

## SECTION 22 40 00

### PLUMBING FIXTURES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes the following conventional plumbing fixtures and related components:
  - 1. Faucets for lavatories and sinks.
  - 2. Flushometers.
  - 3. Toilet seats.
  - 4. Protective shielding guards.
  - 5. Fixture supports.
  - 6. Water closets.
  - 7. Urinals.
  - 8. Lavatories.
  - 9. Service basins.
  - 10. Kitchen / Break Room Sinks

##### 1.2 DEFINITIONS

- A. ABS: Acrylonitrile-butadiene-styrene plastic.
- B. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.
- C. Cast Polymer: Cast-filled-polymer-plastic material. This material includes cultured-marble and solid-surface materials.
- D. Fitting: Device that controls the flow of water into or out of the plumbing fixture. Fittings specified in this Section include supplies and stops, faucets and spouts, shower heads and tub spouts, drains and tailpieces, and traps and waste pipes. Piping and general-duty valves are included where indicated.
- E. PMMA: Polymethyl methacrylate (acrylic) plastic.
- F. Solid Surface: Nonporous, homogeneous, cast-polymer-plastic material with heat-, impact-, scratch-, and stain-resistance qualities.

##### 1.3 SUBMITTALS

- A. See Section 01 3000 – Administrative Requirements, for submittal procedures.
- B. Product Data: For each type of plumbing fixture indicated. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.
- C. Shop Drawings: Diagram power, signal, and control wiring.
- D. Submit Operations and Maintenance (O&M) Manuals for system and components.
- E. In addition to requirements included in the Sections referenced above include the following:
  - 1. List of special tools recommended to be stored at the site for ready access.

2. Detailed operating instructions for both normal and abnormal conditions.
  3. Copy of approved shop drawings.
  4. Document indicating the recommended service intervals.
  5. Site acceptance test report of tests specified in Part 3.
  6. Usernames, passwords and related configuration credentials for all equipment HMIs, including all levels of access that may be modified without voiding the equipment warranty.
- F. Submit a compliance review of the Specifications, Drawings and Addenda. The Compliance Review shall be a paragraph-by-paragraph review of the Specifications with the following information; "C", "D" or "E" marked in the margin of the original Specifications and any subsequent Addenda.
1. "C": Comply with no exceptions.
  2. "D": Comply with deviations. For each and every deviation, provide a numbered footnote with reasons for the proposed deviation and how the intent of the Specification can be satisfied.
  3. "E": Exception, do not comply. For each and every exception, provide a numbered footnote with reasons and possible alternatives.
  4. All notes associated with "D" and "E" responses shall be typewritten and submitted alongside the compliance review for review by the Engineer.
- G. Unless a deviation or exception is specifically noted in the Compliance Review, it is assumed that the Bidder is in complete compliance with the plans and Specifications. Deviations or exceptions taken in cover letters, subsidiary documents, by omission or by contradiction do not release the Bidder from being in complete compliance, unless the exception or deviation has been specifically noted in the Compliance Review. Bidders may submit the latest state-of-the-art components and their standard control components in lieu of the specified items. All deviations from the Specifications must be approved by the Engineer.
- H. Warranty: Special warranty specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.
1. Exception: If fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for that category.
- B. All fixtures to comply with the Federal Drinking Water Act.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; for plumbing fixtures for people with disabilities.
- E. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.

- F. Piping materials shall bear label, stamp, or markings NSF®-61 and NSF®-372 (or NSF®-61-G) or other accepted certifier marks demonstrating third party certification with these requirements.
- G. Comply with NSF/ANSI 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for potable domestic water piping and components.
- H. Products intended to dispense water for human consumption through drinking or cooking shall have a weighted average lead content of not more than 0.25% as determined by NSF/ANSI 372, and NSF/ANSI 61.
- I. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.
- J. Comply with the following applicable standards and other requirements specified for plumbing fixtures:
  - 1. Enameled, Cast-Iron Fixtures: ASME A112.19.1M.
  - 2. Porcelain-Enameled, Formed-Steel Fixtures: ASME A112.19.4M.
  - 3. Slip-Resistant Bathing Surfaces: ASTM F 462.
  - 4. Solid-Surface-Material Lavatories and Sinks: ANSI/ICPA SS-1.
  - 5. Vitreous-China Fixtures: ASME A112.19.2M.
  - 6. Water-Closet, Flush Valve, Trim: ASME A112.19.5.
  - 7. Water-Closet, Flushometer Trim: ASSE 1037.
- K. Comply with the following applicable standards and other requirements specified for lavatory and sink faucets:
  - 1. Backflow Protection Devices for Faucets with Hose-Thread Outlet: ASME A112.18.3M.
  - 2. Faucets: ASME A112.18.1.
  - 3. Hose-Coupling Threads: ASME B1.20.7.
  - 4. Integral, Atmospheric Vacuum Breakers: ASSE 1001.
  - 5. NSF Potable-Water Materials: NSF 61.
  - 6. Pipe Threads: ASME B1.20.1.
  - 7. Sensor-Actuated Faucets and Electrical Devices: UL 1951.
  - 8. Supply Fittings: ASME A112.18.1.
  - 9. Brass Waste Fittings: ASME A112.18.2.
- L. Comply with the following applicable standards and other requirements specified for shower faucets:
  - 1. Backflow Protection Devices for Hand-Held Showers: ASME A112.18.3M.
  - 2. Combination, Pressure-Equalizing and Thermostatic-Control Antiscald Faucets: ASSE 1016.
  - 3. Hand-Held Showers: ASSE 1014.
  - 4. High-Temperature-Limit Controls for Thermal-Shock-Preventing Devices: ASTM F 445.
  - 5. Manual-Control Antiscald Faucets: ASTM F 444.
  - 6. Pipe Threads: ASME B1.20.1.
  - 7. Pressure-Equalizing-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.
  - 8. Thermostatic-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.
- M. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:

