

HOW TO AVOID TRUSS UPLIFT PROBLEMS

Separation of the ceiling from the wall is an annoying, but all too common problem. Its main cause is a normal phenomenon call Truss Uplift. It cannot be prevented, but it's nasty side affects can be controlled by:

- Providing Adequate Ventilation
- Floating the trusses and the drywall
- Good Design

As prefabricated roof trusses dry, they shrink. Since the Bottom Chord is surrounded by attic insulation, it is warmer and drier. Therefore it may shrink more than the other chords. The Top Chords may actually lengthen in some circumstances if they absorb moisture.

Field tests show that differential shrinkage between Top and Bottom members causes the entire truss to bow upwards and if the drywall is attached to the bottom chord too close to the partition, this upwards truss movement will crack the drywall,

Therefore, cracks at the intersection of the of the ceiling and interior partition may open during the winter and close in the summer because the truss is never completely stationary. Such problems are worse during the first year after construction when most drying of the structure takes place.

You can recognize truss uplift by the characteristic separation of the drywall at the ceiling wall angle. The ceiling lifts with the truss away from the interior partition. If the truss is secured too tightly to the partition it lifts the entire wall and separation appears at the floor level.

To prevent truss uplift during construction, try these techniques. They are all used by contractors and they work:

- Float the truss by using brackets with a vertical control slot rather than toe-nailing the truss to the top plate. This will also provide lateral support to the interior wall.
- Attach clips as a backup for all drywall corner joints involving interior partitions. **DO NOT** reduce the amount of insulation in order to expose the Bottom Chord.
- Ensure that adequate airflow is maintained at the eaves.
- Float the drywall corners. It is vital that the recommended ceiling float distances of 12 inches and 16 inches (for 1/2" and 5/8" drywall respectively) be maintained. For walls, the proper distance is 8" from the ceiling.

Careful material handling before construction can also prevent or minimize truss movement. Arrange for the trusses to be delivered to the site just before they are needed so you don't have to store them on site.

If on site storage is unavoidable, store the trusses upright with bracing or horizontally with adequate blocking.

During construction there are other things you can do to prevent the problem:

First, specify the use of dry lumber. S-Dry graded lumber has a maximum of 19% moisture content and will shrink less. Wherever possible, the truss should span the width rather than the length of the structure. The reason for this is that a shorter truss will not lift as much as a longer one will. If long spans are unavoidable, use mono pitch trusses. Smaller ones will shrink less.

