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### Impact sound rating of floor toppings

Warnock, A. C. C.

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## **Impact sound rating of floor toppings**

**Warnock, A. C. C.**

**IRC-ORAL-359**

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***Impact sound rating of floor  
toppings***

**Alf Warnock**

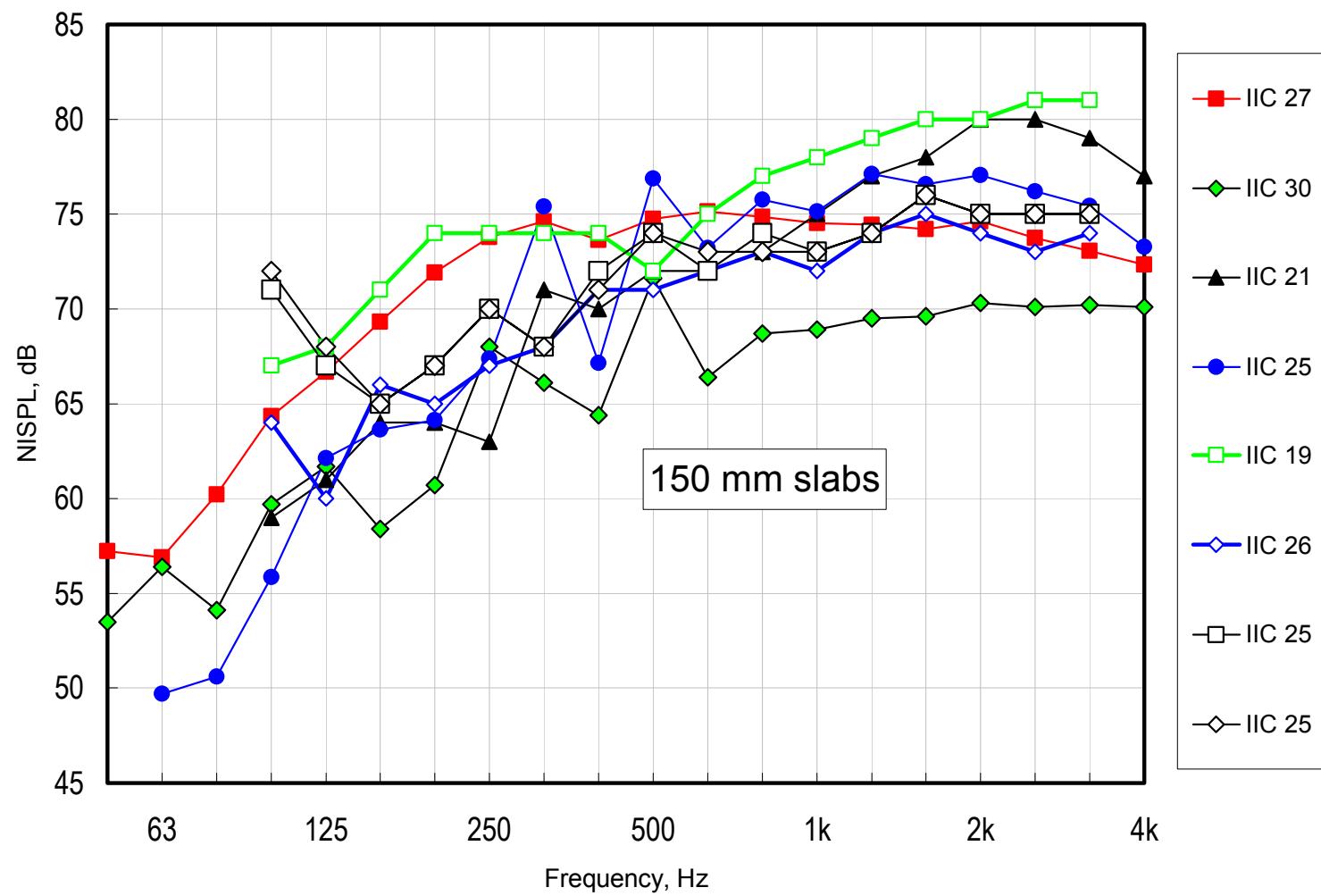
**Indoor Environment Program, Acoustics  
Institute for Research in Construction  
National Research Council  
Ottawa, Ontario**

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## *The problem*

- Impact insulation class measured with the standard tapping machine applies to a complete floor assembly.
- Toppings may be tested on different floors, so designers can't select among different toppings.

