NEGATIVE LOAD SPAN CHART FOR : PETERSEN BOX RIB SERIES BOX RIB 4 @ 12" X 0.032" ALUMINUM (w/ SCREW LEG)						
Span, ft.	TWO EQUAL SPANS			THREE EQUAL SPANS		
	W (psf)	Re	Ri	W (psf)	Re	Ri
1.00	40.32	15.1	50.4	45.82	18.3	50.4
1.25	32.26	15.1	50.4	36.65	18.3	50.4
1.50	26.88	15.1	50.4	30.55	18.3	50.4
1.75	23.04	15.1	50.4	26.18	18.3	50.4
2.00	20.16	15.1	50.4	22.91	18.3	50.4
2.25	17.92	15.1	50.4	20.36	18.3	50.4
2.50	16.13	15.1	50.4	18.33	18.3	50.4
2.75	14.66	15.1	50.4	16.66	18.3	50.4
3.00	13.44	15.1	50.4	15.27	18.3	50.4
3.25	12.41	15.1	50.4	14.10	18.3	50.4
3.50	11.52	15.1	50.4	13.09	18.3	50.4
3.75	10.75	15.1	50.4	12.22	18.3	50.4
4.00	10.08	15.1	50.4	11.45	18.3	50.4

W = Allowable Uniform Wind Load, psf

Re = End Support Reaction, 50.4 #/ft. of panel

Ri = Intermediate Support Reaction, 50.4 #/ft. of panel

Deflection Limit = L/180

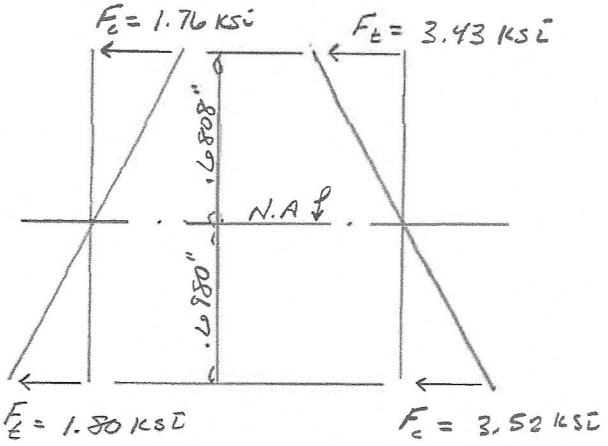
F_y = 1.76 ksi

I_{xx} = 0.2400 in^4

S_{xx} = 0.3520 in^3

Section: PETERSEN BOX RIB - 4 PANEL_NAIL STRIP - 12 X 0.032 ALUM..cfss
PETERSEN BOX RIB - 12" X 0.032"
BOX RIB - 4 W/ NAIL STRIP
Rev. Date: 4/7/2020 9:59:20 AM By:
Thomas M. Shingler, PE
Printed: 4/7/2020 9:59:46 AM

Design Dynamics, Inc.
1333 W. McDermott Dr., Suite 150
Allen, Texas 75013
Ph: (972) 740-5580
designdynamics04@aol.com



$$b/t_{(Top)} = \frac{6}{0.032}$$

$$b/t_{(Top)} = 187.5$$

$$F_{c(Top)} = \frac{330}{187.5}$$

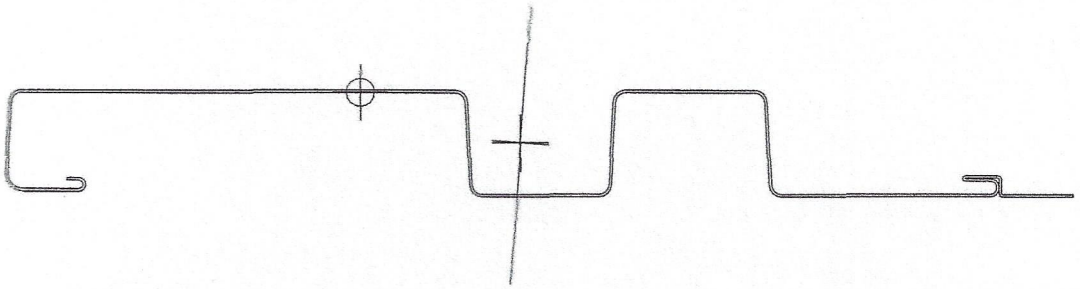
$$F_{c(Top)} = 1.76 \text{ ksi}$$

$$b/t_{(Bot)} = \frac{3}{0.032}$$

$$b/t_{(Bot)} = 93.8$$

$$F_{c(Bot)} = \frac{330}{93.8}$$

$$F_{c(Bot)} = 3.52 \text{ ksi}$$



$F_{c(Top)} = 1.76$ ksi $F_{t(Top)} = 1.80$ ksi

$F_{c(Bot)} = 3.52$ ksi $F_{t(Bot)} = 3.43$ ksi

PETERSEN BOX RIB - 12" X 0.032"
BOX RIB - 4 W/ NAIL STRIP
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Section Inputs

Material: A653 SS Grade 40
Apply cold work of forming strength increase.
No inelastic reserve strength increase.

