

## I. In-Plant Quality Control Manual Specifics

AC 10 is the Acceptance Criteria that the ICC Evaluation Service has created to provide a template for what is reasonable to include in a manufactured product's quality control manual. Just like WTCA's **In-Plant WTCA QC** program and the ANSI/TPI 1 Section 3 commentary, AC 10 is a tool or guide to help the plant meet the building code and inspection agency requirement that each plant have a quality control program and an accompanying quality control process.

The ANSI/TPI 1 standard, referenced by the building code, requires each truss manufacturer to have and maintain an in-plant quality control manual. This manual should acknowledge the AC 10 guideline. This in-plant quality manual should contain, at a minimum, (1) a production flowchart or a description of the manufacturing process, (2) manufacturer's organizational chart, and a description of the duties and responsibilities assigned to key positions in the quality program, (3) quality control procedures, including sampling criteria and how manufacturing processes are monitored to ensure that the product is consistently manufactured within the allowable tolerances, and (4) a document retention policy.

Below is a template created by WTCA to help you make sure you have an in-plant quality control manual that follows the AC 10 minimum guidelines. Please fill in the information below, if you need a blank template to customize it according to your plant look on the WTCA QC 4.2 installation CD support documents or visit the WTCA QC website at [www.sbcindustry.com/wtcaqc.php](http://www.sbcindustry.com/wtcaqc.php).

In the following template information has already been entered for a majority of sections. The truss manufacturer is responsible to complete or edit the following sections:


- 1) Contact Signature – Sign and date this section in the manual.
- 2) Plant Information – Enter your inspector's name, plant manager, etc.
- 6) Work Flow – If your work flow differs from the included flowchart please update it.
- 8) Agency Agreement – Enter your third party inspector information.
- 9) Organizational Chart – Add your plant's org chart and edit responsibilities if they differ.
- 10) Packaging – Update information to tailor it to your specific plant (optional).
- 11) Incoming Material Specifications – Update information to tailor it to your specific plant (optional).
- 12) Incoming Material Inspection – Update information to tailor it to your specific plant (optional).
- 13) In-process QC – Define set-up locations (or crews) and add a plant layout.
- 14) Final Inspection – Update information to tailor it to your specific plant (optional).
- 15) Nonconforming Materials – Update information to tailor it to your specific plant (optional).
- 17) Calibrations – Update information to tailor it to your specific plant (optional).

## In-Plant WTCA QC AC-10 Manual Supplement

### Sections:

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1) Contact Signature                 | 12) Incoming Material Inspection |
| 2) Plant Information                 | 13) In-process QC                |
| 3) Manual Revision                   | 14) Final Inspection             |
| 4) Product Identification            | 15) Nonconforming Materials      |
| 5) Traceability                      | 16) Test Equipment               |
| 6) Work Flow                         | 17) Calibrations                 |
| 7) Product Description, etc.         | 18) Sample Documents             |
| 8) Agency Agreement                  | 19) Document Approval            |
| 9) Organizational Information        | 20) Records Retention            |
| 10) Packaging                        | 21) ICC-ES Use Statement         |
| 11) Incoming Material Specifications |                                  |

**1) Contact Signature** – The manual shall be signed and dated by an authorized representative of the plant.

Signature: 

Date: 7/2/2007

**2) Plant Information** – The manual shall clearly state the manufacturing location and relative information.

Plant Name: Truss Plant WTCA  
QC Inspector: Anthony Piek  
Plant Manager: Ryan Dexter

