

Section 9.11. Sound Transmission

(See Note A-9.11.)

9.11.1. Protection from Airborne Noise

9.11.1.1. Required Protection

- 1) Except as provided in Sentences (2) and (3), a *dwelling unit* shall be separated from every other space in a *building* in which noise may be generated by
 - a) a separating assembly and adjoining constructions, which together provide an *apparent sound transmission class (ASTC)* rating of not less than 47, or
 - b) a separating assembly providing a *sound transmission class (STC)* rating of not less than 50 and adjoining constructions that conform to Article 9.11.1.4.

(See Note A-9.11.1.4.)

- 2) Where a house contains a *secondary suite*, each *dwelling unit* shall be separated from every other space in the house in which noise may be transmitted by

- a) construction having
 - i) joist spaces filled with sound-absorbing material of not less than 150 mm nominal thickness,
 - ii) stud spaces filled with sound-absorbing material,
 - iii) resilient channel on one side of the separation spaced 400 or 600 mm o.c., and
 - iv) not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls, or
- b) construction providing an STC rating of not less than 43, or
- c) a separating assembly and adjoining constructions, which together provide an ASTC rating of not less than 40.

(See also Sentence 9.10.3.1.(2) and Note A-9.11.1.1.(2).)

- 3) Construction separating a *dwelling unit* from an elevator shaft or refuse chute shall have an STC rating of not less than 55.

9.11.1.2. Determination of Sound Transmission Ratings

- 1) The STC ratings shall be determined in accordance with ASTM E 413, "Classification for Rating Sound Insulation," using the results from measurements carried out in accordance with ASTM E 90, "Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements."
- 2) The ASTC ratings shall be
 - a) determined in accordance with ASTM E 413, "Classification for Rating Sound Insulation," using the results from measurements carried out in accordance with ASTM E 336, "Measurement of Airborne Sound Attenuation between Rooms in Buildings," or
 - b) calculated in accordance with Article 5.8.1.4. or 5.8.1.5.

9.11.1.3. Compliance with Required Ratings

- 1) Compliance with the required STC ratings shall be demonstrated through
 - a) measurements carried out in accordance with Sentence 9.11.1.2.(1), or
 - b) the construction of separating assemblies conforming to Table 9.10.3.1.-A or 9.10.3.1.-B, as applicable.
- 2) Compliance with the required ASTC ratings shall be demonstrated through
 - a) measurements or calculations carried out in accordance with Sentence 9.11.1.2.(2), or
 - b) the construction of separating assemblies conforming to Table 9.10.3.1.-A or 9.10.3.1.-B, as applicable, that have an STC rating of not less than 50 in conjunction with flanking assemblies constructed in accordance with Article 9.11.1.4. (see Note A-9.11.1.3.(2)(b)).

9.11.1.4. Adjoining Constructions

(See Note A-9.11.1.4.)

- 1) This Article applies where the required protection is provided in accordance with Clause 9.11.1.1.(1)(b) and compliance is demonstrated in accordance with Clause 9.11.1.3.(2)(b).
- 2) Flanking wall assemblies connected to a separating floor or ceiling assembly shall be constructed with
 - a) concrete or concrete block having a mass per area greater than 200 kg/m², or
 - b) gypsum board finish that
 - i) is supported on wood or steel framing, and
 - ii) ends or is interrupted where it meets the structure of the separating floor or ceiling assembly.
- 3) Flanking wall and ceiling assemblies connected to a separating wall assembly shall be constructed with
 - a) concrete or concrete block having a mass per area greater than 300 kg/m², or
 - b) gypsum board finish that
 - i) is supported on wood or steel framing, and
 - ii) ends or is interrupted where it meets the structure of the separating wall assembly or, for double-stud walls, where it meets the space between the two lines of studs.
- 4) Flanking floor assemblies connected to a separating wall assembly shall be
 - a) constructed
 - i) with concrete having a mass per area greater than 300 kg/m², or
 - ii) in accordance with Section 9.16., or
 - b) supported on joists or trusses that are not continuous across the junction and are covered with floor treatments in accordance with Table 9.11.1.4. for the applicable wall construction.

Table 9.11.1.4.
Floor Treatments for Flanking Wood-Framed Floor Assemblies in Horizontally Adjoining Spaces
 Forming Part of Sentence 9.11.1.4.(4)

Type of Separating Wall Assembly with STC ≥ 50 from Table 9.10.3.1.-A	Minimum Requirements for Floor Treatments Applied Over Subfloor of Wood-Framed Flanking Floor Assemblies on Both Sides of Floor/Wall Junction
W5, W6, W10, W12 (staggered studs)	<ul style="list-style-type: none"> • wood strip flooring not less than 16 mm thick aligned parallel to separating wall, or • one layer of OSB or plywood not less than 15.5 mm thick plus finished flooring, or • one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾
W4, W11 (staggered studs)	<ul style="list-style-type: none"> • one layer of OSB or plywood not less than 12.5 mm thick plus hardwood strip flooring not less than 19 mm thick aligned parallel to separating wall, or • one additional material layer plus finished flooring having a combined mass per area not less than 16 kg/m²⁽¹⁾
W8, W9 (staggered studs)	<ul style="list-style-type: none"> • concrete or gypsum concrete topping not less than 19 mm thick bonded to the subfloor plus finished flooring, or • one additional material layer plus finished flooring having a combined mass per area not less than 32 kg/m²⁽¹⁾
W13, W14, W15 (double stud walls)	<ul style="list-style-type: none"> • where a continuous subfloor or other rigid materials at the floor/wall junction provide structural connection between the two rows of studs in the separating wall: • hardwood strip flooring not less than 16 mm thick aligned parallel to separating wall, or • one layer OSB or plywood not less than 15.5 mm thick plus finished flooring, or • one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾ • any finished flooring where the subfloor and other rigid materials are not connected at the floor/wall junction and where there are no structural connections between the two rows of studs in the separating wall
B1 to B10	<ul style="list-style-type: none"> • any finished flooring

Notes to Table 9.11.1.4.:

(1) See Note A-Table 9.11.1.4.