# *Reproducibility*

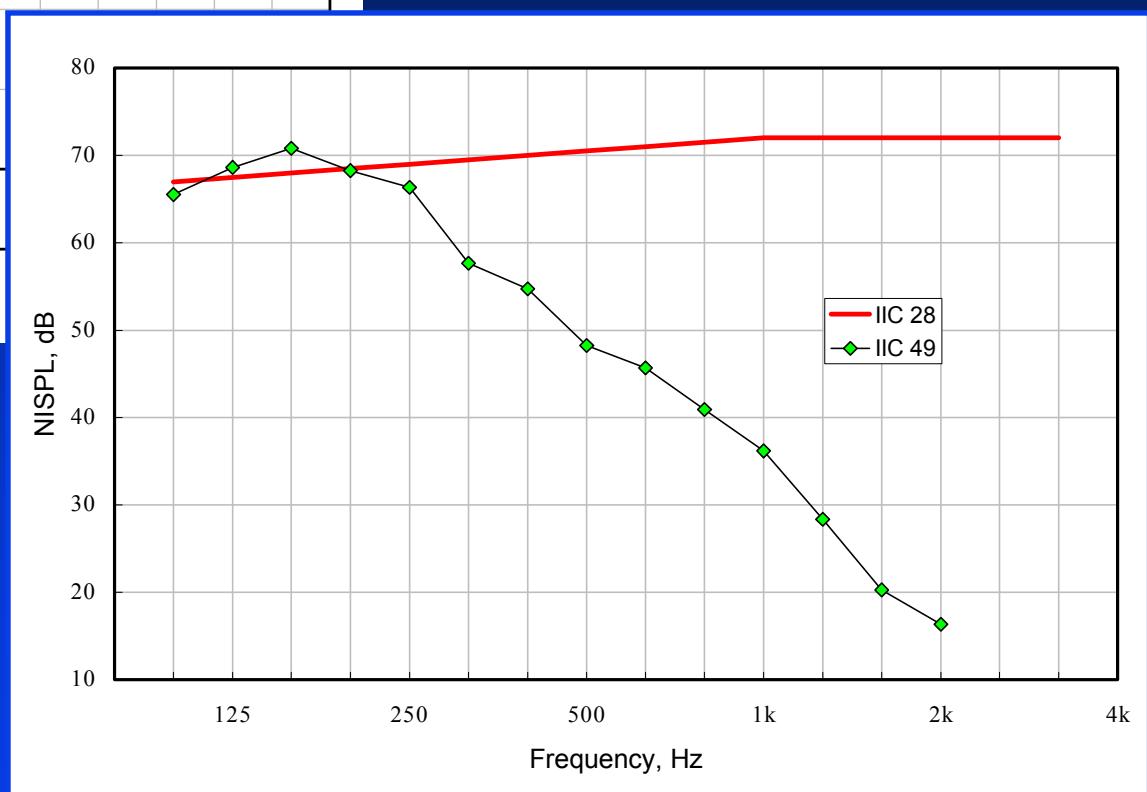
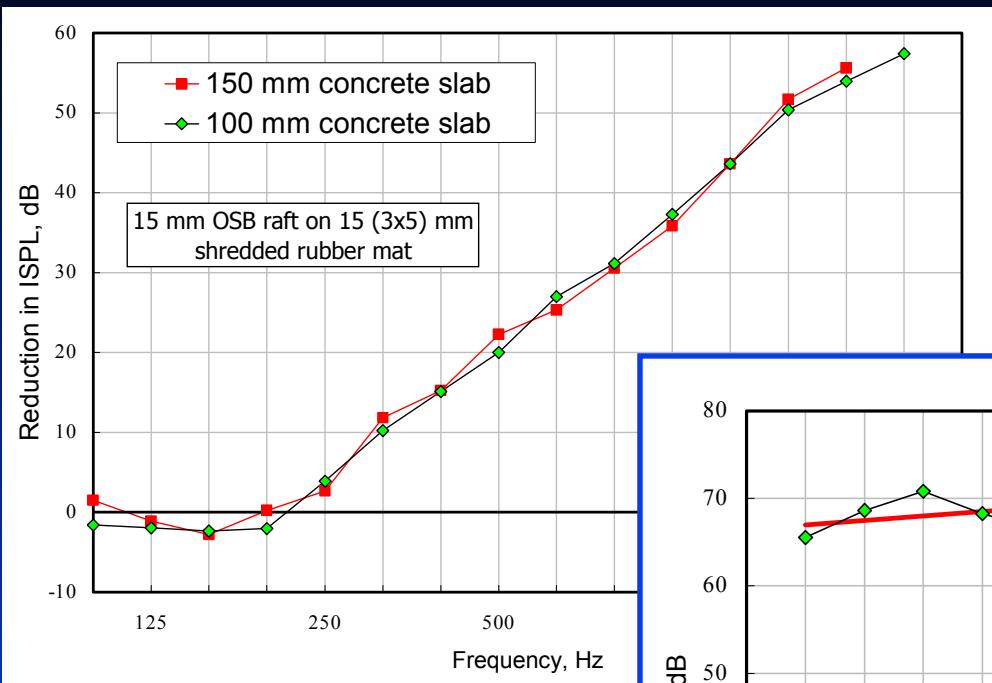


