



Soundproofing Condominiums

By Frederick Seebacher



Frederick Seebacher

Developers, architects, and builders are looking for acoustic products to meet National Building Code guidelines in new construction. Property managers and board of directors in condominiums are looking to solve or prevent problems in existing buildings/renovations. Owners are simply trying to follow their condo regulation chart when renovating floors. They do that by looking at soundproof ratings, which can often become a nightmare. Is the high-performance number advertised the right thing to look at to make a good decision? The answer is yes, but there are also several factors to be taken into consideration.

Performance

The first thing to consider or understand is that an underlayment's performance depends on several factors, which means that the product advertising an IIC number is only part of an assembly. There is no method to test an underlayment alone. That is because it will always be installed under a floor covering, on top of a substrate that is part of a structure that may have excellent acoustic treatment. To summarize this first point, the advertised number, whether a lab test represented in IIC (Impact Insulation Class) or a field test represented as AIIC (Apparent Impact Insulation Class), is a snapshot of a one-time performance in a unique situation.

Testing

This leads us to the second point

to consider. Acoustic products that have been tested thoroughly and hold a sound reputation will have several tests available to demonstrate performance ratings. When we look at any performance numbers, there should always be a description of the assembly on which it was tested that will include flooring type, structure all the way to the ceiling assembly, which all have an impact on the performance of the product. As shown in the illustration on the following page:

- Product A is tested in a controlled lab, without windows, furniture and all materials are installed in perfect conditions. A suspended ceiling, including acoustic insulation, wires and gypsum board ceiling was added to the assembly.
- Product B is tested in a real-

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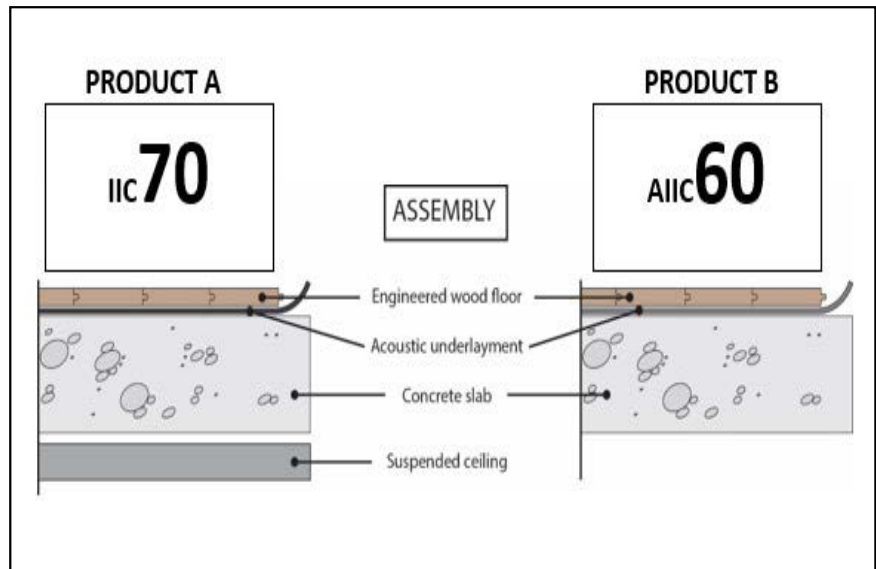
life environment and takes the flanking into consideration.

There is no suspended ceiling.

- Most condominiums made of concrete don't have a suspended ceiling (they have a gypsum ceiling finish or visible concrete).
- A suspended ceiling can add up to 14 points more to the performance.
- Buyers think that product A is better and will meet their board's requirements
- Boards of directors and property managers often require reaching IIC 70+ for the replacement of floor covering without knowing the efficiency of their structure and its potential.
- The available space/thickness between baseboards and the structure is neglected. For instance, some products or /5a combination of products can really bring your ceramic tiles to AIIC 70 but with the consequence of cutting doors, baseboards and even cabinets. This is something that usually can't be done.

Building Structure

The third point is to know your building's structure and components that will affect a sound rating. Is the building a light wood frame, concrete, or mass timber? Are there suspended ceilings? Is there insulation in the ceil-



This illustration shows an example of two products with their assemblies and the resulting ratings.

ing? What thickness is the concrete slab? What floor covering types are owners looking to install? Engineered wood and ceramic does not perform the same way. If you are replacing carpet with a hard surface, how will this affect the acoustics in the building? All these factors will affect the performance of a product in your building and should be considered when approving products or setting bylaws.

In conclusion, for property managers who want to approve acoustical membranes for flooring renovations the right way, be aware of the adver-

tised numbers by manufacturers. Many acoustical engineers can guide you to make sound decisions and there are numerous programs and vendors that can support you in this process. Beware of products riding on a single test to prove performance. It all starts with knowing your building's structure and getting sound advice from experts in the field. ■

Frederick Seebacher is the strategy and program manager for AcoustiCONDO at AcoustiTECH. acousti-tech.com

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