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SECTION 224700 - DRINKING FOUNTAINS AND WATER COOLERS

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Bottle filling stations.

* + - 1. ACTION SUBMITTALS

Action submittals are submittals requiring responsive action and return of reviewed documents to Contractor.

* + - * 1. Product Data:

For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

Include operating characteristics, and furnished specialties and accessories.

Retain "Shop Drawings" Paragraph below if required for Project.

* + - * 1. Shop Drawings:

Include plans, elevations, sections, and [**mounting**] [**attachment**] details.

Include details of fixture assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

Include diagrams for power wiring.

Retain "Delegated Design Submittals" Paragraph below if design services have been delegated to Contractor. If seismic restraints are not applicable, signing and sealing by professional engineer may not be required. Verify with authorities having jurisdiction.

* + - * 1. Delegated Design Submittals: For vibration isolation[ **and supports,**] [**, and seismic restraints**] indicated to comply with performance requirements and design criteria, including analysis data [**signed and sealed by the qualified professional engineer responsible for their preparation**].
      1. INFORMATIONAL SUBMITTALS

Informational submittals are submittals that require review by Architect, but they do not require Architect's responsive action and return of reviewed documents to Contractor, provided submittals comply with requirements. If rejected, submittals with responsive action must be returned to Contractor.

Retain "Seismic Qualification Certificates" Paragraph below if Project includes remote water coolers installed in locations where a seismic event could cause displacement, such as coolers suspended above a ceiling.

Retain "Seismic Qualification Certificates" Paragraph below if required by seismic criteria applicable to Project. Coordinate with Section 220584 "Vibration and Seismic Controls for Plumbing Piping and Equipment." See ASCE/SEI 7 for certification requirements for equipment and components.

* + - * 1. Seismic Qualification Certificates: For remote water coolers, accessories, and components, from manufacturer.

Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

* + - 1. CLOSEOUT SUBMITTALS
         1. Operation and Maintenance Data: For [**drinking fountains,**] [**water coolers,**] [**bottle filling stations,**] [**and**] [**remote water coolers**] to include in maintenance manuals.

Retain subparagraph below if automatic, electronic-sensor fixtures are required for the Project.

In addition to items specified in Section 017823 "Operation and Maintenance Data," include servicing and adjustment of electronic-sensor fixtures.

* + - 1. MAINTENANCE MATERIAL SUBMITTALS

See Section 017700 "Closeout Procedures" for submission of maintenance material items.

* + - * 1. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Filter Cartridges: Equal to <**Insert number**> percent of quantity installed for each type and size indicated, but no fewer than <**Insert number**> of each.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Comply with manufacturer's written instructions for delivery, storage, and handling.
      2. WARRANTY

When warranties are required and available, verify with Owner's counsel that special warranties stated in this article are not less than remedies available to Owner under prevailing local laws.

* + - * 1. Manufacturer Warranty: [**Manufacturer agrees**] [**Installer agrees**] [**Manufacturer and Installer agree**] to repair or replace [**drinking fountains**] [**water coolers**] [**bottle filling stations**] [**remote water coolers**] that fail in materials or workmanship within specified warranty period.

Failures include, but are not limited to, the following:

Faulty operation of <**Insert type of failure**>.

Deterioration of metals, metal finishes, and other materials beyond normal [**weathering**] [**use**].

Verify warranty periods for drinking fountains, water coolers, bottle filling stations, and remote water coolers.

* + - * 1. Warranty Period: [**One**] <**number**> year(s) from date of Substantial Completion.

1. PRODUCTS
   * + 1. PERFORMANCE REQUIREMENTS
          1. Standards:

The U.S. Safe Drinking Water Act (SDWA) has required national compliance with less than or equal to 0.25 percent weighted average lead content at wetted surfaces for pipe, fittings, and devices intended to convey or dispense water for human consumption since January 2014. The IPC and UPC have the same requirements. Items in compliance with NSF 61 and NSF 372 also comply with this requirement. Some manufacturers choose to meet this requirement through independent testing and have "Certified Lead-Free" products, which may or may not have NSF 61 or NSF 372 certifications.

Drinking fountains, water coolers, bottle filling stations, and remote water coolers intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), requirements of the authority having jurisdiction, and with NSF 61 or NSF 372, or be certified in compliance with NSF 61 or NSF 372 by an ANSI-accredited third-party certification body, that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

* + - * 1. Delegated Design:

In first subparagraph below, if seismic restraints are not applicable on the Project, the option to engage a professional engineer may not be required. Verify with authorities having jurisdiction.

