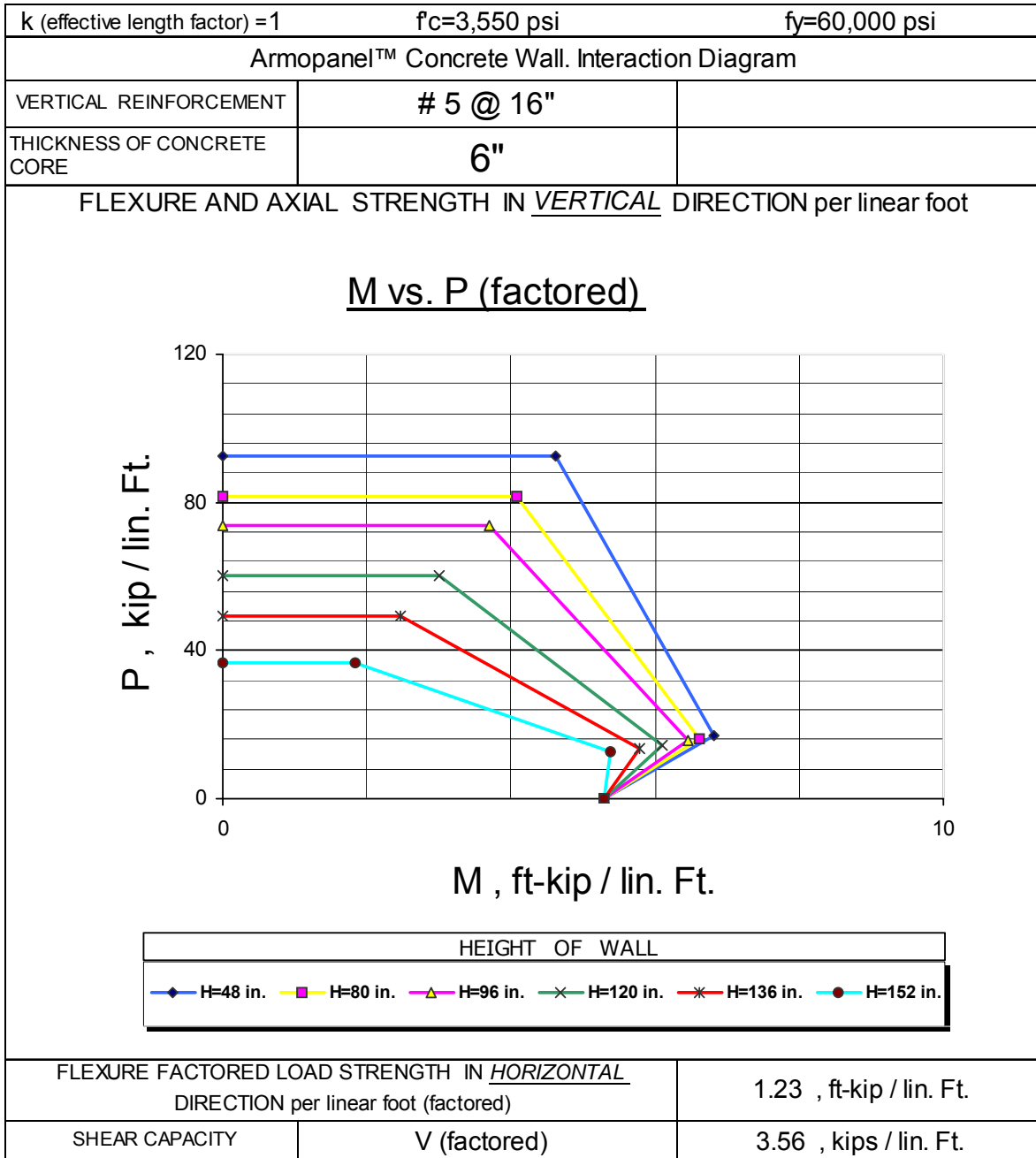
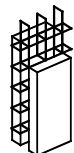


### B-6.2. Interaction Diagrams for Structural Reinforced Armopanel™ Concrete Walls



NOTE: Vertical reinforcement should be placed within middle third of the concrete wall.

FIG. B-6.2.1



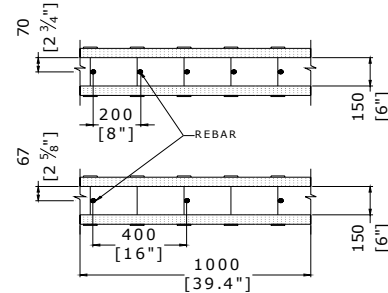
Supplementary table to 6" Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 3,500 psi

