

Timber design guide

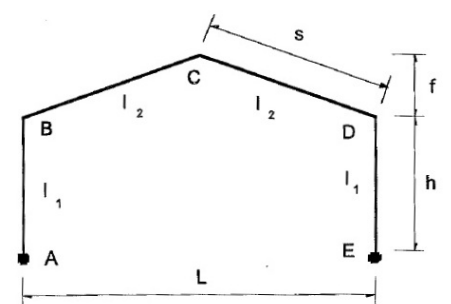
Corrections to all third editions.

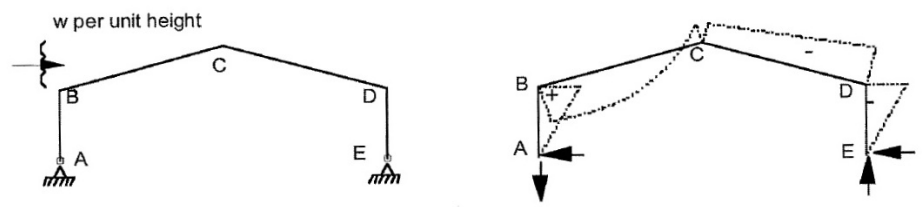
Updated: 21-04-2011

Note: several reprinted versions have been made. These can already have some of the corrections incorporated.

Page	Object	Now	Should Read														
26	Figure 3.6	f_c and f_t are missing from vertical axis.	Should have f_c near top of axis in line with top of curve. Should have f_t near bottom of axis in line with Brittle fracture.														
41	Figure 4.14, horizontal axis	Range of MoE from 0 – 100	Range of MoE from 0 – 16 GPa (as in Figure 14.3)														
59	Photo caption is split on 2 pages	p 59: Curved beam being fabricated from straight p 60: LVL for swimming pool roof	p 59: Curved beam being fabricated from straight LVL for swimming pool roof														
150	RH column – three locations	EI_b	EI_b														
152	Table 15.9, column 6 & 7	Wrong captions & values	<table border="1"> <thead> <tr> <th>Modulus of Elasticity E (GPa)</th> <th>Modulus of Rigidity G (MPa)</th> </tr> </thead> <tbody> <tr> <td>18.5</td> <td>1230</td> </tr> <tr> <td>16.7</td> <td>1100</td> </tr> <tr> <td>13.3</td> <td>900</td> </tr> <tr> <td>11.5</td> <td>770</td> </tr> <tr> <td>10.0</td> <td>670</td> </tr> <tr> <td>8.0</td> <td>530</td> </tr> </tbody> </table>	Modulus of Elasticity E (GPa)	Modulus of Rigidity G (MPa)	18.5	1230	16.7	1100	13.3	900	11.5	770	10.0	670	8.0	530
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18.5	1230																
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154	Formula for k_4	$k_4 = (1 - 0.323/\sqrt{n})0.66$	$k_4 = \frac{(1 - 0.323/\sqrt{n})}{0.677}$														
155	5 th line from bottom, RH column	Table 15.15	Figure 15.4														

156	Table 15.15	Wrong table	
			Figure 15.4. Moisture content factor for plywood, k_{14}
157	LH Column, formula for R_k	Missing brackets	$R_k = \left[1 - \frac{2.7v_R}{\sqrt{n}} \right] R_{0.05}$
162	Line 4	AS/NZS 1170.2 Structural design actions – Wind actions – Wind actions	AS/NZS 1170.2 Structural design actions – Wind actions
169	Formula for A_s in RH column	$A_s = db^2/6$	$A_s = 2/3 db$
173	Beam design example, 7 th line from bottom	Equation from Figure 16.3	Stress tables (p 150)
173	Beam design example	Table 15.4 (4 times)	Table 15.5 (4 times)
174	Notes	Shear strength f_v	Shear strength f_s
175	Notes	Shear strength f_v	Shear strength f_s
180	Notes for hySPAN	Bending strength $f_s = 5.3\text{MPa}$ Shear strength $f_b = 48.0\text{MPa}$	Bending strength $f_b = 48.0\text{MPa}$ Shear strength $f_s = 5.3\text{MPa}$
208	RH column, 8 th line from bottom	$h \cos^2\theta$	$h \cos\theta$
208	RH column, 4 th eqn. from top	$\tan\theta$	$\sin\theta$

