

**SECTION 22 4000
PLUMBING FIXTURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush valve water closets.
- B. Lavatories.
- C. Sinks.
- D. Supply stops.
- E. Under-lavatory pipe supply covers.
- F. Bi-level, electric water coolers.
- G. Mop sinks.

1.02 RELATED REQUIREMENTS

- A. Section 22 1119 - Domestic Water Piping Specialties.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASHRAE Std 18 - Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration; 2008 (Reaffirmed 2013).
- C. ASME A112.6.1M - Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use; 1997 (Reaffirmed 2017).
- D. ASME A112.18.1 - Plumbing Supply Fittings; 2024.
- E. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures; 2011 (Reaffirmed 2022).
- F. ASME A112.19.2 - Ceramic Plumbing Fixtures; 2024.
- G. ASME A112.19.3 - Stainless Steel Plumbing Fixtures; 2022.
- H. ASME A112.19.5 - Flush Valves and Spuds for Water Closets, Urinals, and Tanks; 2022.
- I. ASSE 1070 - Performance Requirements for Water Temperature Limiting Devices; 2020.
- J. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2019, with Editorial Revision (2023).
- K. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
- L. ASTM C1822 - Standard Specification for Insulating Covers on Accessible Lavatory Piping; 2021.
- M. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026.
- N. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
- O. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- P. NSF 61 - Drinking Water System Components - Health Effects; 2025, with Addendum
- Q. NSF 372 - Drinking Water System Components - Lead Content; 2024.
- R. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

- B. Product Data: Provide manufacturer's literature and data sheets for each product. Include materials of fabrication, rough-in requirements, location and sizes of connections, configurations, dimensions, finishes, features, and accessories.
 - 1. For electrically powered fixtures, include electrical characteristics.
- C. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements for additional provisions.
 - 2. Extra Faucet Washers: One set of each type and size.
 - 3. Extra Lavatory Supply Fittings: One set of each type and size.
 - 4. Flush Valve Service Kits: One for each type and size.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on-site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer warranty for electric water cooler.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Potable Water Systems: Provide drinking water system components certified as complying with NSF 61 and NSF 372.
- B. ADA: Where indicated to be ADA-compliant, provide fixtures complying with ADA Standards and ICC A117.1.
- C. Maximum Fixture Supply Pressure: 80 psi (550 kPa) unless stated otherwise.

2.02 REGULATORY REQUIREMENTS

- A. Comply with applicable codes for installation of plumbing systems.
- B. Comply with UL (DIR) requirements.
- C. Perform work in accordance with local health department regulations.
- D. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

2.03 FLUSH VALVE WATER CLOSETS

- A. Water Closets:
 - 1. Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps.
 - 2. Bowl: ASME A112.19.2; 16.5 inches (420 mm) high with elongated rim.
 - 3. Flush Valve: Exposed (top spud).
 - 4. Flush Operation: Sensor operated.
 - 5. Handle Height: 44 inches (1117 mm) or less.
 - 6. Inlet Size: 1-1/2 inches (38 mm).
 - 7. Trapway Outlet: 4 inch (100 mm, DN).
 - 8. Color: White.
 - 9. Manufacturers:
 - a. American Standard: www.americanstandard-us.com/#sle
 - b. Kohler Company: www.kohler.com/#sle

- c. Zurn Water, LLC: www.zurn.com/#sle.
 - d. Or approved equal.
- B. Flush Valves:
 - 1. Valve Supply Size: 1 inch (25 mm, DN).
 - 2. Valve Outlet Size: 1-1/2 inches (40 mm, DN).
 - 3. Manufacturers:
 - a. Sloan Valve Company: www.sloanvalve.com/#sle.
 - b. Toto USA: www.totousa.com/#sle.
 - c. Zurn Water, LLC; ZEMS Series: www.zurn.com/#sle.
 - d. Or approved equal.
 - 4. Sensor-Operated:
 - a. Type: ASME A112.19.5; chloramine-resistant diaphragm valve complete with vacuum breaker, stops and accessories.
 - b. Mechanism: Solenoid-operated piston or electronic motor-actuated operator with battery powered infrared sensor, and mechanical override or override push button.
 - c. Supplied Volume Capacity: 1.6 gal (6.1 L) per flush.
 - 5. Exposed Type: Chrome-plated, escutcheon, integral screwdriver stop.
- C. Toilet Seats:
 - 1. Manufacturers:
 - a. American Standard: www.americanstandard-us.com/#sle.
 - b. Bemis Manufacturing Company: www.bemismfg.com/#sle.
 - c. Zurn Water, LLC: www.zurn.com/#sle.
 - d. Or approved equal.
 - 2. Plastic: White finish, open front, extended back, self-sustaining hinge, brass bolts, with cover.

