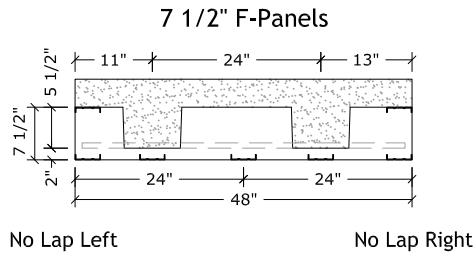
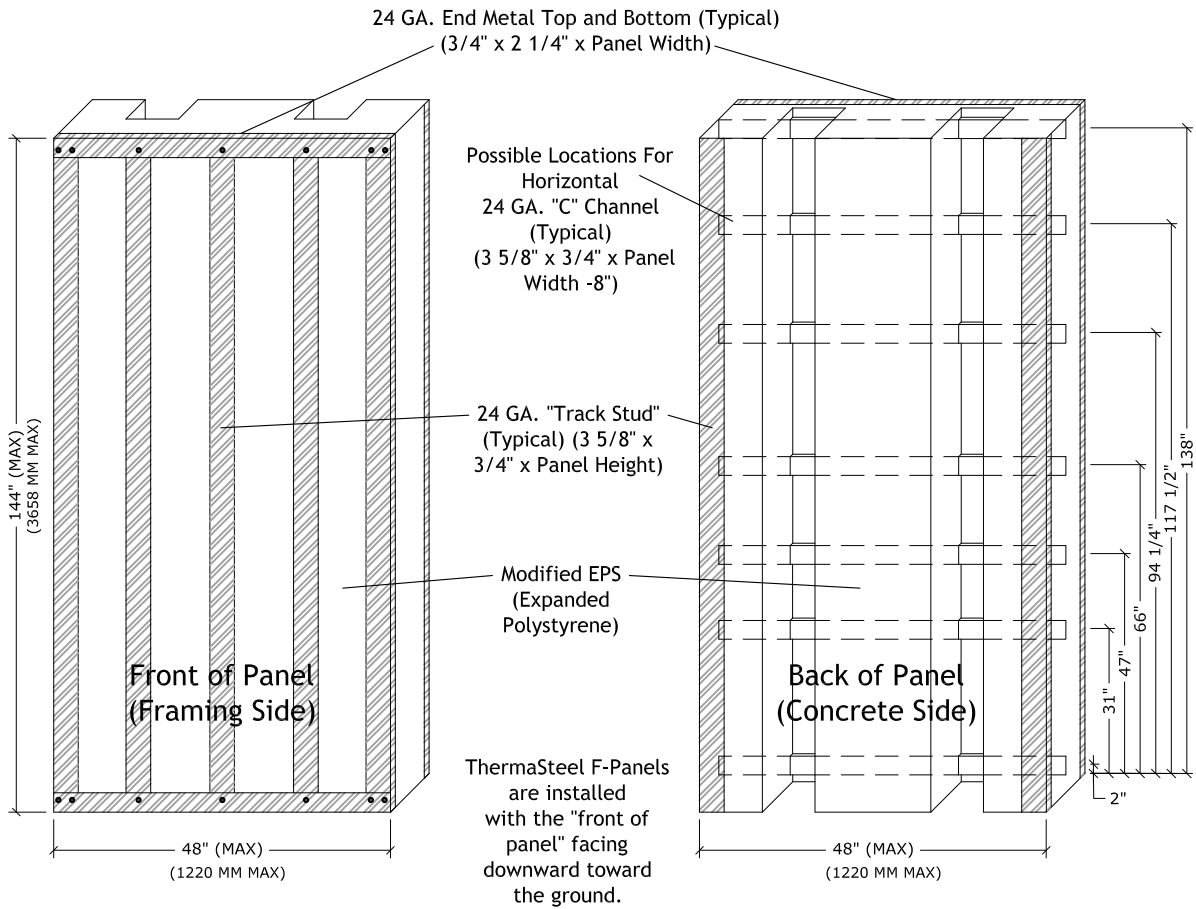