[**Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to**] design vibration isolation[**, supports,**] [**and seismic restraints**], including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

Retain subparagraph below if Contractor is required to assume responsibility for design.

[**Product manufacturer's qualified staff**] [**Qualified professional engineer employed by the product manufacturer**] to select and size products to achieve specified performance requirements.

Retain "Seismic Performance" Paragraph below with "Seismic Qualification Certificates" Paragraph in "Informational Submittals" Article for projects requiring seismic design. Delete paragraph below if performance requirements are indicated on Drawings. Model building codes and ASCE/SEI 7 establish criteria for buildings subject to earthquake motions. Coordinate requirements with structural engineer.

* + - * 1. Seismic Performance: Remote water coolers are to withstand the effects of earthquake motions determined in accordance with [**ASCE/SEI 7**] <**Insert requirement**>. See [**Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment"**] <**Insert Section**>.

Retain first subparagraph below to define the term "withstand" as it applies to this Project. Definition varies with type of building and occupancy and is critical to valid certification. Option is used for essential facilities where equipment must operate immediately after an earthquake.

The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified[ **and the unit will be fully operational after the seismic event**]."

For life-safety components required to function after an earthquake (such as fire-sprinkler systems, components that contain hazardous content, system components serving critical healthcare functions, and storage racks in structures open to the public), the Component Importance Factor is 1.5. For other components, the Component Importance Factor is 1.0 unless the structure is in Seismic Use Group III and component is necessary for continued operation of facility or failure of component could impair continued operation of facility, in which case the Component Importance Factor is 1.5.

Component Importance Factor: [**1.5**] [**1.0**].

See ASCE/SEI 7, Coefficients for Architectural Component Table and Seismic Coefficients for Mechanical and Electrical Components Table, for requirements to be inserted in subparagraph below.

<**Insert requirements for Component Amplification Factor and Component Response Modification Factor**>.

* + - 1. BOTTLE FILLING STATIONS

Copy "Bottle Filling Station - Recessed, Wall Mounted, Stainless Steel" Paragraph below and re-edit for each type of bottle filling station required. Wall-mounted, recessed, bottle filling stations may be used for interior/exterior applications. Projects requiring exterior filling stations may require the product to be freeze resistant.

Insert drawing designation. Use these designations on Drawings to identify each bottle filling station.

* + - * 1. Bottle Filling Station - Recessed, Wall Mounted, Stainless Steel :

Retain "Basis-of-Design Product" Subparagraph and list of manufacturers below to identify a specific product or a comparable product from manufacturers listed.

Basis-of-Design Product: Subject to compliance with requirements, provide **Elkay; Elkay ezH2O In-Wall Bottle Filling Station with Mounting Frame, Filtered** or comparable product by one of the following:

<**Insert manufacturer's name**>

Source Limitations: Obtain recessed, wall-mounted, stainless steel, bottle filling stations from single source from single manufacturer.

Standards:

NSF 61.

NSF 372.

ASME A112.19.3/CSA B45.4.

Type: [**Vandal resistant**] [**and**] [**freeze resistant**].

Cabinet: Stainless steel.

Bottle Filler: **[Sensor]** activation **[20-second]** **[automatic shutoff timer]**. Fill rate is 0.5 to 1.5 gpm.

Drain: Grid type with NPS 1-1/4 tailpiece.

Supply: NPS 3/8 with shutoff valve.

Waste Fitting: ASME A112.18.2/CSA B125.2, NPS 1-1/4 brass P-trap.

Retain "Cooling System," "Ventilation Grille," and "Cooling System Capacities and Characteristics" subparagraphs below only if required.

Cooling System: Electric, with [**precooler,** ]hermetically sealed compressor, cooling coil, air-cooled condensing unit, corrosion-resistant tubing, refrigerant, corrosion-resistant-metal storage tank, and adjustable thermostat.

Standards:

ASHRAE 18.

UL 399.

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Ventilation Grille: Stainless steel, located [**above**] [**below**] bottle filler.

Cooling System Capacities and Characteristics:

Cooled Water: [**8 gph**] [**12 gph**] <**Insert value**>.

Ambient-Air Temperature: 90 deg F.

Inlet-Water Temperature: 80 deg F

Cooled-Water Temperature: 50 deg F.

Cooled-Water Storage: <**Insert value**>.