1. Atmospheric Vacuum Breakers: ASSE 1001.
  2. Brass and Copper Supplies: ASME A112.18.1.
  3. Manual-Operation Flushometers: ASSE 1037.
  4. Plastic Tubular Fittings: ASTM F 409.
  5. Brass Waste Fittings: ASME A112.18.2.
  6. Sensor-Operation Flushometers: ASSE 1037 and UL 1951.
- N. Comply with the following applicable standards and other requirements specified for miscellaneous components:
1. Flexible Water Connectors: ASME A112.18.6.
  2. Floor Drains: ASME A112.6.3.
  3. Grab Bars: ASTM F 446.
  4. Hose-Coupling Threads: ASME B1.20.7.
  5. Off-Floor Fixture Supports: ASME A112.6.1M.
  6. Pipe Threads: ASME B1.20.1.
  7. Plastic Toilet Seats: ANSI Z124.5.
  8. Supply and Drain Protective Shielding Guards: ICC A117.1.

#### 1.5 WARRANTY

- A. Special Warranties: Manufacturer's standard form in which manufacturer agrees to repair or replace components of whirlpools that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Structural failures of unit shell.
    - b. Faulty operation of controls, blowers, pumps, heaters, and timers.
    - c. Deterioration of metals, metal finishes, and other materials beyond normal use.
  2. Warranty Period for Commercial Applications: One year from date of Substantial Completion.
  3. All warranties to be transferred to the owner.

#### 1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Faucet Washers and O-Rings: Equal to 10 percent of amount of each type and size installed.
  2. Faucet Cartridges and O-Rings: Equal to 5 percent of amount of each type and size installed.
  3. Flushometer Valve, Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than 12 of each type.
  4. Provide hinged-top metal box, or individual metal boxes, with separate compartments for each type and size of extra materials listed above. Each to include a legend describing each component, its use, and location of piece of equipment it is associated with.
  5. Toilet Seats: Equal to 5 percent of amount of each type installed.
  6. Provide (1) full replacement of spare batteries for each fixture having hands free battery operation.

## PART 2 - PRODUCTS

### 2.1 LAVATORY FAUCETS

#### A. Lavatory Faucets, LAV-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Kohler Co.
  - b. Sloan Valve Co.
  - c. American Standard Companies, Inc.
2. Description: Hands Free with integral above counter control mixing valve. Coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
  - a. Body Material: Commercial, solid brass.
  - b. Finish: Polished chrome plate.
  - c. Maximum Flow Rate: .17 gal. per 10 second cycle.
  - d. Duration: 10 seconds.
  - e. Centers: Single hole.
  - f. Mounting: Deck, exposed.
  - g. Valve Handle(s): Hands Free.
  - h. Inlet: NPS 3/8 tubing, plain end.
  - i. Spout: Rigid type.
  - j. Spout Outlet: Aerator.
  - k. Operation: Battery powered sensor.
  - l. Drain: Grid.
  - m. Tempering Device: Above counter mixing.

### 2.2 SINK FAUCETS

#### A. Sink Faucets, MSB-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Chicago Faucets.
  - b. Kohler Co.
  - c. T & S Brass and Bronze Works, Inc.
2. Description: Service sink faucet with stops in shanks, vacuum breaker, hose-thread outlet, and pail hook. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
  - a. Body Material: Commercial, solid.
  - b. Finish: Polished chrome plate.
  - c. Maximum Flow Rate: 2.0 gpm, unless otherwise indicated.
  - d. Mixing Valve: Two-lever handle.
  - e. Backflow Protection Device for Hose Outlet: Required.
  - f. Centers: 8 inches.
  - g. Mounting: Back/wall, concealed.
  - h. Handle(s): Cross, four arm.
  - i. Inlet(s): NPS 1/2 female shank.
  - j. Spout Type: Rigid, solid brass with wall brace.
  - k. Spout Outlet: Hose thread.
  - l. Vacuum Breaker: Required.
  - m. Operation: Compression, manual

