

TrusSteel Floor Trusses – Design Criteria

Purpose of this Bulletin

There is a special set of design criteria for TrusSteel floor trusses. Please observe this set of criteria whenever you design a TrusSteel floor truss. These are minimum design criteria, the structural specifications may call for more stringent criteria.

Information

Floor truss designs must meet all of the criteria listed below in order to be eligible to receive a seal from TrusSteel professional engineers:

1. Overall truss span-to-depth ratio shall not exceed 24.
2. Live Load deflection limited to $L/360$ and Total Load deflection limited to $L/240$.
3. For web to chord connections, double shear fasteners are recommended. Single shear screws are allowed, however a minimum of two screws on each face at each joint are required.
4. Top chords must be 20 GA minimum unless deck fasteners are available for 22 GA applications.
5. If no rigid ceiling is directly attached, the bottom chords must be braced at 8 ft o.c. max for small chord and 10 ft o.c. max for large chord.
6. All floor trusses must have strongbacks at 10 ft. o.c. max. with strongback positioned at a vertical. Refer to TrusSteel Standard Detail TS066.
7. Chases and/or untriangulated areas are allowed but must be checked with an unbalanced live load of 0.0/1.0 about the opening(s).
8. Floor trusses that are cantilevered or have interior bearings should be checked with an unbalanced live load of 0.0/1.0 about the bearing(s).
9. Any additional framing loads that occur over the top chords of the truss from other framing (such as walls with trusses framing into them) must be applied to the top chord of the floor truss at the time the truss is engineered. If these additional framing loads are supported by framing other than the floor truss (i.e. squash blocks), no additional loads need be applied to the top chord of the floor truss.
10. Some building codes may require a moveable load check depending on building use.
11. Top chord bearing trusses are allowed, but special design and detailing criteria have to be met. Refer to TrusSteel Standard Detail TS020.

Application

You will need to identify and input these design variables into the SteelVIEW® software so that the program will enforce this set of design criteria. Deflection criteria, fastener type, minimum screws per joint, minimum chord gauge, and chord bracing (i.e. purlins) can be preset in Job/Global Settings. Framing loads, top chord bearing conditions, unbalanced live loads and movable loads involve manual input.

Referenced Documents

TS020
TS066

Revisions

- General revisions on 1/10/02.
- This bulletin was revised on 9/21/10