

**SECTION 22 40 00**

**PLUMBING FIXTURES**

**PART 1 GENERAL**

**1.01 SUBMITTALS**

A. Product Data.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

A. General:

1. Efficient fixtures for new construction shall be EPA WaterSense certified.
2. Manufacturers and catalog numbers are indicated to establish type and quality. Other equivalent products may be selected from lists of acceptable manufacturers.
3. Where color is an option, provide white fixtures.
4. Provide acid-resisting finish.
5. Except for washers, all parts shall be metal. Plastic parts are prohibited.
6. Emergency showers to have adequate drainage (basin/pan required)
7. All thermal mixing valves for emergency showers and eye wash equipment to be in locked box located at 5'-0" above finish floor.
8. All thermal mixing valves located outside of boiler room need to be in locked box located at 5'-0" above finish floor.

B. Kitchen Equipment:

1. Traps: Chrome plated cast brass.
2. Tailpieces: Chrome plated 17 gauge copper.
3. Arms: Chrome plated 17 gauge copper.
4. Escutcheons: Chrome plated, cast brass.
5. Stops: Chrome plated brass with wheel handle operators.
6. Supplies: Chrome plated type L copper tube.
7. Indirect wastes: Chrome plated Type L copper tube.
8. Water piping: Type L copper, chrome plated when located outside of walls or ceilings.
9. Waste & vent piping: No-Hub Cast Iron System.
10. Joints: Where joints of piping systems are welded, soldered or brazed and are exposed to view or cleaning, buff joints to smooth cleanable surface in accordance with NSF.

C. Spray nozzles for kitchen sinks, kettles and garbage disposals shall be T&S or Fisher spray rinse assembly must have checks. Identification and tagging.

1. Provide valve tags in accordance with standard Section 220553.

<b>FIXTURE</b>	<b>MANUFACTURERS</b>	<b>INFO</b>	<b>GPM/GPF</b>
Master Mixing Valves	Bradley (preferred), Powers	Thermostatic or pressure balanced. Integral check valves and strainers	
Mixing Valves (point of use)	Bradley (preferred), Watts, Apollo, Powers		

Traps, Stops, Supplies, Air Gap Fittings, Drains	American Standard, Brasscraft, Eljer, Kohler	Chrome w/ cleanout plug 17 ga, All metal	
Chair Carriers	Josam, J.R. Smith, Wade, Zurn	4-bolt, Cast iron nipple	
Electric Water Coolers	Haws, Halsey-Taylor, Murdoch, Elkay	Vandal resistant bubbles	
Drinking Fountains	Haws, Halsey-Taylor, Murdoch, Elkay	Vandal resistant bubbles	
Emergency Showers/Eye Wash Equipment	Haws, Bradley,		
Laboratory Faucets	Chicago, T&S Brass	Gas and air faucets shall have integral check valves with vandal resistant pins.	
Garbage Disposers	In-Sink-Erator	¾ HP, Stainless Steel	
Faucets (classroom, lounge, community use, etc.)	Chicago, Kohler, Delta 100LF Series		
Faucets (restroom, classroom LAVs)	Sloan Basys	EFX-25-.500.0100 Sensor Faucet (4" centers	
Faucets (kitchen hand sinks)	Moen 8800	No flow restrictions	
Water Closets	American Standard, Sloan, Kohler, Toto	White, vitreous china, wall hung, siphon jet, valve-operated, Water Saver, 5" rough. Certified by an approved agency for flush rate. Provide: supply pipe support, vandal-proof trim.	1.6 gpf (1.28 gpf for new construction)
Water Closets (tank)	Toto	See above for trim.	1.6 gpf (1.28 gpf for new construction)
Toilet Seats	Bemis, Beneke, Church, Olsonite	White, all-plastic, open front, elongated bowl, no seat cover.	
Urinals	American Standard, Sloan, Kohler, Toto	Certified by an approved agency for flush rate. Supply: ¾". Vandal resistant strainer.	1.0 gpf (0.125 gpf for new construction)
Flush Valves (sensor)	Sloan, Toto	Battery-powered, sensor activated. Electrically hard-wired flush valves are prohibited.	
Flush Valves (manual)	Toto		
Lavatories (vitreous china)	American Standard, Sloan, Kohler, Western Pottery	4" centers. Concealed arm carriers.	
Lavatories (cast iron)	Ceco, Kohler, Zurn, American Standard	To be installed with heavy duty brackets and backing. Provide continuous 2"x12" fire retardant treated lumber blocking.	
Lavatories (self rimming)		Not allowed	
Classroom Sinks	Elkay, Just	ADA Accessible, Stainless Steel, 18 gauge minimum,	

		with sound dampening	
Classroom Sinks	Kohler, American Standard, Sloan, Eljer	Food Labs and General Installation, non-ADA compliant, Enameled Cast iron	
Lab Sinks		Epoxy Resin (same as countertop)	
Mop Service Basins Acorn Mop Basin	Fiat, Florestone – Molded Stone  Bradley, Fiat, Floreston - Terrazzo	Stainless steel drains, provide stainless steel edge protectors for custodial sinks and mop basins. At custodial sinks and basins, provide vacuum breaker, bucket hook, threaded hose end faucet with 48” hose, and mop hanger	
Showers	Bradley, Florestone Fiat,	Terrazzo Base, Delta valves and head, stainless steel drains.	2.5 gpm max
Coffee bar sinks		Stainless steel sink with drain board. Faucet: single handle with goose-neck spout.	
Hand wash fountain	Bradley, Deck, Acorn	(Provide when individual hand sinks or lavatories cannot be installed)	

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. Flushometers shall be installed rigid, plumb and at proper critical level heights per the relevant codes.

