

APPENDIX 3E

SOUND TRANSMISSION RATINGS

1. DEFINITIONS

In this Appendix, in addition to the definitions set out in Schedule 1 of this Agreement:

“Distributed UBC Conference Rooms” means the team conference rooms for UBC use identified in the Clinical Specifications with the following reference numbers: HCU Ref 42, NU Ref 42, ICU Ref 36, NICU Ref 25, HDCU Ref 42, Lab Ref 18 and General Administration Ref 42;

“NC” stands for noise criteria and means a single number rating of the background noise in a room, generally as created by building HVAC systems. NC targets depend on the use and acoustical sensitivity of the space and typically range from about 30 to 35 for sleeping rooms and private offices to 45 to 55 for general offices and commercial spaces;

“STC” stands for sound transmission class and means a single number that is an indication of a partition’s ability to block sound. The higher the STC, the higher is the sound transmission loss. For example, loud speech can be understood fairly well through an STC 30 wall but should not be audible through a STC 60 wall. STC is a laboratory test based rating of sound insulation. When walls are tested in the field they tend to achieve lower ratings due to the “flanking transmission” of sound around the primary barrier via the floor, ceiling and side walls and/or by air gaps (leakage). In concrete buildings such as hospitals, the field test results, referred to as “Apparent STC”, or ASTC, tend to be 3 to 5 dB lower than the lab-rated STC; and

“NIC” stands for noise isolation class and means the measured difference between the spatially-averaged noise levels on the source room side and the receiver room side of a wall or partition. NIC is more directly indicative of the degree of sound insulation that exists between two adjacent rooms and is more straightforward to measure in the field.

2. NOISE TRANSMISSION RATINGS

Project Co will:

- (a) provide wall and floor assemblies with STC ratings in accordance with Table 1 below;
- (b) where possible, provide buffer zones (e.g. corridors) between noise sensitive areas (e.g. patient rooms, video-conferencing rooms, meeting rooms and offices) and noisy areas (e.g. service areas and lounges);
- (c) where possible, avoid vertical adjacencies between noisy and noise sensitive areas;
- (d) in order to achieve the required level of speech privacy (speech privacy for confidentiality is critical), extend the STC rated assembly full-height from floor to the underside of structure above for all walls and partitions required to have an STC rating of 45 or higher per Table 1 below. If such a wall or partition cannot extend full height, provide an

alternate system and provide an acoustic consultant's report verifying that the required level of speech privacy will be achieved with the proposed design;

- (e) if doors or interior windows are located in a wall required to have a specified STC rating, the specified rating only applies to the wall and not the door or interior window. Any specific doors or interior windows requiring improved sound isolation are identified specifically in the Clinical Specifications;
- (f) provide moveable partitions (where identified in the Clinical Specifications) that are STC 41 at minimum.

Table 1 – STC Ratings and NIC Ratings of Demising Walls and Floors

Adjacency combination		STC / NIC- Walls	STC/ NIC - Floors
Patient Room	Patient Room	45/42	50/47
Patient Room	Corridor	45/42	50/47
Patient Rooms	Public Space/Administrative Space/Therapy Room	50/47	50/47
NICU Patient Rooms	Corridor	45/42	50/47
NICU Patient Rooms	Procedure Room	50/47	50/47
NICU Patient Rooms	NICU Patient Rooms	45/42	50/47
Exam Room/Clinical Skills Room	Exam Room/Clinical Skills Room	45/42	50/47
Exam or Interview Room	Corridor	45/42	50/47
Exam or Interview Room	Public Space, Administrative Space	50/47	50/47
Exam or Interview Room	Service Areas	50/47	50/47
Exam or Interview Room	Meeting Room	50/47	50/47
Exam or Interview Room	Staff Lounges	55/52	50/47
Procedure Room	Corridor	45/42	50/47
Procedure Room	Procedure Room	50/47	50/47
Procedure Room	Patient Care Areas, Administrative Space, Public Space	50/47	50/47
Meeting Room	Corridor	45/42	50/47
Meeting Room	Public Space	50/47	50/47
Meeting Room	Meeting Room	50/47	50/47
Education Rooms	Public Space	50/47	50/47
Education Rooms	Education Rooms	50/47	50/47
Education Rooms	Corridor	50/47	50/47
Washroom	Any Space	45/42	50/47
Video-Conferencing Room	Any Space	50/47	50/47
Distributed UBC Conference Rooms	Any Room or Space	55/52	50/47
Public Space	Staff Lounges	45/42	50/47
Office	Office	45/42	50/47
Office	Corridor	45/42	50/47
Staff Lounges	Public Space	50/47	50/47
Staff Lounges	Corridor	50/47	50/47
Locker Rooms	Public Space	45/42	50 /47
Locker Rooms	Corridor	45/42	50 /47
On Call Rooms	Public Space	50/47	50/47
On Call Rooms	Meeting Rooms	50/47	50/47
On Call Rooms	Corridor	50/47	50/47

Adjacency combination		STC / NIC- Walls	STC/ NIC - Floors
Service Rooms	Any Occupied Space	55/52	50/47

Table 1 - Notes:

- (a) "Public Space" includes lobbies, waiting rooms, reception areas, and similar spaces.
- (b) "Service Areas" include, elevators, elevator machine rooms, laundries, garages, maintenance rooms, mechanical and boiler rooms and similar spaces.
- (c) The airborne sound insulation requirements for walls and floors have been specified in terms of both their indicative STC ratings (lab-test based) and the NIC ratings that will required to be achieved should the wall be subjected to a post-construction field test. Project Co may decide to select somewhat higher STC ratings in order to provide greater certainty that NIC objectives will be achieved in the field.

3. NOISE CRITERIA WITHIN VARIOUS SPACES

Project Co will

- (a) in undertaking the design of the Facility, evaluate the expected noise from all mechanical systems in the Facility using the NC rating system; and
- (b) design and construct the Facility so that noise from the mechanical systems does not exceed the noise level specified in Table 2 below within the room or space identified.

Table 2 - Noise Criteria - Rating Within Various Spaces

Room Type	NC	
Exam room/ Interview Room	30-35	
Multiple occupant patient care areas	35-40	
Procedure rooms	30-35	
Corridors and public spaces	35-40	
Testing/research lab, minimal speech	45-50	
Research lab, extensive speech	40-45	
Group teaching lab	35-40	
Offices	35-40	
Conference/meeting rooms	30-35	
Video conferencing rooms	25 (max)	
Patient rooms	35-40	
NICU rooms	35-40	
On Call Rooms	35-40	