



IDENTIFICATION AND USE OF STRUCTURAL GLUED LAMINATED TIMBER

The use of non-custom glued laminated timbers has increased as a substitute for large sawn timber beams. Larger glued laminated timbers are manufactured to order while the non-custom members are available from yard stock. Each of these types of members conform to the same standards (AITC 117 or AITC 119) and have their allowable stresses listed in Table 5A, 5B, 5C, and 5D of the 2005 National Design Specifications for Wood Construction (NDS).

The composition (make-up) of a glued laminated member depends on its use. Members are manufactured for bending use and axial use. In the fabrication of a bending member, the standards may dictate different grades of lamination and types of end joints in the tension and compression edges of the member. It is important that the final placement of the member be compatible with its make-up, i.e., a member fabricated as a simple span member with tension laminations at the bottom and compression laminations at the top should not be used in a cantilever application.

To minimize misuse of non-custom members, the quality control stamp (grade mark) contains a use designation letter.

B = simple span bending member;

C = compression member;

T = tension member;

CB = simple, continuous or cantilever span bending member.

Samples of custom and non-custom grade marks as developed by the American Institute of Timber Construction (AITC) are shown on next page.

It is important that where non-custom members are used in cantilever applications that the structural use designation be specified on the plans and verified in the field. This is just as important as making sure that the members are placed with the correct side up.

Glu-Lams are graded by but not limited to the following agencies: as per ISO/IEC 17020

1. Timber Products Inspection, Inc., Conyers, GA.
2. APA – The Engineered Wood Association, Tacoma, WA.
3. American Institute of Timber Construction, Englewood, CO.
4. PFS Corporation, Cottage Grove, WI.

AITC TECHNICAL NOTE 10

AITC QUALITY CONTROL PROGRAM

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American Institute of Timber Construction

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The AITC Quality Control program blends the skills and professional expertise of people who understand the importance of consumer confidence in the product certification process. The AITC Inspection Bureau staff is able to enhance the efforts of production personnel engaged in the manufacture of glued laminated timber through use of a disciplined monitoring system of process control procedures. Predictable structural performance of glued laminated timber manufactured under the AITC Quality Control program is assured through use of daily physical tests, manufacturing check points and visual inspection during the production process, all audited by and verified by the AITC Inspection Bureau.

Glued laminated timber manufacturing plants are initially "qualified" as licensees following a series of in-plant evaluations of production machinery, processes and personnel. These evaluations include physical tests to verify the structural adequacy of end joint and face joint bonding procedures, review of lumber grading procedures, independent calibration of selected equipment and machinery, and other process verification testing to ensure that the manufacturing facility can consistently produce a structurally adequate product.

Required daily physical tests are designed to evaluate the strength and durability of face and end joint bonds. Representative test samples are selected at random from production members and evaluated before that portion of production is shipped. In addition, production equipment is monitored continuously. Machine settings established under plant qualification conditions are maintained during routine production. Prior to application of any of the AITC certification marks, each glued laminated timber is carefully inspected by personnel specially trained for that purpose.

All AITC Qualified Licensee plants manufacture glued laminated timber in conformance with American National Standard ANSI/AITC A190.1. This Standard was developed and is maintained by a consensus process. Practicing engineers, representatives from the academic community, construction personnel, and code agencies from outside the glued laminated timber industry are included in the development and review process. In this way, resulting manufacturing standards and quality control requirements reflect the product performance experience of a broad range of knowledgeable people.

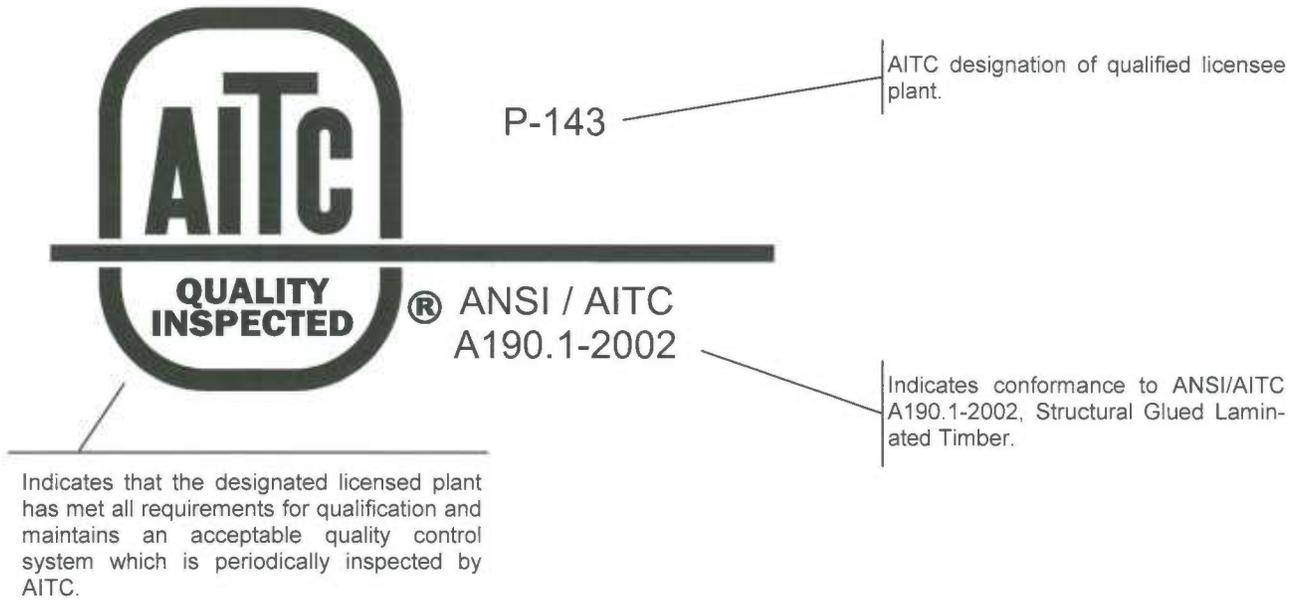
Questions regarding interpretation of ANSI/AITC A190.1 are channeled through the industry Technical Review Board. Any necessary arbitration between the AITC Inspection Bureau staff and plant personnel is handled by the AITC Arbitration Review Board. The Technical Review Board and the Arbitration Review Board are made up of independent individuals who are knowledgeable in the use and manufacture of structural glued laminated timber.

