

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. The AC 10 is a tool or guide to help the plant meet the building code requirement that each plant have a quality control program and an accompanying quality control process.

WTCA suggests each wall panel manufacturer have and maintain an in-plant quality control manual that acknowledges 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 according to your plant's needs look on the WTCA QC Wall Panel installation CD support documents or visit the WTCA QC website at www.sbcindustry.com/wtcaqcwall.php.

In the following template information has already been entered for a majority of sections. The wall panel 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 if applicable.
- 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).

WTCA QC Wall Panel 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: 1/31/2008

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

Plant Name: Wall Panel Plant 123
QC Inspector: Michael Oftedahl
Plant Manager: Anthony Piek

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

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

Name: **WTCA QC Wall Panel** 1.0 Manual

Revision Date: 1/31/2008

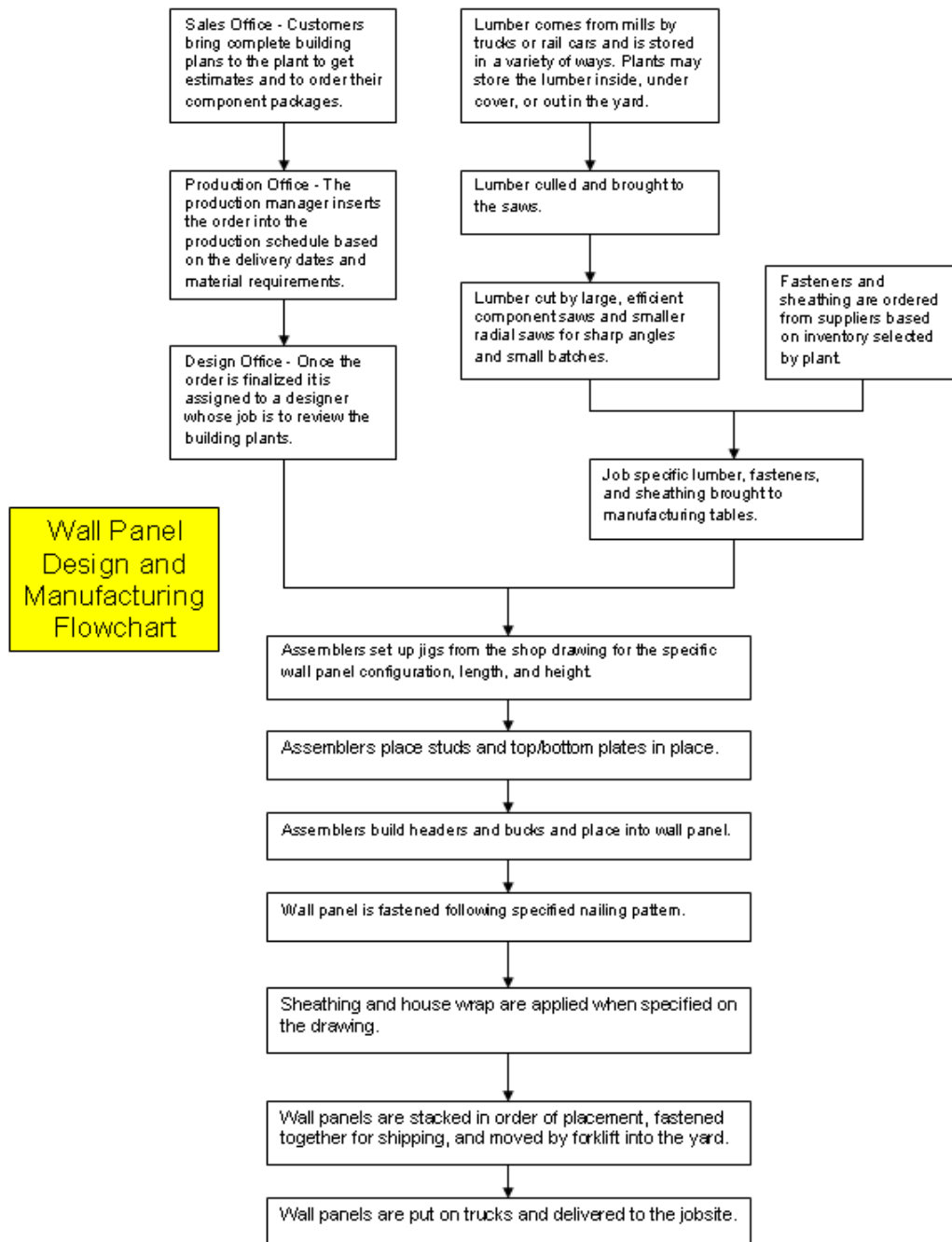
4) Product Identification – The manual shall indicate how the product is to be identified in the field.

