



## ACOUSTICAL INFORMATION

### TECHNICAL SUPPORT 800.345.6202

The ASTM E 492 is the test method for laboratory measurement of impact sound transmission through floor ceiling assemblies using the tapping machine. In fact, it measures the level of noise transmitted in a room when we simulate tapping on the floor-ceiling assembly located over this room. It gives an idea of how the floor-ceiling assembly helps to reduce impact sound transmissions to a lower level.

The ASTM E 492 is the lab test and the ASTM E 989 is the calculation of the results from the E 492 to determine the IIC (Impact Insulation Class). The higher IIC number (an integer number) better is the impact sound insulation of the assembly. It does not measure the floor covering itself but the whole system (the floor-ceiling assembly). This test is considered obsolete because of the variation from the concrete slab. The E 2179 test might be more significant and more appropriate to compare floor coverings amongst each other.

The E 2179 is similar to E492/E989 testing but it subtracts the concrete slab to get the impact insulation class in order to evaluate the floor covering only. It is the standard test method for laboratory measurement of the effectiveness of floor coverings in reducing impact sound transmission through concrete floor. The  $\Delta$ IIC says by how much the floor covering helps to reduce impact sound transmissions to a lower level.

The ISO 140-8 used in Europe is similar but slightly different; we can't compare directly ISO 140-8 with ASTM E 2179.

All these tests are methods for determining the ability of the material, in our case the floor covering, to reduce the noise transmission generated either by a tapping machine (E492/E989, E2179) or speakers (E90/E413, C423).

Resilient and hard surface floor coverings, as a whole, have little ability to reduce airborne sound transmission. Because of this, these types of floor coverings will provide minimal improvement in a floor-ceiling assembly STC rating. Resilient flooring, in contrast to ceramic, wood, concrete, stone or metal hard surface floor coverings, has elasticity and cushions foot and rolling traffic and objects striking the floor's surface. This quality of cushioning reduces the generation of airborne sound within the room and the airborne sound transmitted within the building. More importantly, the cushioning quality minimizes impact noise generation that is radiated via vibration throughout the building. In general, resilient floors are low noise producers.

Thus, rubber because of its composition generates less sound or sound dispersion than other materials. However, since these tests only validate levels of sound absorption, we feel at

Expanko Resilient Flooring it is critical to consider other forms of sound generation such as rolling loads. For example, chairs moving against the surface, people walking, items hitting the floor, etc. After comparing this data, you will better understand why we believe that our product line offers the best cost/performance ratio in the industry.

Sereniti Rubber Flooring:

**3 mm**

IIC Rating: 37 dB

$\Delta$ IIC Rating: 8 dB

**3.17 mm**

IIC Rating 39 dB

$\Delta$ IIC Rating: 9 dB

Installation instructions, technical documentation and care and maintenance instructions are available at [www.expanko.com](http://www.expanko.com).