [moisture-proof upright model with [left] [right] [reversible] swing door,] foam or fiberglass insulation, adjustable temperature control to maintain minus 18 degrees C zero degree storage conditions, [[sliding] removable storage basket, and vertical dividers] [minimum three package door shelves, minimum five full width removable interior shelves, and sliding bottom basket for odd shaped and bulky items, and adjustable leg levelers]. Provide safety indicating light for power failure or temperature fluctuation, magnetic door gasket, and lock with pop-out key. For freezer capacity larger than 0.42 cubic meters 15 cubic feet, provide interior light.

#### 2.1.4 Refrigerator

UL 250, refrigerator with frostproof [top] [side by side] freezer, minimum [0.41] [ ] cubic meter [14.6] [ ] cubic feet, automatic defrosting, two vegetable bottom baskets, four adjustable shelves, two door shelves and minimum 12 egg container in the door, separate interior shelves, multiple door shelves, and two ice trays. [For refrigerator with top freezer, provide reversible (left swing and right swing interchangeable) doors.] Provide four fixed rollers or adjustable leg levelers.

#### 2.1.5 Ice Maker

UL listed and NSF approved; self-contained, air-cooled model, minimum ice cube production of [160] [ ] kilograms [355] [ ] pounds per 24 hours, and minimum bin storage capacity of [80] [ ] kilograms [180] [ ] pounds of ice cubes. Provide stainless steel cabinet panels, solid state automatic thickness controls, built-in self-analyzing integrated circuits, removable access panels, and bin of polyethylene foam or equivalent noncorrosive construction.

#### 2.1.6 Griddle

UL 197 and NSF 2, built-in countertop model with [seven] [ ] kilowatt rating. Provide removable grease tray and adjustable thermostatic

controller. Provide minimum capacities of [260 pancakes (griddle cakes) or 420 hamburgers 0.01 kg or 90 mm diameter 4 ounces or 3 1/2 inches diameter per hour] [\_\_\_\_\_].

#### 2.1.1.7 Hot Plate

NSF 2, built-in countertop model with [two] [\_\_\_\_\_] electrical heating elements and [5] [\_\_\_\_\_] total kilowatt rating. Provide adjustable thermostatic controllers.

#### 2.1.1.8 Microwave Oven

UL 923, [built-in], with black glass window door, minimum 28 liter one cubic foot capacity, automatic oven light, browning element, 10 power levels, automatic temperature controllers, minimum two automatic memory levels, digital time controllers, and electronic touch-control panel.

#### 2.1.1.9 Oven

UL 858, self-cleaning, [[built-in] [and] [under counter]] [countertop]. Equip oven with black glass window door, safety door lock during self-cleaning cycle, broiler pan, self-locking oven racks, digital clock with one-hour timer, automatic oven light, oven "on" light, oven cycling light and tempered glass control panel.

#### 2.1.1.10 Trash Compactor

UL 1086, under counter model with storage compartment and [76 liter] [20 gallon] [\_\_\_\_\_] trash disposable bag, reversible front panel, odor control, minimum 900 kilograms 2,000 pound ram force delivering constant and balancing pressure, and safety start lock with removable key knob guard.

#### 2.1.1.11 Tray and Silver Dispenser

NSF 2, factory assembled, under counter model with welded steel channel frame, polished stainless steel enclosure, removable access panel on three sides, and minimum 100 mm 4 inch diameter chrome plated and rubber tired swivel casters. Provide manufacturer's standard dispenser mechanism to maintain the dispensing height at a constant level with stainless steel carriers. Provide storage capacity for [350] [\_\_\_\_\_] trays, and [10] [\_\_\_\_\_] cylinders with [35 to 40] [[\_\_\_\_\_] to [\_\_\_\_\_]] pieces of silverware per cylinder.

#### 2.1.1.12 Food Cabinet Cart

NSF 2, factory assembled, aluminum construction under counter model with 270 degree swing door, door latch, minimum 100 mm 4 inch swivel casters, and angle ledge pan supports. Provide storage capacity for [seven 450 by 660 mm 18 by 26 inch] [\_\_\_\_\_] pans.

#### 2.1.1.13 Kitchen Exhaust Hood

NFPA 96 and NSF 2, factory fabricated, [island] [wall-mounted] model of minimum 1.2 mm thick 18 gage stainless steel construction, with replaceable grease filters.

##### 2.1.13.1 Hood Construction

Welded joints and seams, grounded and polished to match adjacent exterior

surfaces. Provide stainless steel duct collars and risers.

#### 2.1.13.2 Grease Gutter

1.2 mm thick 18 gage stainless steel gutter down center of hood and directly below filter frame sloping to drain outlet.

