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Technical Q & A

The Building Inspector's Guide to Jobsite Truss Inspections by Rachel Smith

SUPPLEMENTAL SUPPORT DOCS:

Truss manufacturers do not specify the roof or floor permanent system bracing. The only permanent bracing they specify is the location of the bracing that is required to resist web or chord buckling. All other bracing design and specification is up to the owner, builder/framer or building designer. More information on design responsibilities, can be found under the [Support Docs Section: January/February 2005](#).

With the right information at your fingertips, jobsite truss inspections can be as easy as 1-2-3.

I can't think of a better way to spend an afternoon than doing a jobsite truss inspection, but I can understand why building inspectors ask for a checklist to perform inspections more quickly and effectively. This guide lists items to check during simple jobsite truss inspections with references to more information on particular issues if the project warrants it.

Before we get started, let me give some background information. Trusses in the U.S. are designed and manufactured according to the code-referenced standard ANSI/TPI 1 National Design Standard for Metal Plate Connected Wood Truss Construction from the Truss Plate Institute. Truss manufacturers indicate right on the truss design drawings that they are using the ANSI/TPI 1 design standard. Section 2303.4.1 of the IBC details all information that must be listed on truss design drawings. As it turns out, this is also the information you need to perform an effective inspection.

The format of truss design drawings vary with different design software providers, but it is all there as described by the IBC. Take a few minutes to review the Truss Technology in Building (TTB) brochures from WTCA on this topic called "How to Read a Truss Design Drawing" and "How to Read a Truss Placement Diagram." They will help you decipher the information more quickly when you are on site. For example, these brochures explain how truss dimensions are given on the drawings as a series of three numbers that represent feet-inches-sixteenths of an inch. A truss dimension of 8 feet and 7 and $\frac{3}{4}$ inches will be listed as 8-7-12.

JOBSITE TRUSS INSPECTION LIST

Check 1: Review truss design drawings and truss placement diagram.

The most up-to-date copies should be on site; look in the delivery package that came with the trusses.

- Check the truss loads and truss spacing for the project. Check floor and roof trusses separately, as the loads will be different and the spacing may be. Does the loading conform to

the structural plans and the jurisdiction's minimum requirements? Do you see "extra" trusses lying around the site? Truss manufacturers don't send any more trusses than necessary so any leftovers could indicate a spacing or installation error.

- Check the truss placement diagram for locations of any girders (trusses that support framing or extra loads), hangers or areas to be filled in with non-structural framing.
- Check the truss design drawings for any multiple ply girders, web bracing locations, and point load locations. Keep these in mind when you are looking at the truss framing.

Check 2: Check truss placements and orientations.

Do this by comparing the truss ID mark on the placement diagram to the ID mark on the truss itself, if it is visible, otherwise look at the truss design drawing ID and compare the truss configuration in place with that shown on the Truss Design Drawing. Also check the trusses to make sure they are oriented correctly—not upside-down or flipped end-to-end. This is important for parallel chord trusses, cantilevered trusses, asymmetrical truss configurations and asymmetrically loaded girders.

Check 3: Check bearing locations.

Are all the bearing supports indicated on the truss design drawing present and in the correct locations? The drawings often show the bearing as a double top plate, but it can be any type of adequately designed support like a beam, hanger or block wall. The main point here is to make sure that the bearing is at least the minimum size indicated on the truss design drawing.

Check 4: Check multi-ply girders.

Verify that all plies of any multiple-ply girders are fastened together according to the schedule on the girder truss design drawing. Check that any concentrated loads the girder supports are located correctly—point loads will almost always be located at a plated joint. If a girder is bearing on a stud wall, there should be at least a stud under each ply. For more information on multi-ply girders see the BCSI-B9 Summary Sheet on Multi-Ply Girders.

Check 5: Check structural connectors.

Are all hangers, tie-downs and clips installed at the correct locations and all available fastener holes filled with the correct fastener? If truss-to-bearing connectors are not required refer to the BCSI-B8 Summary Sheet on Toe-Nailing for Uplift Reactions.

Check 6: Check permanent web bracing.

Is it installed at all the locations indicated on the truss design drawings? For more information on this see the BCSI-B3 Summary Sheet on Web Member Permanent Bracing/Web Reinforcement.

Check 7: Check for truss damage and repairs.

Is any lumber or are any plates damaged, cut or missing? If so, they must be repaired. If the damage has already been repaired, ask for the "repair detail" issued by the truss manufacturer. It is similar to a truss design drawing, but shows specific instructions on how to repair that particular truss. See the BCSI-B5 Summary Sheet on Truss Damage, Jobsite Modifications and Installation Errors for more information.

This is by no means a comprehensive inspection checklist and there may be other factors to

consider depending on the actual conditions at the jobsite. Remember to contact the truss manufacturer or WTCA for more information on any issue or if you would like to arrange a seminar for the entire inspection department.

For more information on jobsite storage, truss handling, temporary bracing, fall protection or construction loading; refer to the Building Component Safety Information (BCSI 1-03) Booklet Visit the WTCA site at www.woodtruss.com for a complete listing of available documents.

To pose a question for this column, email us at techincalqa@sbcmag.info. To view other questions visit the [WTCA web site](#).

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