

Pakistan Building Code (Seismic Provisions 2007)

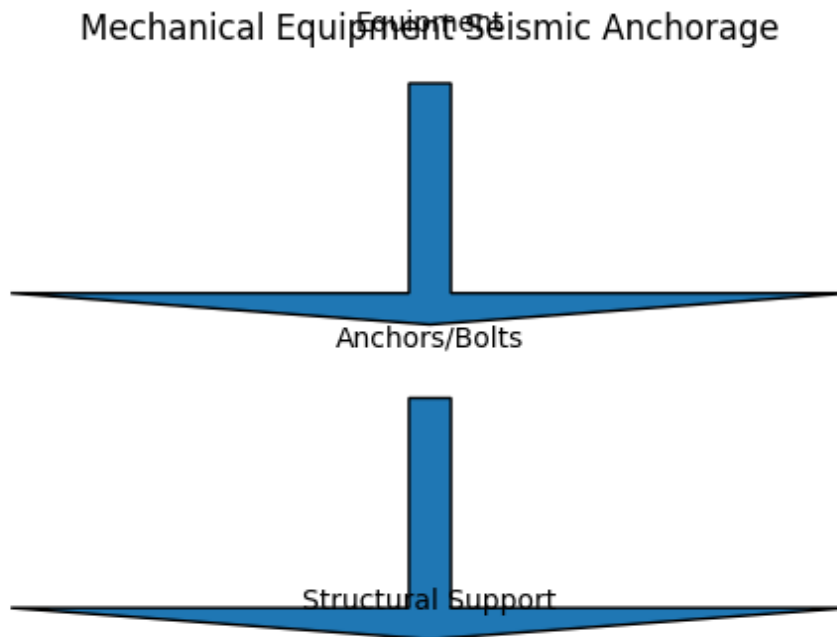
Chapter 11: Mechanical and Electrical Components — Advanced Professional Interpretation

Purpose of Chapter 11

Chapter 11 establishes seismic design and anchorage requirements for mechanical and electrical components. Failures of MEP systems during earthquakes can cause fire, flooding, loss of functionality, and major economic losses even when the structure remains intact.

1. Seismic Design of MEP Components

Mechanical and electrical equipment must be designed to resist seismic forces and remain securely attached to the structure. The design must consider component weight, location, and importance.

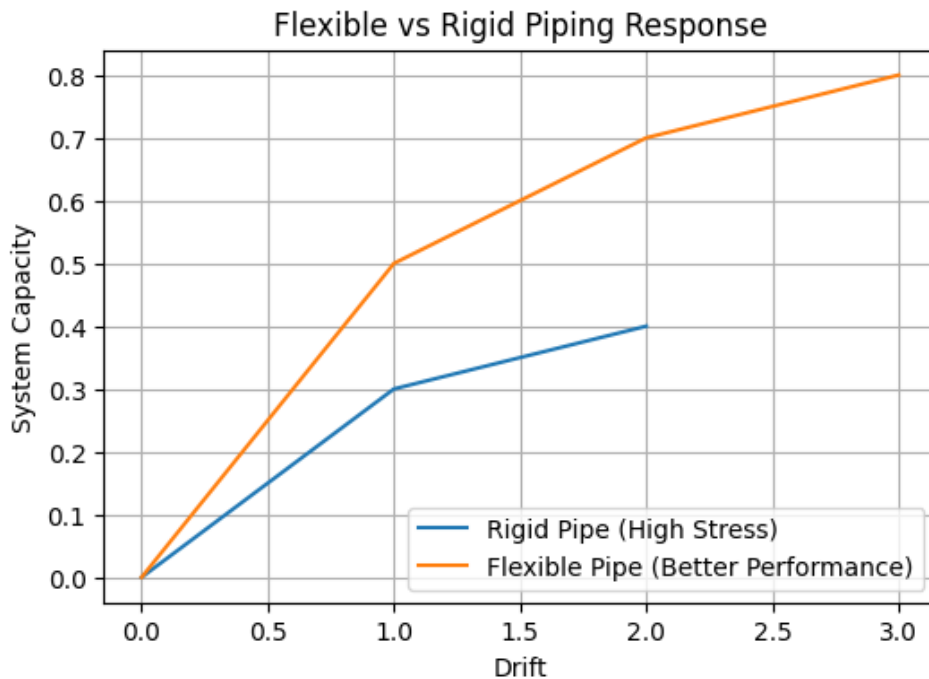


2. Anchorage and Support Systems

Positive anchorage is required to prevent sliding, overturning, or detachment of equipment. Anchors, braces, and supports must be designed for amplified seismic forces.

3. Piping, Ducts, and Cable Trays

Piping and duct systems must accommodate building drift and include seismic bracing where required. Flexible connections are often necessary near equipment and seismic joints.



4. Importance of Essential Facilities

Hospitals, emergency facilities, and critical buildings require enhanced protection of MEP systems to ensure post-earthquake functionality.

Professional Risk Notes

Common failures include unanchored generators, ruptured piping, falling cable trays, and rigid utility connections. Proper seismic restraint of MEP systems is essential for life safety and operational continuity.