

1 GENERAL

- 1.1 The work of this section includes the provision of all design, labour, materials, equipment and services required to fabricate and install plumbing fixtures as required for a complete project. The work includes, but is not necessarily limited to, the items referenced herein:
- 1.1.1 Water Closets.
 - 1.1.2 Urinals.
 - 1.1.3 Lavatories.
 - 1.1.4 Sinks.
 - 1.1.5 Showers.
 - 1.1.6 Drinking Fountain/Cooler.
 - 1.1.7 Other Plumbing Fixtures.
- 1.2 Provide new fixtures throughout, C.S.A- ASHRAE and Building Code approved, free from flaws and blemishes with finished surfaces clear, smooth and bright.
- 1.3 Provide C.S.A. approved plumbing fittings, visible parts of fixture brass and accessories shall be heavily chrome plated.
- 1.4 Fixtures shall be the product of one manufacturer and preferably Canadian made. Fittings of same type shall be product of one manufacturer.
- 1.5 Plumbing brass shall be institutional grade and of high quality.

2 DESIGN

- 2.1 Provide plumbing fixtures at locations and in numbers required.

3 MATERIALS

- 3.1 Acceptable manufacturers:
- 3.1.1 Plumbing fixtures: *[American Standard; Crane; Eljer; Kohler]*.
 - 3.1.2 Plumbing brass: *[Delta; Crane; Emco; American Standard; Waltec; Sloan, Chicago Faucet]*.
 - 3.1.3 Water closet seats: *[Moldex; Beneke; Olsonite; Centoco]*.
 - 3.1.4 Drains and specialties: *[Enpoco; Wade; Zurn; Roto-tech Smith]*.
 - 3.1.5 Shower valves: *[Symons; Leonard; Danfoss; Cambridge Brass; Emco; Moen; Powers]*.
 - 3.1.6 Wash fountains: *[Acorn]*.

3.1.7 Barrier free fixtures and trims to *[CAN/CSA-B651-M90]*.

3.2 Water Closets:

3.2.1 Bowl: wall mounted. siphon jet, vitreous china closet bowl with elongated rim, 40 mm spud.

3.2.2 Flush Valve: exposed chrome plated, diaphragm type, escutcheon, bumper, integral screwdriver stop and vacuum breaker.

3.2.3 Seat: five ply, solid black plastic, open front, extended back, less cover, complete with self-sustaining hinge.

3.2.4 All items to be suitable for handicap use where required.

3.2.5 Acceptable materials: Wall mounted flush valve water closet: *[Crane Compton #3-455]* vitreous china elongated syphon jet bowl, 40mm top spud and bolt caps, wall flange and gasket. *[Crane Presto #402VBEFE]* adjustable quiet action flush valve with vacuum breaker, fitted with solenoid actuating unit complete with concealed *["Electroflo"]* flushing control, transformer, hard wired to power supply. *[Beneke 523SS]* elongated heavy-duty solid plastic open front seat less cover, with check hinges, stainless steel posts, washers and nuts. *[Enpoco series EC710]* vertical trough floor carrier with block feet and 100mm outlet, wall frame, bolts, cap units, adjustable nipple and gasket all factory assembled. For wheelchair use, equip flush valve with centre post seat bumper and toilet seat with cover. Mount water closet at 400 mm above finished floor to rim of fixture.

3.3 Urinals:

3.3.1 Vitreous china, wall-hung, siphon jet, with shields. integral trap. integral flush rim, removable SS strainer, 70 mm top spud.

3.3.2 Concealed flush tank: vitreous china urinal tank with insulated liner and concealed cover. All exposed piping to be chrome plated. Maximum of four adjacent urinals per flush tank.

3.3.3 Control: provide control from building automation system to prevent unnecessary flush cycles during building downtime

3.3.4 Acceptable materials: *[Crane "Cromwell" #7-74T]* vitreous china washout, flushing rim, integral trap, 20mm back spud, stainless steel strainer, 50mm outlet connecting flange with gasket and bolts. *[Crane Belmont]* vitreous china urinal tank with insulated liner and concealed cover; *[Enpoco #EC510]* carrier with steel pipe legs, block base feet supports and bearing plates. Mount urinal at conventional height except for fixtures intended for wheel chair accessible which shall conform to *[CAN/CSA B651-M90]*.

3.4 Lavatories:

- 3.4.1 Self-rimming, countertop 450 mm diameter vitreous china basin with drawings on 100mm centres, overflow, seal: putty, caulking or concealed vinyl gasket.
- 3.4.2 Trim: chrome plated supply fitting with aerator.
- 3.4.3 Where required, fixtures and fittings shall be suitable for handicap use.
- 3.4.4 Acceptable materials: [*Crane "Sonnet" #1-340*], 400mm x 475mm vitreous china basin, front overflow, self-rimming with sealant. Trim fitting [*Crane "Electroflo" #EH-9000*] lavatory supply, low spout, aerator, open grid waste, 17 gauge C.P. 32mm 'P' trap, under counter mixer with check valves and integral stop valves, horizontal supplies with flexible risers. For wheelchair access locations, offset drain and ensure compliance with [*CAN/CSA B651-M90*].

