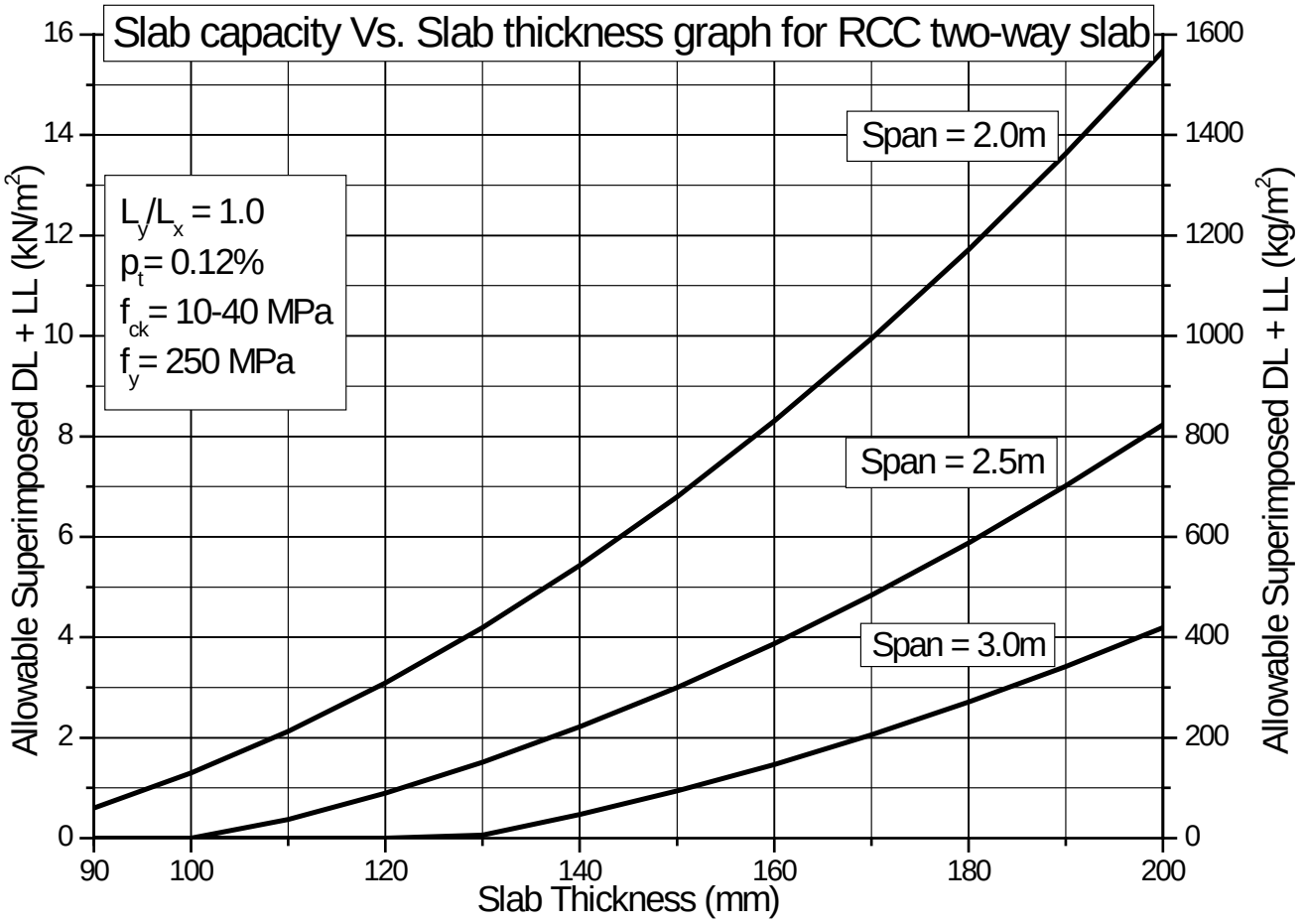
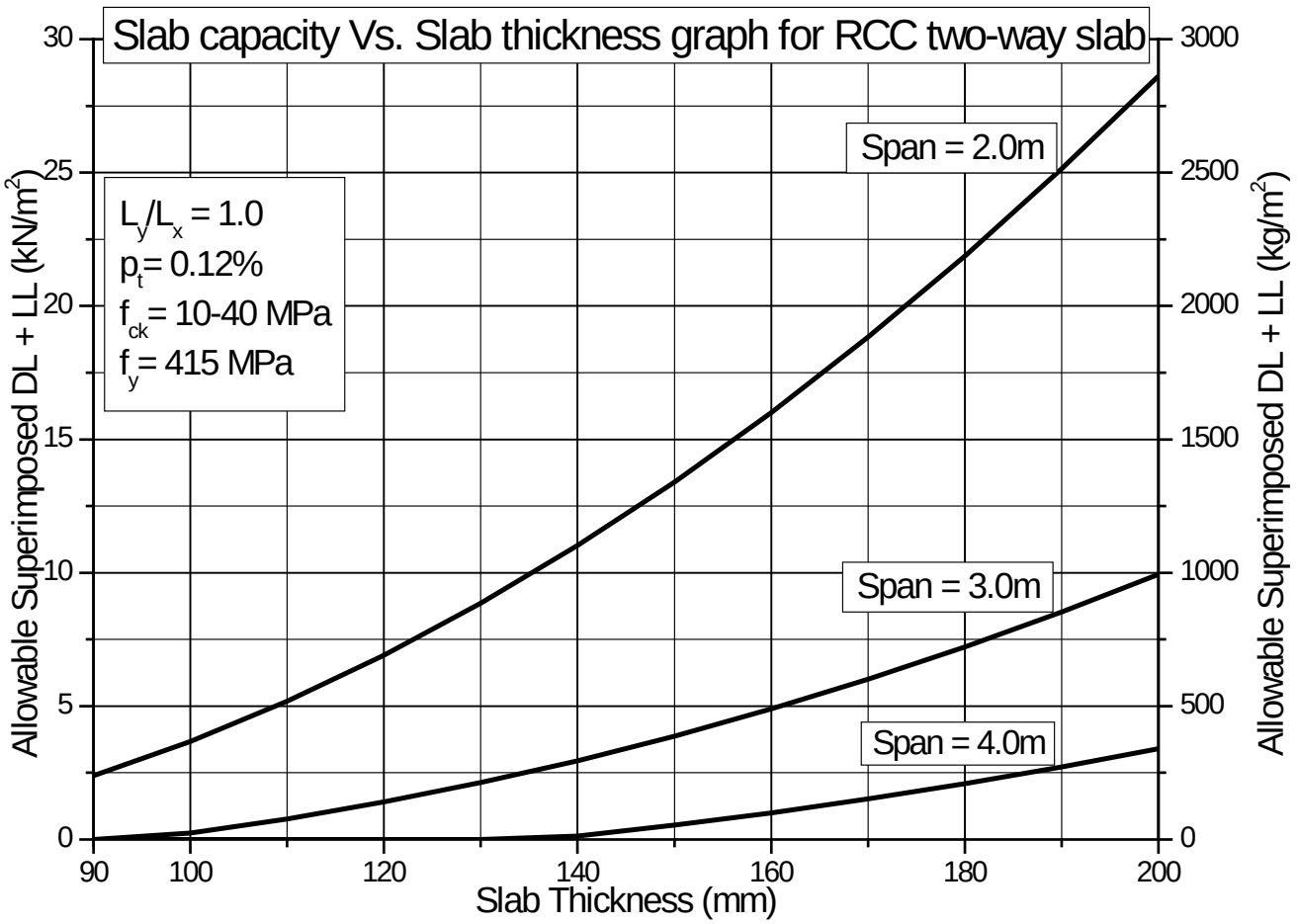
