	Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL Chapter: 01 - Yale Design Standard Division: Plumbing Standards	Section: 22 40 00 Plumbing Fixtures and Trim
		Date: 08/05/2017
		Author: Office of Facilities
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Date	Description of Change	Pages / Sections Modified	ID
8/5/17	Entire document	-	mgl

## PART 1 - INTRODUCTION


- 1.1 This section applies to Plumbing Fixtures and Trim for campus institutional facilities.
- A. Purpose: Yale University preferences and requirements are indicated in this document.

## PART 2 - GENERAL DESIGN REQUIREMENTS


- 2.1 Water Closet Installations
- A. Comprehensive and limited scope capital projects shall incorporate hard wired sensor operated flush valves.
- B. Replacement of water closets shall incorporate battery operated flush valves.
- 2.2 Mop, Service Sink , and all other Faucets
- A. Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water, with valves in open or closed position.
- 2.3 Potable Water Rating
- A. Plumbing items such as but no limited to valves, and faucets shall comply with most current Federal and State no-lead requirement.
- 2.4 Laboratory Waste and Vent
- A. Waste and vent piping, including P-Traps, material shall be compatible and suitable for service
- 2.5 Fixtures shall be specified per the included fixture table, additionally fixtures shall be annotated in the contract documents per the fixture table.
- 2.6 Quality:
- A. Assurance requirements beyond standard 1 year warranty: None required.

## PART 3 - MINIMUM PRODUCT REQUIREMENTS


- 3.1 Flush valves shall comply with ASSE 1037 / ASME A112.19.2 / CSA 845.1
- 3.2 Fixtures shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Plumbing fixtures, including pipe and fittings shall contain less than 15 percent zinc.

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Fixture Code	Description	General Use
WC-1-HW	Water Closet (wall hung, hard wired)  <b>Fixture:</b> ST-2459 Wall Hung Closet and Sloan111 ESS TMO Flushometer Model: WETS-2450.1320-1.28 ES-S, Hard wired, sensor operated wall mounted sensor, Wall Mounted Bowl, 1.28 GPM Flush Valve, mechanical override.  <b>Carrier:</b> Zurn "Rigid System" chair carrier	For both Standard and ADA compliant application, mount ADA at Code required elevation.
WC-2-BO	Water Closet (wall hung, battery operated)  <b>Fixture:</b> ST-2459 Wall Hung Closet and G2 8111 Flushometer Model: WETS-2450.1401-1.28 ES-S, ST-2459 Wall Hung Closet and G2 8111 Flushometer, Battery Powered Sensor Operated, Wall Mounted Bowl, 1.28 GPM Flush Valve. mechanical override  <b>Carrier:</b> Zurn "Rigid System" chair carrier	For both Standard and ADA compliant application, mount ADA at Code required elevation.
WC-3-HW	Water Closet (floor mount, hard wired)  <b>Fixture:</b> Sloan, ST-2009 Floor Mount Closet and Royal 111 ESS TMO Flushometer Model: WETS-2020.1304-1.28, Floor Mounted Closet, Hard Wired, Sensor Operated Flush valve, mechanical override (Verify manual override for battery operated)  <b>Carrier:</b> Zurn "Rigid System" chair carrier	Standard Toilet
WC-4-HW	Water Closet (floor mounted, Hard wired)  <b>Fixture:</b> ST-2029 ADA Closet and Sloan 8111 Flushometer Model: WETS-2020.1412-1.28, Floor Mounted Closet, Hard wired, Sensor Operated Flush Valve, mechanical override.  <b>Carrier:</b> Zurn "Rigid System" chair carrier	ADA Compliant
WC-5-BO	Water Closet (floor mounted, battery operated)  <b>Fixture:</b> ST-2009 Floor Mount Closet and G2 OPT 8111 Flushometer Model: WETS-2000.1401-1.28 G2, Floor Mounted Closet, Battery Powered, Sensor Operated Flush Valve.  <b>Carrier:</b> Zurn "Rigid System" chair carrier	Standard Toilet

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WC-6-BO	<p>Water Closet (floor mounted, battery operated)</p> <p><b>Fixture:</b> ST-2029 ADA Closet and G2 8111 Flushometer  Model: WETS-2020.1401-1.28 G2, Floor Mounted Closet, Battery Powered, Sensor Operated Flush Valve.</p> <p><b>Carrier:</b> Zurn "Rigid System" chair carrier</p>	ADA Compliant
L-1	<p>Lavatory (counter mounted)  American Standard 0475.047 "AQUALYN" 20 x 17  T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator.  Pair C.P. supplies and angle stops  C.P. brass "P" trap with cleanout</p>	Standard Toilets Core
L-1A	<p>Lavatory (counter mounted)  American Standard 0475.047 "AQUALYN" 20 x 17  T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator  Pair C.P. supplies and angle stops (barrier free)  C.P. brass "P" trap with cleanout  TrueBro #102W and #105W insulation kit for supplies and waste.</p>	H.C. Toilets
L-2	<p>Lavatory (wall hung)  American Standard (0356.041 exposed brackets) (0356.421 concealed bracket) "Lucerne" 20x18  T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator  Pair C.P. supplies and angle stops</p>	Standard Toilet Core
L-2A	<p>Lavatory (wall hung)  American Standard 0356.041 "Lucerne" 20 x 18  T&amp;S Brass model EC-3102 electronic faucet with AC/DC control module, temperature control mixing valve with check valves, braided supply hoses, 120 V plug-in AC transformer and B-0199-03-F-05 0.5 gpm aerator  Pair C.P. supplies and angle stops  C.P. brass "P" trap with cleanout  TrueBro #102W and #105W insulation kit for supplies and waste</p>	H.C. Toilets
UR-1-HW	<p>Urinal (wall hung, Hard wired)</p> <p><b>Fixture:</b> Flushometer and OPTIMA® ES-S TMO Unit  Model: WEUS-1006.1304, Hard wired, Sensor Operated Flush Valve, mechanical override</p> <p><b>Carrier:</b> -</p>	Lavatory, Mount at required elevation for ADA compliance.