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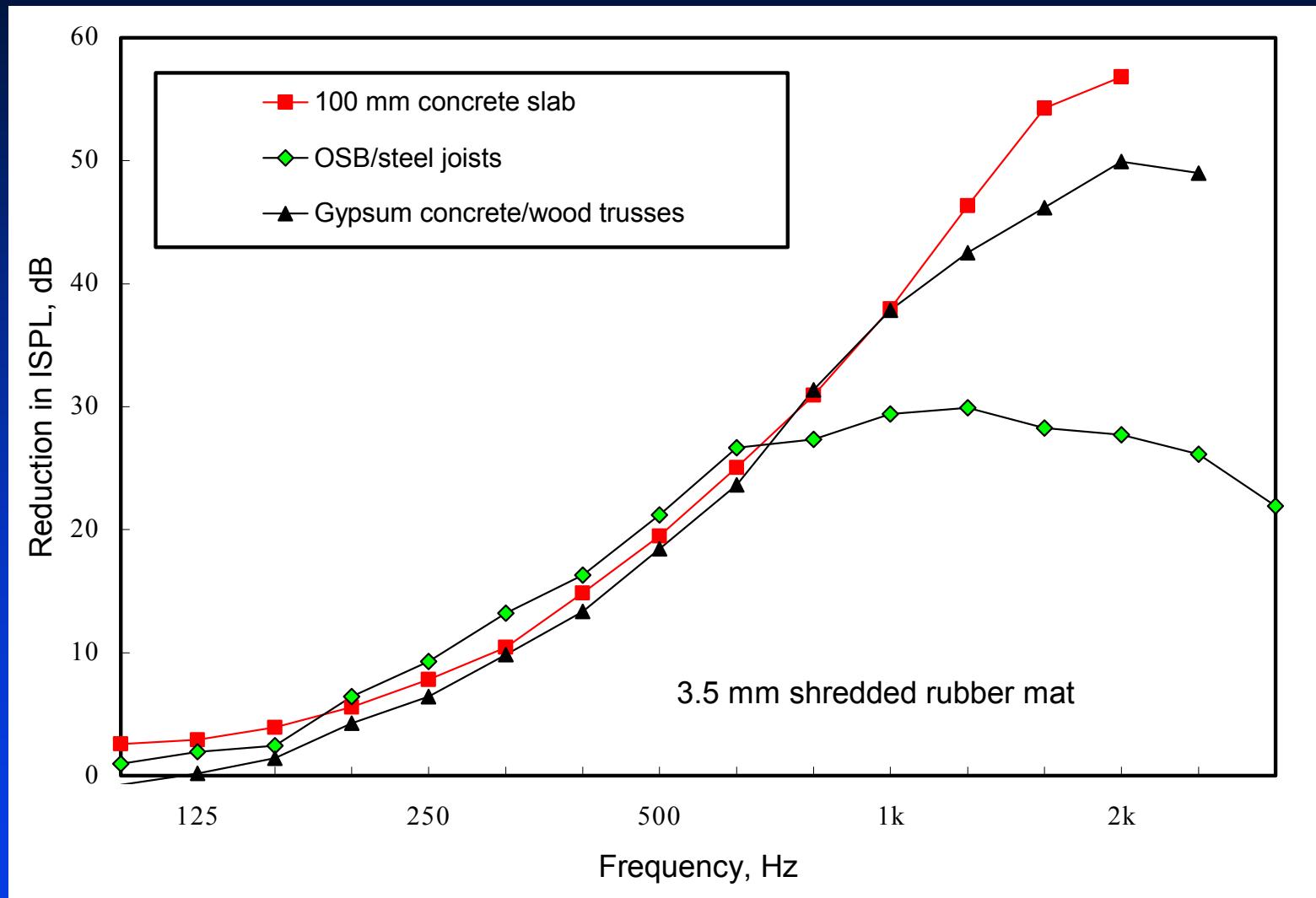
## *ISO 140 part 8 test procedure*

- Measure ISPL on a bare concrete slab
- Measure ISPL on topping on concrete slab
- Add the spectrum of differences to the spectrum of impact sound pressure levels for an idealized concrete slab.
- Calculate the single-number rating and the improvement relative to the idealized slab.

