



Overview of (non-editorial) Changes from ANSI/TPI 1-2007 to ANSI/TPI 1-2014

The ANSI/TPI 1-2014, *National Design Standard for Metal Plate Connected Wood Truss Construction* is an American National Standard developed and maintained through TPI's approved ANSI consensus process (PCMAC). The most recent update to the ANSI/TPI 1 standard (2014 edition) was published on December 31, 2014. The following is an overview of the non-editorial changes that were made from the previous edition (ANSI/TPI 1-2007) to the 2014 edition. The ANSI/TPI 1-2014 standard and earlier editions are available for purchase from TPI at www.tpinst.org.

CHAPTER 1

- 1) When alternate design provisions are used for the design of a MPCWT, it must be stated as such on the Truss Design Drawing. (Section 1.3.2.1)
- 2) To avoid confusion the term "Ladder Frame" was removed from the Definitions section of the TPI 1 Standard since it is commonly used to describe other various building items. (Section 1.6)

CHAPTER 2

- 3) The term "Framing Structural System" was replaced with the term "Building Structural System". This is consistent throughout the Standard. (Section 2.2)
- 4) The term "Truss Design Engineer" was replaced with the term "Truss Designer". This is consistent throughout the Standard. (Section 2.2)
- 5) The term "Special Inspector" was added to the Definitions section in the Standard. (Section 2.2)
- 6) For clarification purposes and to reduce redundancy, Section 2.3, "*Responsibilities Where the Legal Requirements Mandate a Registered Design Professional for Buildings*" was combined with Section 2.4, "*Responsibilities Where the Legal Requirements Do Not Mandate a Registered Design Professional for Buildings*". This was accomplished by replacing the term "Truss Design Engineer" with "Truss Designer", and the term "Registered Design Professional for the Building" with "Building Designer" and prefacing the section with the following language, "Where the Legal Requirements mandate a Registered Design Professional for buildings, the Building Designer and the Truss Designer shall be Registered Design Professionals." (Section 2.3)
- 7) A non-mandatory user note was added to Section 2.3.2.4, "Required Information in the Construction Documents" that refers the user to information in the Commentary pertaining to differential deflection. (Section 2.3.2.4)
- 8) In addition to a Registered Design Professional, repair details are allowed to be provided by the Truss Manufacturer and/or the Building Designer. (Section 2.3.4.9)



- 9) Rain Load has been added to the loads required to be shown on the Truss Design Drawing if Rain Load is a controlling load case. (2.3.5.5)
- 10) The requirement to specify on the Truss Design Drawing “the method of Restraint/Bracing to be used” has been removed. (Section 2.3.5.5)
- 11) The specification of the “Truss Designer” is now part of the required information on the Truss Design Drawing. (Section 2.3.5.5)

CHAPTER 3

- 12) The provisions for finger-jointed lumber have been modified to include the requirements for finger-jointed lumber when it is used in Trusses that are to be used for fire-resistive construction. (Section 3.4.6)
- 13) The Standard now explicitly restricts the use of the Alternative Positioning Procedure to joints designed using standard steel tension values. Joints designed with non-standard steel tension values must be positioned within 1/16 in. from the intended position. (Section 3.7.2.2)

CHAPTER 4

- 14) The list of descriptive gauge designations showing the minimum Metal Connector Plate thicknesses for common Connector Plate gauges has been removed from the Standard. (Section 4.3.4)

CHAPTER 5

- 15) Non-standard tension test specimens with the minimum section not positioned over the joint are recognized, with necessary additional limits including appropriate limits on lumber density (Sections 5.4.4.2, 5.4.7.3.1), prohibiting use of these results for steel moment capacity of plates (Section 8.7.1), and adjusting standard plate positioning minimum tolerances (Sections 8.11.4 and 3.7.2.2).

CHAPTER 6

- 16) Provisions for attic live loads have been removed from the Standard since the application of these loads for design are now adequately addressed in the model building codes. (previous Section 6.2.2.2 deleted)
- 17) The standard now explicitly recognizes transfer of load across joints in the out of plane direction (perpendicular to the plane of the truss). Prescriptive limits are provided for load across diaphragm joints (minimum 3 inches plate width for loads associated with unblocked diaphragm). (Section 6.2.2.6)
- 18) Lumber design values section (6.3, 6.3.1) re-organized.



- 19)** The Standard now includes provisions for Load and Resistance Factor Design (LRFD) for Metal Plate Connected Wood Trusses. (Section 6.3, Table 6.3-1, Table 6.4-7)

CHAPTER 7

- 20)** Additional provisions have been added to the Composite Action of Multiple Layers Section that include the use of a transformed section to determine the moment of inertia and section modulus, and provisions for the analysis of layers with different grades and/or sizes. (Section 7.3.3.7)
- 21)** A 0.3 factor has been added to the allowable compression perpendicular to grain limitation. (Section 7.3.8, Equation E7.3-11)
- 22)** The Deflection Limits for Non-cantilevered Trusses Table has been updated to include limitations that are often specified by Building Designers as well as limitations that are typically established in building codes. In addition, the Creep factors have been increased from 1.5 and 2.0 to 2.0 and 3.0 for trusses using only seasoned lumber in dry service conditions and trusses using green lumber or in wet service conditions respectively. (Section 7.6, Table 7.6-1)

CHAPTER 8

- 23)** The Standard now includes separate provisions for the design of steel section for the effect of moment for when the connector plates are on the front and back of the Truss member, and for when the connector plates are on the top and bottom of the Truss member (floor truss splices). (Section 8.7.1)
- 24)** Clarifications and limitations were added in the provisions for Design of Steel Section for Effect of Moment to aid the user in the application of the moment capacity equation. (Section 8.7.1)
- 25)** The minimum plate positioning tolerance now includes provisions for both standard steel tension values, and non-standard steel tension values. In addition, this section now requires that joints designed with non-standard steel tension values be identified on the Truss Design Drawing. (Section 8.11.4)