Steel Strength = 60,000 psi

Vertical reinforcement should be placed within middle third of the concrete wall

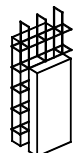


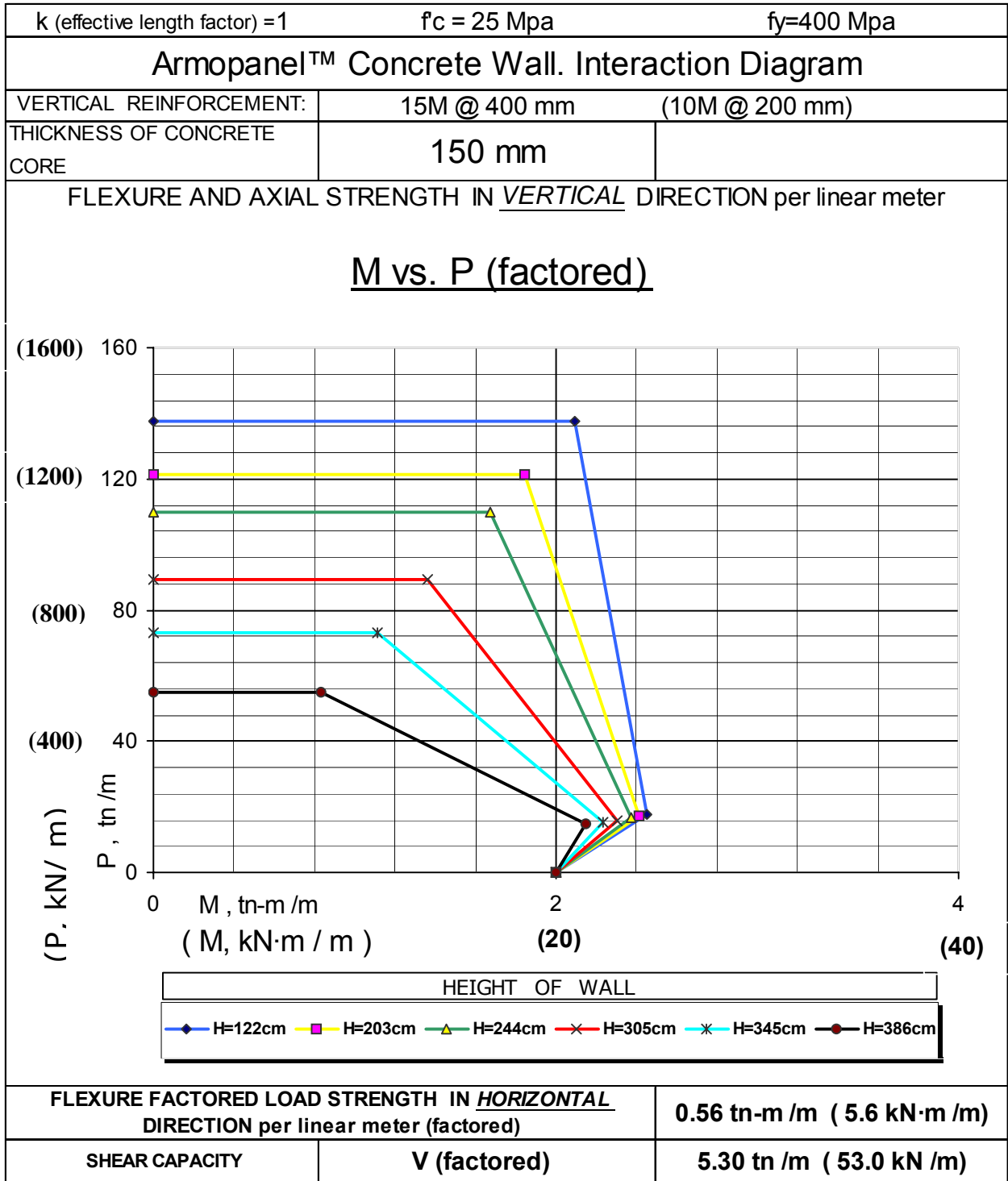
Wall Height per Storey (ft)	M, kip-ft	P , kip									
		16	24	32	40	48	60	74	80		
6	6,6	<b>Design Required</b>									
	6,3										
	6										
	5,7										#5 @ 16"
	5,4										
	4,9										D12 @ 8"
	4,4										
4,1											
8	6,4	<b>Design Required</b>									
	6,08										
	5,6										
	5,4										#5 @ 16"
	5										
	4,4										D12 @ 8"
3,7											
10	6	<b>Design Required</b>									
	5,5										
	5										#5 @ 16"
	4,4										
	3,8										D12 @ 8"
3											
12	5	<b>Design Required</b>									
	3,8										#5 @ 16"
	2,5										
	1,9										D12 @ 8"

Loads are given per liner foot.

FIG.B-6.2.2

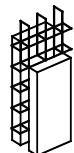
For Horizontal Reinforcement - Refer to Min. Reinforcement Requirements, of ACI 318-99





NOTE:  
Vertical reinforcement should be placed within middle third of the concrete wall.

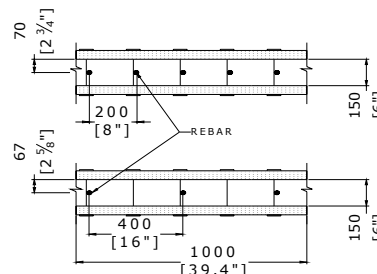
FIG. B-6.2.3



Supplementary table to 150 mm Concrete Wall Interaction Diagram  
Minimum Vertical Reinforcement Required

Concrete Strength = 25 MPa  
Steel Strength = 400 MPa

Vertical reinforcement should be placed within middle third of the concrete wall



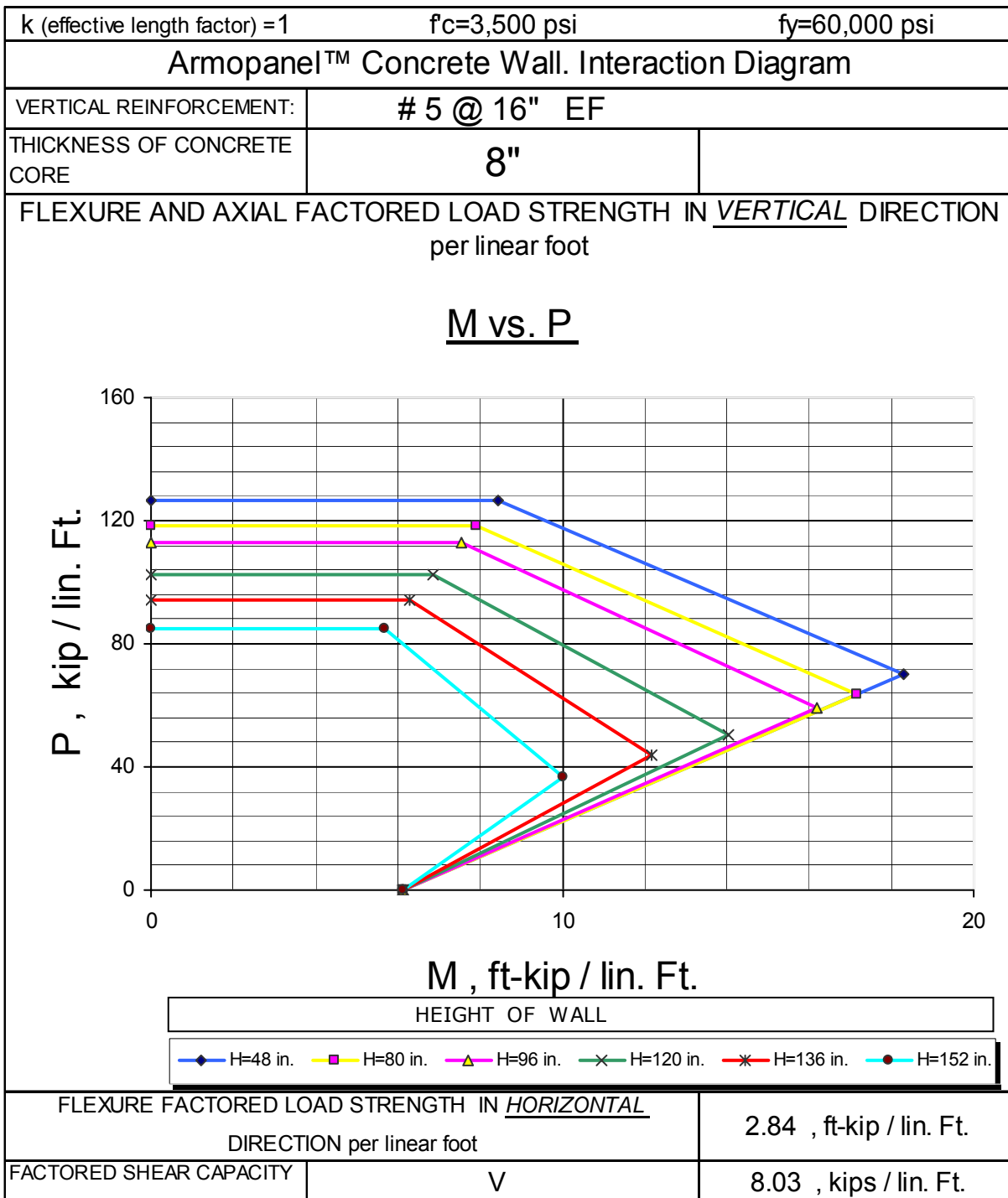
Wall Height per Storey (m)	M, kN·m	P, kN							
		160	400	560	720	880	1120	1200	
2,03	23,8	<b>Design Required</b>							
	23								
	22								
	21								<b>15M@400</b>
	20,5								
	19								<b>D12@200</b>
18,5									
2,44	23,5	<b>Design Required</b>							
	22								
	21								<b>15M@400</b>
	19,5								
	18,5								<b>D12@200</b>
17									
3,05	23	<b>Design Required</b>							
	20								
	18								<b>15M@400</b>
	16								<b>D12@200</b>
14									
3,86	21,5	<b>Design Required</b>							
	13								<b>15M@400</b>
	8,5								<b>D12@200</b>