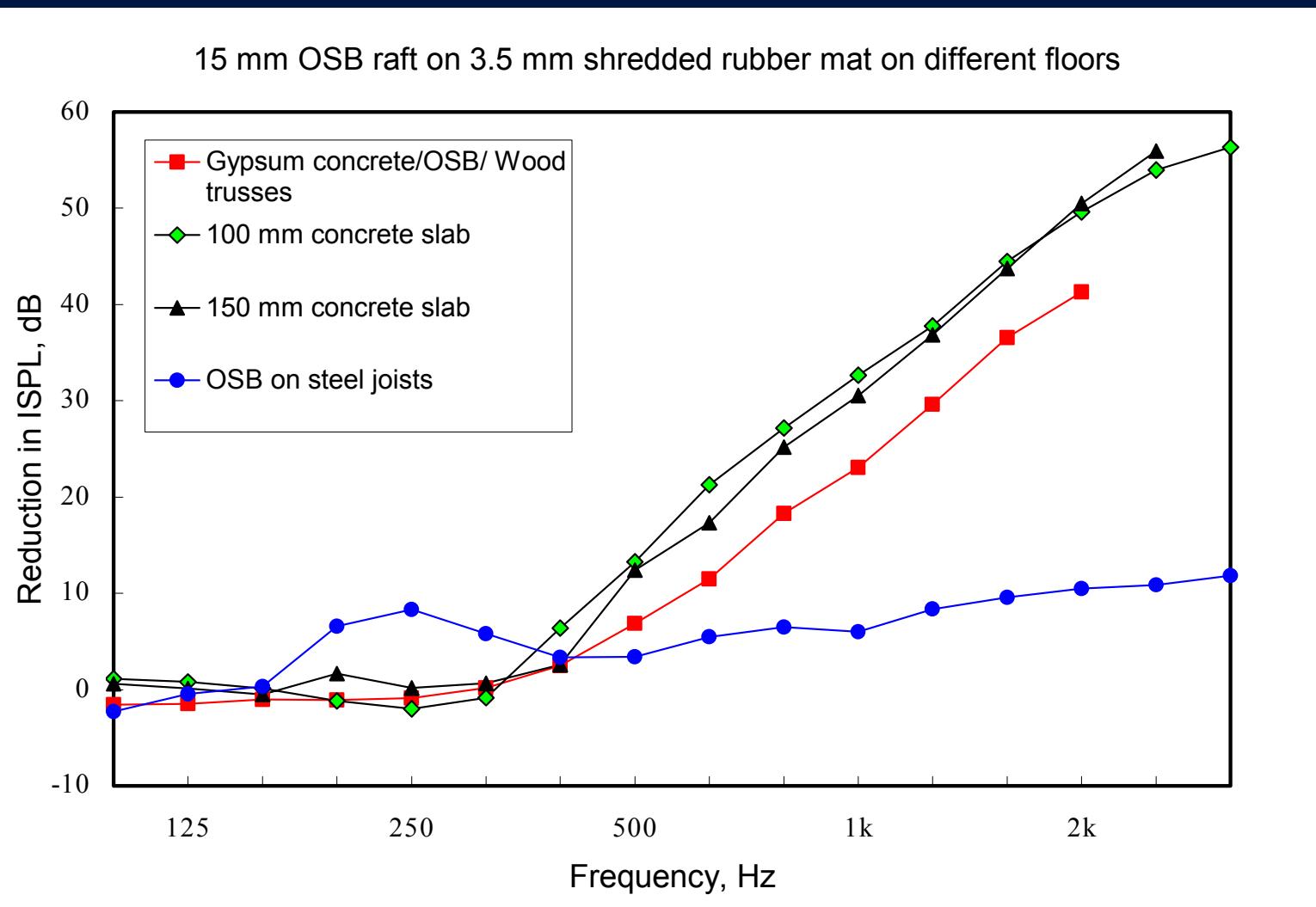
# *Test method*



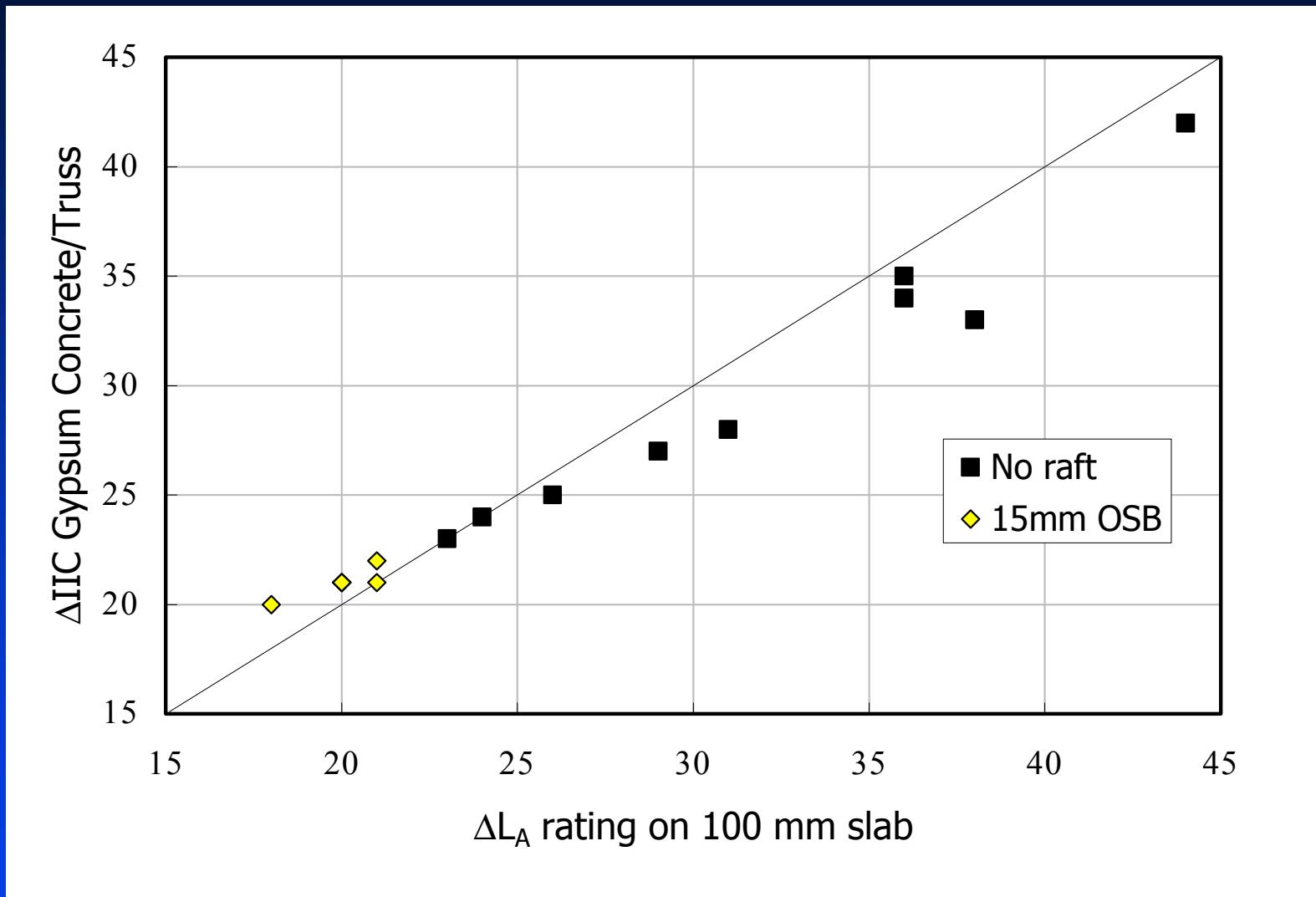
# *Resilient layer on different base floors*



