

# ICC-ES Evaluation Report

**ESR-2342**

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**DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES**  
**Section: 06 17 53—Shop-Fabricated Wood Trusses**

**REPORT HOLDER:**

**CHEROKEE METAL PRODUCTS, INC.**  
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**EVALUATION SUBJECT:**

**CHEROKEE TRUSS PLATE CONNECTORS TYPE A,  
 TYPE B AND TYPE S**

**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

**Property evaluated:**

Structural

**2.0 USES**

Cherokee Truss Plate Connectors Type A, Type B and Type S are metal truss connector plates used in the construction of roof and floor metal-plate-connected wood trusses.

**3.0 DESCRIPTION**
**3.1 General:**

All Cherokee truss connector plates are manufactured from minimum No. 20 gage [0.0356 inch (0.904 mm) total thickness] steel complying with ASTM A 653, SS, Grade 37, and having a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm) of the base-metal thickness of 0.0346 inch (0.879 mm)].

**3.2 Type A:**

The Cherokee Type A connectors are produced in 1-inch (25.4 mm) increments of length up to 24 inches (610 mm) and in 1-inch (25.4 mm) increments of width up to 12 inches (305 mm). The Type A connector plate consists of two 0.36-inch-long (9.14 mm) crimped teeth punched in triplicate rows at 1-inch (25.4 mm) spacing and in multiples of 1 inch (25.4 mm) on center. See Figure 1.

**3.3 Type B:**

The Type B connectors are produced in 0.75-inch (19.1 mm) increments of length up to 24 inches (610 mm) and in 0.8-inch (20.3 mm) increments of width up to

12 inches (305 mm). The Type B connector plate consists of two 0.34-inch-long (8.64 mm) crimped teeth punched in triplicate rows at 0.8-inch (20.3 mm) spacing and in multiples of 0.75 inch (19.1 mm) on center. See Figure 2.

**3.4 Type S:**

The Type S connectors are produced in 0.75-inch (19.1 mm) increments of length up to 24 inches (610 mm) and in 0.8-inch (20.3 mm) increments of width up to 9.6 inches (244 mm). The Type S connector plate consists of two 0.34-inch-long (8.64 mm) crimped teeth punched in duplicate rows at 0.8-inch (20.3 mm) spacing and in multiples of 0.75 inch (19.1 mm) on center. See Figure 3.

**4.0 INSTALLATION**
**4.1 General:**

The truss plates must be pressed into the wood truss members for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press. Trusses must be assembled within the tolerances provided by the Truss Plate Institute (TPI) Quality Criteria for Metal Plate Connected Wood Trusses, shown as Section 4 in ANSI/TPI 1, National Design Standard for Metal Plate Connected Wood Truss Construction.

**4.2 Design Values:**

Allowable design values for Cherokee Metal Products, Inc., metal truss connector plates to be used in the design of metal-plate-connected wood roof and floor trusses are shown in Tables 1 and 2 of this report. Allowable design values are applicable when the connection is made with identical plates on opposite sides of the joint. This evaluation report is limited to the evaluation of the metal truss connector plates described in this report connected to lumber. The design, engineering, manufacture, quality assurance, and installation of trusses employing the truss plates must conform with IBC Section 2303.4.2.

**5.0 CONDITIONS OF USE**

The Cherokee Metal Products, Inc., metal truss connector plates described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application. In the event of a conflict between the manufacturer's published installation instructions and this report, the instructions in this report govern.

- 5.2 Each application for a building permit must be accompanied by documentation showing that the design, manufacture, and proposed installation conforms with the requirements of the applicable code.
- 5.3 This report establishes plate design values only. Items not covered by this report, such as truss design, fabrication, quality assurance and special inspection, must comply with ANSI/TPI 1, engineering drawings and the applicable code.
- 5.4 The lateral resistance design values, effective tension strength ratios, and effective shear resistance ratios used in the design of trusses must not exceed those listed in Tables 1 and 2 of this report. Load combination reductions must be in accordance with the applicable code.
- 5.5 Lumber used in the fabrication of trusses must be graded in compliance with the applicable building code and must have a moisture content not to exceed 19 percent at the time of assembly. Allowable loads shown in the tables of this report are not applicable to metal connector plates embedded in either fire-retardant-treated lumber or preservative-treated lumber.

- 5.6 Metal connector plates must be installed in pairs on opposite faces of truss members.
- 5.7 Metal plate connectors subject to corrosive environments must be protected in accordance with Section 6.5 of ANSI/TPI 1.
- 5.8 The Cherokee Metal Products metal truss connector plates are manufactured in Morristown, Tennessee.

**6.0 EVIDENCE SUBMITTED**

- 6.1 Data in accordance with the National Design Standard for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1-2002.
- 6.2 Manufacturer’s descriptive literature.
- 6.3 A quality control manual.

**7.0 IDENTIFICATION**

Each Cherokee Metal Products metal truss connector plate is identified by the letters “CMP” indented on the surface of the plate. Additionally, boxes containing the Cherokee connector plates are identified with the name of the manufacturer (Cherokee Metal Products, Inc.) the product name (Type A, B, or S), and the evaluation report number (ESR-2342).

