

SECTION 220548 - VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Inertia bases.
- B. Vibration isolators.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete.

1.3 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide schedule of vibration isolator type with location and load on each.
- C. Manufacturer's Instructions: Indicate installation instructions with special procedures and setting dimensions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Isolation Technology, Inc: www.isolationtech.com.
- B. Kinetics Noise Control, Inc: www.kineticsnoise.com.
- C. Mason Industries: www.mason-ind.com.
- D. Substitutions: See Section 016000 - Product Requirements.

2.2 INERTIA BASES

- A. Concrete Inertia Bases:
 - 1. Construction: Structural steel channel perimeter frame, with gusseted brackets and anchor bolts, reinforcing; concrete filled.
 - 2. Mass: Minimum of 1.5 times weight of isolated equipment.
 - 3. Connecting Point: Reinforced to connect isolators and snubbers to base.
 - 4. Concrete: Minimum 3000 psi (20 mPa) concrete.

2.3 VIBRATION ISOLATORS

A. Open Spring Isolators:

1. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
2. Spring Mounts: Provide with leveling devices, minimum 0.25 inch (6 mm) thick neoprene sound pads, and zinc chromate plated hardware.
3. Sound Pads: Size for minimum deflection of 0.05 inch (1.2 mm); meet requirements for neoprene pad isolators.
4. For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

B. Restrained Open Spring Isolators:

1. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
2. Spring Mounts: Provide with leveling devices, minimum 0.25 inch (6 mm) thick neoprene sound pads, and zinc chromate plated hardware.
3. Sound Pads: Size for minimum deflection of 0.05 inch (1.2 mm); meet requirements for neoprene pad isolators.
4. Restraint: Provide heavy mounting frame and limit stops.
5. For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

C. Neoprene Pad Isolators:

1. Rubber or neoprene waffle pads.
 - a. Hardness: 30 durometer.
 - b. Thickness: Minimum 1/2 inch (13 mm).
 - c. Maximum Loading: 50 psi (345 kPa).
 - d. Rib Height: Maximum 0.7 times width.
2. Configuration: Single layer.
3. Configuration: 1/2 inch (13 mm) thick waffle pads bonded each side of 1/4 inch (6 mm) thick steel plate.

D. Rubber Mount or Hanger: Molded rubber designed for 0.4 inch (10 mm) deflection with threaded insert.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

- B. Bases:
 - 1. Set concrete inertia bases for 2 inches (50 mm) clearance between housekeeping pad and base.
 - 2. Adjust equipment level.
- C. Prior to making piping connections to equipment with operating weights substantially different from installed weights, block up equipment with temporary shims to final height. When full load is applied, adjust isolators to load to allow shim removal.
- D. Support piping connections to equipment mounted on isolators using isolators or resilient hangers to nearest flexible pipe connector.
 - 1. Up to 4 Inches (100 mm) Pipe Size: First three points of support.

3.2 FIELD QUALITY CONTROL

- A. Inspect isolated equipment after installation and submit report. Include static deflections.

END OF SECTION