

Floor Trusses VS Floors with TJI® joists



Sprinkler Requirements

To prevent fire propagation through “concealed spaces” (such as the space in a floor between the ceiling and subfloor), sprinklers can be required by NFPA 13 within the floor space of mid-rise projects.

There are 2 options to eliminate this requirement:

- 1) Fill the floor space with non-combustible insulation. A maximum 2” gap between subfloor and insulation is permitted.
- 2) ...or, block the open space with approved materials to limit the volume to less than 160 cubic feet.
 - i. For floor trusses, this means that additional full-depth wood panels or gypsum board is required to contain the open space volume.
 - ii. For TJI® joists, NFPA 13 (8.15.1.2.6) permits the I-joist web material to be used to limit concealed space volumes in order to eliminate the need for sprinklers. 3-1/2” of insulation is also required, which is typically a minimum requirement for other considerations such as acoustics. Refer to project-specific acoustic assembly details and the fire-resistance-rated assembly for specific insulation requirements.

Field-Trimable ends?

TJI® joist lengths can be trimmed as needed on the job site.

Floor trusses are typically made to specific lengths and can not be adjusted on site.

Web-Conflict?

Truss webs do not always align, and can limit flexibility to run drainage and other mechanical services.

Strongback Bridging

2x__ “strongback” bridging, when required, can interfere with the passage of building services.

TJI® Joists do not require bridging or mid-span blocking.



Right side up?

Floor trusses generally are built with a top and bottom, and must be installed that way.

TJI® joists have no such restrictions.

Perimeter Requirements

Floor trusses use a 2x__ “ribbon” to prevent truss rollover, but this element provides no shear transfer to lower levels.

Additional material is required for:

- shear (& vertical load) transfer,
- fire blocking or backing for finishes.

Trus Joist rim board provides vertical load transfer, and secure nailing for shear transfer. It also can contribute to 1-hour fire rated separation between units & corridors and to 2-hour fire rated exterior wall requirements of Type III construction.

Other TJI® Joist Advantages

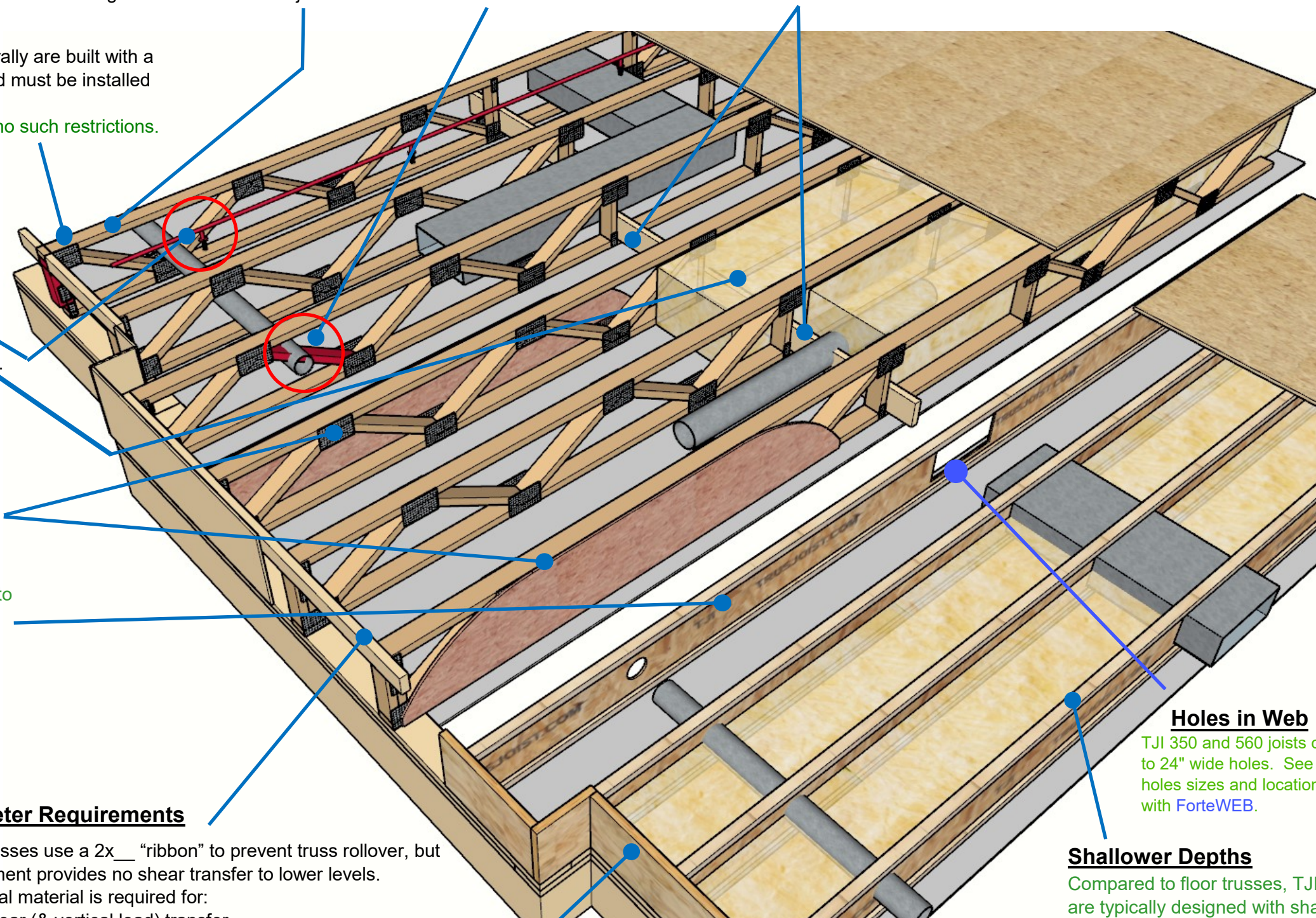
- Economically design the floor to a [TJ-Pro™ Rating](#)
- Limited [life time warranty](#)
- Lighter weight
- Use [ForteWEB](#) design software for easy specification

Holes in Web

TJI 350 and 560 joists can accept up to 24" wide holes. See TJ-4000 for holes sizes and locations or design with ForteWEB.

Shallower Depths

Compared to floor trusses, TJI® joists are typically designed with shallower depth floor systems to reduce costs (not only in floor but also in other building materials)



Questions?

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Visit [“Where to Buy”](#) for more information.

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