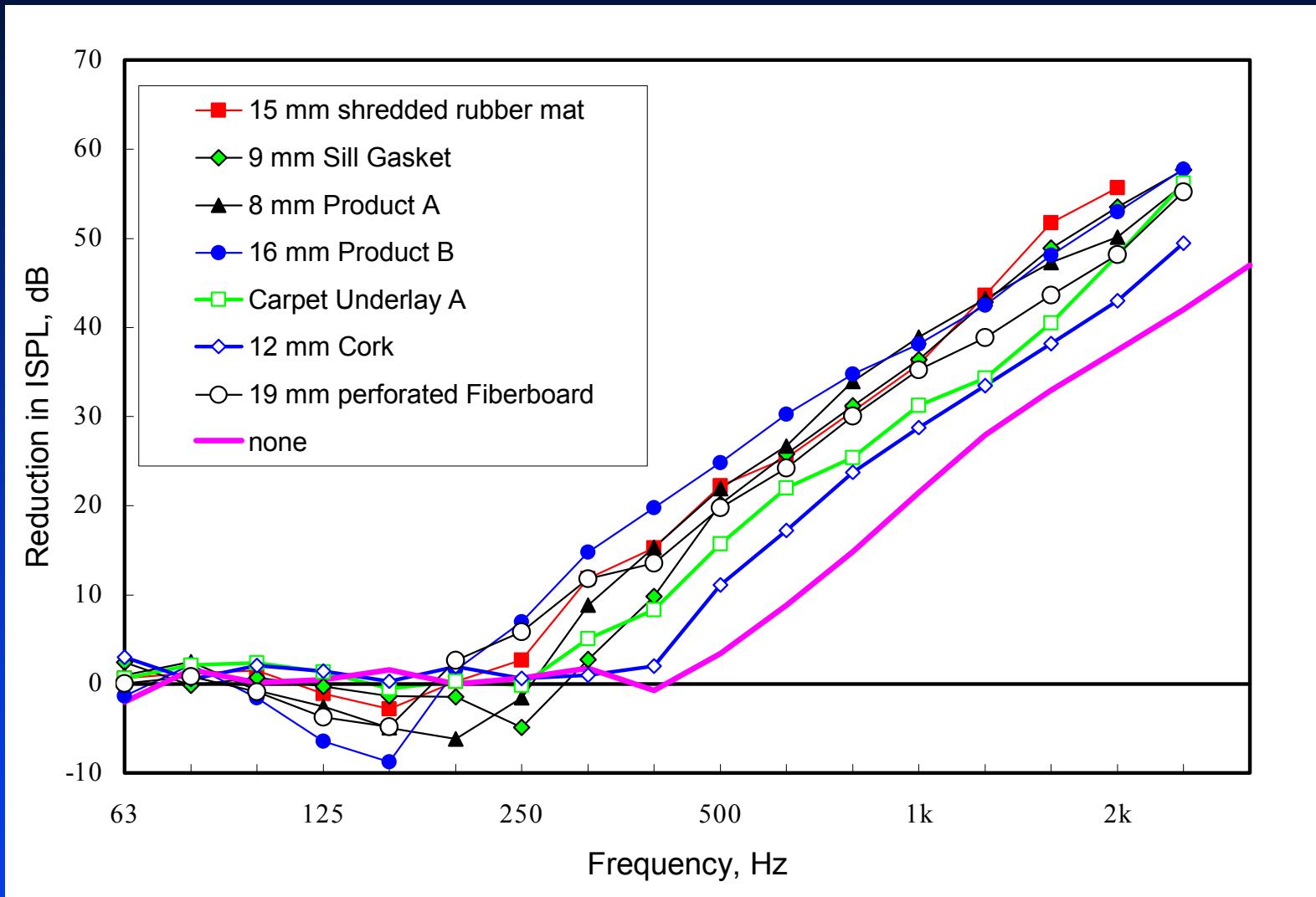
# *Raft on different base floors*



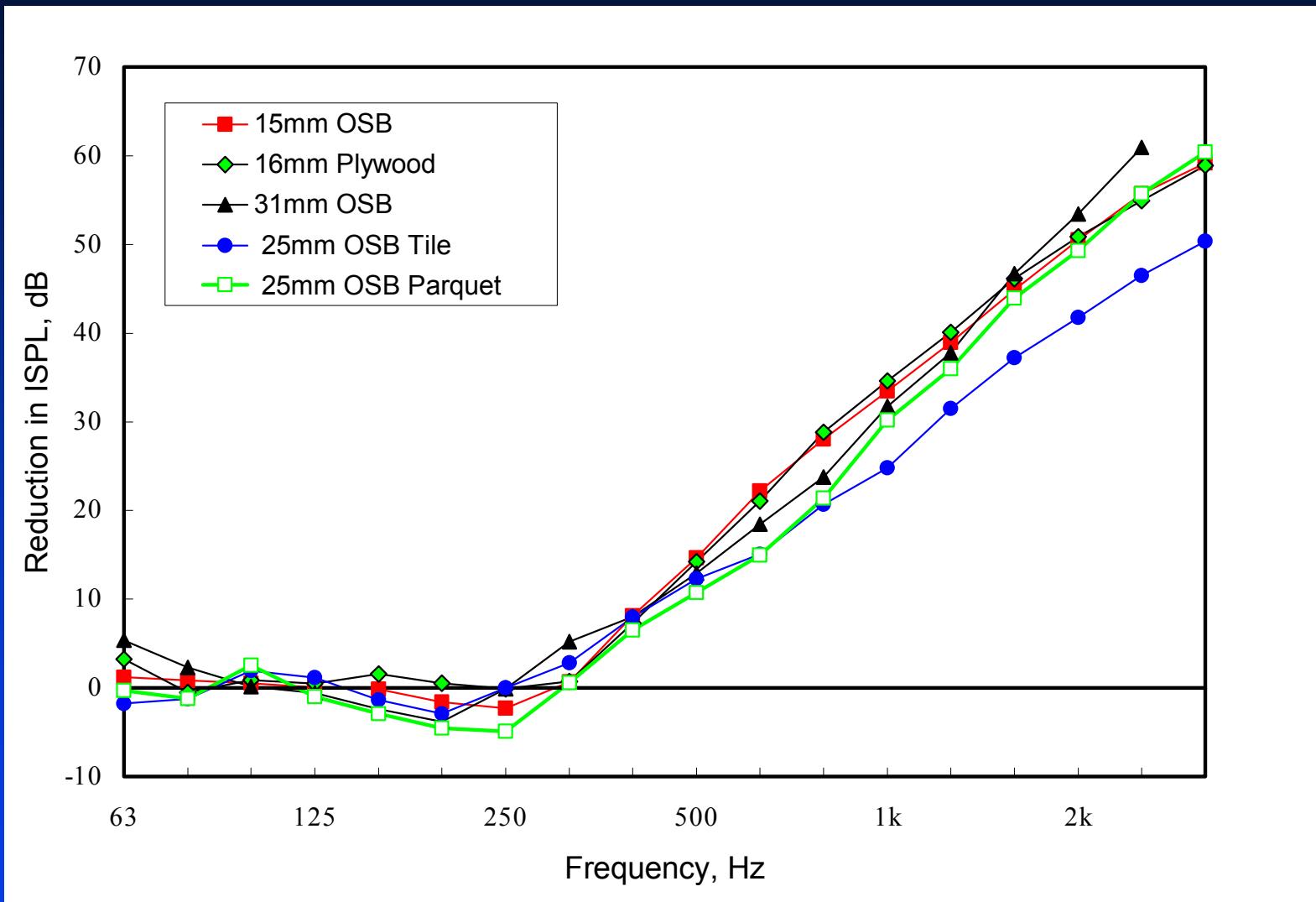