Electrical Characteristics:

Motor Horsepower: [**1/6**] [**1/5**] <**Insert value**>.

Volts: 120 V ac.

Phase: Single.

Hertz: 60 Hz.

Full-Load Amperes: <**Insert value**> A.

Minimum Circuit Ampacity: <**Insert value**> A.

Maximum Overcurrent Protection: <**Insert value**> A.

Retain "Filter" Subparagraph below only if required.

Filter: One or more water filters with capacity sized for unit peak flow rate.

Standards:

NSF 42.

NSF 53.

Support: Provide manufacturer's frame attached to substrate.

Bottle Filling Station Mounting Height: **[Standard]** **[Accessible in accordance with ICC A117.1]**.

Retain "Electrical Characteristics" Subparagraph below only if retaining "Sensor" option in "Bottle Filler" Subparagraph above. Manual units do not have electrical requirements. Coordinate with electrical engineer to have receptacle placed below unit.

Electrical Characteristics:

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Volts: 120 V ac.

Phase: Single.

Hertz: 60 Hz.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine roughing-in for water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before fixture installation.
          2. Examine walls and floors for suitable conditions where fixtures will be installed.
          3. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. INSTALLATION
          1. Install fixtures level and plumb in accordance with roughing-in drawings. For fixtures indicated for juveniles, install at height required by authorities having jurisdiction.
          2. Set pedestal drinking fountains and bottle filling stations on flat surface in accordance with manufacturer's written installation instructions.
          3. Set freestanding water coolers on floor.
          4. Install recessed drinking fountains and bottle filling stations secured to wood blocking in wall construction.
          5. Install off-the-floor carrier supports, affixed to building substrate, for wall-mounted fixtures.
          6. Install mounting frames, affixed to building construction, and attach recessed water coolers and bottle filling stations to mounting frames.
          7. Set remote water coolers on floor unless otherwise indicated.

Retain one of two subparagraphs below. Retain first subparagraph for projects in seismic areas; retain second for projects not in seismic areas. Indicate vibration isolation and seismic-control type and minimum deflection in supported equipment schedule on Drawings.

Comply with requirements for vibration isolation and seismic-control devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."

Comply with requirements for vibration isolation devices specified in Section 220548.13 "Vibration Controls for Plumbing Piping and Equipment."

* + - * 1. Install water-supply piping with shutoff valve on supply to each fixture to be connected to domestic-water distribution piping. Use ball[ **or gate**] valve. Install valves in locations where they can be easily reached for operation. Valves are specified in Section 220523 "General-Duty Valves for Plumbing Piping."
        2. Install trap and waste piping on drain outlet of each fixture to be connected to sanitary drainage system.
        3. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons where required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220500 "Common Work Results for Plumbing."
        4. Seal joints between fixtures and walls using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."
      1. PIPING CONNECTIONS

Coordinate piping installations and specialty arrangements with Drawings and with requirements specified in piping systems. If Drawings are explicit enough, these requirements may be reduced or omitted.

* + - * 1. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
        2. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
        3. Install ball[ **or gate**] shutoff valve on water supply to each fixture. [**Install ball or gate valves with valved bypass on water connections to remote water coolers**]. [ **Install valve upstream from filter for drinking fountain, water cooler, and bottle filling station.**] Comply with valve requirements specified in Section 220523 "General-Duty Valves for Plumbing Piping."
        4. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
      1. ELECTRICAL CONNECTIONS

Retain this article if sensor/hands-free drinking fountains, water coolers, or bottle filling stations are required. Article is not required if sensor/hands-free feature is battery powered.

* + - * 1. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
        2. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
        3. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.
        4. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

Retain one of two subparagraphs below. First subparagraph cross-references Section 260553 "Identification for Electrical Systems" and should be retained for consistent electrical identification. Second subparagraph is an abbreviated version of the product specified in Section 260553 "Identification for Electrical Systems."

Nameplates to be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."

Nameplates to be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inch high.

* + - 1. ADJUSTING
         1. Adjust fixture flow regulators for proper flow and stream height.
         2. Adjust water cooler temperature settings.
         3. Adjust electronic-sensor settings.
      2. CLEANING
         1. After installing fixtures, inspect unit. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish.
         2. Clean fixtures, on completion of installation, in accordance with manufacturer's written instructions.
         3. Provide protective covering for installed fixtures.
         4. Do not allow use of fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 224700