CONSTRUCTION SPECIAL SPECIFICATION

SECTION 15070_S

VIBRATION ISOLATION

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CONSTRUCTION SPECIAL SPECIFICATION

SECTION 15070_S

VIBRATION ISOLATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish and install vibration isolators for rotary, dynamic, or reciprocating equipment or components; include:
1. Inertia bases.
2. Vibration isolation.

1.2 REFERENCES

A. ASHRAE - Guide to Average Noise Criteria Curves.

1.3 SUBMITTALS

A. Indicate isolation base dimensions.

B. Indicate vibration isolator locations, with static and dynamic load.

C. Include calculations required to certify compliance with specified requirements.

D. Submit manufacturer's certificate that isolators are properly installed and properly adjusted to meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

A. Maintain ASHRAE criteria for average noise criteria curves for all equipment at full load condition.

B. Provide vibration isolation devices, including auxiliary steel bases and pouring forms, from a single manufacturer or supplier who will be responsible for complete coordination of all phases of this work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Amber-Booth Company.

B. Korfund Dynamics Corporation.

C. Mason Industries.

2.2 ISOLATION BASES

A. Type A: Integral structural steel fan and motor base with motor slide rails.

B. Type B: Slung structural steel base with gussetted brackets.

C. Type C: Reinforced 3,000 pounds per square inch concrete inertia base set in full depth perimeter structural steel channel frame, with gussetted brackets and vibration isolators.

D. Type D: Reinforced 3,000 pounds per square inch concrete equipment base with chamfered edges without channel frame. Refer to Section 15060.

2.3 VIBRATION ISOLATORS

A. Type 1: Spring isolator with built-in all direction seismic restraint with neoprene rubber stabilizers equal to Mason Industries SLR singles and multiple spring welded restraint mounts.

B. Type 2: Open spring mount with stiff springs (horizontal stiffness equal to vertical stiffness).

C. Type 3: Open spring mount with stiff springs, heavy mounting frame, and limit stop.

D. Type 4: Closed spring hanger with acoustic washer.

E. Type 5: Closed spring hanger with 1 inch thick acoustic isolator.

F. Type 6: Rubber waffle pads, 30 durometer, minimum 1/2-inch thick, maximum loading 40 pounds per square inch. Use neoprene in oily or exterior locations.

G. Type 7: 1/2-inch thick rubber waffle pads bonded each side of 1/4-inch thick steel plate.

H. Type 8: Type BRD-1 rubber-in-shear isolators. Size isolator for 0.35-inch deflection.

2.4 FABRICATION

A. Provide pairs of neoprene side snubbers or restraining springs where side torque or thrust may develop.

B. Color code spring mounts.

C. Select springs to operate at two-thirds maximum compression strain, with 1/4-inch ribbed neoprene pads.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install vibration isolators for motor driven equipment.

B. Set steel bases for 1-inch clearance between housekeeping pad and base. Set concrete inertia bases for 2-inch clearance. Adjust equipment level.

C. Provide spring isolators on piping connected to isolated equipment as follows: up to 4-inch diameter, first three points of support; five to 8-inch diameter, first four points of support; 10-inch diameter and over, first six points of support. Static deflection of first point to be twice deflection of isolated equipment.

D. Provide minimum of four hangers for each fan coil unit and unit heaters. Provide isolators for each hanger.

3.2 SCHEDULE

Isolated Equipment	Base Type	Isolator Type
Boilers	D	NA
Tanks		
Heating Water	D	NA
Domestic Hot Water	D	NA
Expansion (Vertical)	D	NA
Expansion (Horizontal)	NA	4
In-Line Fans	NA	1
Pumps		
Inline	NA	4
End Suction (on ground floor)	D	NA
End Suction (on upper floors)	D	6
Split Case	C	1
Piping	NA	4

Isolated Equipment	Base Type	Isolator Type
Ductwork	NA	N/A
Unit Heaters	NA	8
Fan Coil Units	NA	8

END OF SECTION