#### B. Sink Faucets, SK-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Chicago Faucets.
  - b. Kohler Co.
  - c. Sloan Valve Co.
2. Description: Lead free kitchen sink faucet with stops in supplies. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture hole; coordinate outlet with spout and fixture receptor.
  - a. Body Material: Commercial, solid.
  - b. Finish: Polished chrome plate.
  - c. Maximum Flow Rate: 2.0 gpm.
  - d. Mixing Valve: single-lever handle.
  - e. Centers: single hole.
  - f. Mounting: Deck.
  - g. Handle: Single ADA compliant.
  - h. Inlet(s): NPS 3/8 tubing.
  - i. Spout Type: swivel.
  - j. Operation: Manual.

## 2.3 FLUSHOMETERS

### A. Flushometers, WC-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Sloan Valve Company.
  - b. Zurn Plumbing Products Group; Commercial Brass Operation.
2. Description: Flushometer for water-closet-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
  - a. Internal Design: Diaphragm operation.
  - b. Style: Exposed.
  - c. Inlet Size: NPS 1.
  - d. Trip Mechanism: Battery powered sensor actuator.
  - e. Consumption: High Efficiency: 1.28 gal./flush.
  - f. Tailpiece Size: NPS 1-1/2 and 27-inch length to top of bowl.

### B. Flushometers, WC-2:

1. Same as WC-1 except mounted at handicap height. Cold water rough-in to be configured such that the flush valve handle is accessible from the wide side of stall regardless of hands free operation should the client retrofit with manual flush.

### C. Flushometers, UR-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Sloan Valve Company.
  - b. Zurn Plumbing Products Group; Commercial Brass Operation.
2. Description: Flushometer for urinal-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
  - a. Internal Design: Diaphragm operation.
  - b. Style: Exposed.

- c. Inlet Size: NPS 3/4.
- d. Trip Mechanism: Battery powered sensor actuator.
- e. Consumption: .125 gal./flush.
- f. Tailpiece Size: NPS 3/4 and 11-1/2-inch length to top of bowl.

D. Flushometers, UR-2:

- 1. Same as UR-1 except mounted at handicap height.

## 2.4 TOILET SEATS

A. Toilet Seats, WC-1 and WC-2:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Bemis Manufacturing Company.
  - b. Church Seats.
  - c. Olsonite Corp.
- 2. Description: Toilet seat for water-closet-type fixture.
  - a. Material: Molded, solid plastic with antimicrobial agent.
  - b. Configuration: Open front without cover.
  - c. Size: Elongated.
  - d. Hinge Type: SC, self-sustaining, check.
  - e. Class: Standard commercial.
  - f. Color: White.

## 2.5 PROTECTIVE SHIELDING GUARDS

A. Protective Shielding Pipe Covers:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. McGuire Manufacturing Co., Inc.
  - b. Plumberex Specialty Products Inc.
  - c. TRUEBRO, Inc.
- 2. Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) requirements.

B. Protective Shielding Piping Enclosures:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. TRUEBRO, Inc.
  - b. McGuire "Pro-Wrap"
- 2. Description: Manufactured plastic enclosure for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with ADA requirements.

## 2.6 FIXTURE SUPPORTS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- 1. MIFAB Manufacturing Inc.
  - 2. Smith, Jay R. Mfg. Co.
  - 3. Tyler Pipe; Wade Div.
  - 4. Zurn Plumbing Products Group; Specification Drainage Operation.

B. Water-Closet Supports, WC-1 and WC-2:

1. Description: Combination carrier designed for accessible and standard mounting height of wall-mounting, water-closet-type fixture. Include single or double, vertical or horizontal, hub-and-spigot or hubless waste fitting as required for piping arrangement; faceplates; couplings with gaskets; feet; and fixture bolts and hardware matching fixture. Include additional extension coupling, faceplate, and feet for installation in wide pipe space.

C. Urinal Supports, UR-1:

1. Description: Floor mounted and secured, urinal carrier with hanger and bearing plates for wall-mounting, urinal-type fixture. Include steel uprights with feet.
2. Accessible-Fixture Support: Include rectangular steel uprights.

## 2.7 WATER CLOSETS

A. Water Closets, WC-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Kohler Co.
2. Description Wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation.
  - a. Style: Flushometer valve.
    - 1) Bowl Type: Elongated with siphon-jet design.
    - 2) Design Consumption: High Efficiency 1.28 gal./flush.
    - 3) Color: White.

B. Water Closets, WC-2:

- a. Same as WC-1 above, except rim height shall be 17 inches above floor to meet ADA requirements.

