



Sample Data File Review

Please review the following document. In blue and italics is commentary for each section. After reading please evaluate your procedures. Are you meeting all of the following requirements?

New Inspector,

Thank you for sending your data; this is your first data file review in the process to achieve certification with **In-Plant WTCA QC**. This report summarizes the findings of our review for your data file for the past month, specifically dates 1/1/2006 through 2/1/2006. Please pay attention if a section is marked with an asterisk (***) . These are areas that can be improved upon.

1. FREQUENCY: *The ANSI/TPI 1-2002 National Design Standard for Metal Plate Connected Wood Truss Construction states: "3.2.2 At a minimum, 3 trusses per week per set-up location per shift shall be inspected and recorded for in-plant audits." This is a critical requirement and you will not be certified if this requirement is not met.*

For inspections, you have averaged a frequency of 7.4 crews or about 22 inspections per week. The requirement is 3 trusses per week per set-up location per shift. The frequency of crews above should be equal to or greater than your actual crew size. You noted in your email that you averaged 7 crews during the past month. Great job getting all of your inspections in and meeting the required inspection frequency. Please continue to include your actual crew size in your next email when sending the data; this helps us get a better feel for what is taking place at your plant.

2. TRUSS TYPE: *You are required to inspect a representative sample of what you produce. In this particular section we are looking to see that the number of floor trusses you have inspected is proportionate to your actual floor truss production.*

11 of 93 (11.8%) inspections were performed on floor trusses. The goal here is to inspect an amount of floor trusses proportionate to your production. If you are producing 70% roof trusses and 30% floor trusses, you should be inspecting 70% roof trusses and 30% floor trusses. In your email you indicated that floor trusses made up 10% of your total production, great job inspecting floor trusses. Please remember to include actual floor truss production information next time you send data.

3. OVERALL: *In this section we track your company's overall quality performance. Once we get a couple of reviews to compare we use this section to look at trends. The goal of the program is to see continuous improvement and/or maintain a high level of quality.*

21 of 93 (22.6%) inspections were out of conformance. All inspections were performed using Plate Placement Method. All out of conformance inspections were fixed, initialed, and documented. I have attached a copy of your summary report in this email.

We like to see some problems and have traveled to enough plants to know that you can always find at least one conformance problem during the initial months of using this program. It is important for us to see how you handle these conformance problems and make sure that you are documenting them correctly. Your job as an inspector is to document the trusses as you see them; by doing so you are satisfying the building code requirements for an internal quality assurance program as well as gaining valuable information about your manufacturing process. There are no fines, penalties, or loss of certification for finding conformance problems. Finding areas for improvement will provide benefits to your company and the customer, both now and in the future.

We just want to remind you that certification is not based on finding zero problems in your manufacturing. We encourage plants to find as many manufacturing problems as possible so they have the most information available to help them find and improve problem areas. It is not uncommon for plants to send in data and have 25% of inspections out of conformance and then for that percentage to steadily drop.

The following sections include totals, total number out of conformance, and categories based on specific inspection criterion along with a number out of conformance and percentage. The percentage is the total for each category out of conformance divided by the total number (e.g., preliminary/joint/member).

4. PRELIMINARY: *This information comes directly from the preliminary inspection form. It is extremely important to perform a thorough preliminary inspection on the front and back of the truss.*

Total Inspections: 93
Out of Conformance: 11 (11.8%)
Lumber Issue: 1 (01.1%)
Dimensions: 0 (00.0%)
Plate Size: 3 (03.2%)
Plate Rotation: 1 (01.1%)
Plate Gap: 6 (06.5%)
Member to Member Gap: 5 (05.4%)

Please make sure that you are performing a quick but thorough visual inspection on all non-critical joints, both front and back of truss.

5. JOINTS: *When reviewing joints we look at all the joint information that is available to us. In the review we look to see that you have included a rough estimate of distance from midpoint (how far is the actual plates midpoint from where it was suppose to be or perfect placement, whether it's inside or outside the polygon) and degrees of rotation (a rough estimate of the plates actual rotation in relation to perfect placement). There are designated spaces for this information on the inspection forms, you also have to tab through these columns in the database, so there are no excuses. This information goes directly into the joint report and is valuable for benchmarking and tracking manufacturing trends. It also adds integrity to the inspection process and backs up your results.*

Total Joints: 1214
Out of Conformance: 21 (01.7%)
Plate Size: 2 (00.2%)
Plate Gage: 1 (00.1%)
Outside Polygon: 3 (00.2%)
Rotation: 1 (00.1%)
Embedment Gap (PPM): 7 (00.6%)
Member Gap: 7 (00.6%)

Great job entering an actual estimated distance from specified midpoint and actual degree of rotation unless the plate was perfectly placed. Your average misplacement was 4.5/16ths and average rotation 2.2°. Does that appear accurate to what you would estimate? There were 10 midpoints outside the polygon, but 3 did not pass the tooth count. This information backs up the results and adds integrity to the inspection process.