2.04 LAVATORIES

- A. Manufacturers:
 - 1. American Standard: www.americanstandard-us.com/#sle.
 - 2. Kohler Company: www.kohler.com/#sle.
 - 3. Zurn Water, LLC: www.zurn.com/#sle.
 - 4. Or approved equal.
- B. Wall-Hung Bathroom Sink:
 - 1. Vitreous China, Grade A: ASME A112.19.2; white, rectangular commercial-grade sink with predrilled holes, rear-center drain, front overflow, and hanger. Size as indicated on drawings with 4-inch (100 mm) centerset spacing.
 - 2. Carrier:
 - a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, concealed arm supports, bearing plate and studs.
 - b. Manufacturers:
 - 1) Jay R. Smith MFG. Co: www.jrsmith.com/#sle.
 - 2) JOSAM Company: www.josam.com/#sle.
 - 3) Zurn Water, LLC: www.zurn.com/#sle.
 - 4) Or approved equal.
- C. Supply Faucet:
 - 1. Deck Mounted Faucet Manufacturers:
 - a. American Standard: www.americanstandard-us.com/#sle
 - b. Kohler Company: www.kohler.com/#sle.
 - c. Zurn Water, LLC: www.zurn.com/#sle.
 - d. Or approved equal.
 - 2. ASME A112.18.1; chrome plated combination supply fitting with open grid strainer, water economy aerator with maximum flow of 0.5 gpm (1.9 L/min), indexed handles.

- D. Thermostatic Mixing Valve:
 - 1. ASSE 1070 water temperature limiting valve.
 - 2. See Section 22 1119 for mixing valve specifications.
- E. Accessories:
 - 1. Offset waste with perforated open strainer.
 - 2. Slip-joint P-trap.
 - 3. Chrome-plated 17 gauge, 0.0538 inch (1.37 mm) brass P-trap with clean-out plug, tailpiece, and escutcheon.
 - 4. Wheel handle stops.
 - 5. Rigid supplies.

2.05 SINKS

- A. Manufacturers:
 - 1. Elkay: www.elkay.com/#sle.
 - 2. Just Manufacturing:
 - 3. Or approved equal.
- B. Double Compartment Bowl:
 - 1. ASME A112.19.3; 29 by 18 by _____ inch (_____ by _____ by _____ mm) outside dimensions, 18 gauge, 0.050 inch (1.27 mm) thick, type 304 stainless steel, self-rimming and undercoated, with ledge back drilled for trim.
 - 2. Drain: 3-1/2 inch (90 mm) crumb cup and tailpiece.
- C. Faucets:
 - 1. Manufacturers:
 - a. American Standard: www.americanstandard-us.com/#sle
 - b. Kohler Company: www.kohler.com/#sle.
 - c. Zurn Water, LLC: www.zurn.com/#sle.
 - d. Or approved equal.
 - 2. Single Handle Faucet with Four-Function Pulldown Spray Head:
 - a. Minimum Spout Height: 9 inch (228.6 mm).
 - b. Minimum Spout Reach: 8-1/4 inch (209.6 mm).
 - c. Type: Deck-mount, swivel faucet with mounting plate.
 - d. Spray Functions: Stream, full spray, mist, jet, and pause at 1.8 gpm (6.8 L/min), maximum.
 - e. ASME A112.18.1, ADA Standards, and NSF 61 compliant assembly.
 - f. Materials: Ceramic disc-cartridge valve on brass body with polished chrome finish.
- D. Accessories: Provide braided water supply lines, slip-joint p-trap, and stainless steel basket strainer.

2.06 SUPPLY STOPS

- A. Description: ASME A112.18.1, quarter-turn full-port brass ball valve.
- B. Operation: Handwheel or T-handle.
- C. Finish: Polished chrome.
- D. End Connections: Provide supply stops with end connections to match rough-in piping.
- E. Maximum Working Pressure: 125 psi (8.6 bar).
- F. Working Temperature Range: 33 to 160 degrees F (0.5 to 71 degrees C).

