

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Labor and material to install, test and to place into operation vibration isolation for piping and equipment.
2. All piping, equipment, etc. shall be isolated in accordance with the requirements of the IBC-NJ.

B. Related Sections:

1. Requirements of Section 21 05 00 shall also govern work specified herein, together with all applicable paragraphs of Fire Protection sections.

1.02 SUBMITTALS

A. The submittal material shall include descriptive data for all products and materials including but not limited to, the following:

1. Descriptive Data:

- a. Catalog cuts and data sheets on specific vibration isolators to be utilized showing compliance with the specifications.
- b. Testing reports.

B. Shop Drawings:

1. Drawings showing methods of suspension, support guides for piping and equipment.
2. Concrete and steel details for bases including anchor bolt sizes and locations.
3. Number and location of vibration isolators and anchors for each piece of equipment.
4. Specific details of vibration isolators, including anchor bolts for mounting and maximum loading at each location, for each piece of equipment and piping.
5. Purchased and/or fabricated equipment must be designed to safely accept external forces in accordance with IBC-NJ in any direction for all rigidly and resiliently supported equipment and piping without failure and permanent displacement of the equipment. Substitution of "Internally Isolated" mechanical equipment in lieu of the specified isolation must be approved for

individual equipment units and is acceptable only if above accelerations are certified in writing by equipment manufacturer and stamped by a licensed civil or structural engineer.

### 1.03 REFERENCE STANDARDS

- A. International Building Code – 2009 New Jersey Edition (IBC-NJ).

Where conflicts exist between the two reference standards, the requirements of the more stringent standard shall apply.

### 1.04 MANUFACTURER RESPONSIBILITIES

- A. Manufacturer of vibration isolation control equipment shall have the following responsibilities.
  - 1. Determine vibration isolation sizes and locations.
  - 2. Guarantee specified isolation system deflection.
  - 3. Provide installation instructions, drawings and field supervision to assure proper installation and performance.

### 1.05 QUALITY ASSURANCE

- A. All fire protection systems within the building shall be protected by vibration isolation controls.
- B. The Contractor shall be responsible for obtaining the services of the New Jersey State Registered Professional Engineer with a minimum of 5 years of vibration isolation design experience in related building component restraints. This engineer shall design and certify vibration isolation for proper installation and performance of fire protection systems.
- C. The Contractor's engineer shall provide field supervision as required to ensure proper installation and performance of systems.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Vibration isolation systems shall be provided on all equipment as noted in Division 22 Specifications.
- B. Details of support methods for typical conditions are described herein. Actual method(s) of restraint for all equipment shall be submitted by the manufacturer of each piece of equipment accompanied by a letter indicating compliance with the criteria established. The Contractor shall provide restraints as indicated on approved Shop Drawings.

## 2.02 REQUIRED APPLICATIONS

- A. All equipment which is bolted directly to concrete housekeeping pads.
- B. All floor mounted equipment mounted on vibration isolators.
- C. All piping and equipment supported from overhead.
- D. Wall hung equipment.
- E. All floor-mounted pipes and ducts are not secured to seismic floor stands.

## PART 3 - EXECUTION

### 3.01 UTILIZATION

- A. Equipment and piping supported from overhead:
  - 1. For overhead supported equipment, overstress of the building structure must not occur.
- B. Equipment mounted on vibration isolators:
  - 1. Equipment mounted on springs shall utilize Seismic Restraint Type III (spring mounts) and do not require additional vibration isolation providing that the spring mountings:
    - a. Comply with general characteristics of spring isolators.
    - b. Have vertical limit stops and are capable of supporting equipment at fixed elevation during equipment erection.
  - 2. Where equipment weight or characteristics exceed capacity of spring mounts, equipment shall be mounted on standard spring isolators, Mason Industries Type SLR or approved equal.
- C. Wall mounted equipment, piping and ductwork:
  - 1. Provide and install insert anchors for concrete walls and through bolts with plates for concrete masonry unit and framed walls in accordance with approved submittals.
- D. Anchor cabinets and boxes to wall with steel channel supports and anchors or bolts. In framed walls, framing shall be constructed to accept horizontal forces from dynamic load under horizontal forces from applicable IBC-NJ.

END OF SECTION