## 2.8 URINALS

A. Urinals, UR-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Kohler Co.
2. Description: Accessible, wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation, rim height shall be 24 inches above floor.
  - a. Type: Washout.
  - b. Trapway: Open trapway with integral trap.
  - c. Design Consumption: .125 gal./flush.
  - d. Color: White.
  - e. Supply Spud Size: NPS 3/4.
  - f. Outlet Size: NPS 2

B. Urinals, UR-2:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Crane Plumbing, L.L.C./Fiat Products.
  - c. Kohler Co.

2. Description: Accessible, wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation, rim height shall be 17 inches above floor to meet ADA requirements.
  - a. Type: Washout.
  - b. Trapway: Open trapway with integral trap.
  - c. Design Consumption: .125 gal./flush.
  - d. Color: White.
  - e. Supply Spud Size: NPS 3/4.
  - f. Outlet Size: NPS 2.

## 2.9 LAVATORIES

### A. Lavatories, LAV-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Crane Plumbing, L.L.C./Fiat Products.
  - c. Kohler Co.
2. Description: Accessible, under counter-mounting, vitreous-china fixture.
  - a. Type: under counter mount.
  - b. Oval Lavatory Size: 20 inches wide by 17 inches front to back.
  - c. Faucet Hole Punching: One hole in counter top.
  - d. Color: White.
  - e. Drain: Grid with offset waste.
  - f. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4 0.045-inch-thick tubular brass waste to wall; and wall escutcheon.

## 2.10 SERVICE BASINS

### A. Service Basins, MSB-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawing P00-01 or a comparable product by one of the following:
  - a. Crane Plumbing, L.L.C./Fiat Products.
  - b. Florestone Products Co., Inc.
  - c. Precast Terrazzo Enterprises, Inc.
2. Description: Flush-to-wall, floor-mounting, molded stone.
  - a. Shape: Rectangle.
  - b. Size: 24 by 36 inches.
  - c. Height: 10 to 12 inches.
  - d. Tiling Flange: Not required.
  - e. Rim Guard: On all top surfaces.
  - f. Color: Not applicable.
  - g. Drain: Grid with NPS 3 outlet.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.
- B. Examine cabinets, counters, floors, and walls for suitable conditions where fixtures will be installed.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers' written instructions.
- B. Install off-floor supports, affixed to building substrate, for wall-mounting fixtures.
  - 1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
  - 2. Use carrier supports without waste fitting for fixtures with tubular waste piping.
  - 3. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.
- C. Install back-outlet, wall-mounting fixtures onto waste fitting seals and attach to supports.
- D. Install wall-mounting fixtures with tubular waste piping attached to supports.
- E. Install counter-mounting fixtures in and attached to casework.
- F. Install fixtures level and plumb according to roughing-in drawings.
- G. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
  - 1. Exception: Use ball valves if supply stops are not specified with fixture. Valves are specified in Division 22 Section "General-Duty Valves for Plumbing Piping."
- H. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.
- I. Install tubular waste piping on drain outlet of each fixture to be indirectly connected to drainage system.
- J. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.
- K. Install toilet seats on water closets.
- L. Install faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- M. Install water-supply flow-control fittings with specified flow rates in fixture supplies at stop valves.
- N. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- O. Install traps on fixture outlets.
  - 1. Exception: Omit trap on fixtures with integral traps.
- P. Install escutcheons at piping wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings. Escutcheons are specified in Division 22 Section "Common Work Results for Plumbing."
- Q. Seal joints between fixtures and walls, floors, and countertops using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Sealants are specified in Division 07 Section "Joint Sealants."

### 3.3 CONNECTIONS

- A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

### 3.4 FIELD QUALITY CONTROL

- A. Verify that installed plumbing fixtures are categories and types specified for locations where installed.
- B. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.
- C. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.
- D. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.
- E. Install fresh batteries in sensor-operated mechanisms.

### 3.5 ADJUSTING

- A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.
- B. Adjust water pressure at faucets and flushometer valves to produce proper flow and stream.
- C. Replace washers and seals of leaking and dripping faucets and stops.
- D. Install fresh batteries in sensor-operated mechanisms.

### 3.6 CLEANING

- A. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Do the following:
  - 1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
  - 2. Remove sediment and debris from drains.
- B. After completing installation of exposed, factory-finished fixtures, faucets, and fittings, inspect exposed finishes and repair damaged finishes.

### 3.7 PROTECTION

- A. Provide protective covering for installed fixtures and fittings. Unless directed otherwise by construction manager, protective coverings to remain on all fixtures until day before scheduled final punch list. At this point covering are to be removed and discarded appropriately and fixtures to receive final cleaning.
- B. Do not allow use of plumbing fixtures for temporary facilities.

END OF SECTION 22 40 00