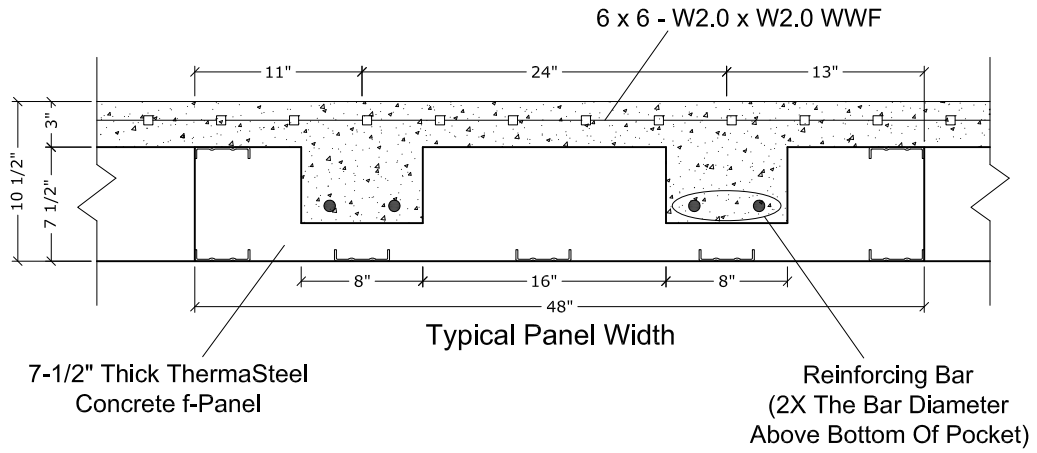
# THERMASTEEL Floor and Roof Panel Design Manual



