"THE CONNECTION IS BUSY AGAIN, SO HANG UP AND TALK INTO THE WALL—I CAN HEAR YOU A LOT BETTER"

ACOUSTICS

COMMON NOISE TYPES / PROBLEMS:

Airborne noise are items like voices, stereos, blenders or any sound created by day-to-day living that travels through the air and, can ultimately be transmitted through walls and floors into adjacent spaces or units.

Sound can be transmitted through:

- Air ducts, piping and electrical outlet boxes, which, if placed back to back inside the wall, provide a channel through which noise will travel.
- Gaps in gypsum board panel joints, as well as unsealed joints at door and window edges.
- The walls. Though much noise will be reflected and absorbed by the wall, detectable amounts can pass through.

Structure-borne noise from sources within or attached to the building structure can be transmitted through vibrations. Examples would be mechanical and plumbing noises that are very much a part of the building itself.

Impact noise is also transmitted by the structure, but from occupant sources such as footsteps on a hard tile surface. Such impact noises are difficult to control and may call for a different solution.

STANDARDS OF UNIFORM BUILDING CODE:

Airborne Sound Insulation: All separating walls and floor-ceiling assemblies between separate living units shall provide airborne sound insulation equal to that required to meet a Sound Transmission Class (STC) of 50 (45 if field tested) as defined in UBC Standard No. 35-1.

Impact Sound Insulation: All separating floor-ceiling assemblies between separate living units shall provide impact sound insulation equal to that required to meet an Impact Insulation Class (IIC) of 50 (45 if field tested) as defined in UBC Standard No. 35-2. Floor coverings may be included in the assembly to obtain the required ratings and must be retained as a permanent part of the assembly and may be replaced only by another floor covering that provides the same sound insulation attenuation.

COMMON SOLUTIONS:

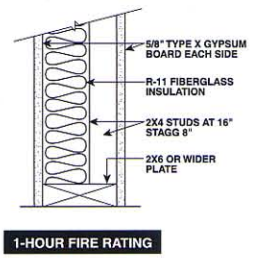
- Adding layers of gypsum board to the existing wall surfaces over "resilient channel" mounting, or installing sound deadening board will increase the wall's absorptive qualities, reducing the sound transmission.
- Gaps and joints in the wall usually can be caulked or sealed with special acoustic sealant, providing a simple, yet effective solution.

Structural-borne sound, from the mechanical and plumbing systems of the building is a different problem with different solutions. Controlling such noises after construction depends more on restricting the entry of the noise into the structure by minimizing it at the source. Solutions can include:

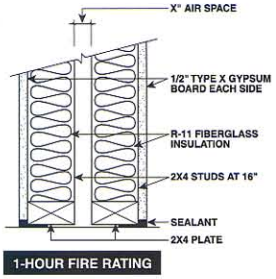
- Placing a noisy HVAC system on resilient pad dampers, or suspending it on hangers or spring-loaded mounts to absorb the vibration before it's transferred to the structure.
- Installation of plumbing pipes with sound deadening devices.
- Isolating plastic waste piping which can be a source of sound transmission in multi-storage buildings. Cast iron may be a preferred material.

Impact noise has limited solutions, where the source of the noise often can't be suppressed.

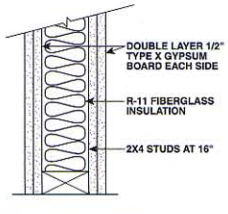
- In the case of floor to ceiling transmission, carpet & pad on the second floor can help, as hardwood, tile or vinyl floors will transmit more sound. Cushion systems installed beneath such hard surfaces can be very effective, breaking the transmission path.



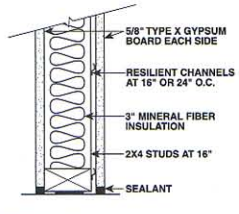
1-HOUR FIRE RATING
DOUBLE STUD PARTY WALL
BAD 47 STC



1-HOUR FIRE RATING
DOUBLE STUD PARTY WALL
GOOD 61 STC



1-HOUR FIRE RATING
SINGLE STUD PARTY WALL
BAD 45 STC



1-HOUR FIRE RATING
SINGLE STUD PARTY WALL
GOOD 50-54 STC

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