



Sound Control

Building multiple family dwelling and custom homes demands that attention be paid to sound transfer. Sound from the neighbour above or the other side of a wall is just as annoying as a loud stereo from the family room, or bathroom noises of showers and flushing toilets. Noise from HVAC equipment is also a frequent source of problems.

Sound travels in three ways: the most common way is through air, but it can also pass through solid objects, causing them to resonate.

Sealing airborne sound leaks

Airborne sound is usually the easiest to eliminate. Sound can travel through extremely small openings, such as keyholes, cracks around doors and through electrical outlets (especially when installed back to back). Sound can travel from floor to floor through ceiling light fixtures and holes between floors made by the plumber and electrician or to accommodate heating ducts. It takes moments for your ICYNENE contractor to seal all these penetrations during the construction process. A structure that is well sealed against air leakage, as is the case with buildings insulated with ICYNENE, will not only be energy efficient but will also combat airborne sound from outside.

Silencing "water music"

Showers and toilets flushing can cause pipe vibrations which are transmitted to building structures, which in turn can cause drywalls to vibrate. Minor changes in construction can eliminate the problem: soft, flexible ICYNENE sprayed around pipes will eliminate vibration and the transfer of sound to gypsum walls. Many luxury home-builders make it standard practice to completely insulate the walls of each bathroom and the pipes leading to and from it.

Eliminating bad vibrations

The next problem is structure-borne sound. Acoustical tiles, fibreboard and other low-density materials do little to deaden sound waves; their function is to modify the properties of sound by preventing echoes and improving sound quality. To soundproof, the easiest step is to add mass to the surfaces through which sound passes. This can be achieved by adding additional layer(s) of $\frac{5}{8}$ " dry-wall to the walls or ceiling.

Low density ICYNENE can efficiently block sound transmission when installed inside a wall or ceiling. Glass fibre or rockwool batts are often used for this purpose; however, unlike ICYNENE it is virtually impossible to completely seal a wall cavity with a batt, and therefore its performance is installation-dependent.

To control impact noises through dividing walls, a staggered-stud design can be used, provided that no stud is in contact with both wall surfaces, and provided that the cavity is filled with ICYNENE.

Stopping ceiling-impact noises

Stacked dwellings, requiring a sound barrier between floors, create sound-control problems which can be solved with ICYNENE. Using batts, it is impossible to completely fill between joists (especially around cross bridging). Without a complete fill, sound will move through any void, however small. The best way to reduce impact noise is to spray ICYNENE between the joists (it will completely surround the bridging) and to physically isolate or decouple adjacent surfaces. This can be done by installing drywall on resilient channels beneath the joists. There is a side benefit from this method: the noise of squeaky floors is drastically reduced.

Rigid materials transmit vibrations better than flexible ones. ICYNENE, combined with gypsum board, provides a viable alternative to concrete blocks. Gypsum board and ICYNENE complement each other very well.