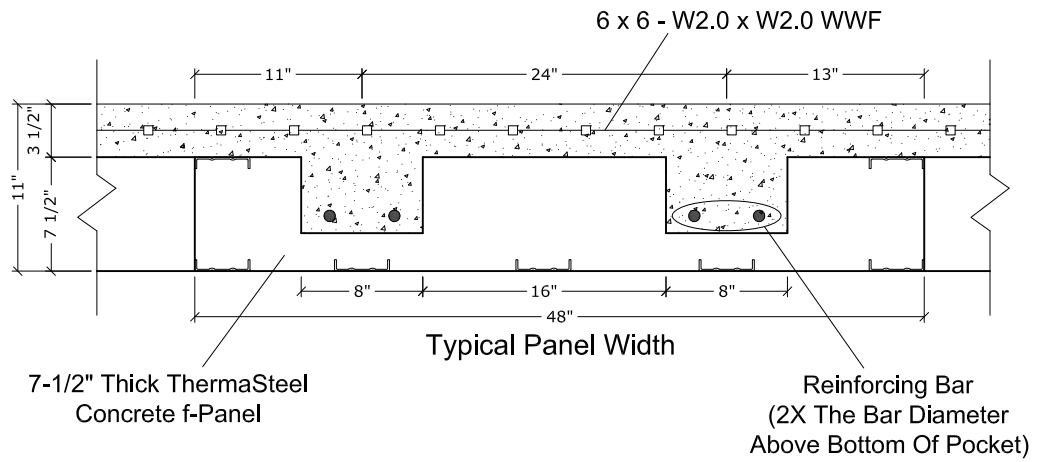


## F-Panel Detail

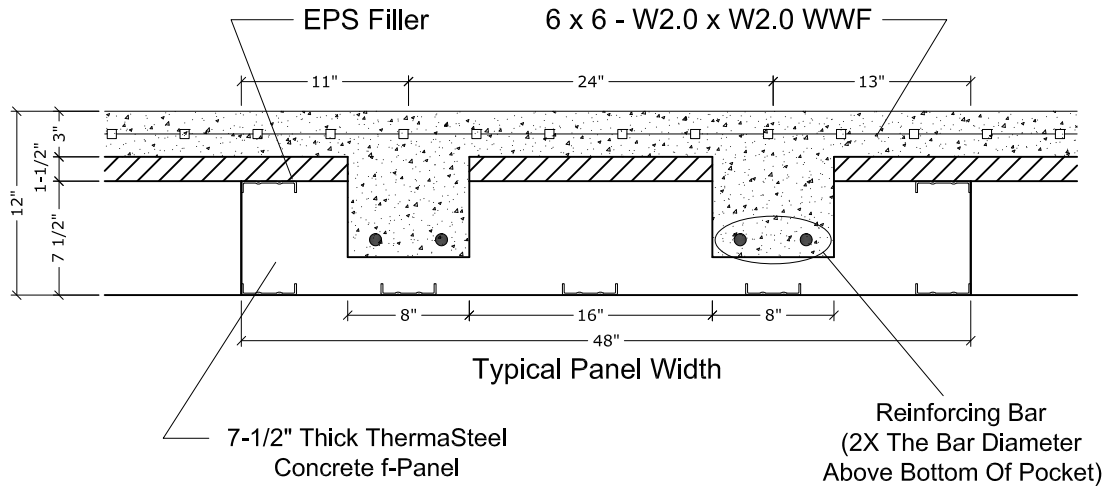
(All Dimensions Taken From The Exterior Surface)  
Wire Chases Are Not Available On F-Panels



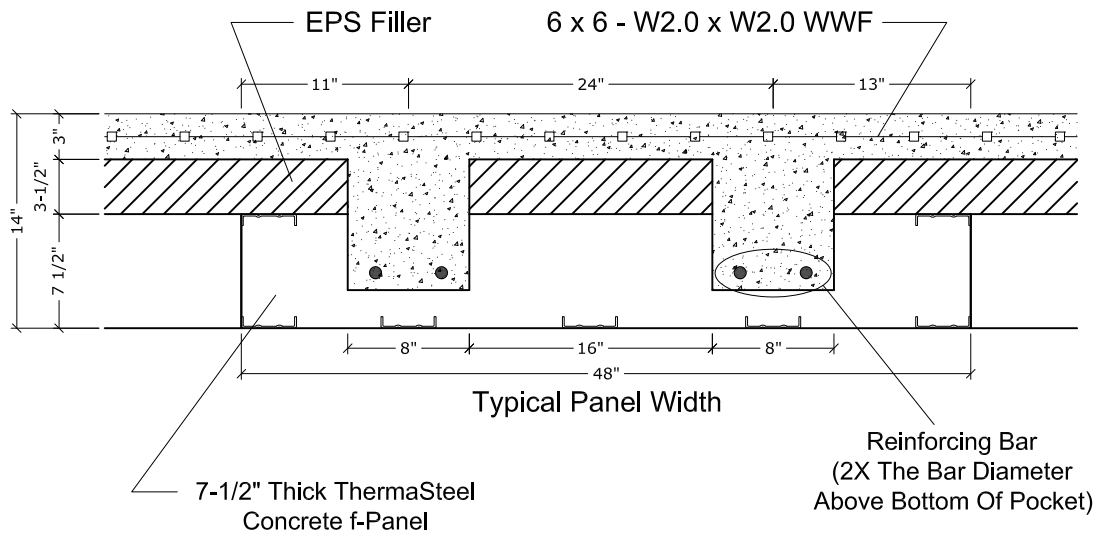
**FIG. 1 - FPB - 1 & RPB - 1**



**FIG. 2 - FPB - 2**



**FIG. 3 - RPB - 2 & FPB - 3**



**FIG. 4 - RPB - 3 & FPB - 4**

### THERMASTEEL F-PANEL STRUCTURAL ANALYSIS FOR ROOF PANEL

TYPE OF ROOF PANELING	SPAN (FT)	RESISTING MOMENT (FT-LBS)	REINFORCING BARS (BOTTOM)
RPB-1 (SEE FIG. 1)	16	7040	2 - #5
	18	9850	2 - #5
	20	12150	2 - #6
RPB-2 (SEE FIG. 2)	22	16100	2 - #6
	24	19160	2 - #6
RPB-3 (SEE FIG. 4)	26	24420	2 - #6
	28	28330	2 - #7
	30	32520	2 - #7

