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Construction

The cost of sound to multifamily developers

The owners and developers of new multifamily projects throughout the Denver metro area probably aren't getting their money's worth when it comes to sound attenuation in their buildings. In many instances, outdated materials are causing multifamily residences to fail when it comes to meeting a sound transmission co-efficiency of STC 50 in walls and floors and an impact insulation class of 50 in floors. This is a code requirement set by the Uniform Building Code Section, UBC 1206 and is enforceable standard.

The level of permissible sound that can travel through a building's floors and walls is what helps people live comfortably in their apartment, townhome or condo without the noise of the outside world – or their neighbors – keeping them up at night. Unfortunately, some owners and developers are being confronted by angry tenants questioning why their residence is so noisy. The answer isn't a pleasant one to come to terms with, and it could become even more costly when the owner attempts to fix the problem or tries to sell the property.

Sound attenuation is the loss of energy from sound waves. Basically, attenuation is a damping of sound, an interruption that diminishes the volume and quality of the sound wave. This level of this damping effect is determined during the construction process when floors are poured and interior walls are framed.

Bob Cujé
President, Modern Materials

When floors are constructed, the typical approach involves putting a rubber mat on top of the wood subfloor and pumping liquid gypsum over the sound mat. This results in a rigid subfloor, which is required to meet a 1 inch-minimum standard. The weight of 9 pounds per square foot and rigidity of the gypsum solution leads to cracks and failures as the building settles. This leads to failed sound ratings in the building, especially if the minimum amount of gypsum isn't poured. More significant is the attachment of flat-screen televisions that violate resilient channel. Demising walls need careful attention as they are the critical link between dwellings.

What happens next is up to residents of the building and the market in general. If a building gets the reputation of being "loud," occupancy levels will fall and rental rates or sales prices will drop. Not many people want to live in a noisy building and the ownership will take a big blow financially. There are better approaches to sound attenuation in floors and walls than the standard practice of pouring liquid gypsum. In fact, one of these approaches has been around for more than 100 years and was reintroduced to the construction industry within the past decade. A rigid sheathing material, or sound attenuation alternative, is made from "absorbing materials" rather than hard reflective gypsum. These absorbent sound boards are cost-saving solutions to general contractors and property owners.

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The physical make-up of this sound insulating material weighs only 1 pound per sf and costs $1 per sf less than gypsum. It does not require a specialty applicator, so it frees up scheduling with the drying process of poured gypsum. Long term, it won't crack and lose value; and it avoids silicosis issues related to poured gypsum.

Of immediate interest to owners who are planning new construction for the winter months is the fact that this sheathing alternative doesn't have to meet temperature requirements to be installed, unlike gypsum, which can't be poured at temperatures below 50 degrees. The time and cost savings of not having to adhere to time and temperature requirements is obviously immense and adds back "days of production" on each floor.

Owners and developers who don't want to hear the scorn of dissatisfied tenants or residents should fully investigate their options when it comes to diminishing sound levels in their buildings. Otherwise not only will they get an "earful" of anger, but also a much lighter bank account. ▲