STRUCTURAL BUILDING COMPONENTS MAGAZINE
April 2001

Frequently Asked Questions

Construction Loads on Floor Truss Assemblies by Adam Pearson

QUESTION:

How much OSB can be stacked onto a floor deck without damaging the trusses?

ANSWER:

During the construction process, it is common practice for builders to store stacks of building materials on top of floor truss assemblies. Unfortunately, a check to see if this "construction loading" causes excessive stresses in truss members is far less common.

Trusses that are overstressed due to construction loading may exhibit loosened connector plates, hairline compression fractures, and excessive sagging. These, in turn, may lead to problems ranging from finishing difficulties to structural collapse.

It is important to realize that in most cases, truss manufacturers design their products to support loads under the following conditions:

- All loading is applied uniformly and does not exceed the design load specified for the component.
- Adequate bracing is in place to ensure that the trusses remain stable and plumb while in service.

If these conditions are satisfied when the truss is loaded with construction materials, then it will not be overstressed. If they are not, then the only way to tell for sure is to redesign the truss for the specific construction loading case.

So, for a typical floor system with a design load of 40 psf, how much material can be safely stacked onto the trusses?

Assuming that the trusses are properly braced according to WTCA's Warning Poster, material may be stacked up to the point where it produces a uniform loading of 40 psf. This information is tabulated for some common building materials in the table above.

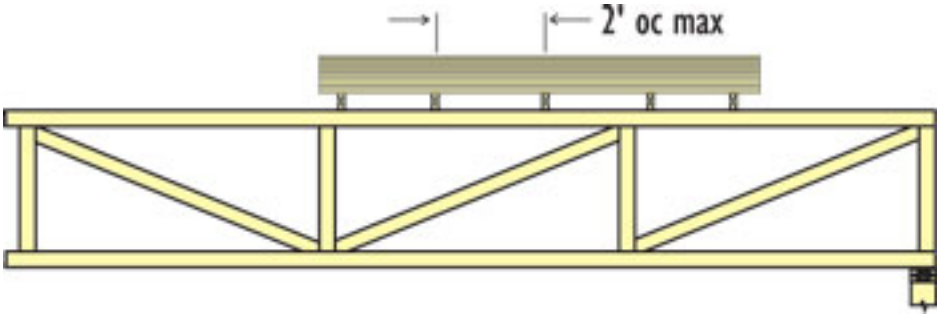
ADDITIONAL NOTES:

- The combined effect of the live loads and construction loads must never exceed 40 psf. For

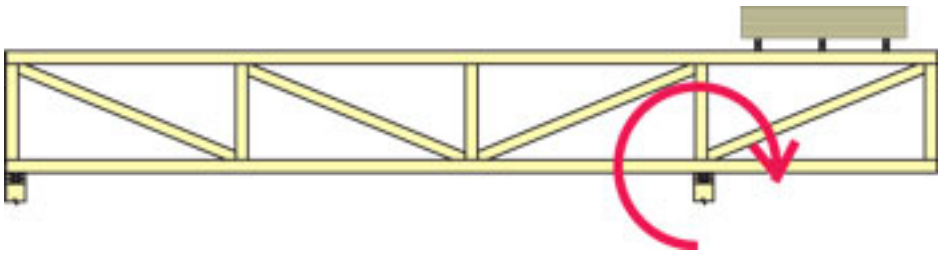
this reason, do not allow excessive snow to accumulate on the floor deck at the same time as it is loaded with construction materials.

Building Material	Weight per 4' x 8' sheet	Number of stacked sheets eqivalent to 40 psf
Gypsum, 1/2	70 lb	18
Gypsum, 5/8"	90 lb	14
Plywood, 3/8"	35 lb	36
Plywood, 1/2"	48 lb	26
Plywood, 5/8"	58 lb	22
Plywood, 3/4"	74 lb	17
Plywood, 11/8"	109 lb	11
OSB, 1/2"	54 lb	23
OSB, 5/8"	64 lb	20
OSB, 3/4"	80 lb	16

- The construction load must be applied uniformly, just like the design load. If blocking is used beneath a stack of materials, it should be spaced at no more than 24" on center in order to simulate a uniform load.



- Never stack materials in a location that will produce instability. Stacking materials on the cantilevered portion of a floor truss, for example, is a bad idea. A good rule of thumb is to always stack construction materials between two points of solid bearing.



SBC HOME PAGE

The mission of Structural Building Components Magazine (SBC) is to increase the knowledge of and to promote the common interests of those engaged in manufacturing and distributing of structural building components to ensure growth and continuity, and to be the information conduit by staying abreast of leading-edge issues. SBC will take a leadership role on behalf of the component industry in disseminating technical and marketplace information, and will maintain advisory committees consisting of the most knowledgeable professionals in the industry. The opinions expressed in SBC are those of the authors and those quoted solely, and are not necessarily the opinions of any of the affiliated associations (SBCC, WTCA, SCDA & STCA).