



Section 224000

Plumbing Fixtures

DESIGN GUIDE

1 General

1.1 General

- A. All piping, fittings, valves, fixtures, faucets and equipment containing or conveying potable water shall comply with the latest US Safe Drinking Water Act mandating any wetted surface of the above mentioned items shall not contain above 0.25% lead content by weighted average. All piping, fittings, valve and equipment containing or conveying potable water shall comply with NSF 61 G and NSF 372 or shall be provided with indication on submittals the manufacturer's declaration of self-certification.
- B. Section excludes fixtures in science laboratories. Typically provided in Division 11 as a part of the lab casework.

1.2 LEED

- A. Fixtures shall be certified by Water Sense when required for LEED certification.

1.3 Extra Materials

- A. For larger capital projects and housing projects (not for minor capital work), supply two sets of each different type of faucet washer, two flush valve service kits, and two of each type of faucet cartridge.



2 Materials

2.1 Lavatories

- A. Lavatory
 - 1. Approved Manufacturers: American Standard, Kohler
 - 2. Vitreous China
 - 3. Wall mounted or counter mounted as indicated on plans.
- B. Manual Faucet (for residential applications, shower/bathroom/changing areas and areas where cold water might be required in addition to hot water)
 - 1. Chrome plated brass body with manually adjustable hot/cold single or dual lever actuation as scheduled; adjustable limit stop; flow restriction for flow rate scheduled on drawings with aerator; vandal resistant.
- C. Automatic Faucet
 - 1. Chrome plated brass body. Vandal resistant. Adjustable time-out settings. Sensor operated, hard wired-electrically operated, (battery operated not allowed), flow restriction for flow rate scheduled on drawings with aerator.
- D. Flow Rates: $\frac{1}{2}$ GPM max

2.2 Water Closets

- A. Water Closet
 - 1. Approved Manufacturers: American Standard, Kohler
 - 2. Wall mounted flush valve water closets (preferred), Siphon jet; vitreous china bowl; elongated rim; $1\frac{1}{2}$ inch top spud; china bolt caps
 - 3. Tank type water closets floor mounted (for residential applications and low water pressure applications): vitreous china; vandal proof cover locking device



4. Performance rated for flush valves below.

B. Flush Valve Automatic

1. Manufacturers: Sloan Optima, Zurn
2. Exposed chrome plated; diaphragm type with wired electric solenoid operator (battery operated not allowed); infrared sensor and over-ride button in chrome plated plate; wheel handle stop and vacuum breaker.

C. Flow rates: Dual flush 1.6/1.1 gallon per flush for new construction. For existing buildings, consult with the Mechanical Plumbing Manager. Some of the existing campus building infrastructure is not set up for low flow water closets creating blockages. If a dual flush valve in a LEED certified building cannot be found with a WaterSense label, provide a 1.28 GPM flush valve.

D. Seat

1. Commercial-heavy duty; solid polypropylene, external, slow closing, stainless steel check hinge and hardware.

2.3 Urinals

A. Urinals

1. Approved Manufacturers: American Standard, Kohler
2. ANSI A112.6.1 Vitreous china; wall hung wash-out; shields; integral trap; removable stainless-steel strainer; $\frac{3}{4}$ inch top spud

B. Flush Valve Automatic

1. Manufacturers: Sloan Optima, Zurn
2. Chrome plated; diaphragm type with hard wired electric solenoid operator (battery operated not allowed); infrared sensor and over-ride button in chrome plated plate; wheel handle stop and vacuum breaker.

C. Flow rates: 0.125 GPM



2.4 Shower

- A. Shower Valve
 - 1. Concealed shower supply with pressure balanced mixing valves, integral service stops, bent shower arm with hot water limit stop. Adjustable spray ball joint shower head and escutcheon.
 - 2. Chrome plated vandal-proof institutional head with integral wall bracket. Use: shared shower facilities for athletics
- B. Flow rate: 1.5 GPM

2.5 Safety Shower

- A. ANSI; wall-mounted, ceiling-mounted, or free standing; self-cleaning; non-clogging 8 inch diameter stainless steel deluge shower head; stay-open valve with pull chain and ring. ANSI certified.
- B. Integral eyewash

2.6 Emergency Eyewash

- A. Self-cleaning; non-clogging eye and face wash with quick opening, stay-open full-flow valves; provide with receptor if not deck mounted at a sink, twin eye wash heads with covers. ANSI certified.