**TABLE 1—ALLOWABLE LATERAL RESISTANCE VALUES<sup>1,2,3</sup>**  
(lb/in<sup>2</sup>/plate)

LUMBER SPECIES	SG <sup>4</sup>	AA	EA	AE	EE
<b>Type A</b>					
Spruce-pine-fir	0.42	119	99	108	96
Southern yellow pine	0.55	180	133	125	175
<b>Type B</b>					
Spruce-pine-fir	0.42	143	126	120	101
Southern yellow pine	0.55	224	177	131	155
<b>Type S</b>					
Spruce-pine-fir	0.42	90	88	73	74
Southern yellow pine	0.55	162	107	92	94

For SI: 1lb/in<sup>2</sup> = 6.9 kPa.

<sup>1</sup>Allowable lateral resistance values are for a single plate (double the values for plates on both faces when applying to area on only one face). To achieve values, plates must be installed on both sides of the truss member.

<sup>2</sup>AA = Plate parallel to load, wood grain parallel to load.

EA = Plate perpendicular to load, wood grain parallel to load.

AE = Plate parallel to load, wood grain perpendicular to load.

EE = Plate perpendicular to load, wood grain perpendicular to load.

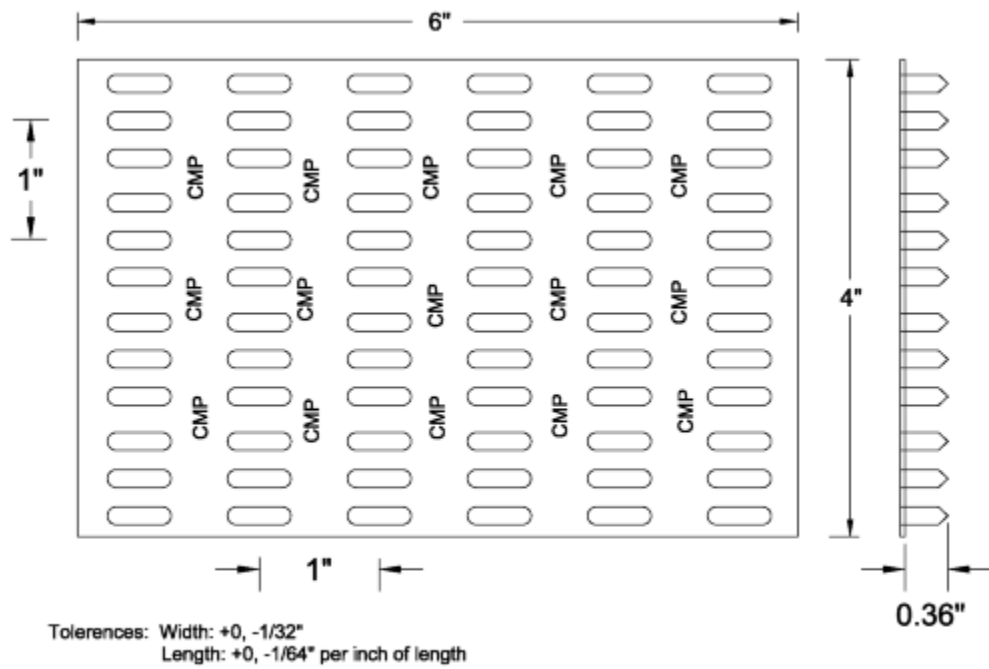
<sup>3</sup>All truss plates must be pressed into the wood for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press.

<sup>4</sup>SG is specific gravity.

