UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated January 2021
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SECTION 11 31 13

ELECTRIC KITCHEN EQUIPMENT
08/17, CHG 1: 08/18

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

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).
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NOTE: The following information must be shown on the project drawings: Design kitchen systems for energy efficiency in compliance with FEMP/Energy Star requirements. Appliances and equipment are listed under "Energy-Efficient Products" at http://www1.eere.energy.gov/femp/procurement.
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PART 1 GENERAL

1.1 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.

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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	(2020; ERTA 20-1 2020; ERTA 20-2 2020; TIA 20-1; TIA 20-2; TIA 20-3; TIA 20-4) National Electrical Code
NFPA 96	(2021) Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations

NSF INTERNATIONAL (NSF)

NSF/ANSI 2	(2019) Food Equipment

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star	(1992; R 2006) Energy Star Energy Efficiency Labeling System (FEMP)

UNDERWRITERS LABORATORIES (UL)

UL 197	(2010; Reprint Jul 2020) UL Standard for Safety Commercial Electric Cooking Appliances
UL 250	(1993; Reprint Feb 2013) Household Refrigerators and Freezers
UL 430	(2015; Reprint Feb 2018) UL Standard for Safety Waste Disposers
UL 710	(2012; Reprint Mar 2017) UL Standard for Safety Exhaust Hoods for Commercial Cooking Equipment
UL 749	(2018) UL Standard for Safety Household Dishwashers

UL 858	(2014; Reprint Sep 2019) UL Standard for Safety Household Electric Ranges
UL 921	(2020) UL Standard for Safety Commercial Dishwashers
UL 923	(2013; Reprint Aug 2020) UL Standard for Safety Microwave Cooking Appliances
UL 1086	(2016) UL Standard for Safety Household Trash Compactors

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

****

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.

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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:

SD-03 Product Data

Kitchen Equipment

Energy Star Label for Freezer; S

Energy Star Label for Refrigerator; S

Energy Star Label for Ice Maker; S

Energy Star Label for Dishwasher; S

SD-08 Manufacturer's Instructions

Kitchen Equipment

Exhaust Hood

SD-10 Operation and Maintenance Data

Kitchen Equipment, Data Package 2; G[, [_____]]

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

SD-11 Closeout Submittals

Manufacturer's Warranty

Contractor's Warranty for Installation

PART 2 PRODUCTS

2.1 KITCHEN EQUIPMENT

2.1.1 Materials

****
NOTE: In drawings, include information on quantities, physical dimensions, colors, and electrical characteristics of kitchen equipment.
****

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 degrees 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. Provide freezer that is Energy Star labeled. Provide data identifying Energy Star label for freezer.

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. Provide refrigerator that is Energy Star labeled. Provide data identifying Energy Star label for refrigerator.[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 ice maker that is Energy Star labeled. Provide data identifying Energy Star label for ice maker. 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 Hot Plate

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

2.1.7 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.

2.1.8 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.

2.1.9 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 pounds ram force delivering constant and balancing pressure, and safety start lock with removable key knob guard.

2.1.10 Tray and Silver Dispenser

NSF/ANSI 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.

2.1.11 Food Cabinet Cart

NSF/ANSI 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.

2.1.12 Kitchen Exhaust Hood

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

2.1.12.1 Hood Construction

Welded joints and seams, grounded and polished to match adjacent exterior surfaces. Provide stainless steel duct collars and risers.

2.1.12.2 Grease Gutter

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

2.1.12.3 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.

2.1.12.4 Exhaust Fan

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

2.1.13 Range Hood

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

2.1.14 Kitchen Unit

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

2.1.14.1 Compact [or Undercounter] 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.
****

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.

2.1.14.2 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.]

2.1.14.3 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 HOUSEHOLD GARBAGE DISPOSAL in this section. Provide storage cabinet with cutlery tray or drawer.

2.1.14.4 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].

2.1.15 Free-Standing Double-Oven Range

UL 858, a combination of cooking top range, microwave oven, and oven. Comply with paragraphs COOKING TOP, MICROWAVE OVEN, and OVEN in this section.

2.1.16 Dishwasher

[UL 921][UL 749], with detergent dispenser. Provide dishwasher that is Energy Star labeled. Provide data identifying Energy Star label for dishwasher. 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.]

2.1.17 Instantaneous Booster Water Heater

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

2.1.18 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

Do not install items that show visual evidence of biological growth.

NFPA 70, Section 22 00 00 PLUMBING, GENERAL PURPOSE 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.

3.3 MANUFACTURER'S WARRANTY

Submit all manufacturers' signed warranties to Contracting Officer prior to final commissioning and acceptance.

3.4 CONTRACTOR'S WARRANTY FOR INSTALLATION

Submit contractor's warranty for installation to the Contracting Officer prior to final commissioning and acceptance.

-- End of Section --