Making Room With Space Joists

The floors of a home need to be strong, resilient and able to support weight from the floors above. To build strong floors, builders must install framing joists to keep occupants safe from the weight of the building above.

A joist is the structural skeleton of the floor. Without joists there would be no floor. Framers commonly install solid sawn floor joists. However, new technologies have led to a new joist, one with an open metal web system.

Open web joists, unlike solid sawn joists, are lightweight, reliable and stable. They have a long span, high load capacity and are made of specially engineered finger-jointed wood and metal, which allows for the quality of the wood to be straighter and more consistent. It also eliminates unwanted bulkheads.

The end result is a strong joist and easier installation of the plumbing and electrical systems. This allows the crews to work fewer days, and possibly create savings for the homeowner's building budget.

Here's how to install an open web joist:

- First we need to look at the plans for the home. Depending on the need for load capacity and size, the spacing for the joists can be every 12, 16, 19.2 or 24 inches on center
- Then we want to cut the ends of space joists so that they align. Space joists are designed to be cut up to 2 feet on each end and still keep their structural integrity.
- Once the joist is in position, toenail it into place on each side of the rim plate. Toe nail it at a 45 degree angle through the bottom chord of the joist into the sill or top plate of the supporting wall. This will fasten the joists to the rim plate.
- After all the joists are fastened we want to add the sub floor. Depending on the type of sub floor check with the manufacturer about the best way to glue and screw it into place. This creates the platform, which will become the floor of the home.

The common building method is to use solid sawn joists, which are attached to the rim plate the same way. However, because they are made of one piece of lumber, their quality and straightness can vary. Solid sawn joists are an acceptable method for building a floor. However, they are heavier and don't allow for much design flexibility. Sawn joists can also slow down system installations later on, when it's time to rough in the utilities.

Although more expensive initially, the web joists pay off in the end with reliability and quality, giving the homeowner a better floor because of their superior engineering.