### THERMASTEEL F-PANEL STRUCTURAL ANALYSIS FOR FLOOR PANEL

TYPE OF FLOOR PANELING	SPAN (FT)	RESISTING MOMENT (FT-LBS)	REINFORCING BARS (BOTTOM)
FPB-1 (SEE FIG. 1)	14	7840	2 - #5
	16	10240	2 - #5
	18	12960	2 - #6
FPB-2 (SEE FIG. 2)	20	16250	2 - #6
FPB-3 (SEE FIG. 3)	22	21180	2 - #6
FPB-4 (SEE FIG. 4)	24	26650	2 - #6

Resisting moment times 8 divide by span squared equals lbs per linear foot.  
 Take lbs per linear ft, divide by width of member to get lbs per square foot.

Resisting Moment	Span	Member Width	Total weight member	Area	Plf/ 4ft	PSF
2750	10	4	22000	100	220	55
3960	12	4	31680	144	220	55
5400	14	4	43200	196	220.408	55.102
7040	16	4	56320	256	220	55
9850	18	4	78800	324	243.210	60.802
12150	20	4	97200	400	243	60.75
16100	22	4	128800	484	266.116	66.529
19160	24	4	153280	576	288.111	66.528
24420	26	4	195360	676	288.994	72.249
28330	28	4	226640	784	289.082	72.270
32520	30	4	260160	900	289.067	72.267
3670	10	4	29360	100	293.6	73.4
5290	12	4	42320	144	293.889	73.472
7840	14	4	62720	196	320	80
10240	16	4	81920	256	320	80
12960	18	4	103880	324	320	80
16250	20	4	130000	400	325	81.25
20180	22	4	161440	484	333.554	83.388
26650	24	4	213200	576	370.139	92.535

## Concert Floor Panel Calculation

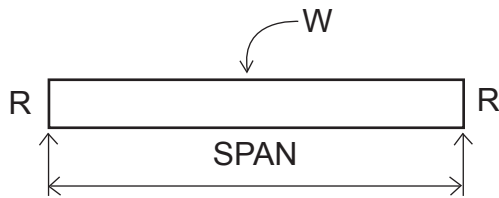
1. The resisting moment number in the chart get larger as the span increases because the concrete and rebar get larger.
2. Formula for resisting moment - Resisting Moment x 8, divide by span squared - lbs per linear foot.
3. To get lbs per sq ft take the lbs per linear foot and divide by the width of the member (panel width) this will give you the lbs per sq ft of live load.
4. 3" of 3000 psi concrete weights 35 lbs. per sq ft. or .081 lbs. per cubic inch.

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PROJECT PSBS  
SUBJECT SIMPLE BEAM W/DISTRIBUTED LOAD  
DATE 20 JUL-09 BY R. PARRISH  
PROJECT NO 003-002 SHEET 1 OF 1

## SAMPLE BEAM W/DISTRIBUTED LOAD



$$R = (\text{REACTION}) \frac{W \times \text{SPAN}}{2}$$

$$M = \frac{W \times \text{SPAN}^2}{8}$$

IF YOUR HAVE A RESISTING MOMENT (M) AND WANT TO DETERMINE THE ALLOWABLE DISTRIBUTION LOAD:

$$W = \frac{8 \times M}{(\text{SPAN})^2}$$

## EXAMPLE

SPAN = 30' - 0" W = 200 PLF

$$R = \frac{200 (30)}{2} = 3000 \text{ LB}$$

$$M = \frac{200 (30)^2}{8} = 22,500 \text{ FT-LB}$$

FOR A RESISTING MOMENT (M) + 36,800 FT-LB

A SPAN 24' - 0"

$$W = \frac{8(36,800)}{(24)^2} = 511 \text{ PLF}$$

IF THE SECTION YOUR ARE CONSIDERING IS 4'-0 WIDE THEN:

$$W = \frac{511}{4} = 127.8 \text{ PSF}$$

W = DISTRIBUTED LOAD  
IN POUNDS PER  
LINEAR FOOT (PLF)

SPAN IS IN FEET

R = END REACTION @ SUUPPORT  
IN POUNDS (LB)

M = MAXIMUM BENDING  
MOMENT IN FOOT-  
POUNDS (FT-LB)