Modulus of Elasticity, E	29500 ksi
Yield Strength, Fy	40 ksi
Tensile Strength, Fu	55 ksi
Torsion Constant Override, J	0 in⁴
Warping Constant Override, Cw	0 in⁶

Part 1, Thickness 0.032 in
Placement of Part from Origin:

X to center of gravity	0 in
Y to center of gravity	0 in

Outside dimensions, Open shape

	Length (in)	Angle (deg)	Radius (in)	Web	k Coef.	Hole Size (in)	Distance (in)
1	0.2500	0.000	0.12500	None	0.000	0.0000	0.1250
2	0.1840	-90.000	0.06000	None	0.000	0.0000	0.0840
3	0.1000	-180.000	0.06000	None	0.000	0.0000	0.0500
4	0.9670	-180.000	0.12500	None	0.000	0.0000	0.4835
5	1.3150	87.000	0.18750	Single	0.000	0.0000	0.6575
6	6.0000	0.000	0.12500	None	0.000	0.0000	3.0000
7	1.3750	-87.000	0.12500	Single	0.000	0.0000	0.6875
8	1.8440	0.000	0.12500	None	0.000	0.0000	0.9220
9	1.3750	87.000	0.12500	Single	0.000	0.0000	0.6875
10	2.0000	0.000	0.12500	None	0.000	0.0000	1.0000
11	1.3750	-87.000	0.12500	Single	0.000	0.0000	0.6875
12	3.0000	0.000	0.12500	None	0.000	0.0000	1.5000
13	0.2280	90.000	0.07550	None	0.000	0.0000	0.1140
14	0.4800	180.000	0.07550	None	0.000	0.0000	0.2400
15	0.0800	90.000	0.00800	None	0.000	0.0000	0.0320
16	0.0600	0.000	0.00800	None	0.000	0.0000	0.0300
17	0.4550	0.000	0.01875	None	0.000	0.0000	0.2275
18	0.2800	-90.000	0.01875	None	0.000	0.0000	0.1400
19	0.9650	0.000	0.01875	None	0.000	0.0000	0.4825

Full Section Properties

Area	0.67723 in²	Wt.	0.0023026 k/ft	Width	21.163 in
Ix	0.240 in⁴	rx	0.5949 in	Ixy	-0.814 in⁴
Sx(t)	0.3520 in³	y(t)	0.6808 in	α	86.202 deg
Sx(b)	0.3433 in³	y(b)	0.6980 in		
Zx	0.3847 in³	Height	1.3788 in		
Iy	12.444 in⁴	ry	4.2866 in	x_o	-2.0977 in
Sy(l)	1.8421 in³	x(l)	6.7553 in	y_o	0.6591 in
Sy(r)	1.7203 in³	x(r)	7.2337 in	jx	1.5494 in
Zy	2.4954 in³	Width	13.9890 in	jy	-6.2052 in

PETERSEN BOX RIB - 12" X 0.032"
BOX RIB - 4 W/ NAIL STRIP
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I_1	12.498 in^4	r_1	4.2959 in	Cw	3.7964 in^6
I_2	0.186 in^4	r_2	0.5235 in	J	0.0002312 in^4
Ic	12.684 in^4	rc	4.3277 in		
I_o	15.958 in^4	r_o	4.8543 in		

DESIGN INPUT DATA FOR BOX RIB 4 X 0.032" AL W/ SCREW L

PRODUCT PROPERTIES :

E = 10100. KSI

I = .2400 IN4/FT S = .3520 IN3/FT

DESIGN PARAMETERS :

DEFLECTION = L/ 180.

ALLOW. BENDING STRESS (PSI)	=	1760.0
ALLOW. END SUPPORT REACTION (#/FT)	=	50.4
ALLOW. INTERMEDIATE SUPPORT REACTION (#/FT)	=	50.4

LOAD-SPAN TABLE FOR BOX RIB 4 X 0.032" AL W/ SCREW L

DEFLECION = L/ 180.

SPAN	SIMPLE SPAN		TWO EQUAL SPAN			THREE EQUAL SPAN		
(FT)	W(PSF)	RE	W(PSF)	RE	RI	W(PSF)	RE	RI
1.00	100.80	50.4	40.32	15.1	50.4	45.82	18.3	50.4
1.25	80.64	50.4	32.26	15.1	50.4	36.65	18.3	50.4
1.50	67.20	50.4	26.88	15.1	50.4	30.55	18.3	50.4
1.75	57.60	50.4	23.04	15.1	50.4	26.18	18.3	50.4
2.00	50.40	50.4	20.16	15.1	50.4	22.91	18.3	50.4
2.25	44.80	50.4	17.92	15.1	50.4	20.36	18.3	50.4
2.50	40.32	50.4	16.13	15.1	50.4	18.33	18.3	50.4
2.75	36.65	50.4	14.66	15.1	50.4	16.66	18.3	50.4
3.00	33.60	50.4	13.44	15.1	50.4	15.27	18.3	50.4
3.25	31.02	50.4	12.41	15.1	50.4	14.10	18.3	50.4
3.50	28.80	50.4	11.52	15.1	50.4	13.09	18.3	50.4
3.75	26.88	50.4	10.75	15.1	50.4	12.22	18.3	50.4
4.00	25.20	50.4	10.08	15.1	50.4	11.45	18.3	50.4

W = ALLOWABLE UNIFORM LOAD
RE = END SOPPORT REACTION AT ALLOW. LOAD (#/FT)
RI = INTERMEDIATE SUPPORT REACTION AT ALLOW. LOAD (#/FT)