

## **DIVISION 15 - MECHANICAL**

### **Section 15450 - Plumbing Equipment**

#### **Introduction**

Equipment associated with building plumbing systems including:

WATER SOFTENER, SEWAGE EJECTOR PUMPS, HOT WATER GENERATORS, WATER HEATERS,  
WATER PRESSURE BOOSTER SYSTEMS.

#### **Part 1 - General**

- For energy conservation purposes, hot water shall not be provided to rest rooms.
- Use central plant steam via heat exchangers for hot water. Consider impact of summer shutdown of steam service, (back up systems may be required) - consult with UA Planning Design & Construction.
- Where used, water heaters shall be placed as near point-of-usage location as possible. Pumped recirculation system is required for piping systems lengths exceeding 50 feet.
- Small clear water ejector systems (fractional horsepower only) may use drop-in submersible pump.
- Autoclaves shall be connected to campus steam system and not furnished with individual steam generators. Verify adequate steam supply main pipe size and available pressure. Provide timers with over-ride button to shut off steam and water when not being used.

#### **Part 2 - Products**

- Water Softeners shall be dual automatic regenerating type to provide service during routine maintenance, complete with fiberglass tanks.

Sewage Ejector Pumps shall be self-priming, base mounted pump with suction line extended to sewage pit, high water alarm to U of A Campus EMCS. Provide two sewage ejector pumps for stand-by service with lead/lag control for building service application. Provide vent bleed valve per manufacturer's recommendation. Preferred manufacturer is Gorman Rupp or UA approved equal.

- Water Heaters - Gas fired preferred, although electric spot heaters may be used where economically justified. Lined galvanized steel tanks. 80% minimum efficiency.
- Water Pressure Booster System shall be Duplex pumping system, with removable bladder type hydropneumatic pressure tank. Booster pumps to have VFD's and be connected to the building EMCS (section 15970). Use of proprietary control systems from system manufacturers is not acceptable. VFD's must comply with DSS section 15870.
- Multi-plex pumps shall each have an H-O-A switch, disconnect, and overcurrent protection.

#### **Part 3 - Execution**

- All equipment shall be installed with isolation valves (threaded ball or flanged butterfly) - 100% full-port, full line size, bronze body at the equipment, drains, thermometers (on heat exchange equipment) and pressure gauges.
- Provide drip pans with piped drain beneath water heaters placed in areas other than in equipment rooms.

- Provide line size (2" maximum) full port ball valve blowdown on each side of heat exchangers (typically 4).

**End of Section 15450**