Loads are given per liner meter.

FIG. B-6.2.4

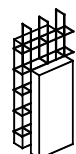
For Horizontal Reinforcement - Refer to Min. Reinforcement Requirements, of CSA A23.3-94





NOTE:  
Vertical reinforcement should be covered by 1 1/2" thick concrete

FIG. B-6.2.5



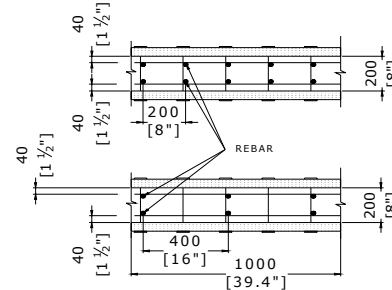
Supplementary table to 8" Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 3,500 psi  
 Steel Strength = 60,000 psi

Reinforcing steel must be placed on the each side of the wall.

Clear concrete cover = 1 1/2"

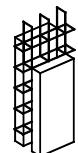


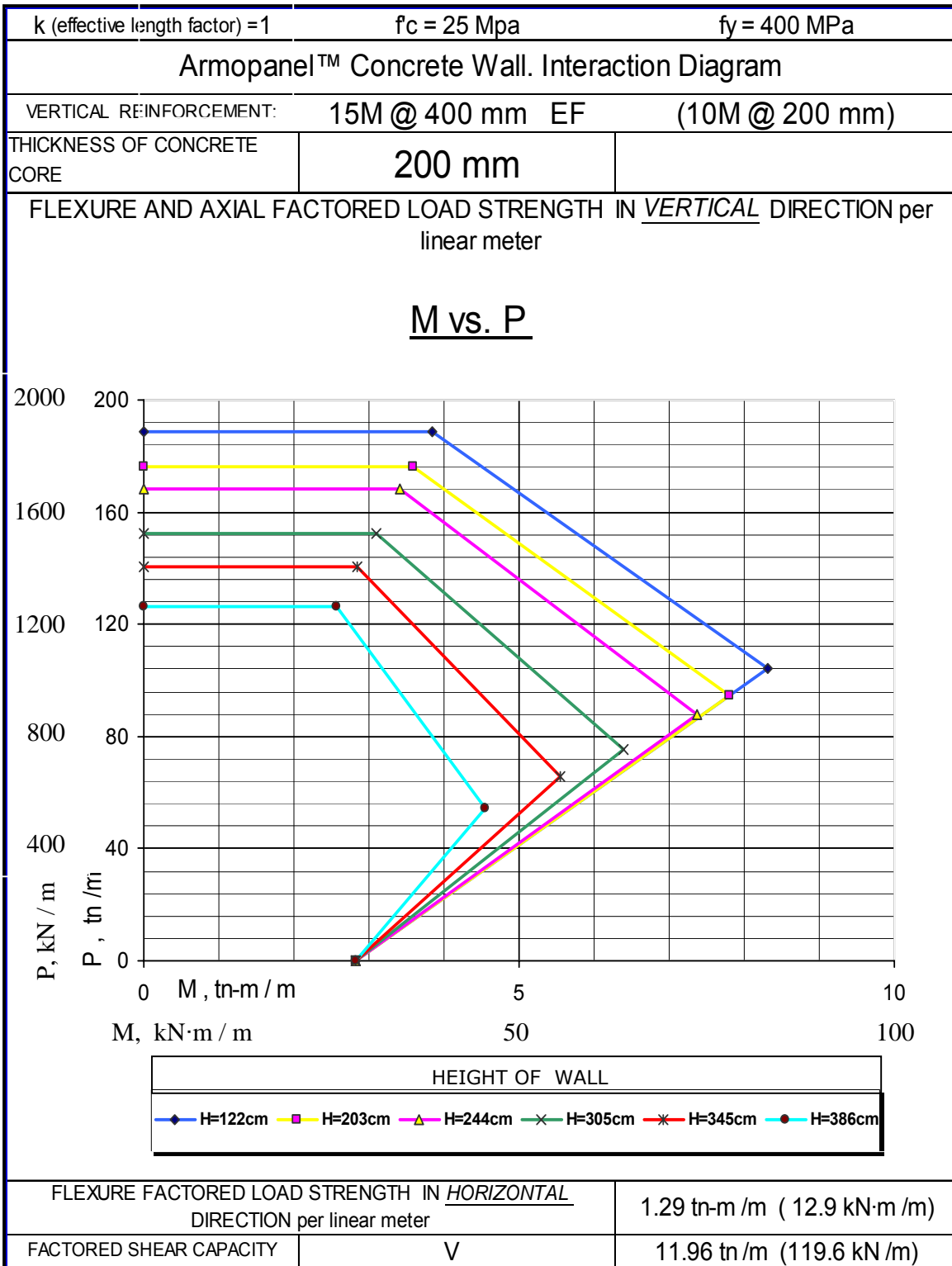
Wall Height per Story (ft)	M, kip-ft	P , kip								
		24	40	56	72	85	102	112	118	
6	10,2									<b>Design Required</b>
	13									
	15,5									
	15,8	#5 @ 16"								
	13,8									
	10,5	D12 @ 8"								
	9									
7,9										
8	10,2									<b>Design Required</b>
	13									
	15,5									
	14	#5 @ 16"								
	12									
	9,2	D12 @ 8"								
7,5										
10	10									<b>Design Required</b>
	12,2									
	13,3									
	11	#5 @ 16"								
	9									
6,8	D12 @ 8"									
12	9,7									<b>Design Required</b>
	9,8									
	8,3	#5 @ 16"								
	6,9									
	5,6	D12 @ 8"								

Loads are given per liner foot.