Wood Wall Panels do not have an ICC-ES report; each panel is an individually designed component.

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 **WTCA QC Wall Panel** 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 wall panel is an individual wood component supplied for the building structural system. Design software will contain specifications and assembly drawings for the wall panel and this **WTCA QC Wall Panel** 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.

Currently, third party inspections are not required on wall panels. As long as the framing members and the structural sheathing are visible, the wall panels can be inspected by the building official at the jobsite as part of the standard framing inspection.

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.

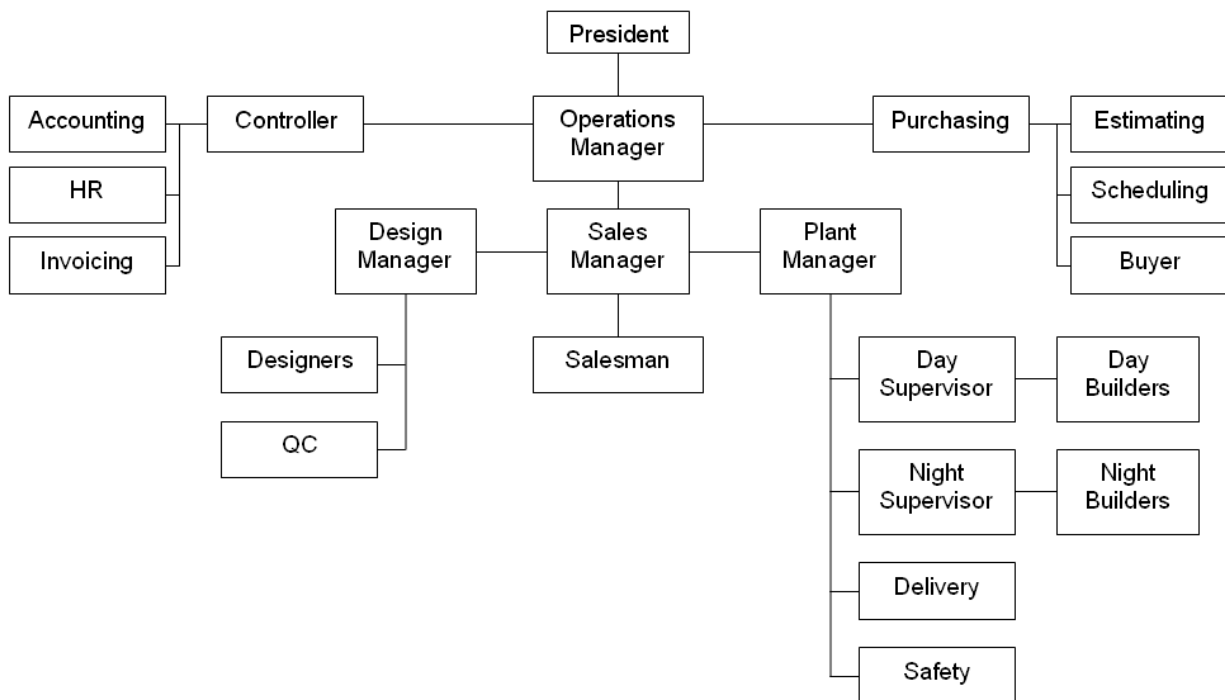
General Manager - Oversees all plant operations under the direction of the Executive(s) in charge (or in smaller companies the owner may act as general manager). Oversight responsibilities include production, personnel, finance, quality control and maintenance.

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, 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.

The wall panel manufacturer can use own discretion in the packaging and storage of wall panel jobs. This will be dependant upon the manufacturer’s specific facility and yard layout.

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. Fasteners must meet appropriate ASTM Fastener Standards.

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

The wall panel manufacturer can use own discretion to conduct audits on incoming lumber and fasteners.

