**In-Plant QC Manual**

for

|  |
| --- |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Company Name*** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Address*** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Phone*** |
|  |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Revision Date*** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| ***Manager’s Signature*** |

**Contents**

[1. General 2](#_Toc158205595)

[2. Plant Contact Information 2](#_Toc158205596)

[3. Product Identification 2](#_Toc158205597)

[4. Traceability 2](#_Toc158205598)

[5. Workflow 2](#_Toc158205599)

[6. Product Description 4](#_Toc158205600)

[7. Program Review 4](#_Toc158205601)

[8. Organizational Information 4](#_Toc158205602)

[9. Packaging 5](#_Toc158205603)

[10. Incoming Material Specifications 6](#_Toc158205604)

[11. Incoming Material Inspection 6](#_Toc158205605)

[12. In-Plant Quality Control 6](#_Toc158205606)

[13. Final Inspection 7](#_Toc158205607)

[14. Nonconforming Materials 7](#_Toc158205608)

[15. Test Equipment 8](#_Toc158205609)

[16. Calibrations 8](#_Toc158205610)

[17. Sample Documents 8](#_Toc158205611)

[18. Document Approval 8](#_Toc158205612)

[19. Records Retention 8](#_Toc158205613)

# General

This Quality Control manual serves as the foundation for the Quality Assurance Program of this metal-plate-connected wood truss plant. It encompasses the fundamental requirements outlined in the *ANSI/TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction*. This manual is subject to periodic updates, and the most recent revision date can be found on the cover.

# Plant Contact Information

|  |  |
| --- | --- |
| QC Manager or Inspector: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Plant Manager: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Authorized Representative: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

# Product Identification

All metal plate-connected wood trusses intended for production will be assigned a unique Job ID and Truss ID. Prior to shipment, each fabricated truss will be labeled with the corresponding Job ID and Truss ID, ensuring alignment with the job order and layout plan.

# Traceability

All incoming material will be reviewed and inspected as outlined in Section 11 of this manual. Stored materials will be clearly labeled, and any non-conforming items will be segregated. Trusses will be manufactured using materials specified in the truss design drawings and other relevant documentation. Each completed truss will be individually marked.

# Workflow

The general truss design and manufacturing process is illustrated in the *Truss Design &* *Manufacturing Flowchart* below.

|  |
| --- |
| QC InspectionAssemblers set up jigs from the shop drawings for the specific Truss configuration, span, and height.Trusses are put on trucks and delivered to the jobsite.Trusses are stacked in the order of the job and roofline, banded, and moved by forklift into the yard.Plates are pressed, Trusses are moved onto rollers, down through the finish press, and out to the stackers.Assemblers place Web and Chord members and tack plates on the front and back sides of the Truss.Job specific plates and lumber are brought to manufacturing tables.Lumber culled and brought to the saws.Lumber comes from mills by trucks or rail cars and is stored in a variety of ways. Plants may store the lumber inside, undercover, or out in the yard.Plates are ordered from suppliers based on inventory of sizes and gauges selected by plant.Lumber cut by large, efficient component saws and smaller radial saws for sharp angles and small batches.**Production Office** The production manager inserts the order into the production schedule based on the delivery date and material requirements.**Design Office** Once the order is finalized, it is assigned to a Truss technician whose job is to review the building plans for the dimension and loading information.**Sales Office** Customers bring complete building plans to the Truss plant sales team to get estimates and to order their component packages. |
| **Truss Design & Manufacturing Flowchart** |

# Product Description

A Truss is an individual metal-plate-connected wood component supplied for a structural system. Each truss that is manufactured shall be accompanied by a unique Truss Design Drawing which will include all information as required per *ANSI/TPI 1*. Manufacturing tolerances shall meet the minimum requirements of *ANSI/TPI 1* or as specified in this manual if more stringent.

