

**GENERAL:**

The objective of this guideline is to provide minimum standards for design and installation plumbing systems. This section covers requirements for common work.

**DESIGN GUIDELINES:**

1. Section 22.05.13 Common Motor Requirements.
  - 1.1. All motors shall meet minimum ASHRAE energy efficiency requirements.
2. Section 22.05.16 Expansion Fittings, loops for plumbing piping
  - 2.1. System design shall provide adequate pipe offsets or loops and shall not use any manufactured expansion joint products.
  - 2.2. Provisions shall be made on vertical pipe risers to accommodate pipe growth when selecting pipe hangers and supports.
3. Section 22.05.19 Meters and gauges for plumbing
  - 3.1 Water meters will be provided as specified in section 331233.
  - 3.2 Thermometers shall be provided on water heaters on both CW and HW piping.
  - 3.3 Pressure gauges shall be provided on the following pieces of equipment:
    - 3.3.1 After the building backflow preventer
    - 3.3.2 After the building water meter.
    - 3.3.3 After the water softeners
    - 3.3.4 After the water heater on HW piping
    - 3.3.5 After the branch or isolation valve on each floor for both HW and CW piping.
4. Section 22.05.48 Vibration, seismic Controls for Plumbing Piping and Equipment
  - 4.1 Follow requirements of IPC
5. Section 22.05.53 Identification for Plumbing Piping and Equipment
  - 5.1 The following abbreviations shall be used in design documents and as actual labels on piping in the finished building:
    - 5.1.1 DCW Domestic Cold Water
    - 5.1.2 DHW Domestic Hot Water
    - 5.1.3 DHWR Domestic Hot Water Return
    - 5.1.4 NPCW Non-potable Cold Water
    - 5.1.5 NPCW Non-potable Hot Water
    - 5.1.6 NPHWR Non-potable Hot Water Return
    - 5.1.7 SW Sanitary Waste
    - 5.1.8 SV Sanitary Waste
    - 5.1.9 LW Laboratory Waste
    - 5.1.10 LV Laboratory Vent

- 5.1.11 SPD Sump Pump Discharge
- 5.1.12 ST Storm Water