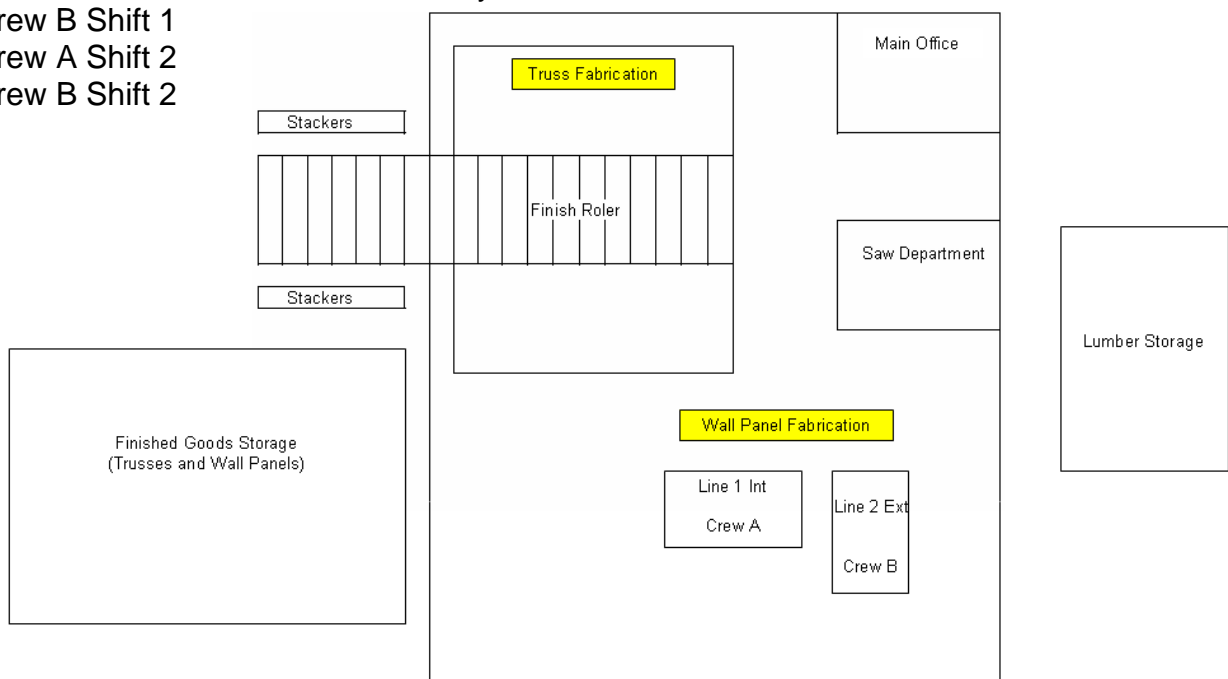
13) In-process QC – The manual shall detail in-process quality control procedures.

Inspection procedures are found in this **WTCA QC Wall Panel** manual. The inspection frequency depends on the production volume at the plant. The inspection frequency is 3 wall panels per 1000 lineal feet of production (or 10,000 board feet of production) / per line / per shift / per week. The 10,000 board feet should not include the sheathing on exterior wall panels. It is up to the plant to do the required number of inspections randomly throughout the week, to split up those inspections proportionately to how many crews they are running, and to split up those inspections proportionately to their production of interior, exterior, and special wall panels. WTCA suggests the plant use a weekly log to make sure they are meeting the inspection frequency each week. The **WTCA QC Wall Panel** database will also be updated with crews and lines.

Set-up Locations:

- 1) Crew A Shift 1
- 2) Crew B Shift 1
- 3) Crew A Shift 2
- 4) Crew B 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. Wall panels inspected but not meeting **WTCA QC Wall Panel** criteria will be repaired 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 fasteners will not be used in manufacturing.

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

Wall panels will be inspected to **WTCA QC Wall Panel** tolerances and tools used include design drawings, tape measure, and a depth gauge.

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

Pneumatic nailing systems, nail guns, hammers, and saws will be checked periodically for tolerances. Manufacturing tables will be checked periodically for proper functionality. The frequency will be determined by the wall panel manufacturer but a suggestion is to check embedment and saws daily and to check tables quarterly.

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

This **WTCA QC Wall Panel** manual includes quality control inspection forms.

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

This **WTCA QC Wall Panel** 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 **WTCA QC Wall Panel** database program for a minimum of 2 years. In addition, it is suggested that the wall panel manufacturer keep the most recent 2 weeks of inspection documents such design drawings 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.

Wood wall panels do not have a specific ICC-ES report because each panel is an individually designed component; the quality control manual follows the guidelines of AC-10.