NEW ENGLAND SOUNDPROOFING

SOUND SOLUTIONS FOR SOUND PROBLEMS

Sound Transmission Pathways

Airborne • Structure-borne • Flanking

www.NewEnglandSoundproofing.com 781-710-1261

Airborne Noise Transmission

What Is Airborne Noise?

Airborne noise describes high-frequency sound waves transmitted by air. These sound waves easily pass through gaps and holes, and are often amplified by thin, rigid materials, such as sheetrock and laminate.

With more solid materials, such as stone or steel, airborne sound waves reflect off of the hard surfaces until they are absorbed or dissipate. This continuous reflection of sound waves is called a **reverberation.**
You probably refer to this as an **echo.**

How Do You Stop Airborne Noise Transmission?

Airborne sound waves will continue to echo within a space until they are

Blocked or Absorbed

Common Culprits

• High Ceilings • Large, Bare Surfaces • Large Windows • Granite Countertops • Hardwood•
• Polished Floors • Minimal Furnishings • Small Rooms • Holes and Gaps • Glass Walls •
• Steel Ceilings • Thin Walls • Overstuffed Insulation • Exposed Brick • Hollow Doors •
• Loud Machinery •

Structure-Borne Noise Transmission

What is Structure-Borne Noise?

Structure-borne noise is the result of low-frequency vibrations generated by impact and transmitted by the building material. Because this type of noise is easily conducted through these hard materials and surfaces, such as wood or plaster, structure-borne noise is difficult to mitigate and if not addressed properly, will result in flanking noise.

How Do You Stop Structure-Borne Transmission?

Because structure-borne noise is conducted by the building materials themselves, you must interrupt the path along which the vibrations are traveling from the noise source to the problem area.

This requires a **Decoupling System**.

Decoupling systems are designed specifically to absorb rather than transfer energy, separating adjoining conductive materials with a resilient non-conductive material.

Common Culprits

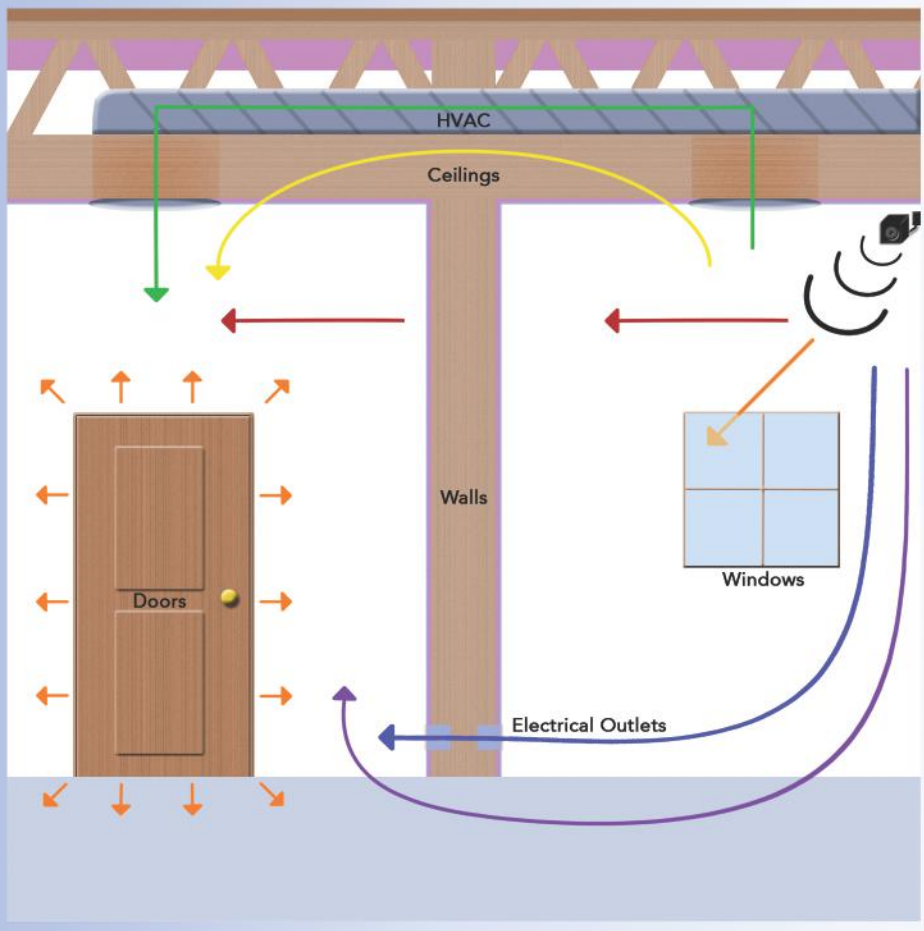
• Footfall • Television • Hardwood • Floors • Stereos • Drums • Thin Ceilings • Bass •
• Wood or Steel Studs and Joists • Subwoofers • Jumping • Dancing • Exercising •
• Passing Trucks • Closing Doors •

Flanking Noise Transmission

What Is Flanking Noise?

Flanking noise transmission describes sound that travels via an indirect pathway.

How Do You Stop Flanking Noise Transmission?



Because flanking noise is transmitted along indirect paths, it is vital to install multiple systems to

DAMPEN AND ISOLATE

vibrations from both airborne and structure-borne sound.

Noise, like water, always finds the path of least resistance. And as almost solid material can conduct sound, the number of potential indirect pathways is extensive. Be creative when identifying all flanking pathways and be sure to address each one with the appropriate soundproofing system.

Common Culprits

• Ceilings • Windows • Unsealed Air Gaps • Outlets and Fixtures •
• Floors • Ductwork • Doors • Adjoining Surfaces and Materials • Structural Joints •
• Walls • Partitions • Plumbing Chases •