2.07 UNDER-LAVATORY PIPE SUPPLY COVERS

- A. Manufacturers:
 - 1. Plumberex Specialty Products, Inc: www.plumberex.com/#sle.
 - 2. Truebro: www.ipsplumbingproducts.com/brands/truebro/#sle..
 - 3. Or approved equal.

B. General:

1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
2. Adhesives, sewing threads and two ply laminated materials are prohibited.
3. Exterior Surfaces: Smooth nonabsorbent with no finger recessed indentations for easy cleaning.
4. Construction: 1/8 inch (3.2 mm) PVC with antimicrobial, antifungal and UV resistant properties.
 - a. Provide one piece injected molded design with internal bridge at top of J-bend to prevent separating.
 - b. Comply with ASTM E84 for flame and smoke development.
 - c. Comply with ASTM C1822 Type III for covers on accessible lavatory piping.
 - d. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
 - e. Comply with ICC A117.1.
 - f. Thermal Resistance: R value of 0.504 or lower when tested by ASTM C177.
 - g. Thermal Conductivity: K value of 0.358 or density of 21.61 pcf per ASTM C518.
 - h. Microbial and Fungal Resistance for Interior and Exterior: Comply with ASTM G21.
5. Color: High gloss white.
6. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

2.08 BI-LEVEL, ELECTRIC WATER COOLERS

A. Manufacturers:

1. Elkay Manufacturing Company: www.elkay.com/#sle.
2. Haws Corporation: www.hawscorp.com/#sle.
3. Oasis International: www.oasiscoolers.com/#sle.
4. Or approved equal.

B. Water Cooler: Bi-level, electric, mechanically refrigerated; surface mounted, ADA compliant; stainless steel top, stainless steel body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, mounting bracket; integral air cooled condenser and stainless steel grille.

1. Capacity: 8 gph (30.3 Lph) of 50 degrees F (10 degrees C) water with inlet at 80 degrees F (27 degrees C) and room temperature of 90 degrees F (32 degrees C), when tested in accordance with ASHRAE Std 18.
2. Electrical: 115 VAC, 60 Hertz compressor, 6 foot (2 m) cord and plug for connection to electric wiring system including grounding connector.

C. Bottle Filler: Materials to match fountain.

2.09 MOP SINKS

A. Manufacturers:

1. Acorn Engineering Company: www.acorneng.com/#sle.
2. Fiat Products: www.fiatproducts.com/
3. Just Manufacturing Company: www.justmfg.com/#sle.
4. Or approved equal.

B. Material: Precast terrazzo composed of marble chips cast in Portland cement.

C. Type: Rectilinear, standard height.

D. Grid strainer: Stainless steel; integral; removable.

E. Dimensions: As indicated on drawings.

F. Accessories:

1. 5 feet (1.5 m) of 1/2 inch (13 mm) diameter plain end reinforced rubber hose.
2. Hose clamp hanger.
3. Mop hanger.

4. Stainless steel wall guards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify walls, floors, and finishes are prepared and ready for installation of fixtures.
- B. Verify rough-ins for field connections match sizes and locations shown on drawings.
- C. Verify electric power is available and of the correct characteristics.
- D. Review casework and countertop shop drawings. Confirm locations and sizes of fixtures and openings before rough-in and installation.
- E. Verify casework and countertops are prepared and ready for installation of fixtures.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install components level and plumb.
- C. Secure fixtures in place.
- D. Install rigid or flexible supplies to fixtures. Provide supply stops, reducers, and escutcheons.
- E. Install wall-mounted fixtures, trim, and accessories at heights indicated on Architectural drawings.
- F. Install new batteries in battery-powered fixtures at time of Date of Substantial Completion.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Repair or replace damaged or defective products.
- D. Test fixtures after installation to verify operation. Correct deficiencies.

3.04 ADJUSTING

- A. Adjust stops and valves so fixtures operate without splashing, noise, or overflow.
- B. Adjust sensor range on sensor-operated fixtures.

3.05 CLEANING

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Clean plumbing fixtures to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.06 PROTECTION

- A. Protect installed products from damage due to subsequent construction operations.
- B. Do not permit use of fixtures by construction personnel.

END OF SECTION