# *Improvement on concrete/joists*



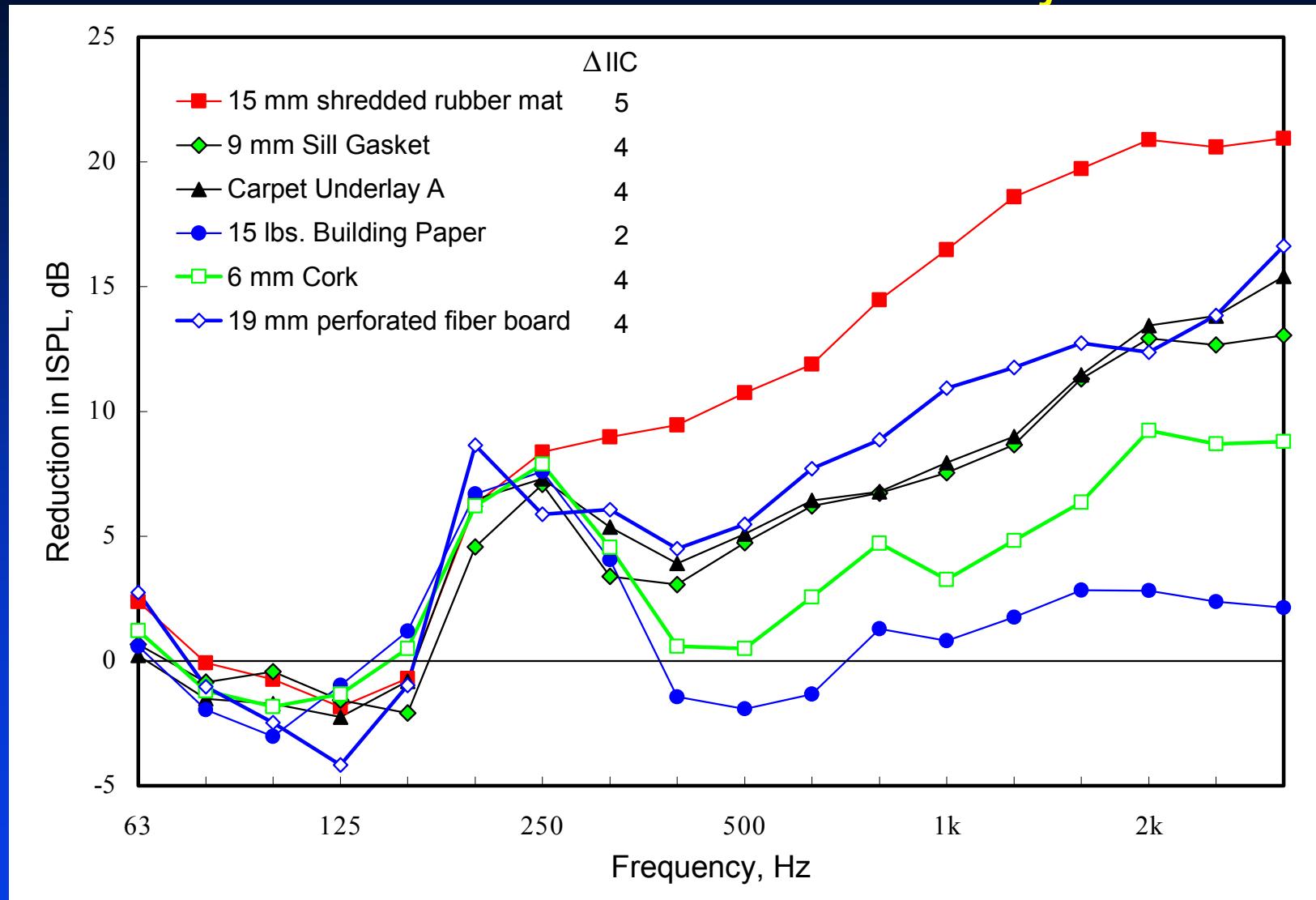
# *Resilient materials under 15mm OSB - concrete