

# Aluminum Design

**Job:** Example1.amd(C:\DCC\AluminumQ3\Done\Example1.amd)

**Designed By:** Auderer

**Description:**

**Checked By:**

**Time:** Tue Mar 03 10:07:00 2009

**Program:** Aluminum Design 2.0

**GENERAL INFORMATION**

Description	Value	Description	Value
Run Mode	Design Mode	Total Load Deflection Limit	L / 240
Design Code	Aluminum Association 1986	Live Load Deflection Limit	L / 360
Member Length	10.00 ft	Lateral Torsional Braced (LTB) Length	0.83 ft
Alloy	6061-T6	Section Shape	W
Max Compression	200.00	Maximum Section Depth	12.00 in
Max Tension	300.00	Minimum Section Depth	6.00 in
% Tens. Area Reduction	15.00	Back-Back Distance (double angles only)	-
L <sub>x</sub>	10.00 ft	Section Width (angles, double angles)	-
L <sub>y</sub>	10.00 ft	Check Section List	-
K <sub>x</sub>	1.00	Maximum Stress Ratio	1.000
K <sub>y</sub>	1.00	Welded	No

**LOAD INFORMATION**

Ref. No.	Load Case	Load Type	Dir	Begin Value	Begin Position	End Value	End Position
1	Dead	Concen	Z	-1.000 (kips)	10.000 (ft)	-	-
2	Live	Concen	Z	-1.500 (kips)	10.000 (ft)	-	-
3	Wind	Concen	Z	-0.900 (kips)	10.000 (ft)	-	-
4	Wind	EndMom	X	-9.200 (kips-ft)	10.000 (ft)	-	-

**DESIGN OPTION:** 1

**ELEMENTS:** 1

**MODE:** DESIGN

I N P U T   E C H O										
A L U M I N U M   D E S I G N   D A T A										
T E N S   A R E A										
M A X   R A T I O S										
DESCRIPTION	DESIGN CODE	ALLOY	MODE	SPAN LENGTH	REDUCTION	STRESS	LL DEFL	TOT DEFL	COMP KLR	TENS KLR
Ft										
Element 1	Aluminum Association 1986	6061-T6	DESIGN	10.000	15.000%	1.000	L/360	L/240	200	300

A X I A L   B U C K L I N G				L A T E R A L   T O R S I O N A L   B U C K L I N G			
AXIS	LB	K	B R A C E D   L E N G T H S   ( L I S T )				
X	10.00 Ft	1.000	10 Ft				
Y	10.00 Ft	1.000					

D E S I G N   F O R C E S											
S I G N   C O N V E N T I O N :   B E A M   D E S I G N E R S											
ELEM NO	LOAD COMB	END	AXIAL	SHEAR X	MOMENT Y	MAX MOM	DIST	SHEAR Y	MOMENT X	MAX MOM	DIST
			K	K	K -Ft	K -Ft	Ft	K	K -Ft	K -Ft	Ft
1	1	NE	-2.50	0.00	0.00			0.00	0.00		
		PE	-2.50	0.00	0.00			0.00	0.00		
	2	NE	-3.40	0.00	0.00			0.92	0.00		
		PE	-3.40	0.00	0.00			0.92	9.20		

LOAD COMBINATIONS :

COMB 1 : 1.00 X LOAD CASE 1  
 + 1.00 X LOAD CASE 2

COMB 2 : 1.00 X LOAD CASE 1  
 + 1.00 X LOAD CASE 2  
 + 1.00 X LOAD CASE 3

C R I T I C A L   S T R E S S E S												
ELEM NO	SHAPE	fa	Fa	fbx	Fbx	fby	Fby	fv	Fv	STRESS RATIO	LOAD COMB	GOVN CRIT
		K /In ^2	K /In ^2	K /In ^2	K /In ^2	K /In ^2	K /In ^2	K /In ^2	K /In ^2			
1	W8x7.02	-0.57	5.07	-6.52	8.65	0.00	28.00	0.46	12.00	0.87	2	4.1
1	W9x8.36	-0.48	6.08	-4.87	10.38	0.00	28.00	0.38	12.00	0.55	2	4.1
1	W10x8.65	-0.46	7.12	-4.18	12.15	0.00	28.00	0.37	12.00	0.41	2	4.1
1	W12x11.67	-0.34	9.60	-2.59	14.86	0.00	28.00	0.26	12.00	0.21	2	4.1

G O V E R N I N G   D E F L E C T I O N S												
SHAPE	TOTAL Dx	LOAD COMB	ACTUAL/ALLOW	TOTAL Dy	LOAD COMB	ACTUAL/ALLOW	LIVE Dx	LOAD COMB	ACTUAL/ALLOW	LIVE Dy	LOAD COMB	ACTUAL/ALLOW
		In		In			In			In		
W8x7.02	0.000	2	0.00	-0.151	2	0.30	0.000	2	0.00	-0.150	2	0.45
W9x8.36	0.000	2	0.00	-0.100	2	0.20	0.000	2	0.00	-0.100	2	0.30
W10x8.65	0.000	2	0.00	-0.077	2	0.15	0.000	2	0.00	-0.077	2	0.23
W12x11.67	0.000	2	0.00	-0.040	2	0.08	0.000	2	0.00	-0.040	2	0.12