Address: 6300 Enterprise Dr  
Madison, WI 53719  
Telephone: 608-213-3593

**3) Manual Revision** – The manual should be reviewed at least annually.

Name: **In-Plant WTCA QC** 4.2 Manual

Revision Date: 8/1/2007

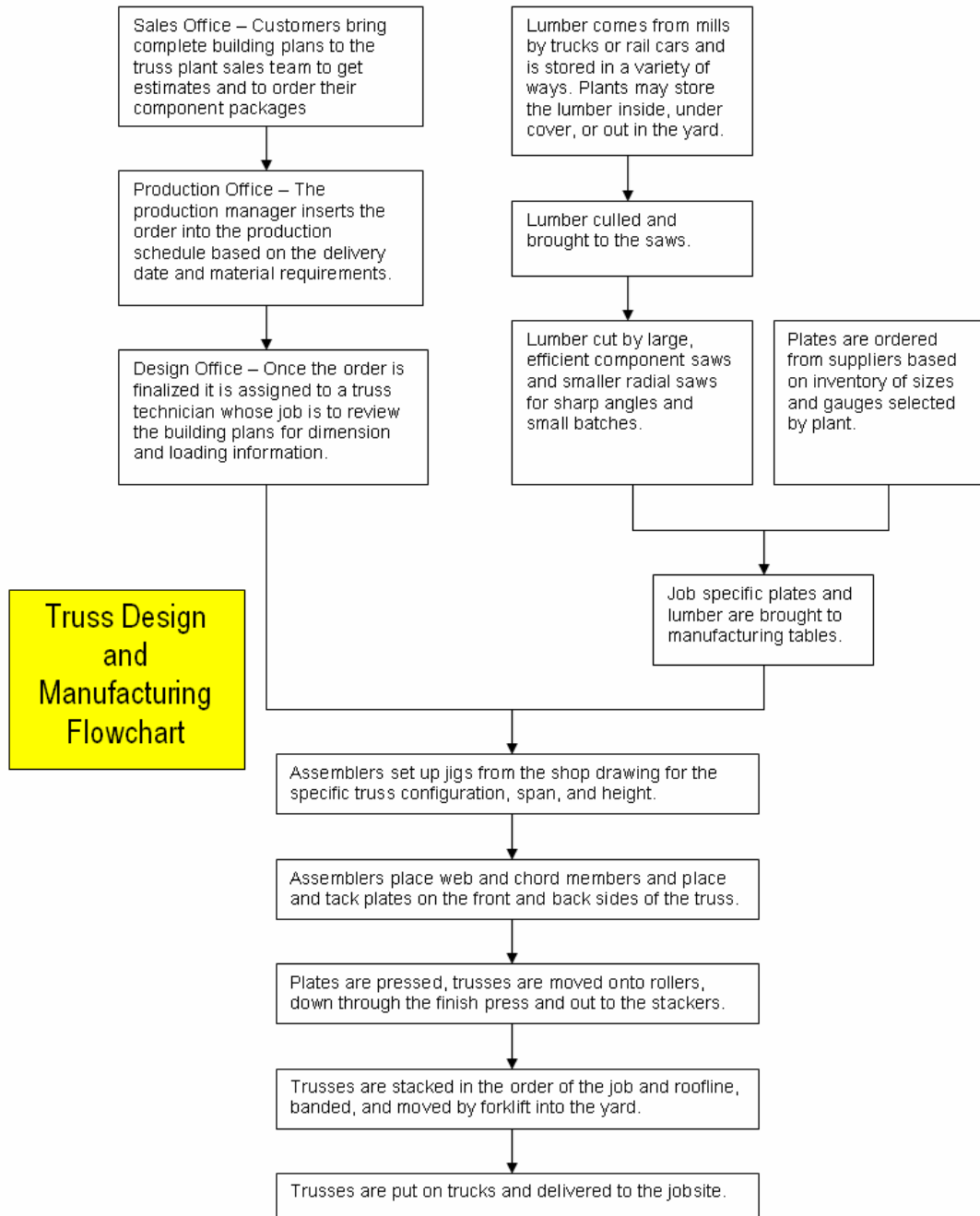
**4) Product Identification** – The manual shall indicate how the product is to be identified in the field.

Metal Plate Connected Wood Trusses do not have an ICC-ES report but metal plate connector plate ICC-ES reports are documented in section 2.2.1.

**5) Traceability** – The manual shall provide a means to trace the finished product back to the production and quality control records.

The recordkeeping source for tracing the product back to production and quality control is the **In-Plant WTCA QC** database program.

**6) Work Flow** – The manual shall include either a production flowchart or a description of the manufacturing process.



**7) Product Description, etc.** – The product shall be described, and the manual shall provide specifications, manufacturing tolerances, and assembly drawings.

A truss is an individual metal plate connected wood component supplied for the Building Structural System. Design software will contain specifications and assembly drawings for the truss and this **In-Plant WTCA QC** manual will contain manufacturing tolerances.

**8) Agency Agreement** – Evidence shall be provided that there is an agreement to perform inspections between the manufacturer and an accredited inspection agency.

Third Party Inspection Agency: Truss Plate Institute

Date Third Party Inspections Began: 6/7/2005

Third Party Inspector: Truss Plate Inspector 99

Third Party Inspector Phone Number: 608-123-4567

Annual Frequency of Inspection (circle one): Quarterly Monthly

\*see plant manager for copy of third party inspection agency approval letter.

**9) Organizational Information** – The manual shall include the manufacturer’s organizational chart and a description of the duties and responsibilities assigned to key positions in the quality program.

