

**State of North Carolina**  
**Required Contents and Review Procedures**  
**For Modular Manufacturer's Quality Control Manuals**

**Revised October 2009**

In order to clarify the requirements of the North Carolina Department of Insurance, Manufactured Building Division for an acceptable Quality Control (QC) Manual, the following typical manual review (with explanatory comments), as performed by the Manufactured Building Division, is offered. This document should be consulted if clarification of the **NC Modular QC Manual Checklist** is needed. *The information included herein is considered to be the minimum requirements.*

1. ***Does the manual include the required completed QC Manual checklist?***  
Each manual submission must be accompanied by a **completed** North Carolina Modular QC Manual Checklist.
2. ***Is the manual bound in a 3-ring, hard cover, loose-leaf binder?***  
To facilitate revising the QC Manual, each manual must be in loose-leaf form and must be bound in a 3-ring, hard cover, loose-leaf binder. **Manuals submitted with other than the required binder will not be reviewed.**
3. ***Are all sections of the manual tabbed and indexed, and are the pages numbered?***  
Each section of the manual must be tabbed for easy reference and must include an index (referenced to section page number) of the section contents. Each page of the manual must be numbered.
4. ***Is the manual properly stamped by the third-party agency?***  
**Each page** of the manual must bear the dated approval stamp of the third-party approval agency, and the approver's name must be legibly indicated on or adjacent to the stamp (written or stamped name is acceptable).
5. ***Does the initial section of the manual include the following specific pieces of information?***
  - a. ***Manufacturer's name, plant street and mailing address, phone number, FAX number, and name and e-mail address of the contact person.***
  - b. ***Directions to plant***  
Directions to the plant from Raleigh, North Carolina or an easily recognized landmark (airport, interstate highway exit #, major highway intersection, etc.) must be provided.
  - c. ***Third-party's name, mailing address, phone number, and FAX number***
  - d. ***Third-party Code certification letter***  
Each manual submittal must be accompanied by a letter from the third-party inspection agency certifying compliance with applicable volumes of the North Carolina State Building Code. References must be exactly in accordance with the most current memorandum, ***Required NC Codes for Modular Construction.***

**In accordance with the North Carolina State Building Code, Volume VIII, Article IV, Section C, the letter must be written, dated, NC registration seal affixed and signed by engineers in responsible charge of certification (full-time professional employees licensed to practice in North Carolina).**

**6. *Does the manual include a manufacturer organizational chart and explanation of responsibilities?***

Each manual must include an organizational chart and a general description of the responsibilities of the general manager, production manager, engineering manager, and quality control manager (or similar titles) as those duties relate to quality control. The complete process for development, implementation, and revision of the QC program must be addressed as well as those positions that can override decisions of the QC manager. It must be noted as to who is the main contact by Manufactured Building Division personnel.

**7. *Does the manual include a general layout of workstations and description of work performed at each station?***

A plant layout depicting work stations and a description of work performed at each station must be included in the manual.

**8. *Does the manual include a QC section with the following specific pieces of information?***

**a. *Detailed job description of the Quality Control Manager***

**b. *Explanation of QC inspection process***

The manual must detail at what point in the construction process each of the QC inspections are performed, who performs QC inspections, traveler process, final inspection, and the process for handling items that fail a QC inspection.

**c. *QC checklists***

Copies of the “traveler” (QC checklists) must be included in the QC Manual

**d. *Example Data Plate***

A sample Data Plate, **filled out to North Carolina requirements**, must be included for a typical residential and/or commercial building

**e. *Explanation of the “Label Control System”***

The Label Control System must be explained in detail. At a minimum, label acquisition, storage, assignment to buildings, and access to must be addressed.

**f. *Explanation of “Record Keeping System”***

A detailed explanation of records to be kept must be provided. At a minimum, a list of all records to be kept, location of records, length of time records are kept, and access to records must be addressed.

**9. *Does the manual include an explanation of in-plant testing?***

The manual must include a description and specifications for all testing to be done in the plant. At a minimum, electrical testing, water line testing, DWV testing, gas line

testing (if applicable), and concrete testing (if applicable) must be provided.

**10. Does the manual include a section with alternate materials and methods identified and indexed?**

**Each manual must include a separate section that addresses alternate materials and methods.** Alternate materials and methods must be documented as required by the applicable following Code sections:

***Section 105, North Carolina State Building Code: Administrative Code and Policies, 2009 Edition.***

*Examples* of materials / procedures requiring approval as alternate materials, design, and methods are:

- On-Frame modular construction.
- Use of 2x3 bearing walls.
- Thermo-ply structural sheathing.
- Spray-on vapor barriers.
- Use of FoamSeal for attachment of gypsum.
- Use of blown or loose fill ceiling insulation where the slope of the roof is not 2-1/2 feet in 12 feet and/or there is not at least 30 inches of clear headroom at the roof ridge.

**11. Does the manual include an explanation of materials handling and storage?**

Each manual must include adequate information to assure that all materials will comply with the requirements of the Code and will be properly received, stored, and handled.

**12. Does the manual include transportation information?**

Each manual must include adequate information to assure that buildings will not be adversely affected by transportation from plant to site.

The following information is not required to be included in the QC Manual but is recommended. If the information is included in the manual, it can be referenced on the plans. ***If not included in the manual, the information must be physically included with each set of plans.***

**1. Calculations (sealed by a North Carolina design professional) for all items not covered by or as an alternate to the prescriptive requirements of the Code**  
Calculations must be provided for all truss systems, laminated beams and columns, connections, uplift, sliding, overturning, etc.

**2. Materials specifications**

Materials specifications must be provided for all materials not covered by or as an alternate to the prescriptive requirements of the code.

**3. *Building installation instructions***

Detailed building installation instructions must be included in the QC Manual or be submitted with each set of plans. **In addition to the complete installation instructions, the following installation instructions must appear on the plans either on the cover sheet or be referenced on the cover sheet to subsequent pages.**

- Lateral and vertical connection specifications for building modules at the floor, wall, and ceiling levels
- Roof set-up and connection specifications
- Vertical and horizontal plumbing connections between modules
- Vertical and horizontal mechanical connections
- Electrical connections between modules
- Fire-stopping and elimination of air infiltration