

Nominal Impact Insulation Class

A floor's ability to reduce the transmission of sound can be rated by an IIC (Impact Insulation Class) number. This rating quantifies the transmission of "impact sounds" such as foot traffic. Similar to STC (Sound Transmission Class) ratings, the higher the ICC number, the better the barrier to impact sounds. Some generic concrete floor systems have IIC ratings. The ratings are modified by the addition of floor coverings. For example,

A flat 6" concrete slab:

With no floor covering: IIC 34**

With wood sheathing, pad and carpet: IIC 81**

A 2" concrete slab with 14" thick T joists:

With no floor covering: IIC 24**

With carpet and pad: IIC 72**

To date, no clinical tests have been conducted to determine Lite-Deck's IIC rating for a specific joist depth or concrete cover. However, it is reasonable to conclude that a Lite-Deck floor will have IIC ratings which are similar to those shown above.

** Ratings are based on "Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies" Published by the California Dept. of Health Services – Local Environmental Health Services Branch, Sacramento, CA. Copies of study available upon request.

In a second study, acoustical computer models suggest that Lite-Deck's Base Section (with 6-inch load-bearing concrete joist) is equivalent to a flat, 4-inch (96mm) concrete slab. Also, a Lite-Deck form with a load-bearing joist of 8-inches is equivalent to a 5.75-inch (145mm) concrete slab. In the model, the addition of gypsum board (to the underside of the LD form) improves the IIC Rating.

Equivalent Slab Thickness	IIC Rating	IIC Rating w/1-inch Gypsum Bd.
4-inches (96mm)	20	35
5.75 inches (145mm)	27	42

Calculations were not done, to quantify the change in IIC Ratings, if floor coverings (such as carpet and pad) were added to the concrete floor. However, based on the California "Catalog" referenced above, the addition of such coverings should significantly improve the IIC Ratings which were calculated in the acoustical model.

The presence of the closed-cell EPS (Expanded Polystyrene) in Lite-Deck's forms do not significantly change the IIC ratings of the concrete floor/roof.