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PART 1 - GENERAL

1.1 GENERAL

- .1 All drawings and all sections of the specifications shall apply to and form an integral part of this section.

1.2 WORK INCLUDED

- .1 All base plates (fabricated, suspended using uni-strut) for pump including placement of pump to be installed with neoprene heavy density pads.
- .2 Pump shall be installed with flex connection.
- .3 Provide swing joints at each connection to existing for new supply and return hot water heating system. Provide expansion loop where referenced.

1.3 REFERENCE STANDARD

- .1 Provide and install vibration isolation necessary to isolate and restrain mechanical equipment so that Average Noise Criteria Curves as outlined in the current ASHRAE Handbook are not exceeded.
 - .1 Vibration, Isolation
 - .1 Neoprene isolation shall be tested to ASTM specification stating "No.", minimum and maximum Tensile strength, minimum and maximum Elongation at break.

1.4 SUBMITTALS

- .1 Obtain relevant mechanical equipment information and provide shop drawings isolator locations, load on each isolator and installation instructions.
- .2 Drawings shall have the stamp and signature of manufacturer's technical representative.

1.5 GENERAL REQUIREMENTS

- .1 Vibration isolation equipment and materials shall be supplied by single Agent, except where isolators are factory installed on the exterior.

1.6 INSPECTION

- .1 Provide inspection services by vibration isolation equipment and materials manufacturer's representative after final installation and provide written report to the Contract Administrator that installation is in accordance with specifications and manufacturer's recommendations.

1.7 ACCEPTABLE MANUFACTURERS

- .1 Manufacturers whose product are approved in principle but subject to requirements of drawings and specifications are:
 - .1 Metraflex, Amber-Booth, Korfund, Vibro-Acoustics, Vibron, Industrial Acoustics Company.

PART 2 - PRODUCTS

2.1 VIBRATION ISOLATORS

- .1 Neoprene Pads: (VI - 3)
 - .1 Provide physical properties, ageing tests, compression set, low temperature limits, tear test bath oil and oven.
 - .2 Where a ribbed pad is used, the height of the ribs shall not exceed 0.7 times the width of the rib. Steel inter-layers shall be used to distribute the load in a multi-layered unit.

2.2 FLEXIBLE PIPE CONNECTIONS

- .1 Pipe Connections: (FPC- 1)
 - .1 (Type FPC - 1)
 - .1 Flexible pipe connector shop drawing data shall include maximum allowable temperature and pressure rating, overall face-to-face length 456 mm (18") long unless otherwise noted, live length, hose wall thickness, hose convolutions per unit length and per assembly, fundamental frequency of assembly braid structure and total number of wires in braid.
 - .2 Construct with stainless steel inner hose and braided exterior sleeve for steel piping.
 - .3 Construct with bronze inner hose and braided exterior sleeve for copper piping.
 - .4 No steel wires or rings shall be used as pressure reinforcement.
 - .5 Use connectors suitable for minimum 862 kPa (125 Psi) WSP and 232°C (450°F), and 1380 kPa (200 Psi) WOG and 121°C (250°F) flanged of NPT.

2.3 EXPANSION COMPENSATORS

- .1 Construction: Expansion Loop

2.4 PIPE ALIGNMENT GUIDES

- .1 Construction:
 - .1 Carbon steel with painted finish.
 - .2 Saddle base with pre-drilled holes.
 - .3 Internal retainer pre-insulated (bolted) with exterior swivel top bolted one side or bolted both sides.
 - .4 Maximum movement 76mm (3")

PART 3 - EXECUTION

3.1 EXPANSION COMPENSATORS

- .1 Installation of piping loop to be as recommended by Division 15205 technical representative c/w written report.

3.2 PIPE ALIGNMENT GUIDE

- .1 Installation of pipe alignment guides relative to piping loop to be as recommended by Division 15205 technical representative c/w written report.

PART 4 - SCHEDULES

TABLE 9 - VIBRATION ISOLATION & ATTENUATION

Equipment Mark	Base Mount	Spring Hung	Neoprene	Flex Connection		Anchor Alignment Guide	Remarks
				D	P		
Glycol Heating Pumps: circulating	√		√		√	√	A, B
Hot Water + Glycol Heating: Piping						√	B
Supply fans:		√		√			C

Remarks

- A -** Provide uni-strut base mount assembly for pump placement. Place pumps on neoprene pads at contact points.
- B -** See Part 3 above.
- C -** Each side of fan.

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