DESIGN OF RC SHORT COLUMN

05-09-19

By Aslam

Column Designation	=	**C1**		
Unsupported length, l	=	**2.9**		
Effective Length, l_{ex}	=	**3.3**	m	
Effective Length, l_{ey}		**3.3**	m	
Depth, D	=	**500**	mm	
Breadth, b	=	**500**	mm	
f_{ck}	=	**20**	N/mm^2	
f_y	=	**415**	N/mm^2	
Clear Cover	=	**40**	mm	
Dia of Lateral Ties	=	**8**	mm	
Max. bar dia	=	32	mm	
Eff. Cover, d'	=	64	mm	
No. of bars along D	=	3		
No. of bars along b	=	3		
Spacing b/w bars along D	=	154	mm	OK
Spacing b/w bars along b	=	154	mm	OK

D = 500 mm

b = 500 mm

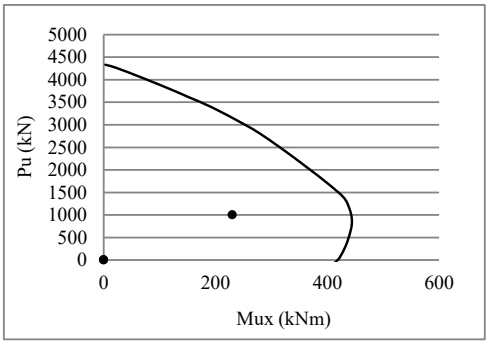
32	**0**	**0**	**0**	**0**	**32**	0	0	0	0	32
0										0
0										0
0										0
0										0
32										32
0										0
0										0
0										0
0										0
32	0	0	0	0	32	0	0	0	0	32

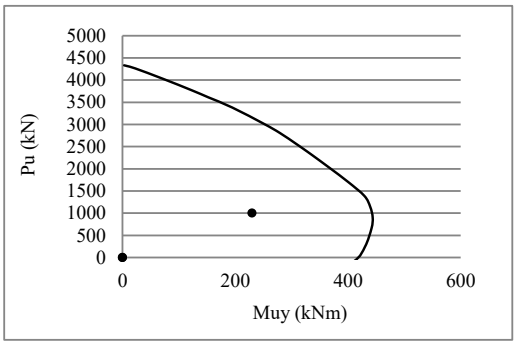
$p_t = 2.57\ \%$

$A_{st} = 64.34\ \text{cm}^2$

Load Combination	1	2	3
P_u (kN)	**1000**	**0**	**0**
M_{ux} (kN.m)	**230**	**0**	**0**
M_{uy} (kN.m)	**230**	**0**	**0**
$M_{ecc.x}$ (kN.m)	22.467	0	0
$M_{ecc.y}$ (kN.m)	22.467	0	0

Pu max.	=	**4175**
p/f_{ck}	=	0.1287
d'/D	=	0.128
d'/b	=	0.128
f_{ck}	=	20
f_y	=	415





M_{ux1} (kN.m)	442.15	443.92	443.92
M_{uy1} (kN.m)	442.15	443.92	443.92
P_{uz} (kN)	4175	4175	4175
P_u/P_{uz}	0.2395	0	0
αn	1.0659	1	1
$(M_{ux}/M_{ux1})^{an} + (M_{uy}/M_{uy1})^{an}$	0.9966	0	0
CHECK	OK	OK	OK