**TABLE 2—EFFECTIVE TENSION AND SHEAR RESISTANCE ALLOWABLE DESIGN VALUES**

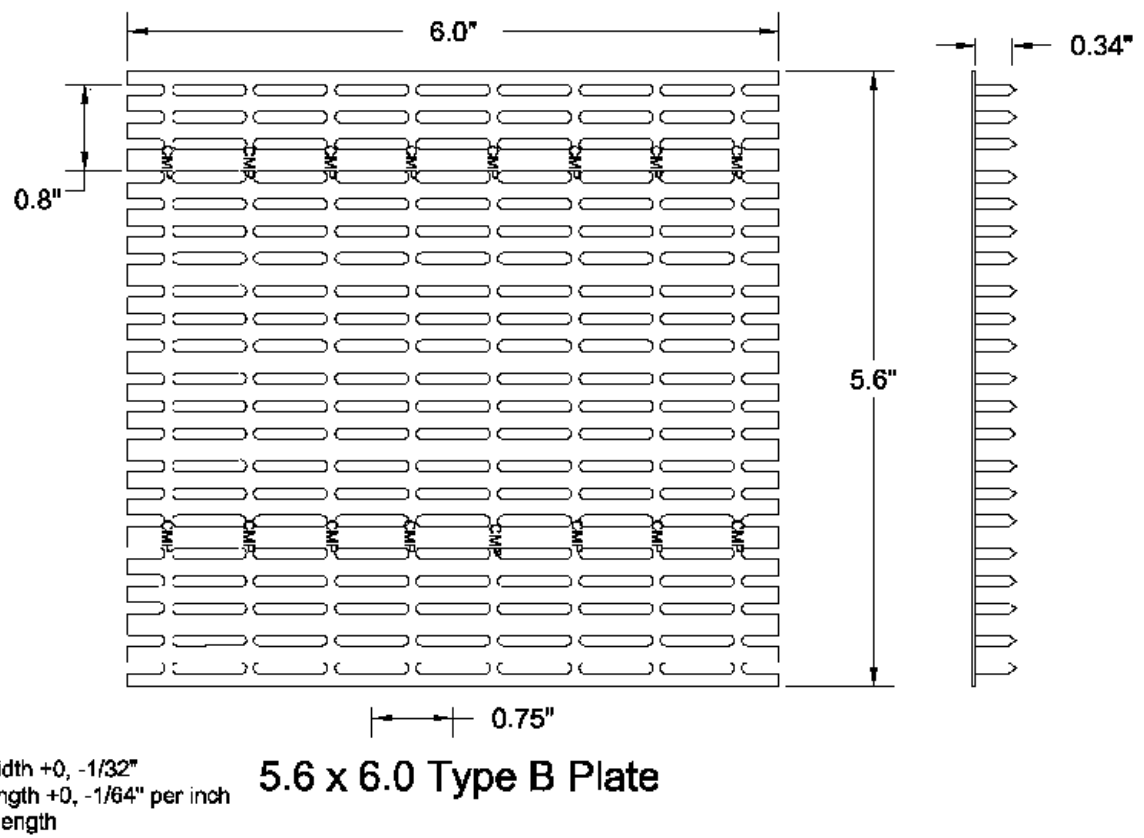
PROPERTY FORCE DIRECTION	TYPE A		TYPE B		TYPE S	
	Efficiency	Pounds/ inch/ Pair of Connector Plates	Efficiency	Pounds/inch/ Pair of Connector Plates	Efficiency	Pounds/ inch/ Pair of Connector Plates
Tension @ 0°	0.542	1007	0.628	1108	0.799	1442
Tension @ 90°	0.527	981	0.43	758	0.451	813
Shear @ 0°	0.587	666	0.566	627	0.497	574
Shear @ 30°	0.623	707	0.711	788	0.743	858
Shear @ 60°	0.675	765	0.881	976	0.94	1085
Shear @ 90°	0.494	561	0.62	687	0.662	764
Shear @ 120°	0.365	415	0.427	473	0.521	600
Shear @ 150°	0.353	400	0.457	506	0.467	538

For SI: 1 lb/inch = 0.175 N/mm, 1inch = 25.4 mm.



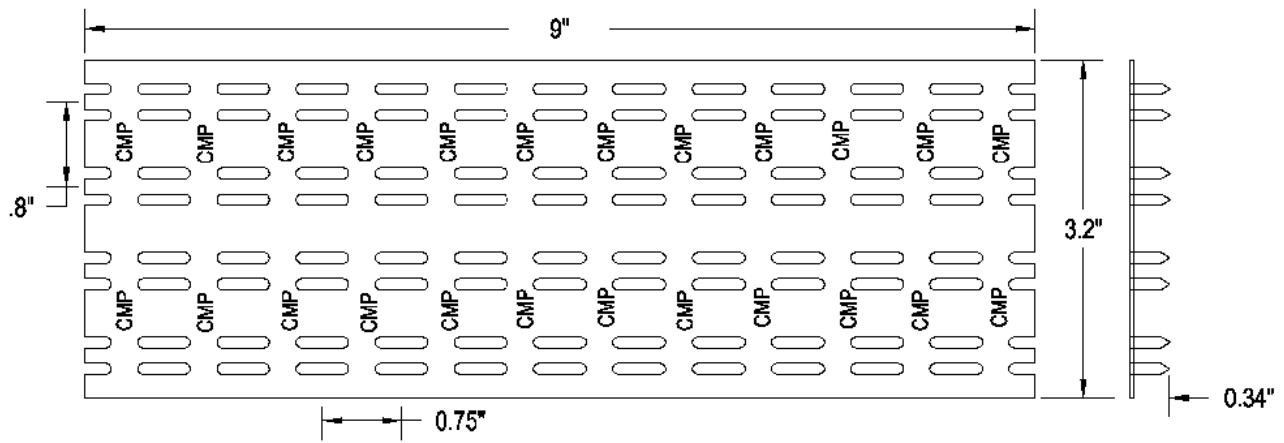
4.0 x 6.0 Type A Plate

FIGURE 1—TYPE A CONNECTOR PLATE



5.6 x 6.0 Type B Plate

FIGURE 2—TYPE B CONNECTOR PLATE



Tolerances: Width - +0, -1/32"  
Length - +0, -1/64" per inch of length

### 3.2 x 9.0 Splice Plate

FIGURE 3—TYPE S CONNECTOR PLATE