#### 2.1.13.3 Accessories

Provide filter frame, minimum [405 by 510 by 50 mm] [16 by 20 by 2 inches] [\_\_\_\_\_] stainless steel grease extractor, hanger rods, vaporproof light fixtures, and wiring in conduit between light fixtures.

#### 2.1.13.4 Exhaust Fan

UL 710; centrifugal fan with maximum kitchen sound pressure level 45 dB. [Provide factory fabricated [adjustable] roof curbs.]

#### 2.1.14 RANGE HOOD

UL 858, [vented] [nonvented], with two-speed fan, permanent washable filter, [top] [or] [rear] exhaust, and eye level controls.

#### 2.1.15 KITCHEN UNIT

NSF 2, UL 250, and UL 858 consisting of refrigerator, range [and oven], wall cabinets, and sink and countertop.

##### 2.1.15.1 Refrigerator

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NOTE: Automatic defrost feature is available for  
refrigerators as small as 0.14 cubic meter 5 cubic  
feet net capacity. Recommend a minimum net capacity  
of 0.14 cubic meter 5 cubic feet.  
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Refrigerator assembly with freezer, corrosion-resistant inner lining, and minimum net capacity of [\_\_\_\_\_]. Provide minimum one ice cube tray, removable shelves, automatic interior light, adjustable cold controls, and [automatic] [manual (pushbutton)] defrost.

##### 2.1.15.2 Range [and Oven]

[Three] [or] [four] [cast-iron] [or] [tubular plug-in] surface elements of minimum 4,500 total watts at [208] [230] volts, infinite control switches, and range indicating "on" lights. [Equip oven with one minimum 2,000-watt tubular broil element and one minimum 700-watt tubular bake element, oven indicating light, automatic oven-heat control, and utensil drawer.]

##### 2.1.15.3 Sink and Countertop

One-piece, seamless, minimum 0.9 mm thick 20 gage stainless steel sink and countertop. Provide drainboard, swing spout faucet with aerator, 90 mm 3 1/2 inch drain, and continuous feed garbage disposer with minimum 1.2 liter 1 1/4 quart capacity conforming to paragraph entitled "Garbage Disposal" in this section. Provide storage cabinet with cutlery tray or drawer.

#### 2.1.15.4 Wall Cabinets

Double wall minimum 0.8 mm thick 22 gage [stainless steel] [or] [cold rolled] cabinets with chrome plated handles, self-aligning friction hatches, and concealed hinges for 180 degree opening. Furnish wall bracket hangers for flush to wall mounting. Provide manufacturer's standard heat deflector [and range hood].

#### 2.1.16 FREE-STANDING DOUBLE-OVEN RANGE

UL 858, a combination of cooking top range, microwave oven, and oven. Comply with paragraphs entitled "Cooking Top," "Microwave Oven," and "Oven" in this section.

#### 2.1.17 DISHWASHER

[UL 921] [UL 749], with detergent dispenser. Provide automatic control to cycle machine through wash, rinse, dry or heat, and stop phases. Include manual setting to repeat or skip phases of cycle. Equip machine with safety switch which automatically stops spraying action when door is open. [For heavy duty dishwasher, provide stainless-steel commercial grade with approximately [300] [\_\_\_\_\_] -dish capacity per hour and [540] [\_\_\_\_\_] -glasses per hour ratings.] [For medium duty dishwasher, provide household grade, with minimum 500-watt input for drying dishes.]

#### 2.1.18 INSTANTANEOUS BOOSTER WATER HEATER

UL listed and self-contained. Provide integral automatic thermostat set for 82 degrees C 180 degrees F.

#### 2.1.19 HOUSEHOLD GARBAGE DISPOSAL

UL 430, stainless steel [continuous feed model, [245] [375] watt [1/3] [1/2] hp motor, and stainless steel grinding element with two 360 degree stainless steel swivel impellers.] [batch feed model, lock cover, minimum 1.9 liter 2 quart capacity, 375 watt 1/2 hp motor, and automatic switch.] Provide polyethylene or polyester drain flow chamber. Equip motor with manual reset, thermal overload protection, and sound insulation.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

NFPA 70, Section 22 00 00 PLUMBING SYSTEMS, and Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM. Install kitchen equipment in accordance with manufacturers' instructions.

#### 3.2 FIELD QUALITY CONTROL

Conduct inspection and testing in the presence of the Contracting Officer.

##### 3.2.1 Field Inspection

Before and after installation, inspect each piece of kitchen equipment for compliance with specified requirements.

##### 3.2.2 Operation Tests

Upon completion, but before final acceptance, perform operation tests on

each piece of equipment to determine that components, including controls, safety devices, and attachments, operate properly and in accordance with specified requirements.

-- End of Section --