

**15B.6 Piping Systems****A. Design Pressures:**

1. Design: Zone system to maintain between 275 kPa and 550 kPa (40 and 80 psi) at fixtures.
2. Zone: Provide a maximum of 9 floors in pressure zones. Utilizing pressure reducing valves in domestic water systems at each floor is prohibited. When required, install two in parallel with shut off valves for maintenance.
3. System Pressure: Maintain through a factory manufactured and tested automatic triplex booster pump system with premium efficiency motors sized at 50% - 50% - 20% split with variable frequency drives. Pump controller sequences pumps based on flow readings from a flow sensor with back-up pressure switch.
4. Booster Pump System: Connect to operational standby power <15C>.

**B. Pipe Material:**

1. Domestic Water Pipe:
  - a. Exterior Water Mains: <1> Cement lined ductile iron, minimum diameter 75 mm (3 inch).
  - b. Inground / Below Grade: Type “K” copper or PVC grades SDR 21 or 26, depending on pressure requirements.
  - c. Galvanized Pipe: Not permitted for domestic water systems (mains, below grade or interior).
  - d. Interior Distribution: Type “L” copper with no-lead solder or “ProPress” joints and copper fittings. Accepted alternatives include:
    - *Flowguard Gold* CPVC piping systems
    - *Corzan* CPVC piping systems
    - Stainless steel piping and fittings with pressure ratings equivalent to Type “L” copper
    - “PEX” Piping: Provide only for final distribution in guestroom bathrooms (no joints between the manifold and fixture). Comply with ASTM F876 / F877, NSF 61, 5006 chlorine resistance rating and 60 day minimum UV rating.
    - Accepted Manufacturers: *VEGA* and *Uponor*