209	Nail design, line 7	Figure 19.11	Figure 19.14
213	Plywood gusset option. Line 2	Figure 19.8	Figure 19.13
213	Plywood gusset option. Line 3	$(1 - d/2L)\tan 15^\circ = 476 \text{ mm}$	$(1 - d/2L)\sin 15^\circ = 479 \text{ mm}$
213	6 th line from bottom	Nails: Try 3.55	Nails: Try 3.15
214	Small steel gusset option, line 2 and 4	F_y	f_y
215	RH column, last eqn.	$(1 + g/r)^3$	$K = \frac{(1 + q/r)^3}{(q/r) \sqrt{(1 + (q/r)^2 + 2 (q/r) \sin \theta)}}$
216	LH column, line 2	$P = 3.6 F_n r q / M^*$	$P = 3.6 F_n r q / 3M^*$
220	Centre of Table 19.4	33.5	3.5
221	Appendix	Wrong figure and formulae	<p>Coefficients:</p>  $k = \frac{I_2 h}{I_1 s}$ $\phi = \frac{f}{h}$ $m = 1 + \phi$ $B = 2(k + 1) + m$ $C = 1 + 2m$ $N = B + mC$ $A = (kC^2 + B^2 + C^2 - BC) / N^2$ $D = (6\phi + 3k + 10k\phi) / N$
222	RH side, last line	Δ_B	$\leftarrow \Delta_B$

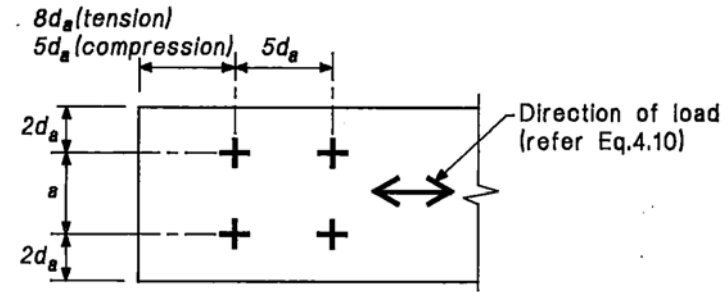
223	Case (c)	Caption is correct but the drawing and equations are all wrong.	<p>Case (c) Horizontal UDL w per unit height on left roof:</p>  $X = \frac{wf^2(C+m)}{8N}$ $M_B = +X + \frac{wfh}{2} \qquad M_C = -\frac{wf^2}{4} + mX \qquad M_D = +X - \frac{wfh}{2}$ $H_A = -\frac{X}{h} - \frac{wf}{2} \qquad H_E = -\frac{X}{h} + \frac{wf}{2} \qquad V_A - V_E = -\frac{wfh(1+m)}{2L}$ $\uparrow \Delta_C = \frac{wLf^2s(3B-C)}{96EI_2N} \qquad \rightarrow \Delta_B = \frac{wfs h^2(4B-C-m)}{48EI_2} + \frac{2f}{L}\Delta_C$
229	Caption to Figure 20.3 Caption to Figure 20.4	Figure 20.3 Figure 20.4	Figure 20.4 Figure 20.5
229	RH column, Horizontal reactions, line 4	Figure 20.3	Figure 20.4
229	RH column, Horizontal reactions, last line	Figure 20.4	Figure 20.5
248	Deflection due to nail slip. Line 4	There is no slip in a glued joint	There is no slip in a glued joint
252	LH column, 5 th line from bottom	can be used in	can be used in

255	Strength Bending Capacity	$A_f = \text{net area of flange} = B h_f - (h_r - h_w)t$	$A_f = \text{net area of flange} = B h_f - 0.5(h_r - h_w) t$
255	Strength Bending Capacity	$D_1 = \text{distance between flange centroids} = h - h_f$	$D_1 = \text{distance between flange centroids} = h - h_f$
287	Line 8, Eqn for $(EI)_{ef}$	$I_t = \gamma_c$	$I_t + \gamma_c$
307	RH column, line 9	Figure 27.6	Figure 27.7
307	Caption to Figure 27.6	Figure 27.6	Figure 26.7
308	RH column, Ultimate strength, line 15	Table 27.	Table 27.5
309	Equations for $F_{v,Rk}$	Several errors	$F_{v,Rk} = \min \begin{cases} f_{h,1,k} t_1 d & \text{(a)} \\ f_{h,2,k} t_2 d & \text{(b)} \\ \frac{f_{h,1,k} t_1 d}{1 + \beta} \left[\sqrt{\beta + 2\beta^2 \left[1 + \frac{t_2}{t_1} + \left(\frac{t_2}{t_1} \right)^2 \right] + \beta^3 \left(\frac{t_2}{t_1} \right)^2} - \beta \left(1 + \frac{t_2}{t_1} \right) \right] + \frac{F_{ax,Rk}}{4} & \text{(c)} \\ 1,05 \frac{f_{h,1,k} t_1 d}{2 + \beta} \left[\sqrt{2\beta(1 + \beta) + \frac{4\beta(2 + \beta)M_{y,Rk}}{f_{h,1,k} d t_1^2}} - \beta \right] + \frac{F_{ax,Rk}}{4} & \text{(d)} \\ 1,05 \frac{f_{h,1,k} t_2 d}{1 + 2\beta} \left[\sqrt{2\beta^2(1 + \beta) + \frac{4\beta(1 + 2\beta)M_{y,Rk}}{f_{h,1,k} d t_2^2}} - \beta \right] + \frac{F_{ax,Rk}}{4} & \text{(e)} \\ 1,15 \sqrt{\frac{2\beta}{1 + \beta}} \sqrt{2M_{y,Rk} f_{h,1,k} d} + \frac{F_{ax,Rk}}{4} & \text{(f)} \end{cases}$