FIG. B-6.2.6

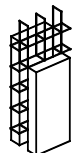
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of ACI 318-99





NOTE:  
Vertical reinforcement should be covered by 40 mm thick concrete

FIG. B-6.2.7

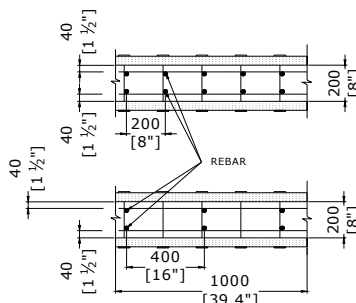


Supplementary table to 200 mm Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 25 MPa  
 Steel Strength = 400 MPa

Reinforcing steel must be placed on the each side of the wall.  
 Clear concrete cover=40mm



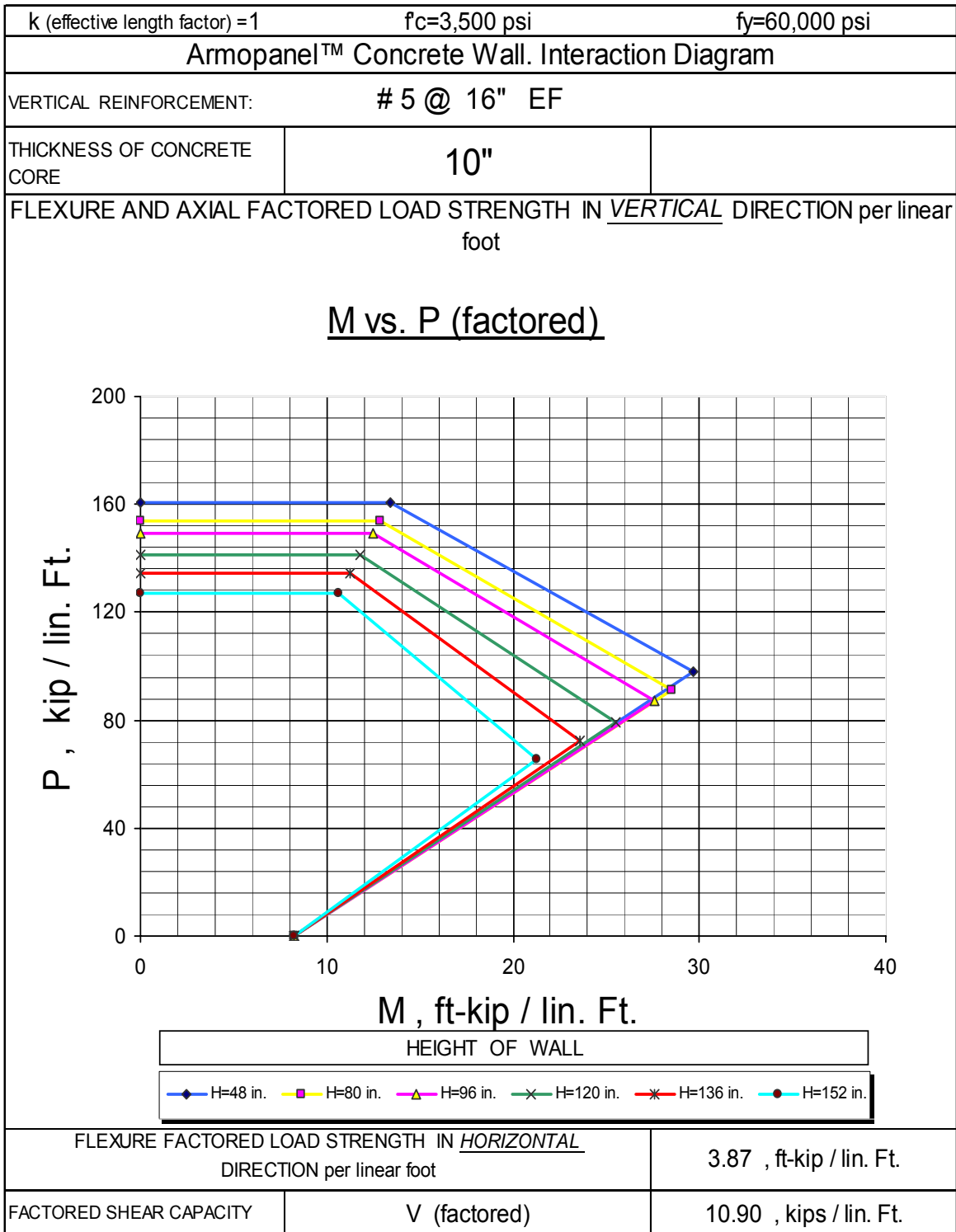
Wall Height per Storey (m.)	M, kN·m	P , kN							
		560	800	1040	1280	1520	1680	1760	
2,03	56								<b>Design Required</b>
	69								
	73								
	61	<b>15M@400</b>							
	48								
	40	<b>D12@200</b>							
2,44	56								<b>Design Required</b>
	69								
	65	<b>15M@400</b>							
	54								
	43	<b>D12@200</b>							
3,05	54								<b>Design Required</b>
	63								
	52	<b>15M@400</b>							
	42								
3,86	31	<b>D12@200</b>							<b>Design Required</b>
	45								
	38								
	25	<b>15M@400</b> <b>D12@200</b>							

Loads are given per liner meter.

FIG. B-6.2.8

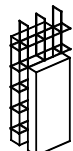
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of CSA A23.3-94





NOTE:  
Vertical reinforcement should be covered by 1 1/2" thick concrete.

FIG. B-6.2.9

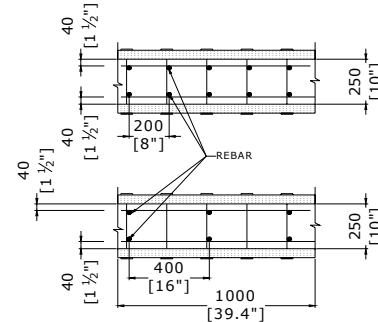


Supplementary table to 10" Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 3,500 psi  
 Steel Strength = 60,000 psi

Reinforcing steel must be placed on the each side of the wall.  
 Clear concrete cover = 1 1/2"

