

Stacking Gypsum Board on Floor Framing During Construction

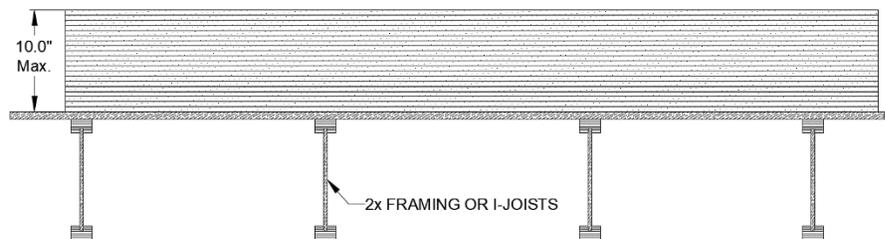
Stacking of construction materials such as gypsum board on a wood framed floor during construction can have an array of effects on the supporting structure. Proper procedures for handling and stacking gypsum board on floor framing must be followed to ensure product performance and optimal job site safety. If the material is distributed such that the stacked load does not exceed the design loads, issues, if any, will be minimal. Should the construction loads exceed the design loads, several issues could result ranging from aesthetic problems due to excessive deflection to life safety concerns due to structural failure of supporting members.

These bulleted statements from the Gypsum Association offer some guidelines for stacking gypsum panel products:

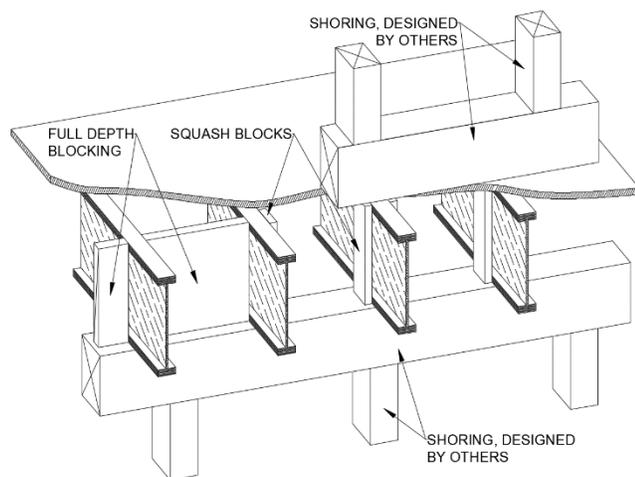
- Stack gypsum panel products flat.
- Gypsum panel products stacked on edge, leaning against a wall, are unstable, prone to slip, and pose a serious hazard.
- Gypsum panel products shall never have other materials stored on top of them.
- Gypsum panel products shall be stacked such that their weight is evenly distributed, and the floor is not overloaded.

More information regarding the handling and storage of gypsum panel products can be found in the Gypsum Association's guide *Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors* ([GA-801-17](#)).

Gypsum panels can be very heavy. For example, a 4' x 12' x 1/2" gypsum panel can weigh over 80 lb. For most residential construction, the framed floors are designed for 40 psf live load. Stacks of panels should be limited to 10" (20 sheets for 1/2" thick) in height so the load on the floor does not exceed 40 psf.



Additional stacks may be placed on the framed floor provided stacks do not exceed the design load of the floor. If the additional stacks exceed the 10" height limit, the design professional responsible for the project must be consulted to determine if the structure can support the additional load (i.e., evaluation of the floor joists, hangers, beams, stud walls, etc.)



When the structure is insufficient to support the loads from stacked gypsum board, shoring may be used to transfer load through the structure to those elements that can support additional load. Shoring and its placement shall be designed by a competent professional familiar with the project and its construction. It is important to consider the following:

- Locate shoring to minimize deflection and prevent permanent settling of floor joists.
- Minimize damage to floor topping and sound mats.
- Shoring shall stack in multiple story structures.
- Blocking and/or squash blocks are required to avoid localized damage to I-joists.

It is beyond the scope of this technical bulletin to prescribe specific shoring recommendations. It is recommended that specifiers include provisions in their specifications that address stacking construction loads to ensure member stability and job site safety.