

## **SECTION 15400** **PLUMBING**

### **A. PLUMBING SPECIALTIES**

1. Roof and floor drains

Roof Drains: use cast iron or brass tops. Provide expansion connector under roof deck.

Floor Drains: In machine rooms, use cast iron; elsewhere use brass, except swimming pools use chrome plated. Provide complete with sediment bucket.

2. Cleanouts

Use brass, recessed fittings in floor, brass cover with three hold down screws, cleanout plug recessed with slot in head.

Use brass fittings in walls, plug with protruding square head, brass cover with three screws. Ensure contractors apply grease to threads of new plugs before fitting.

3. Hydrants

Use frost proof, vacuum breaker type with recessed brass valve box and trim.

4. Backwater Valves

Provide cleanout for service.

5. Water hammer arrestors

Use bellows type with stainless steel body and bellows. Specify ceiling or wall access panels to facilitate maintenance.

6. Interceptors

Sumps: Acid neutralizing sumps required for laboratories

Grease Interceptors: Do not install grease interceptors in kitchen plumbing.

Oil Interceptors: Use in Fine Arts labs to trap paint.

Sediment Interceptors: Use in Fine Arts labs to trap plaster.

Hair and Lint Interceptors: Use in dorms, hair dressing salons, etc.

7. Thermostatic mixing valves

For lines up to 1-1/4" the Powers Hydroguard is preferred. Use Johnson Service valve in lines 1-1/2" and up (requires compressed control air supply); valve shall fail to closed position. For showers, set mix temperature at 110°F. Downstream of mixing valve provide anti-scald valve to shut off water if temperature exceeds 120°F.

8. Back Flow Preventer

Use reduced pressure type; provide at make-up water lines serving chilled water, heating water, and cooling tower water. In some cases, parallel backflow devices may be required if a water system outage is not acceptable. Verify arrangement for all backflow devices with IU Engineering prior to final design. Building backflow preventers shall comply with local water company requirements and all applicable codes. In some cases, vertical B/F preventers may be acceptable. Confirm with IU Engineering Services.  
Acceptable Manufacturers: Wilkins (Zurn) for units ½” to 2” and Febco 860 for units 2 ½” – 10”. Incorporate a brass strainer for each backflow device installed.

## **B. PLUMBING EQUIPMENT**

### **1. Water Heaters**

In homes and small buildings use natural gas water heaters, high efficiency, insulated. Acceptable manufacturers: A.O. Smith, State, Lochinvar, Cemline. In other areas, use steam (if available) shell and tube heat exchangers with copper lined shell and copper tubes. Water in shell and steam in tube. Acceptable Manufacturers: Aerco, PVI, Patterson Kelly.

For projects at IUPUI, steam fired instantaneous or semi-instantaneous type domestic water heaters are preferred in lieu of storage tank heaters. Acceptable manufacturers include Armstrong, Maxi Therm, Cemline, Aerco, and Patterson Kelly.

### **2. Water storage tanks**

Steel, lined with epoxy or cement.

### **3. Water softeners**

Provide for dishwashers in residence halls' kitchens.

### **4. Water pressure booster system**

Large buildings - provide pump package with variable speed drive.  
Smaller buildings - provide pump, with sealed hydro pneumatic tank.

### **5. Sump Pumps**

Specify automatic duplex type sump pumps suitable for pumping from tanks or pits, complete with control package and pit cover. Control package to include a mechanical alternator with float type switch to alternate pumps and start idle unit when capacity of the operating unit is exceeded. Provide alarm to indicate pump failure and high water level. Connect to building automation and emergency power system(s) where available.