TRUSS PLATE INSTITUTE OF CANADA

ERRATA AND REVISIONS
Effective January 1, 2004

TPIC – 1996

TRUSS DESIGN PROCEDURES AND SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES
Limit States Design

The following revisions should be made:

Page Section

Add:

7 3.2.1 4) Multi-bearing trusses shall be designed for pattern-loading.

10 4.1.2.1 Change the bracketed sentence in (a) to read as follows:
(For Girder Heel, end of bottom chord is always used to construct this line. See Figure 4.1.2.1.B. The only exception to this rule is in the case of a short cantilever. If the bearing occurs inside the point where the top chord terminates then this line is constructed at the end of the top chord and is considered the design span. See Appendix A.1 to A.4)

36 5.1.(7) Change table as shown below:

Table 5.1.(7) Minimum Bite For Chords and Webs, mm (in)

Truss Length L, m (ft)				
Lumber Size	0 < L ≤ 12.5 (0 < L ≤ 41)	12.5 < L ≤ 18.3 (41 < L ≤ 60)	18.3 < L ≤ 24.4 (60 < L ≤ 80)	24.4 < L ≤ 30.5 (80 < L ≤100)
38x64 (2x3)	38 (1.5)	45 (1.75)	51 (2.0)	57 (2.25)
38x89 (2x4)	38 (1.5)	45 (1.75)	51 (2.0)	57 (2.25)
38x114 (2x5)	38 (1.5)	45 (1.75)	51 (2.0)	57 (2.25)
38x140 (2x6)	38 (1.5)	51 (2.0)	57 (2.25)	64 (2.5)
38x184 (2x8)	51 (2.0)	57 (2.25)	64 (2.5)	76 (3.0)
38x235 (2x10)	64 (2.5)	70 (2.75)	76 (3.0)	83 (3.25)
38x286 (2x12)	76 (3.0)	76 (3.0)	83 (3.25)	89 (3.5)

43 5.5.8.4 Change the existing text to read:

Moment Consideration

When in-line members terminate at a splice, where chord moment should be considered, the splice plates must have sufficient resistance to transfer this factored bending moment in addition to the factored axial load. This resistance is in both plate steel section clause 5.5.8.4.1 and plate tooth gripping clause 5.5.8.4.2. See also clause 4.6.2.

Add:

5.5.8.4.1 Design of Steel Section for Effect of Moment.

The factored moment resistance in combination with tension M_{Tr}, of a pair of connector plates at a splice joint shall be taken as:

$$M_{Tr} = 0.27\, t_p(0.5w_{br} + y)^2 + 0.18\, b\, C(0.5d - y)^2 - T_f\, y$$

$$y = \frac{0.25bdC + 1.85T_f - 0.5w_{br}t_p}{t_p + 0.5bC}$$

where t_p = corrected tensile resistance of the connector plates, N/mm
w_{br} = effective plate width for steel section calculations, mm (clause 5.5.8.2)
y = distance from the chord centerline to neutral axis of wood/steel combination, mm (y can be positive or negative but the moment formula is invalid if y lies outside the plate)
b = chord thickness, mm
C = F_c, MPa
F_c = $f_c(K_D K_{Sc} K_T K_{Zc})$
d = chord depth, mm
T_f = factored tension force in chord at the splice (set equal to zero for compression), N

The stress ratio for moment in combination with axial tension shall be taken as the following:

$$\frac{M_f}{M_{Tr}} \leq 1.0$$

Where M_f = factored bending moment in the chord at the splice, N-mm

The stress ratio for the axial tension shall be taken as the following:

$$\frac{T_f}{T_r * w_{br}} \leq 1.0$$

Where T_r = factored tension-only resistance of the connector plates, N/mm

5.5.8.4.2 Design of Plate Lateral Resistance for Effect of Moment.

The moment applied at the splice joint shall not exceed the the moment capacity in lateral resistance in any orientation, nor the combined capacity for moment and non-moment loads defined as follows:

$V_M \leq V_{LRmin}'$ and,

$V_M + V_P \leq V_{LR}'$

$V_M = 4\ M_f / (A_{ef}\ D)$

$D = \sqrt{(A_{ef}/h)^2 + h^2}$

where:

V_M = tooth holding stress due to the factored moment on a pair of plates,Mpa

V_P = tooth holding stress resultant of factored shear and axial loads in wood on a pair of plates, Mpa , equal to the vector addition of the factored shear + axial loads in wood, divided by A_{ef}

V_{LR}' = allowable tooth holding stress for a pair of plates for the orientation of V_P per section 5.5.3 with modification factors of 5.3.2, Mpa

V_{LRmin}' = minimum allowable tooth holding value for any angle of load at the joint for a pair of plates determined from section 5.5.3 with modification factors of 5.3.2, Mpa

A_{ef} = effective plate area on one face of each wood member at the splice joint, mm^2

D = diagonal of rectangle equivalent to A_{ef}, mm

h = height of equivalent rectangle, equal to the greatest dimension across A_{ef}, perpendicular to the longest side of A_{ef}, mm

Appendix

A.1 to A.4 See enclosed pages.

B Add the following notes to Table B.1.2, Table B.1.3, Table B.1.4, and Table B.1.5.

NOTE: If 3-inch power driven nails are to be substituted for 3-inch common wire nails, then reduce the maximum kN/m (or PLF) to be transferred by a factor of 0.69.
NOTE: These tables are based on seasoned, untreated lumber.

D See enclosed page.