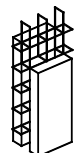


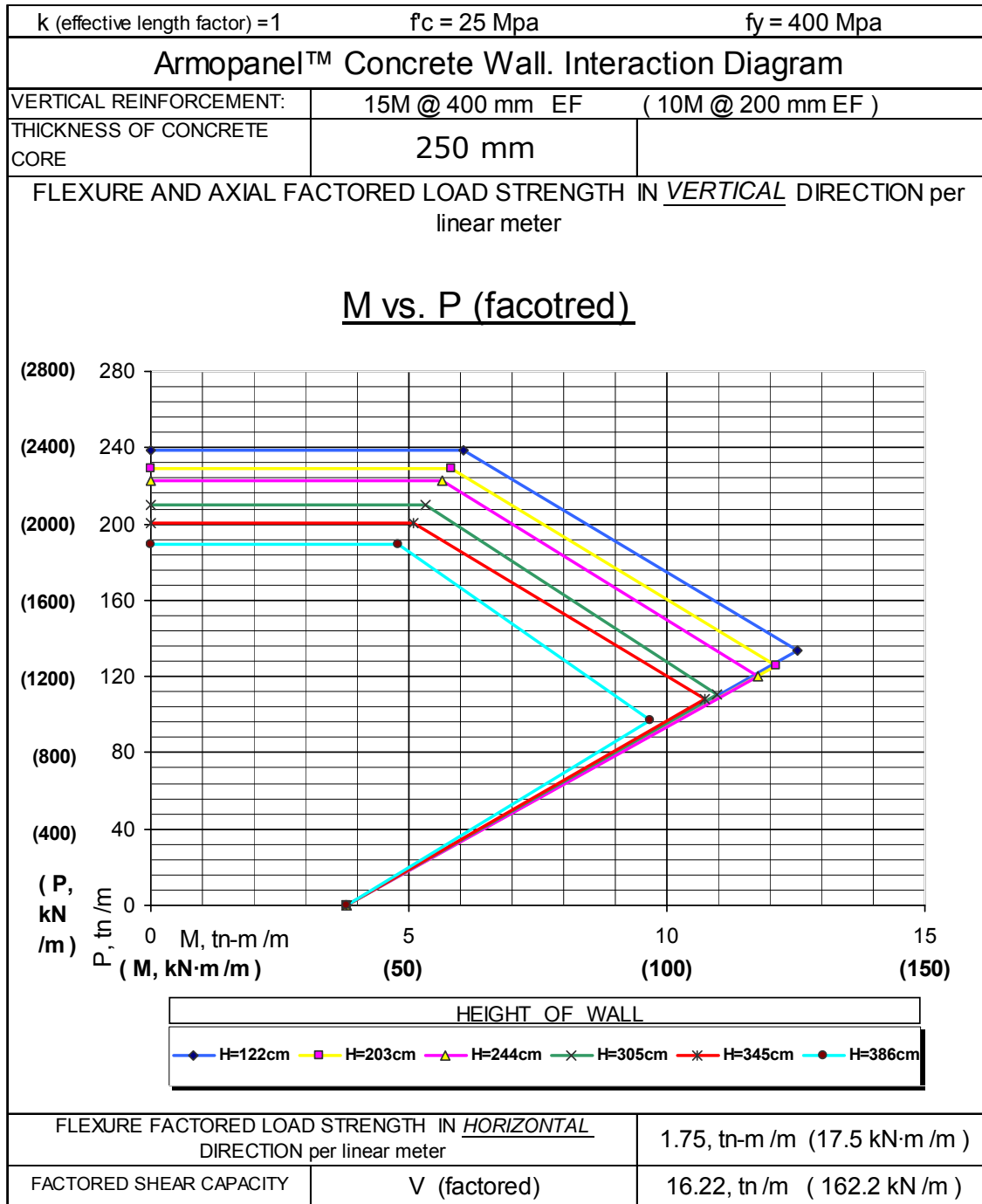
Wall Height per Story (ft)	M, kip-ft	P , kip								
		40	64	88	112	127	141	149	154	
6	17									<b>Design Required</b>
	22,5									
	27,5									
	21,5	#5 @ 16"								
	19,5									
	16,5	D12 @ 8"								
	14									
	12,8									
8	17									<b>Design Required</b>
	22,5									
	27,5									
	21,6	#5 @ 16"								
	17,8									
	14,5	D12 @ 8"								
	12,4									
10	17									<b>Design Required</b>
	22,5									
	21,5									
	18,5	#5 @ 16"								
	14,8									
	11,7	D12 @ 8"								
12	16									<b>Design Required</b>
	21									
	17,2	#5 @ 16"								
	14,3									
	10,6	D12 @ 8"								

Loads are given per liner foot.

Fig. B-6.2.10

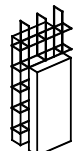
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of ACI 318-99





NOTE:  
Vertical reinforcement should be covered by 40 mm thick concrete

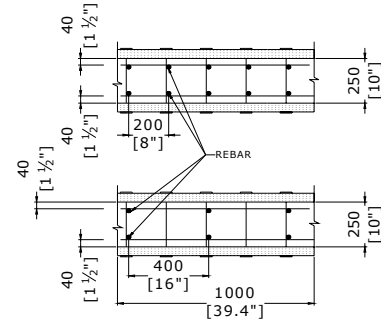
FIG. B-6.2.11



Supplementary table to 250 mm Concrete Wall Interaction Diagram  
Minimum Vertical Reinforcement Required

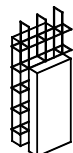
Concrete Strength = 25 MPa  
Steel Strength = 400 MPa

Reinforcing steel must be placed on the each side of the wall.  
Clear concrete cover = 40 mm.



Wall Height per Story (m)	M, kN·m	P , kN								
		560	960	1280	1600	1890	210	222	229	
2.03	75									
	100									
	120									
	100									
	81									
	70									
	58									
2.44	75									
	100									
	114									
	94									
	76									
	56									
3.05	75									
	100									
	100									
	82									
	53									
3.86	72									
	95									
	80									
	63									
	48									

