

What Do the Terms STC and IIC Mean In relation to Sound Rated Floor Systems

STC Ratings

The term STC refers to the single figure of evaluation used to quantify the transmission of airborne sounds through building elements, such as a wall or floor systems. These types of sounds would be the equivalent of voices, music, radio or television audio in the context of a multi-family building. The term STC translates to Sound Transmission Class and is measured and stated in accordance ASTM Standard number C634 and tested via the test methodology of ASTM Test Methods E 90, E 336 and E 596. When done in an accredited test laboratory, these values are stated as a number to the right of the initials STC. When done in the "Field", using ASTM Method E 336, these values are designated by the initials FSTC to the left of the numeric value.

STC values are in a large part influenced by solid mass of the structure, but are also somewhat dependent on isolation and resilience within the structure.

IIC Ratings

The term IIC refers to the statistical measurement standards used to quantify the transmission of impact sound energy through a floor/ceiling assembly system. These types of sounds would be the equivalent of foot traffic, dropped articles or furniture moving in the context of a multi-family building. The term IIC translates to Impact Isolation Class and is measured and stated in accordance to ASTM Standard number C634 and tested via the test methodology of ASTM Test Methods E90, C423, E 548, E 717 and E 989. In addition, a new test protocol for concrete sub-floors has been introduced under ASTM E 2179-01. When done in an accredited test laboratory these values are stated as a number to the right of the initials IIC. When done in the "Field", using ASTM Method E-1007, these values are designated by the initials FIIC to the left of the numeric value.

IIC values are not heavily influenced by the presence of solid mass in the structure. IIC values are dependent on the presence of a resilient material somewhere in the assembly to isolate and absorb the sonic energy created by impacts.

STC and IIC Ratings and Building Codes

In multi-family construction, in most jurisdictions, there are minimum IIC and STC values which the floor/ceiling assembly must achieve to meet the building code standards. Most common is the U.B.C. Uniform Building Code or I.B.C. International Building Code, which calls for minimum values of IIC 50 and STC 50. Some states, municipalities and counties have different building code standards, but the U.B.C. and I. B.C. codes are by far the most common. Consult your local Building Department for the exact code standards applicable in your area.

In addition to the building code standards, some condominium developers and condo homeowners associations have their own minimum standards written into their Covenants, Conditions and Restrictions (CC&R's), which are often more stringent than the building code in that given jurisdiction. It is wise to consult your condo association in regard to their CC&R standards for the required IIC and STC values before installing hard surface flooring materials in your unit.