2.7 Stainless steel sink-counter mounted

- A. Sink
 - 1. Stainless steel (304), undercoated, ledge back drilled for trim, 18 gauge minimum
- B. Faucet:
 - 1. Chrome plated cast brass body and tubular brass swing spout with manually adjustable hot/cold lever(s); replaceable ceramic disc type flow restriction with swivel aerator. Retractable sprayer/hose assembly only when required for program.
 - 2. 1.5 GPM max unless LEED goals dictate other operation. Review with Mechanical Plumbing Manager.



2.8 Service Sinks-for Mechanical Rooms

- A. Floor mounted, free standing, deep, fiberglass utility sinks for washing parts and equipment.
- B. Faucet
 - 1. Swivel neck

2.9 Mop Sinks

- A. Sink
 - 1. Molded stone; floor mounted: corner mounted preferred; with minimum 1-inch-wide shoulders; stainless steel guard splash shield; stainless steel strainer.
 - 2. Trim:
 - a. 5 feet of ½ inch diameter plain end reinforced rubber hose, hose clamp and wall splash panels
- B. Faucet
 - 1. Exposed wall type supply; spout wall brace; vacuum breaker; threaded hose end spout; strainer' eccentric adjustable inlets; integral screwdriver check stops with covering caps and adjustable threaded wall flanges
- C. Hose Bibb
 - 1. Provide a 3/4-inch warm climate hose bibb with hose threads, wall flange & vacuum breaker adjacent to service sink.
 - 2. Locate approximately 18" off center fixture, on wide side of room and approximately 30 inches above floor.

2.10 Electric Drinking Fountains

- A. Manufacturer
 - 1. Elkay (no substitutions permitted)



- B. Stainless steel refrigerated fountains with bottle filler and integrated air-cooled condenser with stainless steel grille. Include bottle count indicator. Dual height for ADA applications.
- C. Drinking fountain shall be specified without a filter so that the drinking fountain arrives without a filter indicator light. Indicate that filter shall be ordered separately from the drinking fountain manufacturer and field installed by the contractor within the shroud of the drinking fountain. CWU will changeout filters on a preventative maintenance schedule.
- D. Avoid remote compressors in all drinking fountains. Provide an easily accessible isolation valve at each unit.

2.11 Disposers

- A. When program requires disposer, provide continuous feed style. When program/application requires alternate style, review with the Mechanical Plumbing Manager.

2.12 Carriers

- A. Flush Valve and Tank Type Water Closets
 - 1. Adjustable cast iron frame; integral drain hub and vent; adjustable spud; lugs for floor and wall attachment; threaded fixture studs with nuts and washers
 - 2. Heavy duty carriers rated for a minimum 500-pound static load.
- B. Wall mounted tank type water closets
 - 1. Heavy duty carriers rated for a minimum 500-pound static load.
- C. Urinals
 - 1. Heavy duty floor mounted carrier with lower bearing point.
- D. Lavatories
 - 1. Cast iron and steel frame with tubular legs; lugs for floor and wall attachment; threaded studs for fixture hanger; concealed arm supports; bearing plate and studs



2.13 Supplies

- A. Angle stops: Loose key, ¼ turn stops, brass body-chrome plated stops and chrome plated wall flange.
- B. Supplies
 - 1. Braided stainless-steel flexible hose riser matching faucet inlet piping size
- C. Waste Fitting:
 - 1. Chrome plated 17 gauge tailpieces and chrome plate wall flange.
 - 2. Drains-Lavatory: Grid type or pop-up type
 - 3. Drains-sinks: Grid type or basket type

2.14 Bathtubs

- A. Bathtub
 - 1. Approved Manufacturers: American Standard, Kohler
 - 2. Recessed porcelain bonded steel with integral overflow, lift and turn stopper assembly end drain outlet, integral apron and tiling flange for above floor rough-in installation.
- B. Faucet
 - 1. Pressure balancing mixing valve, solid brass and chrome plated fill and mixing valve, hot water limit stop

3 Execution

3.1 Eyewashes

- A. Provide in all custodial rooms.
- B. Provide at service sinks in mechanical rooms.



3.2 Service Sinks

- A. Provide in each mechanical room.

3.3 Disposers

- A. Provide at break room sinks and where required for food service.

4 Appendix

4.1 Reserved for future.