SECTION 01 1460

GENERAL ACOUSTICAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. This Section defines terms used in the Contract Documents which have acoustic significance and describes requirements which are to be met by all Contractors and trades to meet the established acoustic quality defined for the project.

1.2 DEFINITIONS AND ABBREVIATIONS

A. Acoustically Sensitive Room

1. An Acoustically Sensitive Room is defined as a room or space which requires special construction considerations to meet room acoustic, acoustic isolation or noise and vibration control requirements.

B. Acoustically Isolated Construction

1. Acoustically Isolated Construction is wall, floor, ceiling and other building components constructed utilizing resilient materials for the purpose of limiting structure-borne noise transfer to achieve a desired level of acoustic isolation between noise producing and noise sensitive spaces.
2. Acoustically Isolated Construction includes but is not limited to resiliently supported slabs, resiliently supported wood floor systems, walls constructed on resiliently supported slabs, walls constructed on isolation mats, walls with resilient connections at slabs above, and resiliently suspended ceilings.
3. Acoustically Isolated Construction is accomplished utilizing resilient architectural acoustic isolation materials. The acoustic intent of details which utilize architectural acoustic isolation materials is to avoid rigid connections across the entire extent of building components separated by resilient materials. Coordination is required by all trades to avoid rigid connections between isolated building components.

C. Acoustic Volume

1. An Acoustic Volume is defined as the overall volume of a room contained within an airtight and light-tight enclosure defined by Contract Drawing walls carried from floor or slab below to the roof or slab above. The Acoustic Volume of a room includes any and all spaces contiguous to the typically visible portion of the room, including those spaces located behind sound transparent or sound absorptive materials and those spaces which are not normally visible to the user or patron. Conceptually, each Acoustically Sensitive Room is understood to be made up of its own individual Acoustic Volume.
2. The intent of the Acoustic Volume is to define an airtight and light-tight bounded space in which no sound may be transmitted into or out of through airborne paths. All penetrations through Acoustic Volume walls, floor slabs, and ceiling slabs shall be sealed to an airtight and light-tight seal with non-porous, heavy-weight barriers and/or Acoustical Sealant. Airtight closure requirements include, but is not limited to, non-visible areas such as attic spaces, above soffits, curtain pockets, plena, conduit, pipe, duct or structural penetrations, chases and risers, wall/floor/ceiling/deck abutments, etc.
3. All walls, slabs and deck common to Acoustically Sensitive Rooms are acoustically isolated construction.

4. All walls common to Acoustically Sensitive Rooms which are shown in plan on Contract Drawings are assumed to continue full height to an airtight and light-tight seal to the construction above. This condition applies to all walls, unless section drawings specifically restrict the extent of wall systems with written notes directly referencing the Acoustically Sensitive Room.
5. A closure is considered light-tight if no light can be seen through the closure from a 100-watt light bulb held 3 feet from the opposite side of the barrier. The construction is considered airtight if the noise reduction as measured following ASTM E-366 performed 1 foot from the closure does not deviate by more than 3 decibels from the noise reduction measured 10 feet from the closure.

PART 2 PRODUCTS [NOT USED]

PART 3 EXECUTION

3.1 GENERAL

A. Noise Criteria

1. The noise levels will be measured by the project's Acoustics Consultant following substantial completion and, as requested by the Owner, during the warranty period of the building and its equipment. The measurements shall be taken at normal locations of people or audio microphones.
2. The contractor shall be responsible for meeting the specified noise levels to the extent specifically indicated by the construction type and detail requirements of the Contract Documents. Product substitutions or construction techniques not approved in writing by the Architect and defective or improperly installed materials shall be repaired or replaced as necessary to meet the construction details indicated. Contractor shall not be responsible for acoustical performance of construction that is constructed in compliance with Contract Documents and does not meet specified noise criteria.

B. Acoustically Sensitive Rooms shall be constructed to meet the following general requirements. These requirements are the responsibility of all trades.

1. All ductwork and mechanical systems within Acoustically Sensitive Rooms shall be free from rattles.

C. The Acoustic Volume of Acoustically Sensitive Rooms shall be constructed to meet the following requirements:

1. All penetrations through Acoustic Volume walls, floor slabs, and ceiling slabs shall be sealed to an airtight and light-tight seal with Acoustical Sealant.
2. All wall, floor, ceiling, slab, deck and other abutments of construction materials and systems shall be sealed to an airtight and light-tight closure. Construction systems shall be continuous and free of holes, openings, cracks, gaps and missing wall, floor or ceiling surfaces. This condition applies to all surfaces, including those which are not visible or are part of a technical space or attic.
3. Connections of door or window frames common to a wall within an Acoustic Volume shall be caulked to an airtight and light-tight seal using acoustical sealant. Doors serving as the Acoustic Volume of an Acoustically Sensitive Room shall be gasketed to an airtight and light-tight seal, as specified. All doors of an Acoustic Volume shall be free of louvers.

D. Acoustically Isolated Construction

1. For structural integrity, the various sections of Acoustically Isolated Construction must be

supported using connections including acoustic isolation materials in series with the structure as noted on the Contract Drawings.

2. Conduits, pipes, ducts, structure, reinforcement bar and other building components which pass through or make contact with Acoustically Isolated Construction shall not be rigidly attached to the Acoustically Isolated Construction. Conduits, pipes, and ducts crossing Acoustically Isolated Construction shall be isolated per details referencing Acoustically Isolated Construction or Acoustically Isolated Spaces.

3.2 TESTING, EVALUATION AND ACCEPTANCE PROCEDURES

A. Upon Substantial Completion or prior to the expiration of the Warranty of the project, the Acoustics Consultant will perform acoustic measurements to establish the background noise level, acoustic isolation and room acoustics performance of the facility as indicated on the Contract Documents.

B. If it is found that the construction is not in accordance with the Contract Documents, then the Contractor shall be responsible for the costs associated with changes necessary to meet the construction requirements indicated on the Contract Documents. Costs for acoustical retesting shall be the responsibility of the Contractor.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK