



Preface

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Metal Truss Connector Plates

Scope

These Evaluation Listings apply to light metal plate connectors used in structural lumber assemblies. The proponent has demonstrated that the product meets the requirements of the following Standard:

- CAN/CSA-O86-01, “Engineering Design in Wood,” (including Supplement CAN/CSA-O86S1-05).

The design values for the metal truss connector plates are based on test results obtained in accordance with CAN/CSA-S347-99 (R2004), “Method of Test for Evaluation of Truss Plates Used in Lumber Joints.”

Standards

CAN/CSA-S347 requires the following tests:

1. Lateral resistance of teeth;
2. Tensile strength of plate;
3. Shear strength of plate; and
4. Ultimate tensile strength of plate material.

Clause 10.8 of CAN/CSA-O86 does not apply to situations where corrosive conditions exist, or in lumber that has been treated with a fire retardant and that is used in wet service conditions or in locations prone to condensation.

- Truss plates shall be manufactured from galvanized sheet steel and should be of G90 coating class meeting Clause 10.8.1.3 of CAN/CSA-O86.

National Building Code of Canada (NBC)

NBC References

The CAN/CSA-O86-01 standard is referenced in the NBC 2005, Division B, Table 4.1.8.9. and Sentence 4.3.1.1.(1).

The CAN/CSA-S347-99 (R2004) standard is not directly referenced in the NBC 2005, however it is referenced in CAN/CSA-O86-01 in Clauses 10.8.1.9, 10.8.3.2.1, and 10.8.4.2.



**Evaluation Listing
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Alpine HS18 Truss Plate

1. Evaluation

Conforms to CSA S347-99, “Truss Plates Used in Lumber Joints,” and CSA O86.1-94, “Engineering Design in Wood (Limit States Design).” CSA S347-99 test results are as follows:

Ultimate Tensile Strength of Plate

Ultimate Tensile Strength	Plate Thickness	Mean Ultimate Strength	Correction Factor
MPa	mm	MPa	-
480	1.18	540	0.889

Lateral Resistance of Teeth

Direction of Load	Limit States Design	
	Ultimate Lateral Resistance, n_u	Lateral Slip Resistance, n_s
Units	MPa/Plate	MPa/Plate
Type of Press	Hydraulic	Hydraulic
Species of Wood	S-P-F	S-P-F
Load parallel to grain, plate length parallel to load	1.74	1.67
Load parallel to grain, plate length perpendicular to load	1.25	1.22
Load perpendicular to grain, plate length parallel to load	1.28	0.86
Load perpendicular to grain, plate length perpendicular to load	1.52	1.28

Tensile Strength of Plate

Direction of Load	Limit States Design
	Tensile Resistance, t_p
Units	N/mm/Plate
Plate length parallel to load	408
Plate length perpendicular to load	154

Shear Strength of Plate

Angle (Degree)	Limit States Design	Failure Mode	
	Shear Resistance, v_p (N/mm/Plate)	Shear failure in T or C	Slots in Plate Axis
0	141	N/A	⊥
30	216	T	//
30	128	C	⊥
60	254	T	//
60	92	C	⊥
90	152	N/A	//
120	113	T	⊥
120	148	C	//
150	127	T	⊥
150	130	C	//

⊥: Slots perpendicular to plate, long dimension

//: Slots parallel to plate, long dimension

C: Compression

T: Tension

2. Description

A galvanized, HSLAS, Type B, Grade 60 (as per ASTM A 653-02, “Steel Sheet, Zinc-Coated [Galvanized] or Zinc-Iron Alloy-Coated [Galvannealed] by the Hot-Dip Process”) steel truss connector plate with a thickness of 1.18 mm and stamped with 0.0108 teeth/mm² that are 8.5 mm long.

3. Standard and Regulatory Information

See the [Preface](#) and the standard for explanation.

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