

CODES & STANDARDS

One of the most comprehensive guidelines established can be obtained from the U.S. Department of Housing and Urban Development in the Guide to Airborne, Impact, and Structure Borne Noise Control in Multifamily Dwellings. Descriptive definitions of three grades of acoustic environments are given in order to ascribe criteria suitable to the wide range of urban developments, geographic locations, economic conditions and other factors involved in the areas of concern of the FHA. Constructions meeting the criteria will provide good sound insulation and satisfy most of the occupants in buildings fitting the conditions of each grade.

GRADE I “LUXURY RATING”

Grade I is applicable primarily in suburban and peripheral suburban residential areas, which might be considered as the “quiet” locations and as such the nighttime exterior noise levels might be about 35-40 dB(A) or lower, as measured using the “A” weighting network of sound level meter which meets the current standards. The recommended permissible interior noise environment is characterized by noise criteria of NC 20-25 (32 dB(A)). In addition, the insulation criteria of this grade are applicable in certain special cases such as dwelling units above the eighth floor in high-rise buildings and the better class or “luxury” buildings, regardless of location.

GRADE II “AVERAGE RATING”

Grade II is the most important category and is applicable primarily in residential urban and suburban areas considered to have the “average” noise environment. The nighttime exterior noise levels might be about 40-45 dB(A); and the permissible interior noise environment should not exceed NC 25-30 (37dB(A)) characteristics.

GRADE III “MINIMUM RATING”

Grade III criteria should be considered as minimal recommendations and are applicable in some urban areas which generally are considered as “noisy” locations. The nighttime exterior noise levels might be about 55 dB(A) or higher. It is recommended that the interior noise environment should not exceed the NC 35 (42 dB(A)) characteristic.

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Product Data Sheet

Partition Function Between Dwellings			Luxury Grade I		Average Grade II		Minimum Grade III	
APT. A		APT. B	STC	IIC	STC	IIC	STC	IIC
Bedroom	above	Bedroom	55	55	52	52	48	48
Living Room	above	Bedroom 1,2	57	60	54	57	50	53
Kitchen 3	above	Bedroom 1,2	58	65	55	62	52	58
Family Room	above	Bedroom 1,2,4	60	65	56	62	52	58
Corridor	above	Bedroom 1,2	55	65	52	62	48	48
Bedroom	above	Living Room 5	57	55	54	52	50	48
Living Room	above	Living Room	55	55	52	52	48	48
Kitchen	above	Living Room 1,2	55	60	52	57	48	53
Family Room	above	Living Room 1,2,4	58	62	54	60	52	56
Corridor	above	Living Room 1,2	55	60	52	57	48	53
Bedroom	above	Kitchen 1,5	58	52	55	50	52	46
Living Room	above	Kitchen 1,5	55	55	52	52	48	48
Kitchen	above	Kitchen	52	55	50	52	46	48
Bathroom	above	Kitchen 1,2	55	55	52	52	48	48
Family Room	above	Kitchen 1,2,4	55	60	52	58	48	54
Corridor	above	Kitchen 1,2	50	55	48	52	46	48
Bedroom	above	Family Room 1,5	60	50	56	48	52	46
Living Room	above	Family Room 1,5	58	52	54	50	52	48
Kitchen	above	Family Room 1,5	55	55	52	52	48	50
Bathroom	above	Bathroom	52	52	50	50	48	48
Corridor	above	Corridor	50	50	48	48	46	46

NOTES:

1. The most desirable plan would have the floor-ceiling assembly separating spaces with equivalent functions, e.g. living room above living room, etc.; however when this arrangement is not feasible the assembly must have greater acoustical insulating properties.
2. This arrangement requires greater impact sound insulation than the converse, where a sensitive area is above a less sensitive area.
3. Or dining, or family, or recreation room.
4. The airborne STC criteria in this table apply as well to vertical partitions between these two spaces.
5. This arrangement requires equivalent airborne sound insulation and perhaps less impact sound insulation than the converse.