#### **3.02 CARRIERS**

- A. Provide floor mounted chair-type carriers for wall-mounted fixtures including lavatories, water closets, urinals, drinking fountains, electric water coolers, etc.
- B. Lavatories shall be hung with concealed arm type carriers only.
- C. Wood or metal mounting plates anchored to the wall framing or studs are strictly prohibited.
- D. Carrier shall transfer the load to the floor and shall be capable of fully supporting the fixture.
- E. Provide adjustable carriers to locate the fixture at the desired mounting height.

#### **3.03 FLUSH VALVES**

- A. Flush valves shall be secured to prevent movement by anchoring the long finished top spud connecting tube to the wall adjacent to the valve with metal bracket.
- B. Coordinate flush valve heights with ADA accessibility requirements, grab bars, and fixture heights.

#### **3.04 INSTALLATION**

- A. Provide stop valves at fixtures and equipment and at rough-in locations. All stops to be chrome one quarter turn ball valve type.
- B. Provide loose key stops with fixtures. All stops to be chrome one quarter turn ball valve type.
- C. Exposed traps and supply pipes for fixtures and equipment shall be connected to the rough piping system at the wall.
- D. Require rigid anchors behind walls for supplies and stops, to eliminate push or pull movement.
- E. Provide finished floor and wall escutcheons at wall and floor penetrations.
- F. Provide access panels for maintenance access to concealed valves and controls.

#### **3.05 KITCHEN EQUIPMENT**

- A. All kitchen trim and specialties, including valves and piping, shall be chrome plated brass or chrome plated copper where components are not concealed in walls or ceilings. Trim and specialties within cabinets and under sinks will not be considered concealed.
- B. Provide traps with clean-outs, tubing waste to wall including escutcheons, of sizes as required.

- C. Provide chrome-plated water supplies and branches complete with individual and branch shut-off chrome-plated valves (globe pattern), and chrome-plated brass escutcheons.
- D. Provide gas supplies, complete with isolation valves at point of entry through walls or floors, flexible hose with armor shield and plastic coating from branch to appliance, and connections to the appliance made with "Hanson Gas-Mate" quick coupler type valves only.
- E. Provide extensions of chrome-plated brass indirect waste piping from unit connection to air gapped connections to floor drains or waste receptacles at termination point.
- F. Provide necessary solenoid or motorized valves not furnished as parts of kitchen equipment.
- G. Provide necessary specialties not specifically mentioned, but necessary for complete operation of each unit.

**3.06 LABORATORY EQUIPMENT**

- A. Verify items of trim and fixtures not furnished by these suppliers and specify all items necessary to complete the installation.
- B. Ensure that Fuseal cleanout above sink fits within ceiling-to-bench chase.
- C. Traps and wastes shall conform to materials as specified for soil waste and vent, acid resistant drain, waste and vent in Division 23.
- D. Supplies, stops, and valves shall be nickel-plated brass where installed in areas subject to acid fumes.
- E. Provide shut-off valves at each piece of laboratory equipment and each piece of laboratory furniture for all services in accordance with the following schedule and as specified in Division 23.

1. Schedule

<u>Service</u>	<u>Valve Type</u>
Water	Ball, or loose key compression stop
Air	Ball
Vacuum	Ball
Gas	Plug or Ball certified for gas service
Special	As noted on drawings or as specified herein

- 2. Plumbing through walls or floors shall be provided with nickel-plated brass escutcheons; set screw type or screw-on type. Loose or split type escutcheons will not be accepted.
- 3. Potable water supplies to water faucets provided with means for hose or tubing connections shall be installed with branch vacuum breaker, atmospheric or pressure type, with the ASSE Seal affixed to each vacuum breaker, in accordance with ASSE Standard #1001.
- 4. Lab fume hoods shall have exterior mounted vacuum breakers on domestic and laboratory water lines serving the hood. Atmospheric breakers inside the hood are not allowed.
- 5. Casework Equipment
  - a) Verify items of trim and fixtures not furnished by these suppliers and specify all items necessary to complete the installation.
- 6. Provide traps with cleanouts, tubing waste to wall including escutcheons, of sizes as required.
- 7. Provide chrome-plated water supplies and branches complete with individual and branch shut-off chrome-plated valves (globe pattern), and chrome-plated brass escutcheons as required.
- 8. Provide gas supplies, complete with isolation valve, flexible hose with armor shield from branch to appliance, and connections to the appliance made with "Hanson Gas-Mate" quick coupler type valves only.
- 9. Provide extensions of chrome-plated brass indirect waste piping from unit connection to air gapped connections to floor drains or waste receptacles at termination point.
- 10. Provide necessary solenoid or motorized valves not furnished as parts of casework equipment.
- 11. Provide necessary specialties not specifically mentioned but necessary for proper and complete operation of the unit, or for good appearance and a clean finished contract.

12. Trim and specialties, including valves and piping, shall be chrome plated brass or chrome plated copper where components are not concealed from view. Trim and specialties within cabinets will not be considered concealed.

a) Schedule:

<u>Service</u>	<u>Valve Type</u>
Water	Ball, or loose key compression stop
Air	Ball
Vacuum	Ball
Gas	Plug or ball certified for gas service
Special	As noted on Drawings or as specified herein

13. All plumbing through walls for floors shall be provided with chrome-plated brass escutcheons, set-screw type or screw-on type. Loose or split type escutcheons will not be accepted.
14. Locate shut-off/isolation valves under sinks in the cabinet under the sink. Shut-offs behind casework will not be allowed.
15. All potable water supplies to water faucets provided with means for hose or tubing connections shall be installed with branch vacuum breaker atmospheric or pressure type with the ASSE Seal affixed to each vacuum breaker, in accordance with ASSE Standard #1001.

**END OF SECTION 22 40 00**