

Overview of (non-editorial) Changes from ANSI/TPI 1-2014 to ANSI/TPI 1-2022

The ANSI/TPI 1-2022, *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 (2022 edition) was approved on December 23, 2022. The following is an overview of the non-editorial changes that were made from the previous edition (ANSI/TPI 1-2014) to the 2022 edition. The ANSI/TPI 1-2022 standard and earlier editions are available for purchase from TPI at www.tpinst.org.

Chapter 1

1. **1.6 DEFINITIONS** – A definition for “Extended-Chord-bearing Truss” was added to clarify the applicable conditions for designing per section 7.3.13.

Chapter 2

2. **2.3.5.5 Information of Truss Design Drawings** – A requirement was added to include a note on each Truss Design Drawing that states that permanent lateral and diagonal braces must be installed as required.

Chapter 3

3. **3.4.8 Lumber Wane** – This new section was added to alert inspectors that lumber wane could be prohibited in the bearing area of some Extended-Chord-bearing Trusses (i.e., when Wane Factor set to 1.00).
4. **3.7.2.1 Plate Placement** – This section has been reformatted for clarification only. The provisions have not changed.
5. **3.7.2.2 Alternative Positioning Procedure** – Extended-Chord-bearing Joints have been excluded for use with the Alternative Positioning Procedure.
6. **3.7.3 Plate Rotation** - Extended-Chord-bearing Joints have been excluded for use with the 10-degree plate rotation tolerance.
7. **3.8 Repressing** – The section was revised to clarify that repressing plates to attain full connector plate grip strength only applies to plates that were not fully embedded during manufacture.

Chapter 4

8. **4.6.2 Requirements** – The requirements to measure hardness, width and length, and tooth bending ability were removed.
9. **4.7 Tolerances** - Tolerances for Metal Connector Plate inspections were revised to coordinate with the changes in Section 4.6.2.

Chapter 5

10. **5.1.2.5 Measuring Devices** – Clarifies that the units in Section 5 are resolution of measurement rather than accuracy of measurement and adds an accuracy requirement for measuring equipment.

11. **5.2.6.7 Structural Composite Lumber** – An additional provision was added to this section which states that connector plate lateral design values shall be limited to the shear design value for the SCL matching the application.
12. **5.3.2.1 Test Specimen Selection** – There is now a limit ($\leq 5\%$) on the allowed thickness over the minimum thickness for tested Metal Connector Plates.

Chapter 6

13. **6.1.1.3 Joint Model** – New sections have been added (6.1.1.3.1 and 6.1.1.3.2) to provide guidance and limitations on modeling translational and rotational stiffness for Truss Joints.
14. **6.2.2.4.2 Allowable Out-of-Plane Load Resistance for a Pair of Metal Connector Plates** – A prescriptive design holding value was added for connector plates loaded perpendicular to the plane of a Truss. The prescriptive value only applies to pairs of connector plates having minimum 5/16-inch length teeth and 8 or more teeth per square inch.
15. **6.2.2.5 Person Loading** – A new load check was added for Trusses with unsheathed Chords. The provision requires a 300-pound point load to be checked at each chord mid-point concurrently with just dead load using a load duration factor of 1.6 or less.
16. **6.4.2.3 Alternative Repetitive System Factors** – This new section limits the use of system behavior adjustment factors to only those determined per *ASTM D6555*.
17. **Table 6.4-2 Bending Capacity Modification Factors** – The K_m factor is no longer restricted to compression members only.
18. **6.4.12 Horizontal Shear Volume Factor (C_v)** – A new adjustment factor (C_v) has been added for checking wood shear at Extended-Chord-bearing Joints.
19. **6.5 Corrosive Conditions** – This section was updated and now provides guidance for specific corrosive conditions.

Chapter 7

20. **7.2.3 Point of Lateral Restraint** – This new section defines the requirement of a lateral restraint. Lateral restraints must be sufficiently designed to resist 2% of the maximum axial compression force in the restrained member.
21. **7.3.2.1 Web Reinforcement to Increase Buckling Capacity** – This new section and following sub-sections provides provisions for designing reinforced compression Webs (e.g., T-Braced-, L-braced-, I-braced-, and Scab-reinforced-Webs).
22. **7.3.6 – L'/d Ratios for Compression & Tension Members** – A method has been added to this section for designing compression members that exceed the prescriptive L'/d ratios.
23. **7.3.8 Rolling Shear** – This new section includes provisions for checking rolling shear.
24. **7.3.9.3 Bearing Plate Increase Factor** – An exception has been added for using the bearing plate increase factor. The increase only applies to portions of the bearing that are directly under the Metal Connector Plate.
25. **7.3.12 – Bearing Reinforcement** – Provisions have been added for designing bearing reinforcement (bearing blocks).
26. **7.3.13 Extended-Chord Bearing Trusses** – This new section includes provisions for determining the maximum reactions for Extended-Chord-bearing Trusses (e.g., Top Chord bearing) beyond the prescriptive table.

27. **Load Not Continuous Across All Plies** – This new section provides guidance for determining load distribution to the individual plies of a multi-ply girder Truss loaded from one face.
28. **7.5.3.7 Additional Repetitive Increase** – Additional repetitive-member factors for bending stress have been added for multi-ply Trusses.
29. **Table 7.6-1 Deflection Limits for Trusses** – A new deflection limit was added to Table 7.6-1 for exposed vertical Webs and integral parapets.
30. **7.6.2.3 Deflection Calculation for Parallel Chord Trusses** – The deflection equation for parallel chord Trusses was revised to include the deflection that occurs at Extended-Chord-bearing Joints.

Chapter 8

31. **8.3.2.3 Additional Consideration for Extended-Chord-Bearing Joints** – To coordinate with the design provisions for Extended-Chord-bearing Trusses, lateral resistance values for connector plates at Extended-Chord-bearing Joints are reduced by 20%.
32. **8.6 Combined Shear and Tension** – This section has been modified to address mid-panel splices cut at an angle.