

## Acoustic Sleeper Guide to Impact Insulation Classification

It is difficult for architects to work with manufacturer’s data on  $\Delta$ IIC. It is generally assumed that the  $\Delta$ IIC values of various components add together to provide a reliable IIC. This is not always correct since the frequency characteristics of each component  $\Delta$ IIC will affect the outcome. For example, if the deficiencies in the classification system for one component are in the same frequency center band as other components of the system the total IIC will come up short in the field. STC Sound Control recommends providing the simplest, most economical, highest-performing underlayment system (the Acoustic Sleeper) and overshooting the minimum Code requirement or client directive when adding the other components.

The following chart is our best estimate of IIC for various floor systems based on independent tests of the Acoustic Sleeper ( $\Delta$ IIC-18) and data from various sources, mostly *without* information on the frequency characteristics. Ceiling system, where indicated, consists of one layer of gypsum board on resilient channels with 3” fiberglass batts in the plenum ( $\Delta$ IIC-15).

IMPACT INSULATION CLASSIFICATION	With Ceiling				Without Ceiling	
	Wood Joists and Trusses		Concrete Deck		Concrete Deck	
	Direct Attachment	Sleeper System	Direct Attachment	Sleeper System	Direct Attachment	Sleeper System
None	28	46	43	<b>61</b>	28	46
Linoleum or Sheet Vinyl	28	46	43	<b>61</b>	28	46
with pad	32	<b>50</b>	47	<b>65</b>	32	<b>50</b>
Vinyl Plank with pad	49	<b>67</b>	<b>64</b>	<b>82</b>	49	<b>67</b>
Engineered Wood with pad	32	<b>50</b>	47	<b>65</b>	32	<b>50</b>
Wood Strips	28	46	43	<b>61</b>	28	46
with pad	32	<b>50</b>	47	<b>65</b>	32	<b>50</b>
Porcelain, Stone or Ceramic Tile	28	46	43	<b>61</b>	28	46
with crack isolation pad	32	<b>50</b>	47	<b>65</b>	32	<b>50</b>
Polished Concrete	32	<b>50</b>	47	<b>65</b>	32	<b>50</b>
Carpet with pad	<b>53</b>	<b>71</b>	<b>68</b>	<b>86</b>	<b>53</b>	<b>71</b>

Without the Acoustic Sleeper System, finish floor choices are limited to carpet with a pad, as well as vinyl plank with a pad on concrete deck when a ceiling is hung below. With the Acoustic Sleeper *any finish floor* becomes a choice on concrete with a ceiling. Even on concrete with exposed structure (no ceiling) or lightweight wood joist or truss construction, there is a wide selection available including linoleum, sheet vinyl, vinyl plank, engineered wood, wood strips, tile, and polished concrete in addition to carpet.