3.5 Sinks (stainless steel):

- 3.5.1 Bowl: 500 x 510 x 180 mm OD, Type 302 SS, self-rimming, single compartment with undercoating, 90 mm crumb cups, 2 hole drilling in ledge back.
- 3.5.2 Trim: chrome plated supply with swing spout, aerator.
- 3.5.3 Acceptable materials: 500 x 510 x 180 back ledge stainless steel single compartment, self-countertop sink with crumb cup strainer, sound deadening pads and neoprene rim gasket, 40mm 'P' trap cleanout. Trim fitting [*Crane "Solitaire" #S-5900*] single lever deck mounted with swing spout, aerator. Connect with flexible tubes and stops on supply piping.

3.6 Handicapped lavatories, wall-mounted:

- 3.6.1 Vitreous china, low shelf, with integral back, contoured front, shallow front basin, front overflow, supply openings at 102mm centres, concealed supports.
- 3.6.2 Acceptable materials: [*Crane Wheelchair 1H-362*]. Trim as per 3.4 above.

3.7 Showers:

- 3.7.1 Shower Head: chromium plated vandal-proof institutional head c/w integral wall bracket and built-in 0.19 L/s flow, suitable for handicap units.
- 3.7.2 Trim: concealed shower pressure balanced shower control unit complete with adjustable limiting stops, check valves, and stop valves.
- 3.7.3 Trim: concealed shower supply with push button.
- 3.7.4 Acceptable materials: [*Symmons #4-151 "Universal"*] institutional wall mounted showerhead. [*Symmons #4-428 concealed "Showeroff"*] valve.

[Symmons "Safetymix"] pressure balanced shower mixing valve with adjustable limit stops, flow limiting device, check valves, and integral stop valves.

3.8 Drinking Fountain/Cooler, fully recessed:

- 3.8.1 Refrigeration system: packaged hermetic, low pressure, low or non-CFC unit with pre-cooler, insulated double wall chiller, storage tank, air-cooled condenser, thermostatically controlled.
- 3.8.2 Capacity: 30 L/h from 27°C to 10°C, with 32°C ambient air. In accordance with *[ANSI/ARI 1010]*.
- 3.8.3 Cabinet: type 302, stainless steel, satin finish, integral back, strainer, access panel and grille, elevated bubbler base.
- 3.8.4 Bubbler: barrier free, push-button operated, self-regulating, angle stream, squirt-proof, with nozzle and guard.
- 3.8.5 Electrical: grounded electrical cord with plug: 120 V, 60 Hz, CSA certified.
- 3.8.6 Acceptable materials: *[Haws Model HWCF8]*, wall mounted stainless steel fountain with #4 satin finish, 360 mm diameter receptor, bubbler, strainer, push-button control, self-closing valve, automatic stream height regulator, mounting frame, capacity 0.5 L/s at 27°C inlet water temperature and 32°C room temperature, 38 mm waste trap and supply stop. All items to be in compliance with *[CAN/CSA B651-M90]*.
- 3.8.7 Fixture for handicap use shall be stainless steel with floor supported chair carrier.

3.9 Other Plumbing Fixtures:

- 3.9.1 Service and Slop Sink:
 - 3.9.1.1 Bowl: 600 x 600 x 300 mm deep molded stone, floor mounted sink with 25 mm wide shoulders, stainless steel strainer.
 - 3.9.1.2 Trim: exposed wall type supply with cross handle, spout wall brace, vacuum breaker, hose and spout, strainer, eccentric adjustable inlets, integral screwdriver stops with covering caps and adjustable threaded wall flanges, 1.5 metre, 15 mm plain end reinforced rubber base, hose clamp, mop hanger.
 - 3.9.1.3 Acceptable materials: *[Williams #SB-300]*, 600 x 600 x 300mm deep precast terrazzo mop service basin and strainer and one piece 20 gauge stainless steel cap with tiling flange on one side. Trim fitting *[Crane C-5051]* complete with spout, wall brace, integral stops and vacuum breaker. Fit up with 1500mm reinforced rubber hose, hose clamp and mop hanger.
- 3.9.2 Emergency eyewash

- 3.9.2.1 Provide and install emergency eyewash units as per space data sheets.
- 3.9.2.2 Acceptable materials: [*Haws model 7301 DM*] deck mounted or [*model 7612*] for mounting over a sink.

4 INSTALLATION

- 4.1 Provide chrome plated rigid or flexible supplies to fixtures with screwdriver stops, reducers and escutcheons.
- 4.2 Install wall mounted fixtures with approved floor supported carriers. Model to suit installation.
- 4.3 Install hose and faucets and hose connections with vacuum breakers.
- 4.4 Fit up all showers with a pressure balanced mixing valve as specified herein. Fit up all lavatories with under counter mixer complete with check valves and integral stop valves.

End of Section