SECTION 15

GLU LAM AND TRUSS JOISTS

OBJECTIVE

The fabrication of most glu lam and truss joist products is conducted in controlled plant conditions that are designed for a mass-produced product. The primary purpose of observing the product at the plant is to check the critical operations, such as gluing, and to provide verification that the quality control exercised by the fabricator is adequate.

To best achieve this objective, an experienced timber technician should be employed performing the following duties under the direct control of the materials engineering laboratory.

GLU LAM TIMBER OBSERVATION DUTIES

A. Documents

1. Review the approved plans, specifications, and approved shop drawings.
2. Review applicable sections of referenced codes, particularly the Timber Construction Manual by the American Institute of Timber Construction (AITC) and reference standards of the California Building Code (CBC).
3. Verify that the proposed lumber grades, combinations, adhesive, and end joint details meet with code requirements.

B. Materials

1. Verify certifications on lumber grading, adhesives, and preservatives.
2. Verify lumber grade marks on the pieces being used.

C. Observation Requirements - Preliminary

1. Verify that shop drawings have been reviewed and stamped by architect/engineer and general contractor.
2. Verify that spacing of joints meets job and code requirements.
3. Measure moisture content of lumber and verify with acceptance range specified.
4. Check appearance grade requirements.
5. Verify preservative treatment requirements.

E. Observation of Sub-Assemblies (End Joints)

1. Verify lumber grade at end joints.
2. Gluing and curing procedure, verification of following:
   a) Lumber moisture, temperature, and cross-section
   b) Workroom humidity and temperature
   c) Adhesive certification, lot, and temperature
   d) Joint match and separation
   e) Assembly temperature, pressure, and time
   f) Sample and test representative joints

F. Laminating (Gluing)

1. Recheck lumber grades, combinations and faces, moisture, and temperature.
2. Record workroom temperature and humidity.
3. Adhesive certification, lot verification, and temperature.
4. Verify camber assembly.
5. Gluing and curing:
   a) Observe glue spread and check for skips.
   b) Record open time prior to clamping.
   c) Record clamping pressure.
   d) Record curing temperature and time.
   e) Sample and test (block shear, core shear, cyclic delamination).

G. Finishing

1. Recheck joint spacing and cross-sectional dimensions.
2. Observe repairs for appearance.
3. Record and inspect surface treatment.
   a) Preservative
   b) Sealer
   c) Primer or paint
4. Hammer-brand each member, prepare shipping certificate.
5. Observe and record wrapping.

G. Reports

1. Submit written progress reports describing the tests and observations made and showing the action taken to correct nonconforming work. Itemize any changes authorized by architect/engineer. Report all uncorrected deviations from plans or specifications.

TRUSS-TYPE JOIST CONSTRUCTION

A. Chord Fabrication

1. Perform all requirements of "Glu Lam Timber Observation Duties."
2. Check end joint spacing at panel points.
3. Check drilling and routing for webs.

B. Web Fabrication

1. Structural Steel:
   a) Review specification requirements.
   b) Review mill certification, steel, and coating.
   c) Sample and test, when specified.
2. Fabrication:
   a) Verify web wall thicknesses and diameters at specified locations.
   b) Check for splitting at flattened ends.
   c) Check alignment edge distance and pin placement.
   d) Check bridging clips, bearing clips, and ridge connector.
   e) Check truss dimensions.
   f) Check connector welding, if performed.

C. Reports

1. Submit written progress reports describing the tests and observations made and showing the action taken to correct nonconforming work. Itemize any changes authorized by architect/engineer. Report all uncorrected deviations from plans or specifications.