slab*



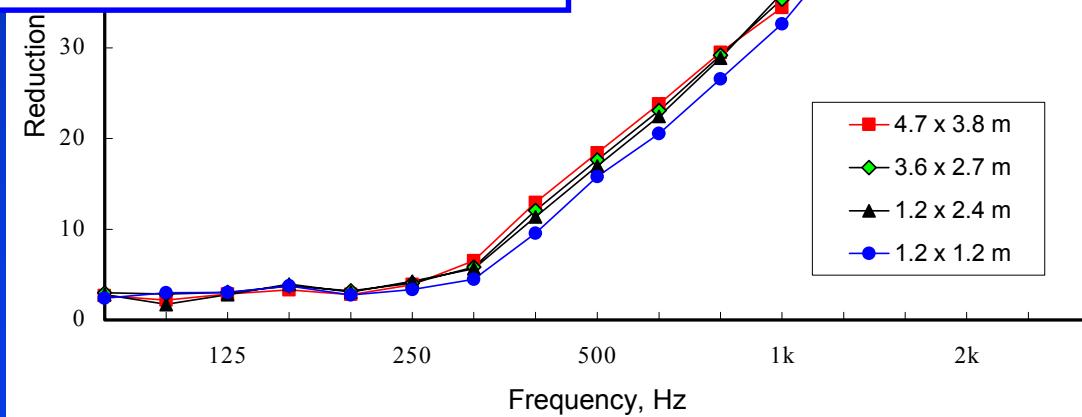
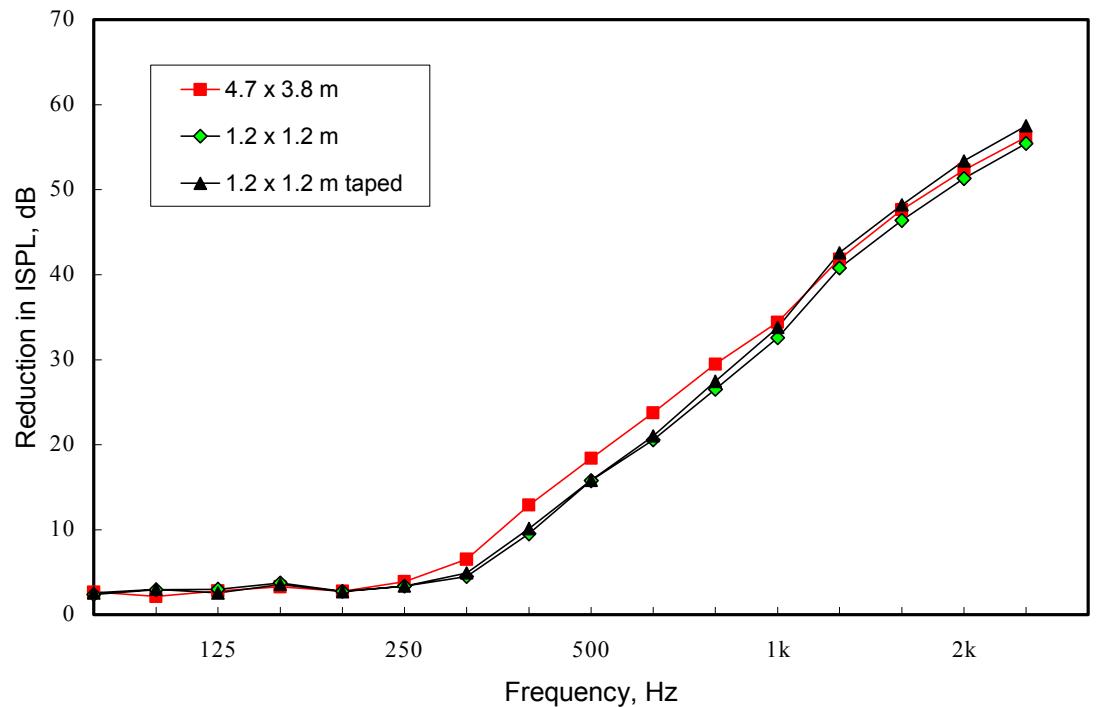
# *Different raft weights*



