SECTION 230548 - MECHANICAL VIBRATION CONTROL

PART 1-GENERAL

1.1 SECTION INCLUDES

A. Vibration isolators.

B. Equipment bases.

C. Flexible connectors.

1.2 SUBMITTALS

A. Submit shop drawings and product data per applicable Division I Specification.

B. Shop drawings shall include product data noting calculations, materials, sizes, and dimensions.

1.3 WARRANTY

A. Contractor shall warranty entire systems and equipment for a period of one (1) year.

PART 2-PRODUCTS

2.1 MANUFACTURERS

A. Mason Industries.

B. Korfund Company Inc.

C. Consolidated Kinetics.

D. Vibration Elimination Co.

E. VMC Group- Amber/Booth

F. Metraflex

2.2 VIBRATION ISOLATORS

A. Open Spring Isolators:

1. Spring Isolators:

a) For Exterior and Humid Areas: Provide hot dipped galvanized housings and neoprene coated springs.

b) Code: Color code springs for load carrying capacity.

2. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection.

3. Spring Mounts: Provide with levelling devices, minimum 0.25 Inch thick neoprene sound pads, and zinc chromate plated hardware.

4. Sound Pads: Size for minimum deflection of 0.05 inch; meet requirements for neoprene pad isolators.

B. Restrained Spring Isolators:

1. Spring Isolators:

a) For Exterior and Humid Areas: Provide hot dipped galvanized housings and neoprene coated springs.

b) Code: Color code springs for load carrying capacity.

2. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection.

3. Spring Mounts: Provide with levelling devices, minimum 0.25 Inch thick neoprene sound pads, and zinc chromate plated hardware.

4. Sound Pads: Size for minimum deflection of 0.05 inch; meet requirements for neoprene pad isolators.

5. Restraint: Provide heavy mounting frame and limit stops.

C. Spring Hanger:

1. Spring Isolators:

a) For Exterior and Humid Areas: Provide hot dipped galvanized housings and neoprene coated springs.

b) Code: Color code springs for load carrying capacity.

2. Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection.

3. Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators.

4. Misalignment: Capable of 20 degree hanger rod misalignment.

D. Neoprene Pad Isolators:

1. Rubber or neoprene waffle pads.

a) 30 durometer.

b) Minimum 1/2 inch thick.

c) Maximum loading 40 psi.

d) Height of ribs shall not exceed 0.7 times width.

2. Configuration: Single layer.

E. Rubber Mount or Hanger: Molded rubber designed for 0.5 inches deflection with threaded insert.

F. Flexible piping connectors as follows:

1. Molded reinforced neoprene construction with steel flanges and control rods.

2. Flexible steel braided construction with steel flanges.

G. Vibration insolation equipment bases

1. Manufacturers subject to compliance with requirements, provide products by one of the following:

a. Kinetics

b. Mason Industries, Inc.

c. Vibration Eliminator Co, Inc.

d. Vibration Isolation

e. Vibration Mounting and Controls, Inc.

PART 3-EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions and with manufacturer's engineered selections.

B. Install isolation for motor driven equipment.

C. Adjust equipment level when installed on concrete bases.

D. Install spring hangers without binding.

E. 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.

F. Provide pairs of horizontal limit springs on fans with more than 6.0 Inch static pressure, and on hanger supported, horizontally mounted axial fans.

G. Support piping connections to isolated equipment resiliently as follows:

1. Up to 4 Inch Diameter: First three points of support.

2. 5 to 8 Inch Diameter: First four points of support.

3. Select three hangers closest to vibration source for minimum 1.0 Inch static deflection or static deflection of isolated equipment. Select remaining isolators for minimum 1.0 Inch static deflection or 1/2 static deflection of isolated equipment.

H. Connect wiring to isolated equipment with flexible hanging loop.

END OF SECTION 230548