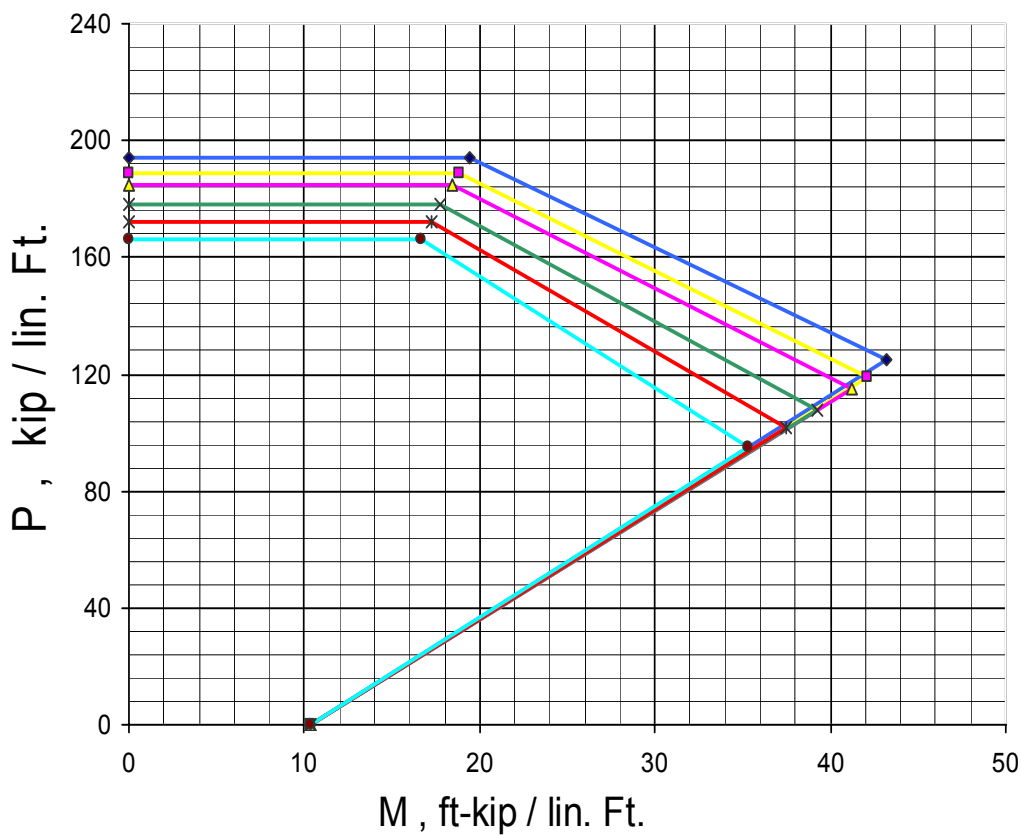
Loads are given per liner meter FIG. B-2.12.  
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of CSA A23.3-94



k (effective length factor) = 1		f <sub>c</sub> =3,550 psi		f <sub>y</sub> =60,000 psi	
<b>Armopanel™ Concrete Wall. Interaction Diagram</b>					
VERTICAL REINFORCEMENT:		# 5 @ 16" EF			
THICKNESS OF CONCRETE CORE	12"				

FLEXURE AND AXIAL STRENGTH IN VERTICAL DIRECTION per linear foot

M vs. P (factored)



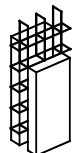
HEIGHT OF WALL	
◆ H=48 in.	■ H=80 in.
▲ H=96 in.	× H=120 in.
* H=136 in.	● H=152 in.

FLEXURE FACTORED LOAD STRENGTH IN <u>HORIZONTAL</u> DIRECTION per linear foot (factored)	4.90 , ft-kip / lin. Ft.
SHEAR CAPACITY	V (factored) 13.76 , kips / lin. Ft.

NOTE:

Vertical reinforcement should be covered by 1 1/2" thick concrete

FIG. B-2.13

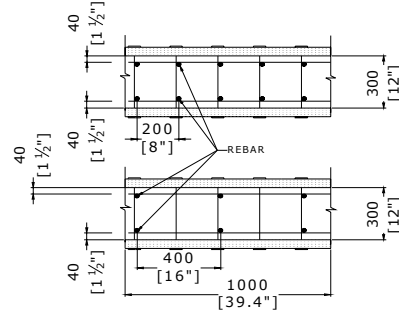


Supplementary table to 12" Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 3,500 psi  
 Steel Strength = 60,000 psi

Reinforcing steel must be placed on the each side of the wall.  
 Clear concrete cover = 1 1/2"

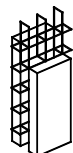


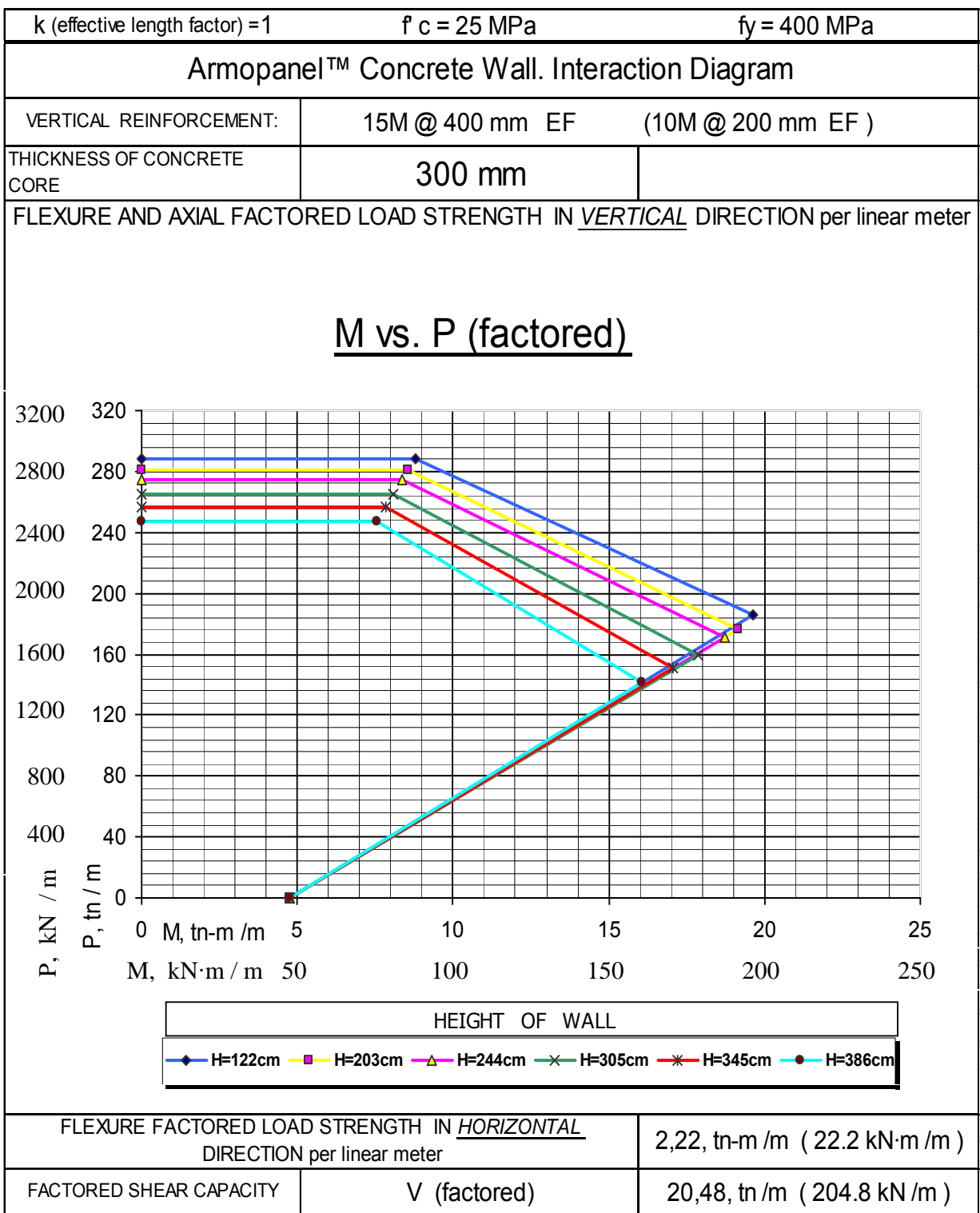
Wall Height per Story (ft)	M, kip-ft	P , kip								
		40	96	120	144	166	177	184	188	
6	21									<b>Design Required</b>
	36									
	41,8									
	34	#5 @ 16"								
	26									
	23	D12 @ 8"								
	20									
18,8										
8	21									<b>Design Required</b>
	36									
	39,2									
	32	#5 @ 16"								
	24,5									
	21	D12 @ 8"								
18,4										
10	21									<b>Design Required</b>
	36									
	35,2	#5 @ 16"								
	28									
	21	D12 @ 8"								
17,7										
12	21									<b>Design Required</b>
	35									
	29	#5 @ 16"								
	22,5									
	16,6	D12 @ 8"								

