AWTFA
Atlantic Wood Truss Fabricators Association

CODE OF STANDARD PRACTICE

FOR WOOD TRUSS MANUFACTURERS

PREFACE

The purpose of this Code is to encourage a uniform performance of the AWTFA members and to promote a clear understanding with the specifying community, erection industry and its clients. The Code covers all facets of the truss development process from design to proper installation, the Overall Job Process. We endeavor to define the performance of areas in the Overall Job Process that are under our control such as component design, manufacturing, marking, documentation and delivery; and to positively influence the other parts of the Overall Job Process that we don't fully control, such as the product specification and installation. Our goal is to provide a quality product to the marketplace.

This Code is a compilation of usual industry practices relating to the design, fabrication and erection of wood trusses. These practices will evolve over a period of time and will be subject to change as improved methods replace those of today.

Adopted on: January 15, 2010

1. GENERAL PROVISIONS

1.1 Scope

This Code covers standard industry practice for wood truss manufacturing. In the absence of provisions to the contrary contained in contracts to which members of the AWTFA are contracting parties, members will abide by the practices described herein.

1.2 Definitions

Building Designer refers to the person having the ultimate responsibility for the overall design of the building. In some cases the Building Designer is also the Structural Engineer of Record and vice versa.

Commercial refers to a project conforming to the Part 4 of the Building Code of the province in which the project is being built.

Farm refers to a project conforming to the National Farm Building Code of Canada.

Member in Good Standing refers to an AWTFA member who follows the objectives of the AWTFA and keeps their dues current.

Overall Job Process *consists* of six parts: Specification, Bidding, Contract, Manufacturing, Installation and Inspection.

Residential refers to a project conforming to Part 9 of the Building Code of the province in which the project is being built.

Truss Designer refers to either the Truss Design Engineer or a suitably qualified person working in conjunction with Truss Design Engineer.

Truss Design Engineer refers to a P.Eng. registered or licensed in the Province in which the project is being built who seals truss design drawings.

Truss Placement Drawings convey information about the trusses that is required by field personnel in order to assemble. They may be submitted to the Building Designer for review, but will not be sealed by a professional engineer as it contains no structural information, only placement information.

Truss Shop Drawing refers to structural drawings of individual truss components. They can be sealed by the Truss Design Engineer if requested.

1.3 Responsibilities

1.3.1 *Building Designer*

1.3.1.1 Responsibility of Building Designer – **Part 4 of applicable Provincial Building Code including Farm Buildings**. The Building Designer provides the following information to the Truss Designer or Truss Design Engineer:

- Completed set of dimensioned drawings. (floor plan(s), foundation, building elevations, cross sections)
- Bearing points for all trusses.
- Building layout outlining girder truss locations and bearing points.
- Point load values and locations (i.e. mechanical units etc.)
- Building elevations.
- Loading diagrams, including built-up loads from snow drifts.
- Code requirements.
- Review the truss placement drawing and the truss shop drawings in relation to the overall building to verify that the truss design complies with the construction documents.
- Specifications for Section 06000.
- Wind swept conditions on site; swept or unswept.
- Clearly define sealing requirements.

1.3.1.2 Responsibility of Building Designer – **Part 9 of the applicable Provincial Building Code**. The Building Designer provides the following information to the Truss Designer or Truss Design Engineer:

- Completed set of dimensioned drawings (floor plan(s), foundation, building elevations, cross sections)
- Building layout outlining girder truss locations and bearing points.
- Geographical location of the building and or ground snow load required.
- Code requirements.

1.3.2 Truss Designer

1.3.2.1 Responsible for creating the Truss Shop Drawings and the Truss Placement Drawings in conformance with the applicable Provincial Building Code and TPIC's standard for metal plate connected wood trusses. They shall:

- Interpret the Construction Design Documents to prepare the Truss Shop Drawings and the Truss Placement Drawing to provide trusses that convey the intent of the Construction Design Documents.
- Create Truss Shop Drawings so they correspond with the requirements of the Truss Placement Drawing.
- Convey to the Truss Design Engineer untypical situations utilized to create Truss shop Drawings.

1.3.3 Truss Design Engineer

1.3.3.1 Responsible for the design of metal plate connected wood truss components, in accordance with TPIC truss design procedures and specifications. They shall:

- Ensure that the truss design software is current.
- Ensure that the Truss Shop Drawings provide sufficient and clear information for the authority having Jurisdiction to review Truss Shop Drawings.
- Review and seal the Truss Shop Drawings submitted by the Truss designer.
- Provide any special notes or instructions on the Truss Shop Drawings where untypical situations exist.

- Be satisfied that the Truss Manufacturer has adequate manufacturing standards in place to ensure that the finished product meets the Truss Designer's intent.