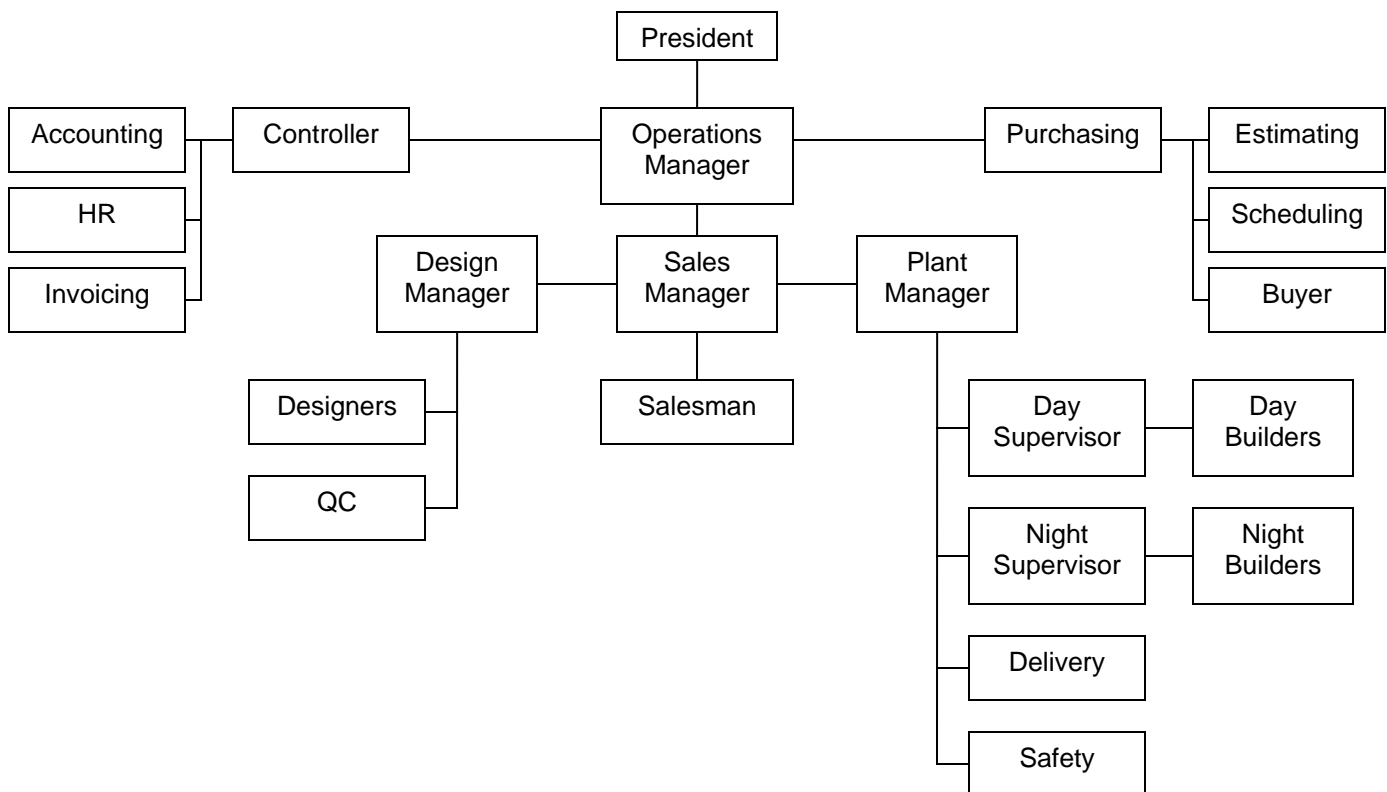
General Manager - Oversees all plant operations under the direction of the Executive(s) in charge (or in smaller companies the owner may act as general manager). Oversight responsibilities include production, personnel, finance, quality control and maintenance.

Operations Manager - Responsible for the overall management/coordination of production, sales and administration functions of the plant location. Develops operating budgets and capital expenditure recommendations and creates operating policies and procedures as required.

Production Manager - Facilitates the smooth flow of work through the plant. Ensures that outgoing products meet or exceed standards. Coordinates all activities that relate to trucking, forklifts, and work flow in the yard. Answers questions from customers regarding product or service.

Quality Control Inspector - Reports to the engineering department or management that does not have direct line production responsibilities. Has knowledge of company standards and requirements, lumber grading rules, TPI requirements and how the product is used by the customer. Records and identifies product by origin and date. Records data to identify progress of quality, either positive or negative.

Plant organizational chart:



**10) Packaging** – The manual shall contain information on packaging and storage of the product.

Truss jobs are to be banded and stored according to industry standard recommendations outlined in the Building Components and Safety Information document (BCSI 1).

**11) Incoming Material Specifications** – The manual shall provide specifications for incoming materials used for the manufacture of the product.

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

**12) Incoming Material Inspection** – Details shall be provided of inspections or tests that are conducted on incoming materials.

Truss plant can use own discretion to conduct audits on incoming lumber and metal connector plates.