			$F_{v,Rk} = \min \begin{cases} f_{h,1,k} t_1 d & \text{(g)} \\ 0,5 f_{h,2,k} t_2 d & \text{(h)} \\ 1,05 \frac{f_{h,1,k} t_1 d}{2 + \beta} \left[\sqrt{2\beta(1 + \beta) + \frac{4\beta(2 + \beta)M_{y,Rk}}{f_{h,1,k} d t_1^2}} - \beta \right] + \frac{F_{ax,Rk}}{4} & \text{(j)} \\ 1,15 \sqrt{\frac{2\beta}{1 + \beta}} \sqrt{2M_{y,Rk} f_{h,1,k} d} + \frac{F_{ax,Rk}}{4} & \text{(k)} \end{cases}$
310	Equations for $F_{v,Rk}$	Several brackets missing	$F_{v,Rk} = \min \begin{cases} f_{h,k} t_1 d \left[\sqrt{2 + \frac{4M_{y,Rk}}{f_{h,k} d t_1^2}} - 1 \right] + \frac{F_{ax,Rk}}{4} & \text{(c)} \\ 2,3 \sqrt{M_{y,Rk} f_{h,k} d} + \frac{F_{ax,Rk}}{4} & \text{(d)} \\ f_{h,k} t_1 d & \text{(e)} \\ f_{h,1,k} t_1 d & \text{(f)} \\ f_{h,1,k} t_1 d \left[\sqrt{2 + \frac{4M_{y,Rk}}{f_{h,1,k} d t_1^2}} - 1 \right] + \frac{F_{ax,Rk}}{4} & \text{(g)} \\ 2,3 \sqrt{M_{y,Rk} f_{h,1,k} d} + \frac{F_{ax,Rk}}{4} & \text{(h)} \end{cases}$
310	LH Column, line 2	Table 27.7	Table 27.8
313	Line 16		Table 28.6

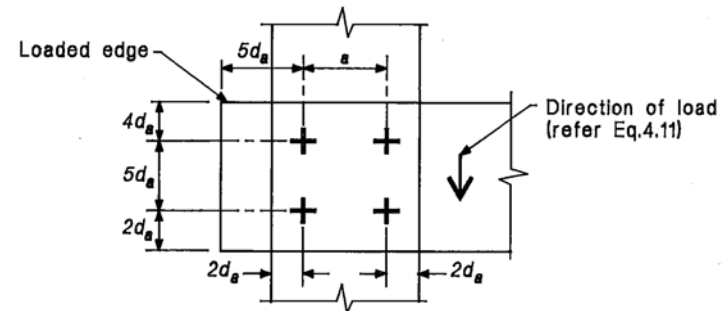
315

Figures 28.2 and 28.3 are missing



Minimum spacing of bolts - Loaded parallel to grain
All timber (a is given in 4.4.1.3 (a))

Figure 28.2. Minimum spacing of bolts, loaded parallel to grain in radiata pine.



Minimum spacing of bolts - Loaded perpendicular to grain
All timber (a is given in 4.4.1.3 (b))

Figure 28.3. Minimum spacing of bolts, loaded perpendicular to grain in radiata pine.

315	Eqn 28.1	Error in formula and brackets are missing	$a = \max \left\{ \begin{array}{l} d \frac{(n-4+r)}{(r-1)} \\ 2.5d \end{array} \right.$
315	Below Eqn 28.1	r = number of rows fasteners	r = number of rows of fasteners
315	Below Eqn 28.2	or greater than 5	or greater than 5d
318	Caption to Table 28.8	Table 28.8	Table 28.7
318	RH Column, line 3	Table 28.8	Table 28.7
319	Caption to Table 28.9	Table 28.9	Table 28.8
319	LH Column, line 14	Table 28.9	Table 28.8