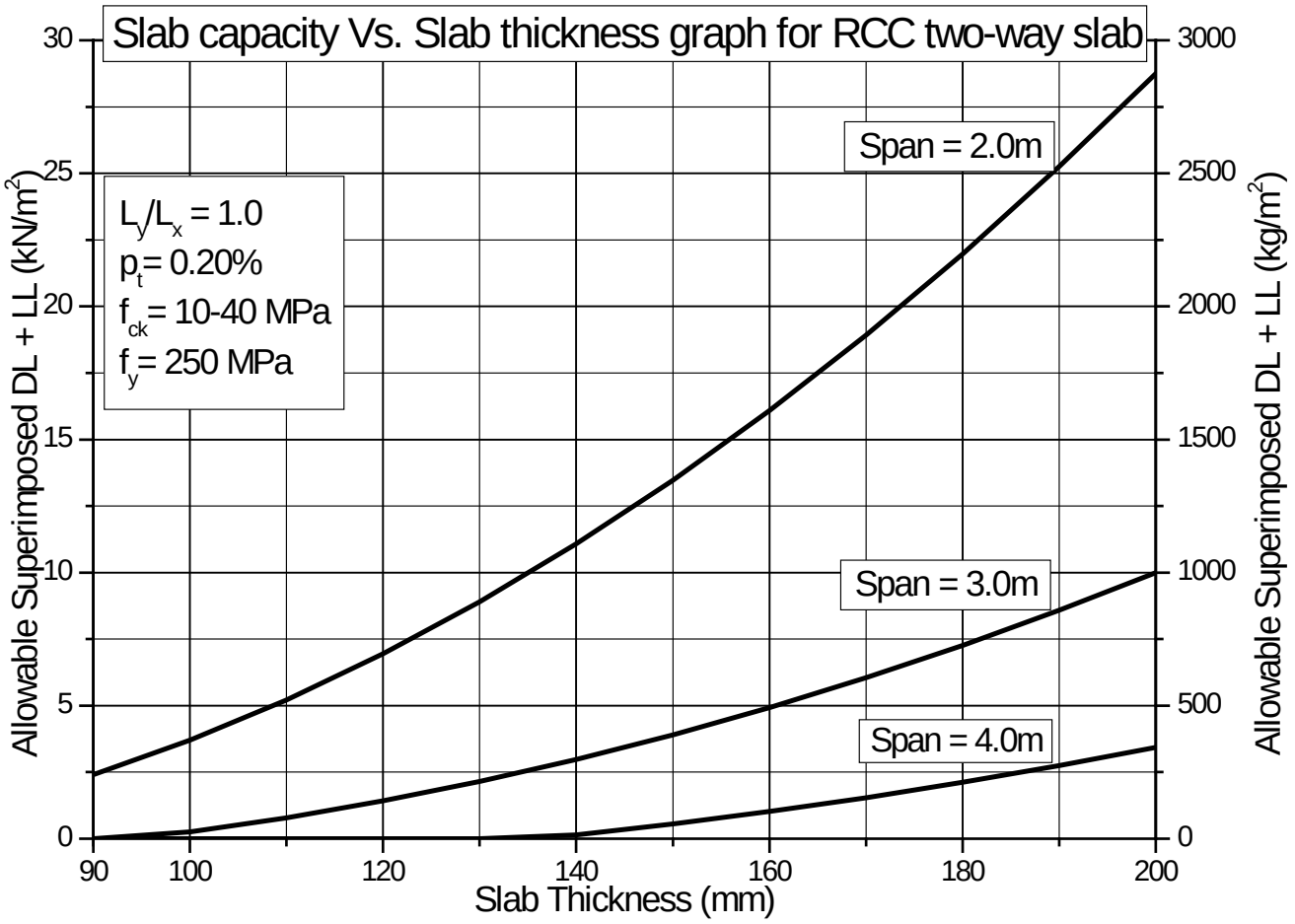
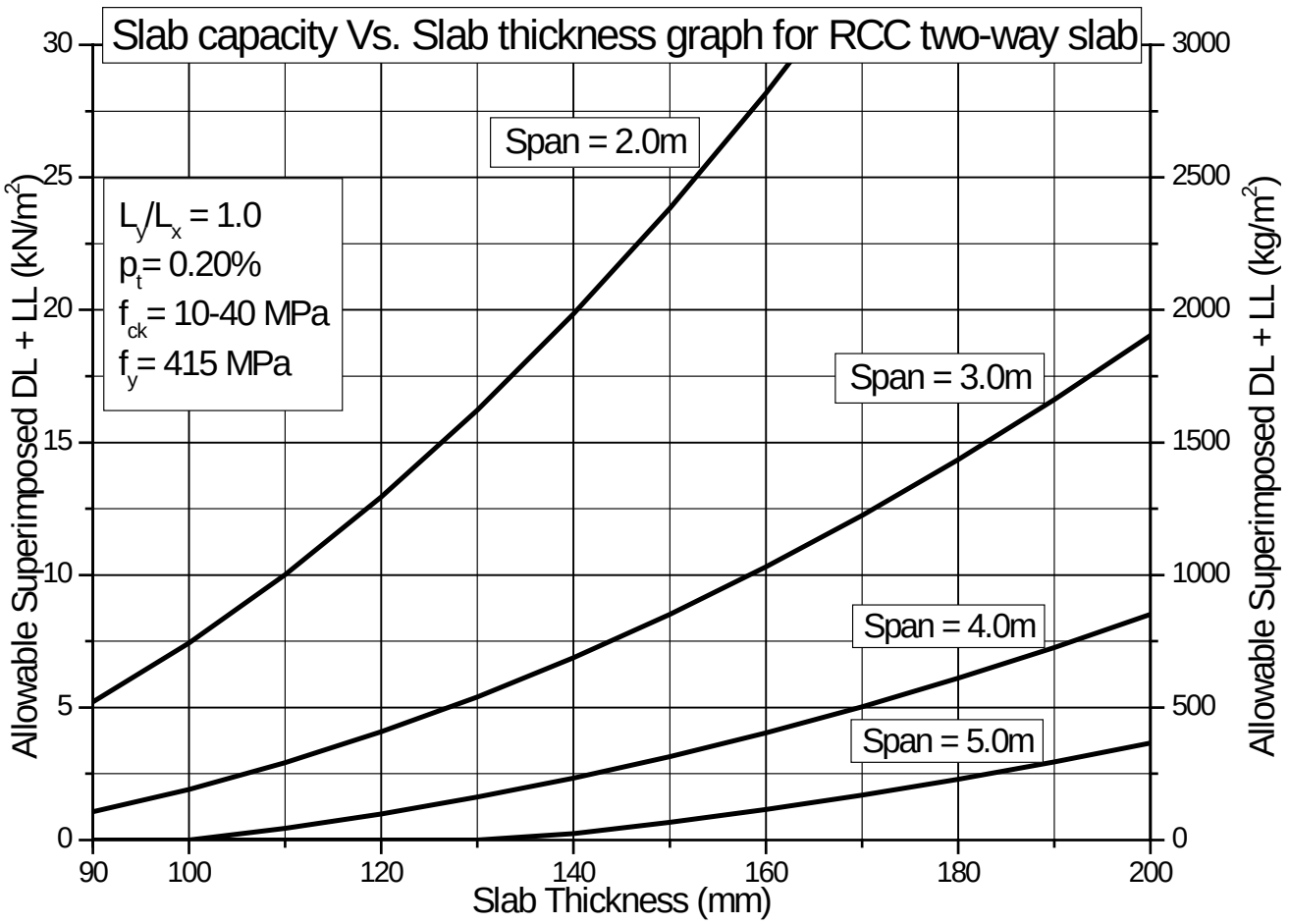
RCC Graphs:

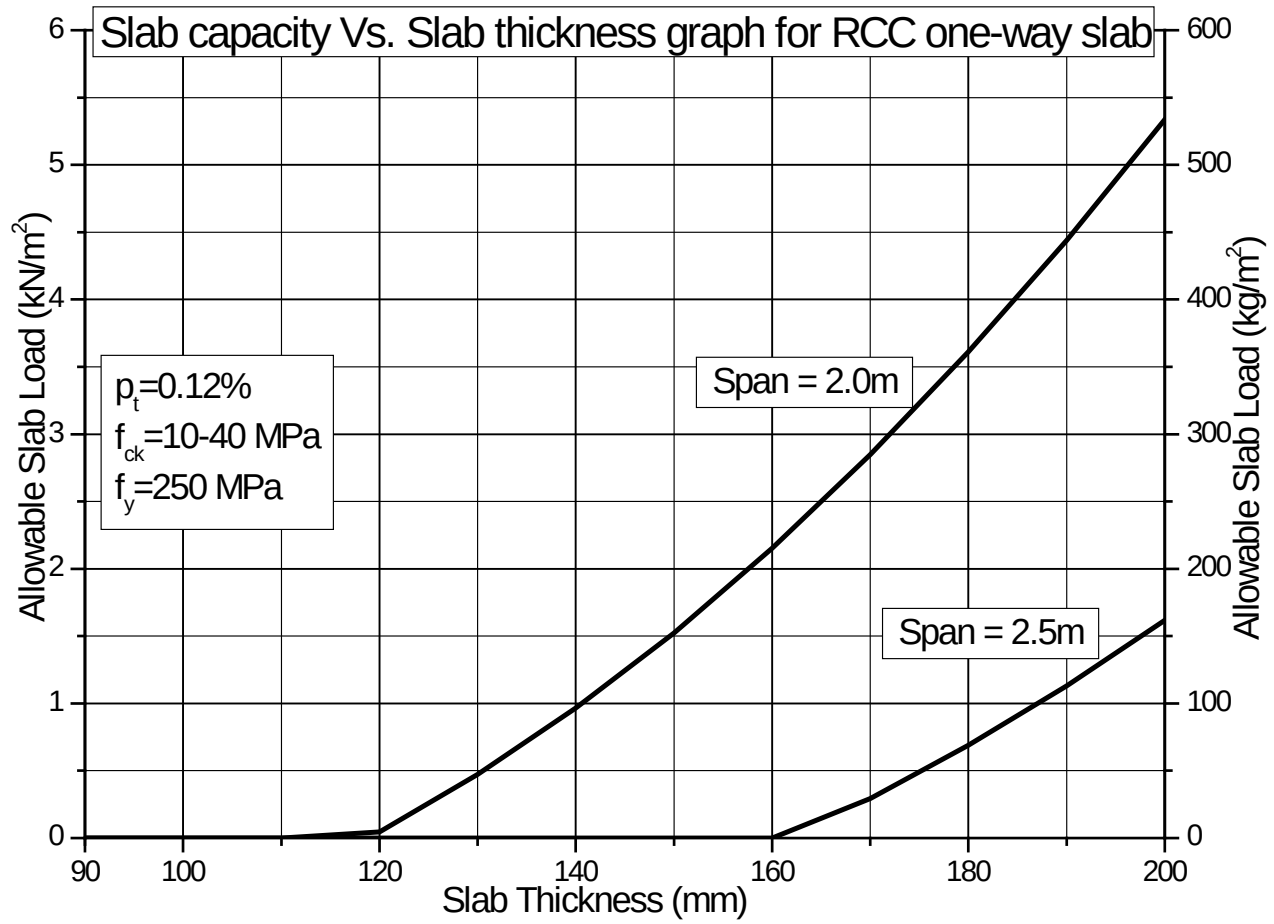