Loads are given per liner foot.

FIG. B-2.14

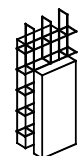
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of ACI 318-99





NOTE:  
Vertical reinforcement should be covered by 40 mm thick concrete

FIG. B-6.2.15



Supplementary table to 300 mm Concrete Wall Interaction Diagram

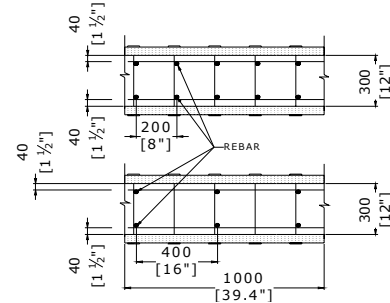
Minimum Vertical Reinforcement Required

Concrete Strength = 25 MPa

Steel Strength = 400 MPa

Reinforcing steel must be placed on the each side of the wall.

Clear concrete cover = 40 mm.

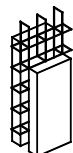


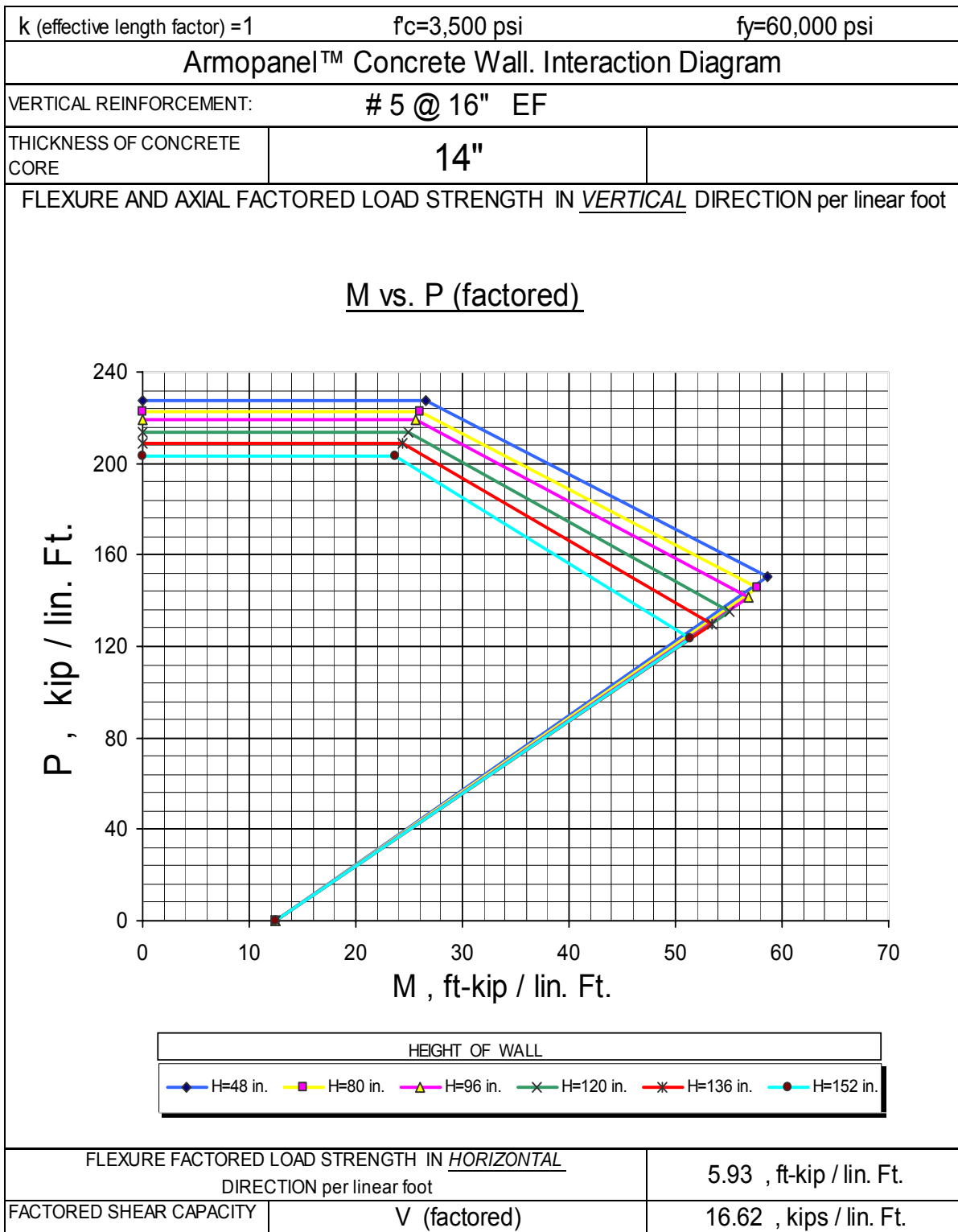
Wall Height per	M, kN·m	P , kN							
		560	1360	1760	2160	2470	2640	2740	2800
2,03	92								
	160								
	191								
	151	<b>15M@400</b>							
	120								
	103	<b>D12@200</b>							
	90								
	85								
2,44	92								
	160								
	182								
	143	<b>15M@400</b>							
	111								
	95	<b>D12@200</b>							
	83								
3,05	92								
	160								
	163	<b>15M@400</b>							
	125								
	97	<b>D12@200</b>							
	80								
3,86	92								
	155								
	133	<b>15M@400</b>							
	100								
	75	<b>D12@200</b>							

Loads are given per liner meter.