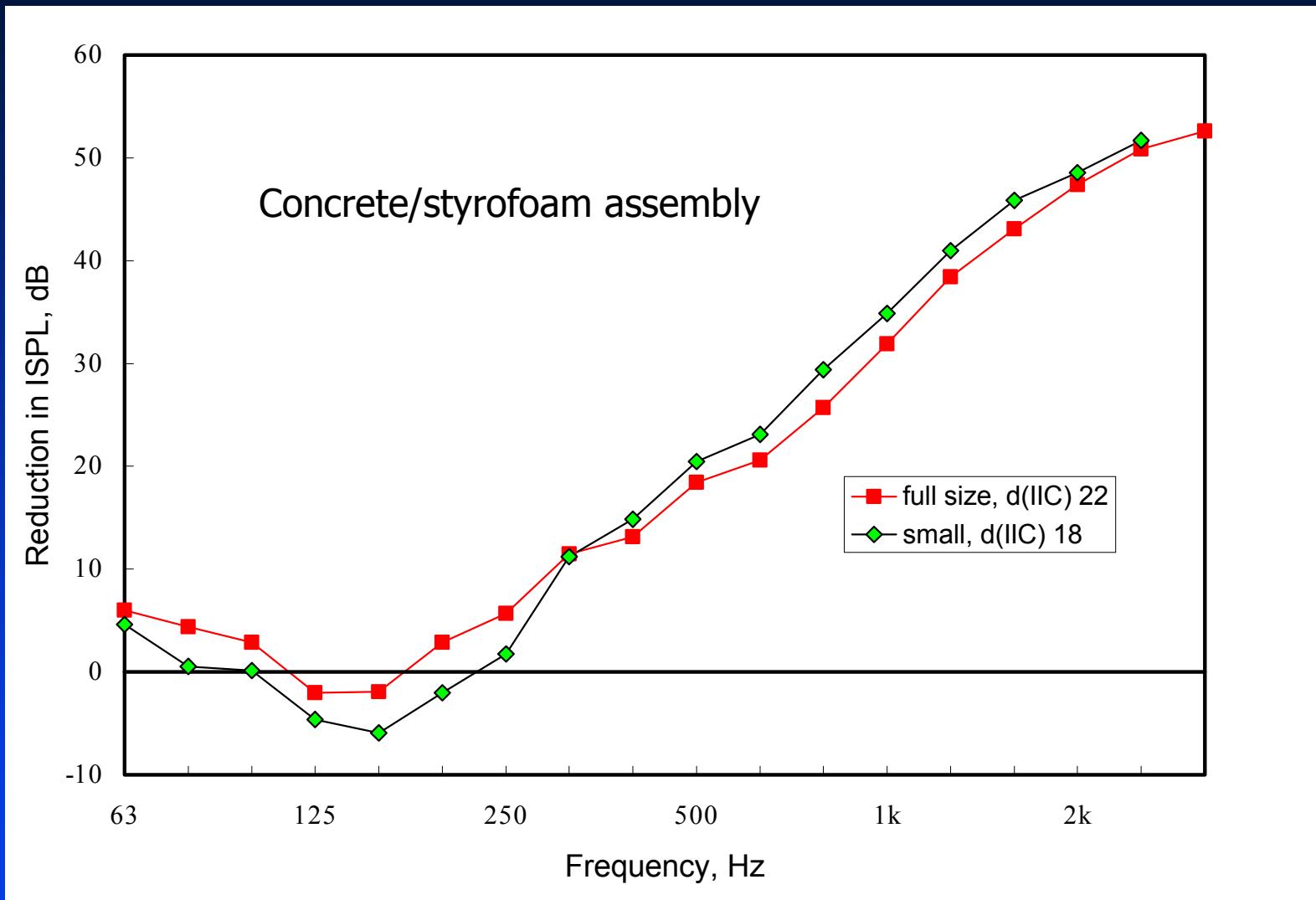
# *Resilient materials under 15mm OSB - joist floor*



*Small  
specimens*



# *Small v. large*



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## *Summary*

- New standard will be useful but needs to deal with joist floors - ASTM and ISO working on it.
- Improvements are for ISO tapping machine, not for walkers
- Still lots to do!!

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# ***Reports***

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