New quality criteria for wood trusses

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The Truss Plate Institute is pleased to announce the approval and implementation of two new standards in 2002.

ANSI/TPI/WTCA 4-2002

The American National Standards Institute Board of Standards Review approved ANSI/TPI/WTCA 4-2002 "National Standard and Recommended Guidelines on Responsibilities for Construction Using Metal Plate Connected Wood Trusses" as a new American National Standard, effective Aug. 1, 2002. ANSI/TPI/WTCA 4-2002 is a revision of WTCA 1-1995, "Standard Responsibilities in the Design Process Involving Metal Plate Connected Wood Trusses" and was developed in accordance with ANSI's organizational method to achieve consensus.

ANSI/TPI/WTCA 4-2002 defines the usual duties and responsibilities of the truss manufacturer and truss designer for the benefit of the owner, building designer and contractor, and provides recommended guidelines to the owner, building designer, and contractor on matters related to the use of trusses. A proper recognition of the responsibilities and recommended guidelines involving trusses will result in better understanding of the expectations of all involved in construction using trusses, more effective and efficient use of trusses, and safer and more economic structures. The new ANSI/TPI/WTCA 4-2002 document is available for public purchase from TPI by calling (608) 833-5900.

ANSI/TPI 1-2002 Approved as Revision to ANSI/TPI 1-1995

Effective March 25, 2002, the ANSI Board of Standards Review approved ANSI/TPI 1-2002 "National Design Standard for Metal Plate Connected Wood Truss Construction." ANSI/TPI 1-2002 is the revision of ANSI/TPI 1-1995, the truss industry's first American National Standard developed in strict accordance with ANSI's organizational method to achieve consensus.

Having received ANSI approval as a revised American National Standard, ANSI/TPI 1-2002 also received a nod of approval at the International Code Council code development hearings in early April 2002 for reference into the 2003 edition of the International Building Code. The IBC 2003 Code should be released around spring/early summer of 2003, at which time the TPI Board of Directors' implementation date (May 1, 2003) for ANSI/TPI 1-2002 will become effective.

With the completion and approval of the new ANSI/TPI 1-2002 "National Design Standard for Metal Plate Connected Wood Truss Construction" comes the introduction of a new Quality Standard for truss manufacturers (i.e., TPI 1-2002 Chapter 3). The new Quality Standard is a revision of the quality criteria in Chapter 4 of ANSI/TPI 1-1995, and consists of a blend of familiar criteria (i.e., per ANSI/TPI 1-1995) with some not-so-familiar concepts that are new to the ANSI/TPI 1-2002 standard.

Something New, Something Old

For the most part, lumber, assembly, and plating requirements remain the same in the 2002 standard, as well as the provisions for repressing and replating. What's different is a new procedure for joint inspection to determine acceptance of a joint, as it relates to plate placement (i.e., maximum allowable plate translation, rotation, and a 20 percent limitation for lumber characteristics within each plate contact area) and embedment (i.e., maximum allowable plate embedment gap along the plate perimeter). This new method, called the Plate Placement Method, provides a quick, step-by-step approach to determining acceptance of the joint.

For those familiar with ANSI/TPI 1-1995, you will not find anything in the new PPM relating to "total number of effective teeth." However, effective teeth requirements, similar to those in ANSI/TPI 1-1995 (Ch. 4), do appear in an alternate joint inspection method presented in an Annex to Chapter 3. This alternate method is appropriately called the Tooth Count Method and includes the requirement to determine the number of effective teeth at each plate contact area, accounting for any ineffective teeth (e.g., flattened teeth, teeth in knots, etc.) or teeth with reduced effectiveness due to gaps between the plate and wood.

The wood member-to-member gap checks are the same regardless of the plate QC method employed (PPM vs. TCM). What has changed with wood gaps, though, is where the gaps are now measured (at the edge of the connector plate rather than at the cut), and a uniform maximum gap tolerance for a greater variety of joints replaces the differing maximum and average gap criteria for different joints as currently found in ANSI/TPI 1-1995.

A First Look at the New Quality Standard

For the curious, Chapter 3 of the new ANSI/TPI 1-2002 and a review of the current criteria as found in Chapter 4 of ANSI/TPI 1-1995 may both be downloaded from the Truss Plate Institute's Web site at www.tpinst.org. Keep in mind, however, that the best understanding of the new Quality Standard will come from the corresponding Commentary to Chapter 3 and other informational articles that will be developed in the months to come. The official ANSI/TPI 1-2002 Standard with Commentary & Appendices are available for purchase by calling TPI at (608) 833-5900. ■