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UR-2-BO	<p>Urinal (wall hung, battery operated)</p> <p><b>Fixture:</b> SU-1009 Standard Urinal and G2 8186 Flushometer  Model: WEUS-1005.1401-0.5 G2, Battery Powered, Sensor Operated Flush Valve.</p> <p><b>Carrier:</b> -</p>	<p>Lavatory,</p> <p>Mount at required elevation for ADA compliance.</p>
LS-1	<p>Laboratory sink (stainless steel)  Elkay Model MDLR-XXXX; Just Model SLXD-316-XXXX  Type 316 stainless steel, 18 gauge, self rimming, 12" deep sink with LK-372 316 stainless steel perforated grid strainer and 1 1/2" O.D. 316 ST. ST. tailpiece.  T&amp;S brass Model BL-5700-9 double ledge mixing faucet with BL-5500-1 wrist action handles, rigid/swing convertible gooseneck spout, integral vacuum breaker, chrome plated finish and T&amp;S brass Model BL-5550-0-1F15 1.4 GPM non-splash aerator.  Hydro Service and Supplies Picotap Model 04313 RO/DI pure water faucet with meter valve and vacuum breaker and MPT inlet.  Pair supplies and angle stops Enfield 1 1/2" polypropylene "P" trap</p>	<p>Standard Laboratory Bench</p>
SK-1	<p>Sink  Elkay MLR2522 316 stainless steel sink with 4 faucet holes  Delta No. 450-WF single handle kitchen faucet with swing spout and spray attachment and Delta No. RP19754 1.5 GPM aerator.  Elkay No. LK-18B stainless steel perforated grid drain outlet assembly Supplies and angle stops  Cast brass P-trap</p>	<p>Kitchen/Lounge</p>
MSB-1	<p>Mop Service Basin  Fiat MSB-36x24x10 with shelf or 24x24x10 without shelf T&amp;S Brass No. B-665-BSTR faucet (Confirm integral shutoff, see Kohler)  Mop Hanger Fiat No. 889-CC  Hose and Hose Bracket. Fiat No. 832-AA Vinyl bumper guard. Fiat No. E-77-AA.  Provide cold water hose bibb T&amp;S Brass No. B-720-POL and reduced pressure backflow preventer Watts No. 909 for cleaning solution system.  Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water.</p>	<p>Janitor's Closet</p>

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SS-1	Service Sink (slop sink) American Standard 7692.049 Lakewell service sink. T&S Brass No. B-674-BSTR service sink faucet American Standard 7798.176 trap standard with strainer. Provide cold water hose bibb T&S Brass No. B-720-POL and reduced pressure backflow preventer Watts No. 909 for cleaning solution system. Fixture shall have internal reverse flow mechanism to prevent bi-directional flow between cold and hot water.	Janitor's Closet
EWC-1	Electric Water Cooler (barrier-free) Halsey Taylor HAC8FS-Q Self closing, front and side push bar actuators Stainless steel finish Supply stop Brass "P" trap with cleanout	As shown
EWC-2	Water Cooler High Low Halsey Taylor OVLII Series Q Recessed with integral chiller Stainless steel finish	As Shown
EWC-3	Water Cooler Single barrier free Halsey Taylor OVL-ER-Q Recessed with integral chiller Stainless steel finish	As Shown
ES-1	Emergency Shower / Eyewash Supply an emergency shower / eyewash assembly where indicated on the drawings Guardian Model GBF-2150 or GBF-2160(barrier free) Recessed stainless steel cabinet	<b>Laboratory</b>
ES-2	Emergency Shower, Supply an emergency shower where indicated on the drawings Guardian Model G- 1672SSH (barrier free) Recessed stainless steel cabinet	<b>Toilets</b>
ES-3	Emergency Shower / Eyewash Supply an emergency shower / eyewash assembly where indicated on the drawings Guardian Model G21-SL701 (barrier free) Recessed stainless steel cabinet with valve slot cover.	<b>Vivarium</b>
EW-1	Emergency Eyewash/Drench Hose Unit with Vacuum Breaker Deck Mounted Install separate ball valve shut-off under sink.	Laboratory
SH-1	Shower Symmons Model No. S-25-1-131 shower assembly modified with Symmons Model No. 4-228 2.0 gpm flow rate Clear-Flo shower head. Fiat Model MFT3636 Base.	Bathroom

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SH-1A	Handicap Shower Symmons SafetyMix Visu-Temp Model No. 1-117VT-FS-XB30 shower unit modified with Symmons Model No. 4-228 2.0 gpm flow rate Clear-Flo shower head and Symmons Model No. EF-100 Euro-Flo wall/hand shower wand with 2.0 gpm flow restrictor. Fiat Model WTR-5000 Base.	H.C. Bathroom
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