# Program Review

This manufacturing plant’s Quality Assurance Program will be periodically reviewed by management to ensure that the requirements of this manual are met. When required by the local authority having jurisdiction, the plant’s quality assurance procedures will undergo regular audits to ensure compliance with *ANSI/TPI 1*. These audits will be conducted by an independent third-party agency. If applicable, third-party verification letters can be obtained from the Plant Manager.

|  |  |  |
| --- | --- | --- |
| Third-Party Inspection Agency: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | N/A |
| Date started with Third-Party: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | N/A |
| Third-Party Inspector: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | N/A |
| Inspector’s Phone Number: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | N/A |
| Inspection Frequency: | Monthly | Quarterly | N/A |

# Organizational Information

The following outlines the key positions and the general responsibilities of the individuals involved in maintaining the plants Quality Assurance Program.

|  |  |
| --- | --- |
|  | **General Manager** - Oversees all plant operations under the direction of the Executive(s) in charge. Oversight responsibilities include production, personnel, finance, quality control, and maintenance. Other key responsibilities: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **Operations Manager** - Responsible for the overall management and coordination of production, sales, and administration functions at the plant location. Other key responsibilities: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **Production Manager** - Facilitates the flow of work through the plant. Ensures that outgoing products meet or exceed standards and coordinates all activities that relate to workflow in the yard. Other key responsibilities: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **Quality Control Manager/Inspector** - Reports to the engineering department or management. Has knowledge of company quality standards and requirements and the quality criteria per *ANSI/TPI 1*. This role is responsible for maintaining and conducting the necessary Quality Assurance requirements as outlined in this manual. Other key responsibilities: \_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |
| **Plant Organizational Chart of Key Personnel** |

# Packaging

Truss groups for each order will be securely banded and stored in accordance with the industry's standard recommendations as outlined in the *Building Components and Safety Information* document (BCSI). All truss packages will be clearly labeled with the corresponding job number, and each individual truss will be properly identified.

# Incoming Material Specifications

Incoming lumber must be grade stamped and records will be kept of size, species, and grade. Incoming metal connector plates must meet appropriate suppliers’ ICC-ES reports.

# Incoming Material Inspection

**Lumber:** Incoming lumber will be inspected to ensure proper size, grade, species, treatment (if any), and moisture content. All lumber shall be grade stamped or include a certificate of inspection.

**Connector Plates:** Incoming metal connector plates will be inspected to ensure proper brand, type, size, gauge, and corrosion protection (e.g., galvanization).

Incoming material not conforming with order specifications will be clearly marked and management will be notified.

# In-Plant Quality Control

A minimum of \_\_\_\_\_\_\_ trusses shall be inspected per week, per setup location, per shift.

The number of Critical Joints (as defined by *ANSI/TPI 1*) to be inspected on each truss selected for inspection shall be \_\_\_\_\_. When there are no Critical Joints on a truss selected for inspection, one or more non-critical joints will be selected by the inspector for evaluation. The total number of Critical Joints inspected in one week for all setup locations shall be equal to or greater than the total number of trusses inspected for the week.

Truss inspections shall be done in accordance with *ANSI/TPI 1* using:

* Plate Placement Method (PPM)
* Tooth Count Method (TCM)
* Combination of the PPM and TCM as described here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Set-up locations are defined below with a number or letter designation for each. A weekly inspection log or its equivalent will be used to record the inspection frequency each week.

|  |
| --- |
| *(Provide a labeled diagram of your current plant layout with current lines and set-up locations)* |
|  |
| **Set-up Locations with Identifications** |

# Final Inspection

Job number and contents of job will be verified before delivery. Trusses inspected not meeting *ANSI/TPI 1* Chapter 3 criteria will be corrected and documented prior to shipping.

# Nonconforming Materials

Sawyers are trained to cull lumber that is unsatisfactory for design because of appearance. Material culled will be segregated or discarded. Damaged metal connector plates will not be used in manufacturing and will be segregated or discarded.

# Test Equipment

Trusses are inspected to *ANSI/TPI 1* Chapter 3 tolerances and tools used include Joint QC Details generated from the truss design software, truss design drawings, tooth reports from the truss design software, tape measure, and a depth gauge. Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Calibrations

Embedment presses and saws will be checked periodically for tolerances. Manufacturing tables will be checked periodically for proper functionality. The inspection frequency will be as follows: \_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Sample Documents

This In-Plant QC manual includes the following quality control inspection forms:

* In-Plant QC Inspection Form : See Appendix A
* Weekly QC Inspection Log: See Appendix B
* Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Document Approval

The in-plant QC Inspector will assemble the inspection paperwork for each truss into a package and sign and date the work. At the completion of the weekly inspections the inspector will assemble the weeks’ inspection paperwork along with a weekly inspection log for review and approval by upper management. Upper management, after review, will initial and date the inspection package and will discuss any issues observed with the in-plant QC Inspector. Completed inspection paperwork will be filed and available for access by a third-party inspector if applicable.

# Records Retention

All inspection records (Joint QC Details, design drawings, tooth reports, inspection forms, and weekly logs) shall be maintained for a minimum of: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_