KINETICS LONG-FORM
CONCRETE FLOATING FLOOR
SPECIFICATIONS

Part 1.00 General

1.01 Related Documents
A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division -1 Specification sections, apply to work of this section.

1.02 Related Work Specified Elsewhere
A. Concrete and reinforcement for slabs to be isolated. Section
B. Waterproofing, membrane flashing sealant. Section ____.
C. Sound Absorption Materials used as finish or cavity fill unless included in a specified "system" of this Section. Section

1.03 Work Furnished To Sound Condition Materials Installed By Others
A. Pipe, conduit, ductwork packing. Section ____.

1.04 Description of System
A. The work under this Section shall include furnishing all labor, materials, tools, appliances and equipment, and performing all operations necessary for the complete execution of the installation of sound isolation systems as shown, detailed and/or scheduled on the drawings, and/or specified in this section of the specifications except as listed above. This work in general shall be included but not necessarily be limited to the following:

1. Isolated concrete slabs, "Floating Floors" shall be supported by sound isolated materials.
2. The perimeter of "Floating Floors" shall be isolated from adjoining walls, columns or curbs by means of perimeter isolation board.

1.05 Alternate Systems
A. Isolation Systems offered, as an alternate to the specified materials shall conform to the performance characteristics of the specified system. Characteristics will be evaluated as follows:

1. Support media "Noise and Vibration Pads" must provide a natural frequency of 15 Hz or lower and shall remain constant within 2 Hz over the entire load range of the floor system. Pads shall be designed to safely withstand a minimum imposed load of 200 PSF in all open areas, and shall have a minimum overload capacity of 100% in all high load areas.
B. Support media, both initially and permanently, must be of a load-versus-deflection predictability that uniform deflection of the "Floating Floor" can be engineered by the supplier to control variation of deflection of the "Floating Floor" to within the bending limits of the "Floating Floor" slab designed for this project, to eliminate cracking of the slab caused by excess deflection.

C. Support Media: "Noise and Vibration Isolation Pads" shall be resistant to oil, water, acids and fungus, and shall be capable of sustaining a 100% overload without damage, permanent set, collapse or permanent loss in specified natural frequency.

D. Technical data supporting performance characteristics of the support media shall include dynamic and static load deflection, natural frequency test, as performed and reported by a nationally recognized independent testing agency. Test reports shall include data on longevity, creep rate and details of test procedures used to establish reported data.

E. Substitutes for the isolation specified as an integral part of the sound isolation system incorporating non-permanent materials such as cork, rubber/neoprene, wood pulp, polyurethane product or thermal-type fiber glass will not be acceptable.

F. The intent of this specification is to assure that the support media used for "Floating Floors" will be of a nature that it will continue to perform properly for the life of the installation. Any information requested by the Architect to assure that the intent of the specification will be met shall be provided. Alternate must be submitted for approval ten (10) days prior to bid letting.

1.06 Installation

A. Installation of all sound isolation materials specified herein shall be accomplished following the isolation material manufacturer’s written instructions. Installation instructions shall be submitted to the Architect for approval prior to beginning of work.

B. Installing contractors shall be experienced in installation of the systems specified herein and shall evidence such qualification by submitting to the Architect a list of five (5) previously installed similar sound isolation systems that performed satisfactorily to the building owner, or a letter of certification from an approved isolation materials manufacturer stating that the installing subcontractor is familiar with the special requirements of installing the system specified.

1.07 System Design

A. The isolation materials manufacturer shall be responsible for the design of the load-bearing sound isolation material, and shall provide a complete sound isolation system to the installing contractor.

B. The isolation system shall be designed to accommodate the range of uniform dead and live loads, and concentrated loads of furnishings and/or mechanical
equipment supported by the "Floating Floors", as shown or otherwise indicated on the construction documents.

C. The General Contractor shall furnish a complete set of final approved shop drawings of all equipment to be supported by "Floating Floors" to the isolation material manufacturer on which the design of load-bearing sound isolation panels will be based.

D. Maximum additional vertical deflection of cured "Floating Floors" shall not exceed 0.10 inch, or the given bending limits for the concrete slabs, within 36 inches of the center line of imposed concentrated loads, when equipment or furnishings are placed on the finished "Floating Floor."

1.08 Laboratory Testing

A. Sound Isolation performance of the specified 'Floating Floor' system has been evaluated at the Riverbank Acoustical Laboratories and rated in excess of STC 72, IIC 70. Manufacturers offering alternate systems to this specification shall provide laboratory test from an independent laboratory verifying that the alternate system is capable of achieving equivalent sound isolation results. Acceptable laboratory test reports shall be from one of the following laboratories: Cedar Knolls Acoustical Laboratory, Geiger-Hamme Acoustical Laboratory, Kodaraas Acoustical Laboratory, Riverbank Acoustical Laboratory.

B. Laboratory test reports are the basis for initial consideration of alternate systems only and are not in lieu of the provisions of Paragraph 1.5 "Alternate Systems."

1.09 Submittals

A. Samples: The Contractor shall submit samples in triplicate of all sound isolation materials or system components to the Architect for approval.

B. Shop Drawings: The Contractor shall have prepared by the isolation material manufacturer, and shall submit to the Architect for approval, drawings showing the construction of the various parts of the work, including connections of the isolation system components to adjacent parts of the building structure. Drawings shall include complete installation instructions and layout sequence of the prefabricated sound isolation material. Submit drawings in sepia form (1) copy, and black and white copies in triplicate.

