Wood Truss Construction Stats and Facts

FACTS

The Three Main Signs of Roof Truss Failure

1. Cracks or Buckling

Never ignore a crack! When a roof truss becomes stressed beyond its load capacity, it may buckle, crack, or break. Atypical loading events or additional loading after the original construction can cause roof truss failure. Structural changes such as building an addition can also compromise structural integrity.

2. Deterioration or Corrosion

Cumulative damage from weather and water takes its toll. When you inspect your roof, always check for signs of aging. Corrosion of the metal plates, bolts, or nails can weaken roof trusses. Wood and glue also deteriorate over time, leading to a potential roof truss failure.

3. Accidental Damage

Damage to the structure from weather, earthquakes, landslides, floods, or fires can cause even the strongest roof trusses to fail. Structural damage or an impact to the building might suddenly overload one or more sections. Accidental damage during renovations can also cause failure due to impact or stress.

4. Steel VS Wood

There are important differences between structural steel and wood materials. Steel is far denser than wood, and depending on the size of the individual members, steel trusses tend to be much heavier. The hoisting and stabilization of heavier objects prove more difficult and requires added vigilance.

STATS

- Falls were particularly relevant in the setting of trusses, and that proper safety protocols were observed in the setting of trusses only 28% of the time. A subsequent study conducted a comprehensive needs assessment to determine gaps in the school-based apprentice carpenters' fall prevention training. The study showed that less than one third (33%) of the apprentices received school-based training in home-building tasks that involve working at heights, such as in the setting of trusses.
- 10 incidents (8%) described other types of trusses that are common for roof installations, including four (3%) web trusses, two (2%) scissor trusses, two (2%) gable trusses, one (1%) outrigger truss, and one (1%) jack truss. In total, roof type trusses comprised ninety-three percent of the sample dataset. Seven incidents (6%) referred to floor trusses. One incident (1%) referred to a plate truss.
- Each of the floor and plate truss incidents described the work as being performed at elevation. Truss material Seventy-one incidents described a specific truss material. Forty-one (58%) incidents involved wood trusses, and thirty (42%) involved steel trusses.
- 14 incidents (7%) occurred during the stacking, loading, or unloading of materials. These incidents occurred at both ground level and at elevation. Demolition activities resulted in eight incidents (4%). In these cases, poor choices were made, and inadequate evaluations of the remaining structure resulted in a collapse. 4 incidents (2%) were the result of transportation, where large loads struck employees standing adjacent to the path of travel. 3 incidents (1%) involved the mounting or dismounting of an adjacent work platform. Two incidents (1%) were attributable to cutting or making truss modifications prior to installation.