1.3.4 Truss Manufacturer

1.3.4.1 The truss manufacturer is an organization engaged in the manufacturing and delivery of trusses. They shall:

- Ensure that every truss is clearly identified by markings corresponding with those on the Truss Placement Drawing.
- Ensure the truss shop drawings were created following the minimum guidelines for quality manufacturing criteria as set out in TPIC.
- Ensure that the truss manufacturing plant be adequately trained to fabricate trusses to match Truss Shop Drawings.
- Ensure that any special information such as point loads, special bearing locations, and truss orientation is clearly marked on the trusses.

1.3.4.2 Ensure that a package of documents and instructional information be delivered with every shipment of trusses that includes as a minimum;

- Truss Drawings for all trusses included in shipment.
- Truss Placement Drawing, if required.
- AWTFA Handling, Bracing and Installation Guidelines.
- Hanger manufacturer's instructions and nail specifications.
- Special instructions as required (e.g. Girder laminating, 'T' braces etc.)
- List of trusses and materials supplied.

1.3.4.3 The truss manufacturer shall not be responsible for determining the adequacy of the building design or structure, nor liable for the loss or damage resulting from an inadequate building design. Even though proposed component design and design details may be prepared by the truss manufacturer's technical staff the overall behavior of the structure remains the responsibility of the Building Designer. The Building Designer is responsible for determining the temporary and permanent truss bracing requirements for the structure.

1.3.5 Installation

1.3.5.1 When the installation of trusses is part of his contract, the truss manufacturer shall be responsible for determining the installation procedure, for checking the adequacy of the connections for the uncompleted structure and for providing installation bracing or connection details. When the installation of wood trusses is not part of this contract, the truss manufacturer shall not be responsible for the uncompleted structure or for providing erection bracing or connection details not included in the contract documents, nor shall the truss manufacturer be liable for loss or damage resulting from faulty installation. However the truss manufacturer shall be informed by the client of the installation sequence to be used when it influences the sequence and process of the manufacturing.

2. SPECIFICATION

2.1 See Appendix A – Prefabricated Wood Trusses – Master Specification.

3. BIDDING

3.1 Materials included. Unless otherwise specified in the tender documents, a contract to supply and fabricate wood trusses shall include only those items from the following list which are clearly indicated as being required by the structural drawings and tender specifications:

- wood trusses
- connecting hardware – truss to product supplied by plant i.e. truss, beam
- bearing hardware (hangers) – truss to product supplied by plant i.e. truss, beam

3.2.1 The field connection material is not included in the bid, unless the truss manufacturer installs the trusses. When installation of the truss system is not part of the truss manufacturer's contract, the truss manufacturer shall furnish only the appropriate special fasteners of suitable size and in sufficient quantity for all field connections which are specified to be permanently connected. The blocking and bracing material for the truss system shall not be furnished by the truss manufacturer unless otherwise specified in the tender documents.

3.3 On-site inspection is not included in the bid.

4. CONTRACT

4.1 ***Standard Form of Contract***. Unless otherwise agreed upon, a contract to fabricate, deliver and/or install trusses shall be based on the appropriate Standard Construction documents approved by the Canadian Construction Documents Committee, or the Canadian Construction Association.

4.2 **Revisions of Contract Documents.**

4.2.1 Revisions to the contract shall be made by the issue of dated new or revised documents. All revisions shall be clearly indicated. Such revisions may be issued on a Detailed Change Notice.

4.2.2 The truss manufacturer shall advise the client or client representative of any impact such revision shall or change will have on the existing agreement between the two parties.

4.2.3 Upon agreement between the truss manufacturer and the client or client representative as to revision's impact, the client or his representative shall issue a change order or extra work order authorizing the truss manufacturer to proceed with the work.

4.2.4 Unless specifically stated to the contrary, the issue of a revision is considered approved for construction by the client.

4.3 **Contract price adjustments.**

4.3.1 When the responsibility of the truss manufacturer is changed from that previously established by the contract documents, an appropriate modification of the contract price shall be made. In computing the contract price adjustment, the truss manufacturer shall consider the quantity of work added or deleted, modifications in the character of the work, the timeliness of the change with respect to the status of material ordering, the detailing, fabrication and related impact costs.

4.3.2 Requests for contract price adjustments shall be presented by the truss manufacturer and shall be accompanied by a description of the change in sufficient detail to permit evaluation and prompt approval by the client.

5. MANUFACTURING

5.1 **Design Procedures**

5.1.1 Design Work

5.1.1.1 Truss Estimate shall be prepared from the most recent version of the building plans. All trusses shall be identified and subsequently marked clearly so that the markings on trusses correspond with the markings on the Truss Placement Drawing, when provided.