C. Calculations: The Contractor shall have prepared by the isolation material manufacturer and shall submit tabulated isolator and floor loads and deflection under "as-built" and "operating" conditions. The calculation shall be computer generated for each isolator near each concentrated load. Floor slabs shall be modeled as a semi-infinite plate on an elastic foundation. All final loads and deflections shall be within the rated capacity of each isolator and shall be tabulated for a minimum of three isolator spaces away from the center of the imposed concentrated load on the "Floating Floor."

D. Test Reports: Contractor shall submit copies in triplicate of certified test reports, from independent laboratories which are specified as verification of performance for the specified sound isolation system if an alternate system to that specified is being submitted.
1.10 Examination of Existing Conditions

A. The sound isolation contractor shall carefully examine conditions at the job site before commencing his work. Any surfaces not properly prepared to receive work of this section shall be reported to the Architect's representative and work shall not commence until conditions are satisfactory.

B. Prior to beginning the work of this section, all areas to receive sound isolation materials will be dry, level and smooth and will have been cleared of all debris and broomed clean.

1.11 Protection of Work in Place

A. Isolation materials installed under this section of the specifications shall not be installed during inclement weather when areas receiving same are temporarily exposed to the weather.

B. All isolation materials installed in areas exposed to the weather shall be temporarily protected by 6 mil polyethylene film covering until permanent waterproofing is achieved. The work shall be protected at the end of each day's work.

C. On completion of the installation system, protection of the system during the pouring of concrete floating floors shall include polyethylene film covering by the isolation material installing contractor, and protection of isolation material and protective coverings by the placement of planking and/or plywood sheets by the contractor installing concrete "Floating Floors."

D. Contractors installing materials specified under this section but installed under other sections of the specifications shall provide protection from damage for these materials until they are permanently covered by complete systems

Part 2.00 Materials

2.01 Source of Materials*

A. All sound isolation materials specified herein shall be provided by a single manufacturer to assure single responsibility for the proper performance of all isolation materials used.

B. Systems specified herein and details on the drawings are based on materials manufactured by Kinetics Noise Control, Inc. Other available manufacturers are Vibration Mountings, Bloomingdale, NJ; Vibration Eliminator, Long Island, NY.

2.02 Hosting Floors

A. The floating floor system shall consist of a heavy aggregate 150 PCF concrete "floating" slab of 4" minimum thickness, the isolation material and the supporting floor structure.

B. Isolation System: Shall consist of 1/2 inch C grade, sheathing, EXP-1, fir, 4 ply. Plywood concrete pouring form supported by pressed molded fiber glass noise and vibration isolation pads, individually coated with a flexible
moisture-impervious membrane Fiberglass pads shall have satisfactorily passed WMATA Section 3.49 dynamic test for isolator performance. Isolation Pads shall be 2 inches thick and shall be of flame-annealed glass fibers with nominal fiber diameters not to exceed 0.00027 inch, and shall have been stabilized by pre-compression. The isolation pads shall be spaced on 12 to 16 inch centers each way. Low-density fiberglass noise absorption material 1.08 PCF, NRC 87, 1-1/2 inches thick, shall be bonded to the entire area between the isolation pads. Bearing surface area of each pad shall be determined by the isolation manufacturer on the basis of final evaluation of concentrated and uniformly imposed loads, but in no case shall the uniform load range be less than 200 PSF to maintain an essentially constant natural frequency of 15 Hz or lower and uniform deflection of the floating floor. Isolation material shall be Kinetics Noise Control, Inc., Type RIM.

C. Junction Plates for maintaining planar alignment of isolation panels, plates shall be 4” x 4”, 16 Ga. galvanized steel attached at four (4) points using power-driven screws. Junction plates shall be Kinetics Noise Control, Inc., Type JP.

D. Perimeter Isolation Board Shall be 3/4 inch thick, closed cell, expanded polyethylene conforming to ASTM Designations C-272, D-624, D-1564 and D-1621. Install as indicated on the drawing. Perimeter isolation board shall be Kinetics Noise Control, Inc., Type PIB.

E. Penetrations: Piping, conduit or ductwork penetrations of the "Floating Floors' shall be isolated with 3/4 inch, closed cell expanded polyethylene as specified for perimeter isolation board, or Kinetics Noise Control, Inc., Type PS-1-D Pipe Sleeve.

F. Isolated Floor Drains: Shall consist of two-part units designed to be cast into the isolated slab and the structural slab with no rigid connection between the two members. The drains shall allow for drainage of the air space. The upper member shall contain a grate appropriate to the system. Isolated floor drain shall be Kinetics Model IFLD.

Part 3.00 Execution

3.01 Installation

A. The installation of all sound isolation materials specified herein, including those installed under other sections of the specifications, shall be accomplished following the installation procedures submitted by the isolation material manufacturer, and approved by the Architect.

B. All sound isolation materials and building components supported by isolation materials are to be completely free from rigid contact with any part of the building structure.

3.02 Inspections

A. Notification shall be given by the contractor to the Architect and to the field representative of the isolation material manufacturer to inspect the installation at the following stages:
1. Upon completion of all areas prior to the placement of isolation materials. All surfaces shall receive their approval before installation of isolation material.

2. Upon completion of placement of isolation materials prior to placement of concrete topping. The manufacturer’s representative shall be on hand to assist in the initial stages of the placement of isolation material to ensure that proper procedures and techniques are strictly followed.

3. Upon completion of finished floor surface installation of sealant; the final inspection of sound isolation shall be made at this time. Any evidence of faulty performance shall be evaluated and such imperfections shall be corrected. Any area subject to short-circuiting shall be cut out and properly installed to ensure a satisfactory sound isolation performance.