THE CANADIAN WOOD TRUSS ASSOCIATION

L'ASSOCIATION CANADIENNE DES FABRICANTS DE FERMES DE BOIS

NATIONAL QUALITY STANDARD
FOR
METAL PLATE CONNECTED WOOD TRUSSES

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Reference Publications

- Truss Plate Institute of Canada (TPIC), Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses
- National Lumber Grade Authority (NLGA), Standard Grading Rules/Special Product Standards
- FPInnovations, Truss Fabricator Guidelines on the Use of Fingerjoined Lumber in Metal Plate Connected Trusses

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1. GENERAL

1.1. Scope

This standard is a quality standard for the manufacturing of metal-plate-connected wood trusses and shall be used in conjunction with an in-plant quality assurance program. It is intended to provide the basic quality requirements to enable truss plants to demonstrate conformance with industry standards.

1.2. Alternative Materials

Where alternative material is used, additional requirements such as found in Annex A, "Truss Fabricator Guidelines on the Use of Fingerjoined Lumber in Metal Plate Connected Wood Trusses" shall also apply.

2. IN-PLANT QUALIFICATION PROGRAM

2.1. Plant Quality Assurance Manual

Each qualified truss plant shall have a plant quality assurance manual complying with this standard and approved by the Regional Association[1]. It shall contain documentation of quality control procedures which include the requirements for initial plant qualification and for ongoing quality control.

2.2. Manufacturing Tolerances

Manufacturing tolerances shall be in accordance with TPIC "Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses", Appendix G, and this standard.

2.3. In-Plant Inspections

A minimum inspection of three trusses per operational set-up location per shift, per week shall be completed and duly recorded. Trusses sampled for inspection shall be as-finished off the production line or preferably from yard storage. They shall, as much as practicable, be the type representative of the range of production. Inspections shall follow a format that includes the manufacturing and material variances prescribed in TPIC Appendix G, and this standard.

2.4. Non-Conforming Inspections

Trusses that do not meet minimum allowances for material defects and variances in workmanship shall be documented with follow-up repair, rework or replacement as instructed and documented by the truss designer.

[1] The term "Regional Association" means an entity representing one or more light metal plate connected wood truss plants and possibly associated industries within a given geographical region.

2.5. Outside Party Audits

Audits shall be conducted at a minimum frequency of two times per year unless the plant is inactive for a period of at least 6 months. They shall be random and unannounced and reasonably distributed during the year. These audits are intended to verify the plant's ongoing conformance with this standard and Regional Association requirements. They are to be conducted by qualified individuals approved by the Regional Association.

2.6. Documentation

The plant shall maintain all records of in-house inspections including outside party audits for a minimum of 5 years. The Regional Association shall maintain a current list of qualified plants that can be made available to interested parties.

3. TRUSS DESIGN DRAWINGS

3.1. Design Procedures

All trusses shall be designed in accordance with TPIC procedures.

3.2. Minimum Information

Minimum information shall be in accordance with TPIC "Minimum Information on Truss Design Drawings", Appendix H.

4. MATERIALS

4.1. Lumber

All trusses shall be manufactured using dimension lumber graded and stamped according to NLGA Rules including applicable NLGA Special Products Standards.

4.2. Metal Connector Plates

All metal connector plates shall be in accordance with TPIC Appendix G. Substitute (larger) sizes are acceptable provided the plate is the same type, gauge and orientation as the plate being specified. No dimension can be less, and the tooth count in each joint member shall equal or exceed the original requirement. Plates shall not project past truss profiles or internal boundaries where clear space is required by the design specifications i.e. duct chases in floor trusses, room space in attic trusses.

5. HANDLING AND STORAGE

5.1. Lumber and plates

Lumber and plates shall be stored in a way to protect against the elements.

5.2. Fabrication

Any damage to trusses during fabrication and handling relevant to Section 1.2, Alternative Materials shall be recorded and made available to the Regional Association.

5.3. Finished Trusses

Trusses shall be handled and stored in a way to prevent damage (excessive bending, overstressing joints and lumber). They shall be protected from excessive moisture including excessive ground contact.

6. TRUSS SUBMITTAL PACKAGE

6.1. Design Drawings

The truss submittal package shall contain individual truss design drawings, including requirements for web bracing, or otherwise in accordance with the Authority Having Jurisdiction.

7. REPAIR AND REPRESSING

7.1. Repair Specifications

When any installed (i.e. embedded) connector plate does not meet plating requirements the truss designer shall do one of the following:

(a) Specify the repair removing the plate
(b) Specify the repair leaving the plate in place, or
(c) Review and approve the plate "as is".

7.2. Lumber Condition

When a connector plate is installed in a connection area of lumber that contains tooth holes (wood otherwise not damaged) from a previously installed plate, connector plate teeth shall be considered 50% effective at the location where they cover the tooth holes.

7.3. Plate Removal

Connector plate teeth installed into lumber which has been damaged (i.e. wood removed, or excessive splits) by the installation/removal of a previous connector plate shall be considered ineffective in the damaged areas.

7.4. Repressing

Connector plates may be repressed during manufacture to improve plate embedment.

8. TRUSS MARKING

8.1. Plant Qualification Marking

Appropriate truss marking (stamps, tags) should be used to provide evidence of plant qualification to standards.

8.2. Special marking

Bearing locations other than truss heels, and locations of point loads shall be identified with stamps, tags or other appropriate marking on each truss, or with the drawings that accompany the truss shipment. Bottom chord bearing parallel chord truss shall be clearly marked to avoid inverted installation.

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