Qualified licensees must maintain strict conformance to AITC standards in order to use the AITC quality marks and Certificates of Conformance. The AITC Inspection Bureau staff provides rigorous training through on-going in-plant and regional programs. Key personnel involved in the quality control program are properly trained before they are given on-line responsibilities in the manufacturing process. The AITC Inspection Bureau staff monitors the operation of member plants through unannounced audits that require checks of all records and all phases of production.

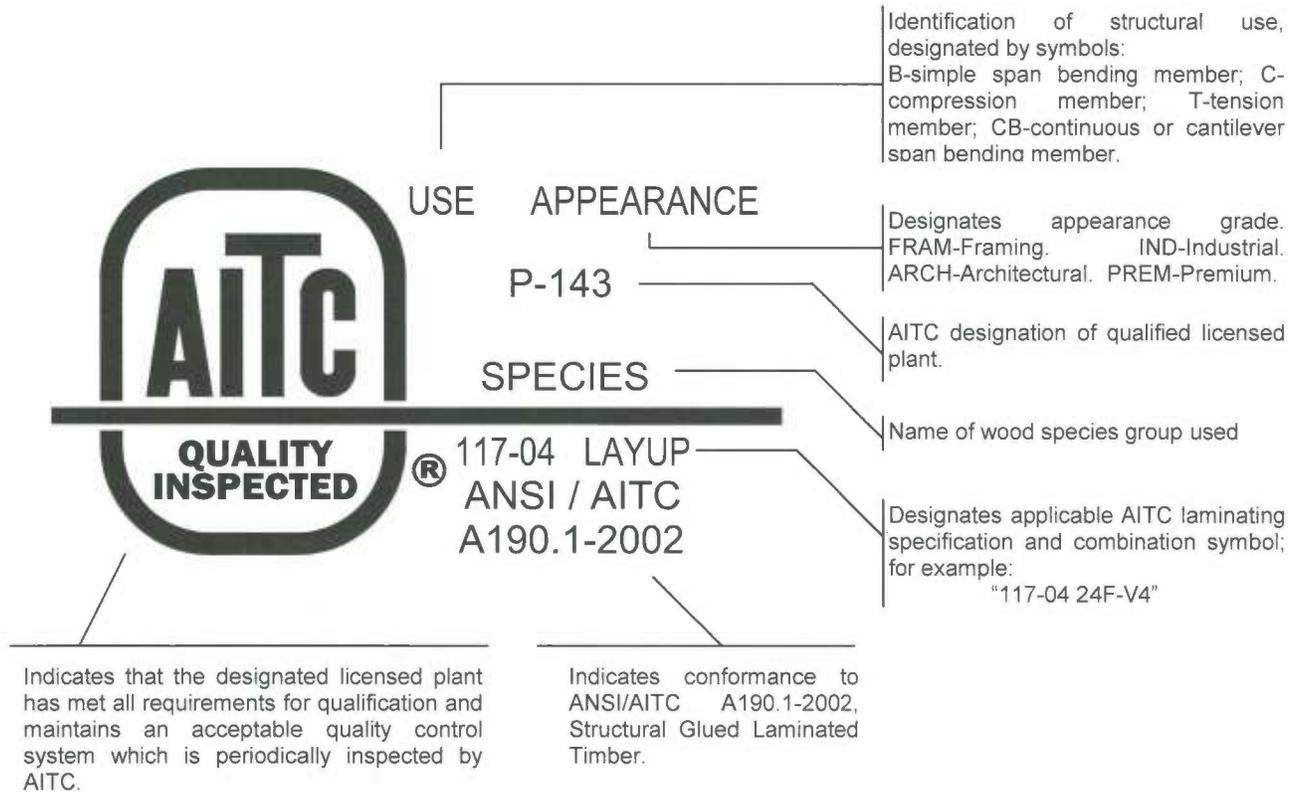
AITC staff involved in the AITC Quality Control Program are the most knowledgeable and highly qualified personnel in the industry in all phases of the system. AITC's program is designed to keep pace with the latest in technology and to upgrade manufacturing procedures to reflect improvements in methodology. Structural glued laminated timber manufactured under the AITC Quality Control Program is the best quality available.

Glulam members are stamped with one of the following type quality marks. Each qualified plant has an individual qualification designation. The designation "P-143" shown on the typical quality marks below is not assigned to any plant and is used only for the purpose of illustration.

A TYPICAL CUSTOM* PRODUCT QUALITY MARK



A TYPICAL NON-CUSTOM** PRODUCT QUALITY MARK



* For custom products, the details covering the product are included in applicable documents.

** For non-custom products, essential details are included on the stamp.

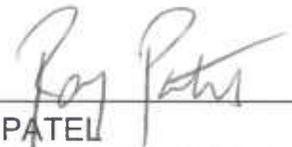
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