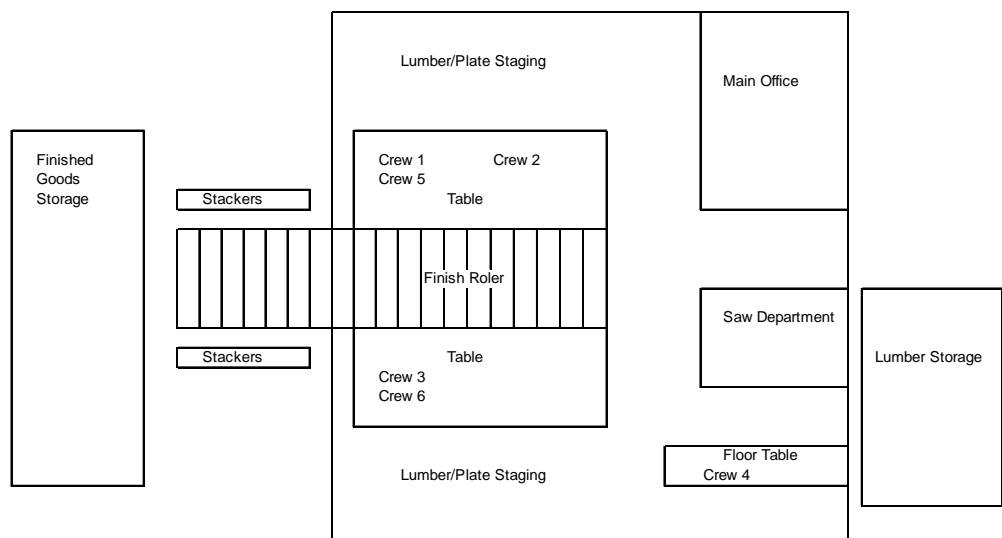
**13) In-process QC** – The manual shall detail in-process quality control procedures.

Inspection procedures are found in this **In-Plant WTCA QC** manual and originate from the ANSI/TPI chapter 3. The truss manufacturer shall inspect a sampling of trusses as per ANSI/TPI 1 and at a minimum inspect a sampling of 3 trusses per operating set-up location per shift per week. The 3 trusses may be of 1 design sampled for that set-up location or preferably broken up with 1 truss from design A, 1 truss from design B, and 1 truss from design C inspected throughout the week. Critical joints shall be selected for inspection based on ANSI/TPI 1 chapter 3. Set-up location may be defined as a crew, or group of personnel within a defined work area building one truss. If defined as this, then each “crew” during each shift will have a minimum of 3 trusses inspected per week. Set-up locations shall be defined below with a number or letter designation or by crew leader for each shift. WTCA suggests the plant use a weekly log to make sure they are meeting the inspection frequency each week. The **In-Plant WTCA QC** database will also be updated with crews.

Set-up Locations:

- 1) Crew 1 Shift 1
- 2) Crew 2 Shift 1
- 3) Crew 3 Shift 1
- 4) Crew 4 Shift 1
- 5) Crew 5 Shift 2
- 6) Crew 6 Shift 2

A diagram of your current plant layout with current set-up locations labeled on the layout shall be included below:



**14) Final Inspection** – The manual shall detail the final inspections.

Job number and contents of job will be verified before delivery. Trusses inspected not meeting ANSI/TPI 1 chapter 3 criteria will be fixed and documented.

**15) Nonconforming Materials** – The manual shall specify how nonconforming materials are reworked.

Sawyers are trained to pull lumber that is unsatisfactory for design because of appearance. Damaged metal connector plates will not be used in manufacturing.

**16) Test Equipment** – The manual shall contain a list of the measuring and test equipment that is used.

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 and tooth reports from the truss design software, tape measure, and a depth gauge.

**17) Calibrations** – The manual shall note the frequency of equipment calibration.

Embedment presses and saws will be checked periodically for tolerances. Manufacturing tables will be checked periodically for proper functionality. The frequency will be determined by the truss manufacturer but a suggestion is to check embedment, saws, and tables quarterly.

**18) Sample Documents** – The manual shall contain sample copies of these documents.

This **In-Plant WTCA QC** manual includes quality control inspection forms.

**19) Document Approval** – The manual shall describe how the completed documents are approved by responsible personnel.

This **In-Plant WTCA QC** manual documents how out of conformance inspections are to be documented.

**20) Records Retention** – The manual shall contain a statement committing the manufacturer to retaining the completed inspection information for a minimum of two years

It is suggested that all quality control inspections will be retained in the **In-Plant WTCA QC** database program for a minimum of 2 years. In addition, it is suggested that the truss manufacturer keep the most recent 2 weeks of inspection documents such as Joint QC Details, design drawings, tooth reports, and inspection forms in addition to having the inspections entered into the database.

**21) ICC-ES Use Statement** – The ICC-ES name, mark, or report number will only be used on products that are in compliance with the evaluation report and the approved quality control manual.

Metal Plate Connected Wood Trusses do not have a specific ICC-ES report because each truss is an individually designed component; rather the quality control manual follows the guidelines of AC-10.