FIG. B-2.16

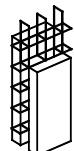
For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of CSA A23.3-94





NOTE:  
Vertical reinforcement should be covered by 1 1/2" thick concrete

FIG. B-6.2.17

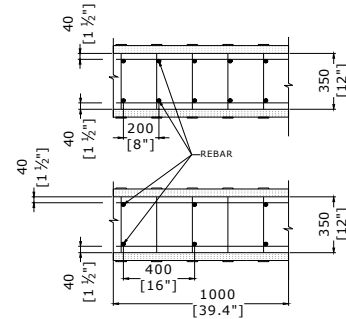


Supplementary table to 14" Concrete Wall Interaction Diagram

Minimum Vertical Reinforcement Required

Concrete Strength = 3,500 psi  
 Steel Strength = 60,000 psi

Reinforcing steel must be placed on the each side of the wall.  
 Clear concrete cover = 1 1/2"

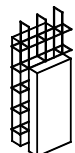


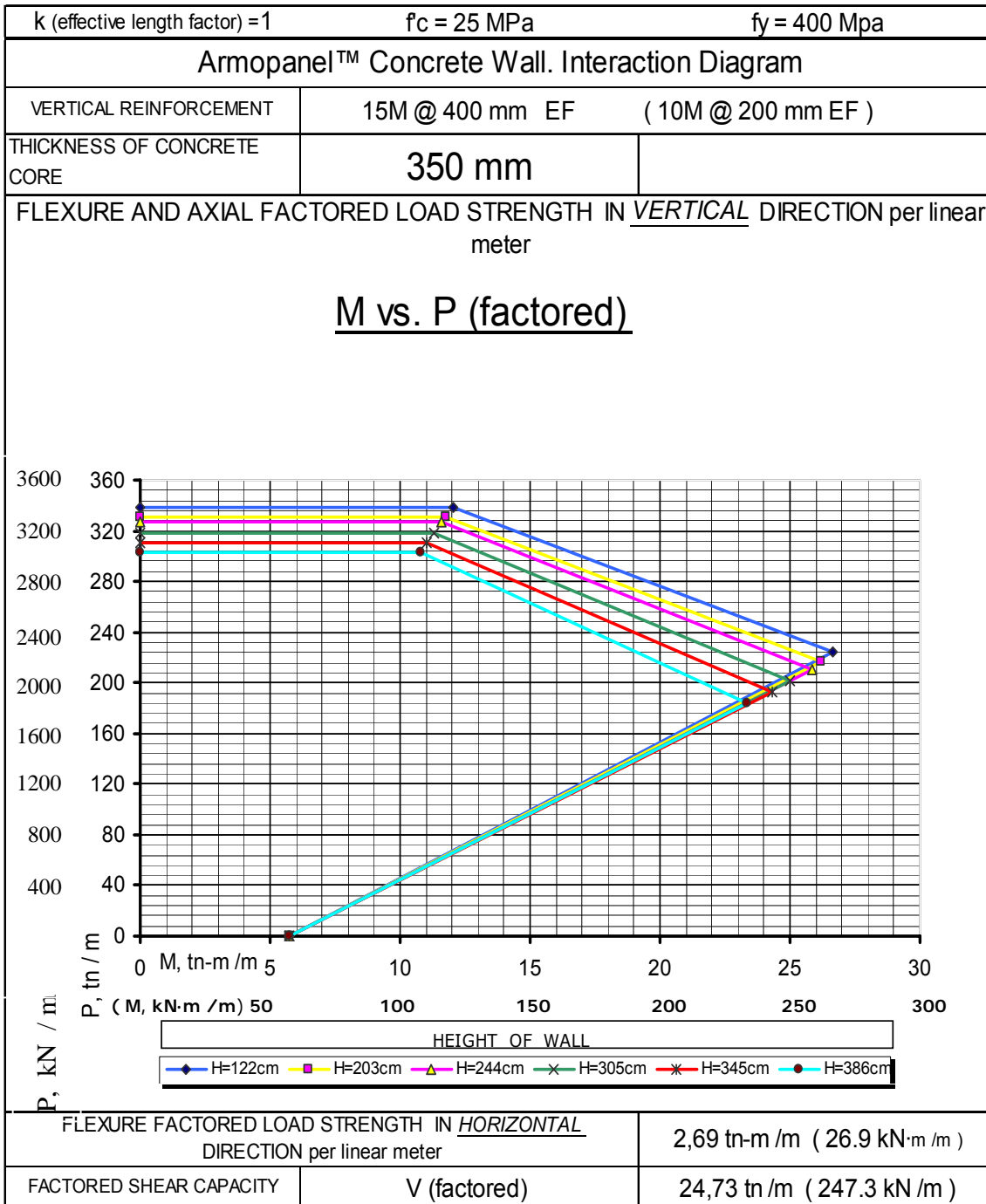
Wall Height per	M, kip·ft	P , kip							
		40	120	144	176	203	213	219	222
6	25								
	50								
	57								
	45	#5 @ 16"							
	34								
	30	D12 @ 8"							
	27,8								
	26								
8	25								
	50								
	55,8								
	43	#5 @ 16"							
	32								
	28	D12 @ 8"							
	25,6								
10	25								
	50								
	51,5	#5 @ 16"							
	39,5								
	29,5	D12 @ 8"							
	24,9								
12	25								
	50								
	44	#5 @ 16"							
	33								
	23,7	D12 @ 8"							

Loads are given per liner foot.

FIG. B-2.18

For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of ACI 318-99

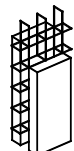




NOTE:

FIG. B-2-19

Vertical reinforcement should be covered by 40 mm thick concrete



Supplementary table to 350 mm Concrete Wall Interaction Diagram

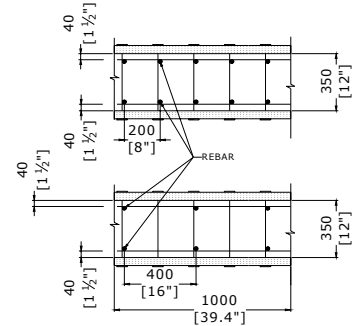
Minimum Vertical Reinforcement Required

Concrete Strength = 25 MPa

Steel Strength = 400 MPa

Reinforcing steel must be placed on the each side of the wall.

Clear concrete cover = 40 mm.



Wall Height per	M, kN·m	P , kN							
		560	1840	2160	2560	3020	3170	3260	3310
2,03	110								
	230								
	262								
	213	<b>15M@400</b>							
	152								
	134	<b>D12@200</b>							
	122								
117									
2,44	110								
	230								
	251								
	204	<b>15M@400</b>							
	145								
	127	<b>D12@200</b>							
	116								
3,05	110								
	230								
	232	<b>15M@400</b>							
	185								
	130	<b>D12@200</b>							
	113								
3,86	110								
	233								
	200	<b>15M@400</b>							
	155								
	107	<b>D12@200</b>							

Loads are given per liner meter.

FIG. B-2.20

For Horizontal Reinforcement – Refer to Min. Reinforcement Requirements, of CSA A23.3-94