5.1.1.2 Truss Designer shall advise the Structural Engineer of Record or the Building Designer, through the General Contractor, about all changes to be made to accommodate the trusses (such as but not limited to special bearing conditions for girders, transfer of loads, additional beams, changes to truss directions, etc.).

5.1.2 Design Criteria

5.1.2.1 Commercial. The design shall conform to the current applicable provincial building code, TPIC design procedures, current CSA standards, and local codes or any other codes currently in force. Truss Shop Drawings shall be sealed by Truss Design Engineer when requested by the Building Designer or an authority having jurisdiction.

5.1.2.2 Residential. The design shall conform to the current applicable provincial building code, TPIC design procedures, current CSA standards, and local codes or any other codes currently in force. Truss Shop Drawings shall be sealed by Truss Design Engineer when requested by the Building Designer or an authority having jurisdiction.

5.1.2.3 Farm. The design shall conform to the National Farm Building Code of Canada, TPIC design procedures, current CSA standards, and local codes or any other codes currently in force. Truss Shop Drawings shall be sealed by Truss Design Engineer when requested by the Building Designer or an authority having jurisdiction.

5.1.2.4 Commercial and Farm designs can only be considered windswept if the Building Designer so specifies.

5.1.3 *Truss Shop Drawings*

5.1.3.1 A Truss Shop Drawing shall be prepared for every truss manufactured and identified by markings corresponding with those on the Truss Placement Drawing.

5.1.3.2 The Truss Shop Drawing shall include reference to the design criteria used, lumber requirements, plating requirements, design loading, spacing, special framing details, bracing details and nailing, framing instructions and adjustment to plate and design values.

5.1.3.3 Truss Shop Drawing shall indicate as a minimum the following information:

a) Truss identification number and job name;
b) Span, depth or slope and spacing of trusses;
c) Size, species and grade of lumber used for each truss member;
d) Required bearing widths;
e) Specified loads as applicable:
    Top chord live, dead, and snow
    Bottom chord live, dead, and snow
    Concentrated loads and their points of application
    Wind and earthquake loads
f) Location, and size of any web bracing:
    Continuous bracing for three or more adjacent trusses of the same kind
    “T”, “I”, “L”, or scab bracing for one or two trusses of the same kind
g) Reaction forces, their points of occurrence, direction and support conditions
h) Adjustments to lumber and metal connector plate design values for condition of use;
e) Metal connector plate type, gauge, size and location of plate at each joint interface;
j) Connection requirements for (unless shown on truss layout drawing):
    Truss to bearing, truss to girder or beam, girder ply to ply, field splices.
k) Deflection limits, deflection and CSI
l) Code used (Part 9, Part 4, or Farm)
m) Design formula used (standard or modified)

5.1.3.4 Truss Placement Drawing includes truss designations and placement, company name and contact information, project name and designation, date.

5.2 Approval

5.2.1 Commercial (Part 4 and Farm). Truss Manufacturer shall submit the Truss Shop Drawings to the General Contractor, who reviews them prior to submission to the Building Designer. The General Contractor represents by this review that he determined and verified all field measurements and field construction conditions.

5.2.2 Residential (Part 9). Truss manufacturers submit the truss design drawings to the General Contractor, who reviews them. The General Contractor represents by this review that he determined and verified all field measurements and field construction conditions.

5.3 Shipping

5.3.1 Truss manufacturer is responsible that trusses are in good condition when loaded and properly fastened to prevent damage.

5.3.2 When delivery is not part of truss manufacturer's contract, the truck driver is responsible for fastening the load to prevent damage.

5.3.3 When delivery is not part of the contract the truss manufacturer is not responsible for any damage incurred after the load leaves the compound.

6. INSTALLATION PROCESS

6.1.1 It is the responsibility of the installer to report any damage to trusses immediately to the truss manufacturer. The installer is not to repair trusses without instructions from the Truss Design Engineer.

6.1.2 The Truss Design Engineer may provide the installer with truss repair instructions for a fee.

7. INSPECTIONS

7.1 Building Designer

7.1.1 The Building Designer or a suitably qualified person working under their direction examines the completed construction of the wood truss system to confirm that it has been constructed in accordance with the intent of the drawings and specifications.

7.1.2 The Truss Design Engineer shall assist the Building Designer by providing complete documentation to make the inspection possible.

7.2 Safety Code Officer

7.2.1 Truss manufacturers, and members of the AWTFA shall assist Safety code officers who do site inspections by providing complete documentation to make the inspections possible.

7.2.2 AWTFA members encourage Safety Code Officers to attend courses to improve their knowledge of proper truss installation.