The Simplest Way to Fix Bouncy Floors

We have had many calls from homeowners complaining about bouncy floors that cause annoying vibration, rattling china, cracking grout and so on.

Over the years traditional remedies have been used to resolve the problem. One of the biggest issues is not just the cost to fix the floor, but how effective the floor performance (how the floor feels) would be afterwards.

This article shows that the simplest and most cost effective way of fixing bouncy floors is by using Luxor's patented IBS engineered bridging and doing the floor analysis with Luxor's Floor Performance Rating (FPR) system. The FPR is based on point load deflection (this is what occurs when one steps on a floor while walking across the room) and predicts floor performance.

We will analyze five traditional remedies that have been used to fix bouncy floors. We will use a 16' by 20' room built with 16' floor joists.

1- Add Bridging or Blocking.

The simplest solution most people use is to add conventional bridging or blocking between the joists. They can buy the product readily and they can do it themselves.

After installation, in most cases, they will realize that the floor feels the same as there was no noticeable difference.

Pros: Easy and relatively fast to install.
Lowest cost.

Cons: If blocks are used, they must be cut to precise lengths.
Blocks must be toe-nailed.
The tops of the cross bridging could be rubbing the underside of the subfloor.
Has to be installed from underneath.
The least effective solution.

Floor Performance: Floor will feel 1 to 4% better.
Cost: $100 or $.31 per square foot

2- Double Up the Floor Joists.

Usually, a friend or designer might suggest doubling the floor joists. Now, we have a double joist which should act like a beam. "The floor should feel a lot better."

The labour cost is high since all the wires, pipes, etc. have to be removed and then put back. Now, another joist has to be fastened to the existing one. It is very difficult to put in a fixed 16 foot piece of joist into a space that is 16 feet in length with a space of 12" or 16".

Pros: Will achieve a better performing floor.

Cons: Labour intensive.
Have to take out pipes, wires, HVAC lines, etc.
Difficult to put joists onto bearing walls.
Have to put back new pipes, wires, HVAC lines, etc.
Have to buy joists for each space.
Has to be installed from underneath.

Floor Performance: Floor will feel 38% better.
Cost : $600 or $1.90 per square foot

3- Add Another Layer of Subfloor.

Sometimes, a person might recommend that another subfloor layer be put down on top of the existing one. The theory is that this will make the subfloor stiffer, which will lead to less bounce.

A problem with this is that, in most cases, there is already an existing floor covering such as ceramic, vinyl or hardwood. If this is the case, another remedy is needed.

Pros: Will achieve a better performing floor.

Cons: Very labour intensive.
Can only be done if there is no floor covering or carpet.

Floor Performance: Floor will feel 34% better.
Cost: $650 or $2 per square foot

4- Add a Ceiling.

A common remedy is to strap the whole underside of the joists and then add drywall. People think that this will tie all the joists together.

Pros: Will achieve a slightly better floor.

Cons: Labour intensive.
Expensive material cost, strapping and drywall.
Can only be installed from underneath.
In relation to cost versus floor performance, it is the worst case.

Floor Performance: Floor will feel 11% better.
Cost: $1,000 or $3 per square foot

5- Add a Beam.

Usually, the last remedy is to put in a beam. Associated with the beam will be columns and footings. Even though the floor will feel so much better, a lot of people do not want to use this remedy, since the room will now be divided.

Pros: Will achieve the best performing floor.

Cons: High labour and material cost.
One or more posts will be needed with footings.
The depth of the beam affects headroom.
The room will now be divided eliminating the open concept.
Requires a contractor and maybe a structural engineer.

Floor Performance: Floor will feel 150 to 220% better.
Cost: $850 or $2.65 per square foot

Use IBS Engineered Bridging.

Install a row of IBS at midspan. Either use standard or retrofit IBS units.

If needed, two rows of IBS can be added. The cost will be slightly more and the floor performance will be better. (an extra $100 for a 77% better floor).

Pros: Easy and fast to install.
Standard or retrofit units available.
Can install around existing pipes, wires, HVAC lines, etc.
Easy for a Do It Yourself installation.
Will achieve the second best performing floor.
Overall, the best solution, cost to floor performance.

Cons: Has to be installed from underneath.

Floor Performance: Floor will feel 45% better.
Cost: $300 or $.94 per square foot

SUMMARY:

The simplest and most cost effective solution to eliminate a bouncy floor is to use a row of the IBS. Any handyman can install the IBS without altering or changing the actual floor system. There is no need to “guesstimate” labour and materials. Luxor's FPR will predict how the floor will feel.