6. MEMBERS: *Similar to collecting and entering joint placement data we ask that you include a rough percentage of defect circle filled in, even if it is not completely filled. If wane on a member fills up half of the defect circle, then be sure to enter 50% as the defect circle percentage, if a knot fills up 25% of a defect circle, then enter 25% as the defect circle percentage. This again adds*

integrity to the inspection process but also helps the plant gauge how much lumber defects are affecting their quality. If there are lumber issues this information can be very valuable.

Total Members: 3646
Out of Conformance: 12 (00.3%)
Required: 3 (00.1%)
Defective: 4 (00.1%)
Rolled: 8 (00.2%)
Embedment Gap: 5 (00.1%)
Combination: 4 (00.1%)
Defect Circle Filled (PPM): 5 (00.1%)

Good job including a defect percentage for each member if it was other than zero. This again adds integrity to the inspection and gives the plant an idea of how lumber affects manufacturing. The biggest problem area this past month was plates having rolled teeth. Embedment gaps and lumber defects also caused out of conformance inspections as well.

7. CRITICAL JOINT BREAKDOWN: *On average we see that trusses have 3-4 critical joints. That being said there are many design factors that can be manipulated to increase or decrease the number of critical joints. Please make sure you are taking a representative sampling of the trusses that you manufacture. In other words don't always pick the easiest trusses or fewest critical joints. Sometimes plants are extremely surprised at how many plates are upsized from what was specified in the design when they first send in data (e.g., 30%).*

Total Joints	Joint Type	Number	Percentage
1214	E	36	2.97%
1214	H	248	20.43%
1214	I	540	44.48%
1214	IS	64	5.27%
1214	P	108	8.90%
1214	S	218	17.96%

Average Number of Critical Joints per Inspection: 3.9
% of Plates Upsized from Specified: 5.5%

8. COMMENTS: *This program was designed to be a management tool for use in evaluating and tracking your manufacturing process. If you put bad or incomplete information into the system you won't get the full benefits of the program. Please review the sample comment report attached to see exactly what we are looking for.*

The goal here is that every out of conformance inspection contain a comment that includes a specific cause and remedy of the situation. It is extremely important, seeing as though these inspections are out of conformance with the ANSI/TPI 1 standard, to document how they were repaired so that they do meet the standard requirements. This is also so you can go back later and analyze the out of conformance inspections with the goal of finding and correcting the root problem.

The action item below is a quick list for management to see what needs to be addressed. The second set of bullets reiterates the items we are looking to see in order to certify a plant.

Thank you for using **In-Plant WTCA QC** at future **In-Plant WTCA QC** Certified Company, by meeting these guidelines you are off to a great start in this initial review. A summary is provided below:

Action Items

- Make sure to meet the ANSI/TPI -1 inspection frequency requirements

- Include your actual number of production crews per week and floor truss production when emailing your data file
- Make sure to inspect a proportionate number of floor trusses to roof trusses
- Make sure to be thorough in your data entry (distance from midpoint, degree of rotation, and percentage of defect circle filled)
- Include specific cause and remedy comments when an inspection is out of conformance

Keep in mind, these are the types of things we are looking for in order to certify a plant:

- Frequency: Crew size in terms of frequency is equal to or greater than average actual crew size
- Type: Inspecting a representative sample of trusses at your plant, including roof and floor trusses
- Data Entry Complete: Inspections are recorded and entered completely
- Errors Corrected: All out of conformance inspections are corrected, specific comments and initials are entered for each

There is often room for improvement and we ask the plant to make improvements and resend data in a month. In other cases the number of crews the plant is running is very small and we might ask for another month to see more data. Even if everything looks close we still like to see that a plant can meet the inspection frequency for two months. Typically it takes plants a few reviews before reaching certification.

Certification is based on meeting these requirements, and by showing us that your plant has a solid grasp of how to use our program. Your plant has done an excellent job meeting all of the requirements of certification mentioned above. Please remember, it typically takes plants a few months of sending data before they are certified. Please send your data in 1 month or around March 1, 2006. If you can show you are able to keep up the great work for another month you have a very good chance of being certified at that time.

Sincerely,

Tony

Tony Piek

In-Plant WTCA QC Project Leader
 WTCA – Representing the Structural Building Components Industry
tpiek@qualtim.com
 608/310-6713
 608/274-3329 (fax)
www.sbcindustry.com

Michael

Michael Oftedahl

In-Plant WTCA QC
 WTCA – Representing the Structural Building Components Industry
moftedahl@qualtim.com
 608/310-6709
www.sbcindustry.com

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