Slab, Beam and Column

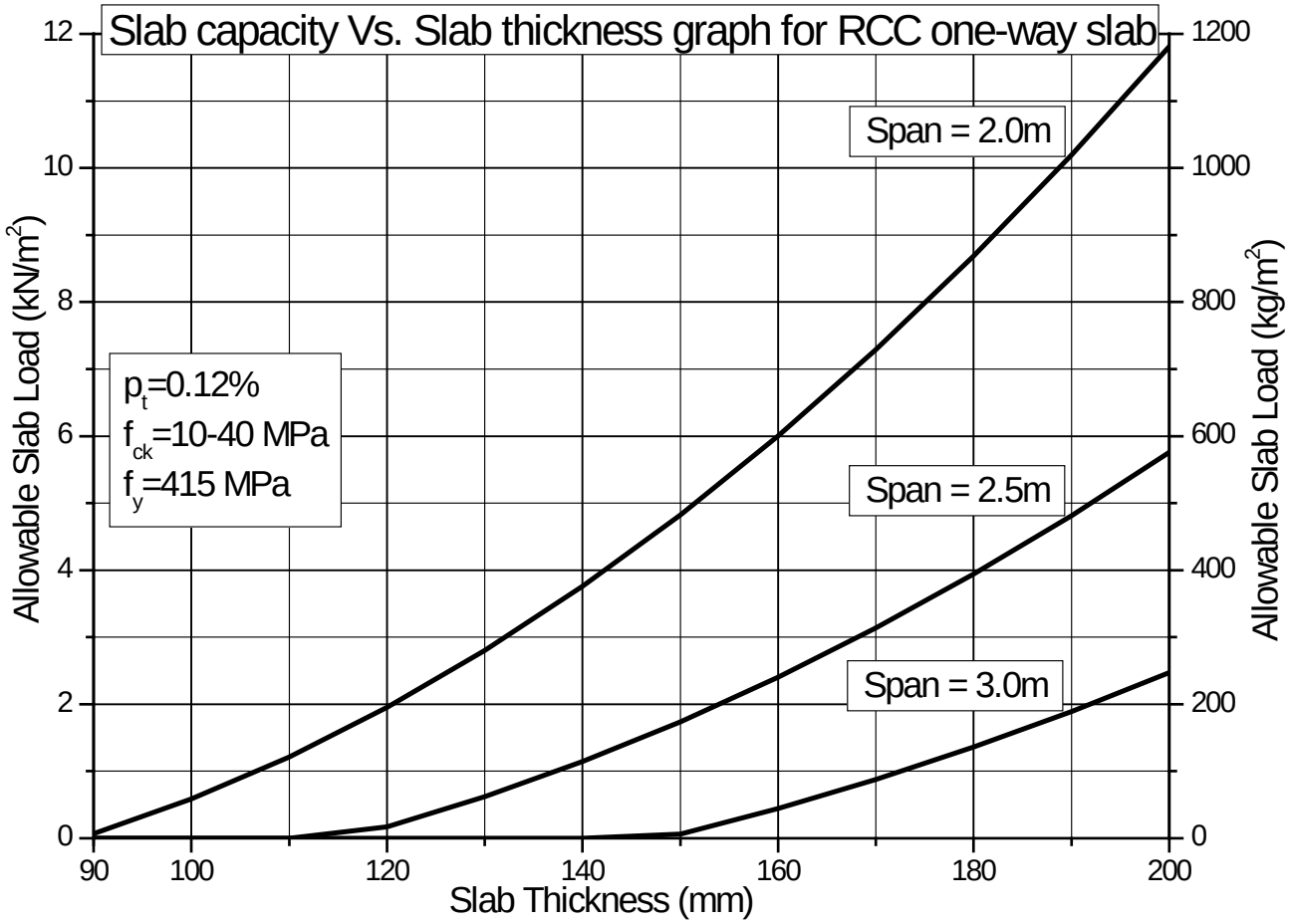

Slab capacity Vs. Slab thickness graph for RCC two-way slab
Ly/Lx = 1.0
pt= 0.12%
fck= 10-40 MPa
fy= 250 MPa
Span = 2.0m
Span = 2.5m
Span = 3.0m
Allowable Superimposed DL + LL (kN/m2)
Allowable Superimposed DL + LL (kg/m2)
Slab Thickness (mm)
0
2
4
6
8
10
12
14
16
0
200
400
600
800
1000
1200
1400
1600
90
100
120
140
160
180
200

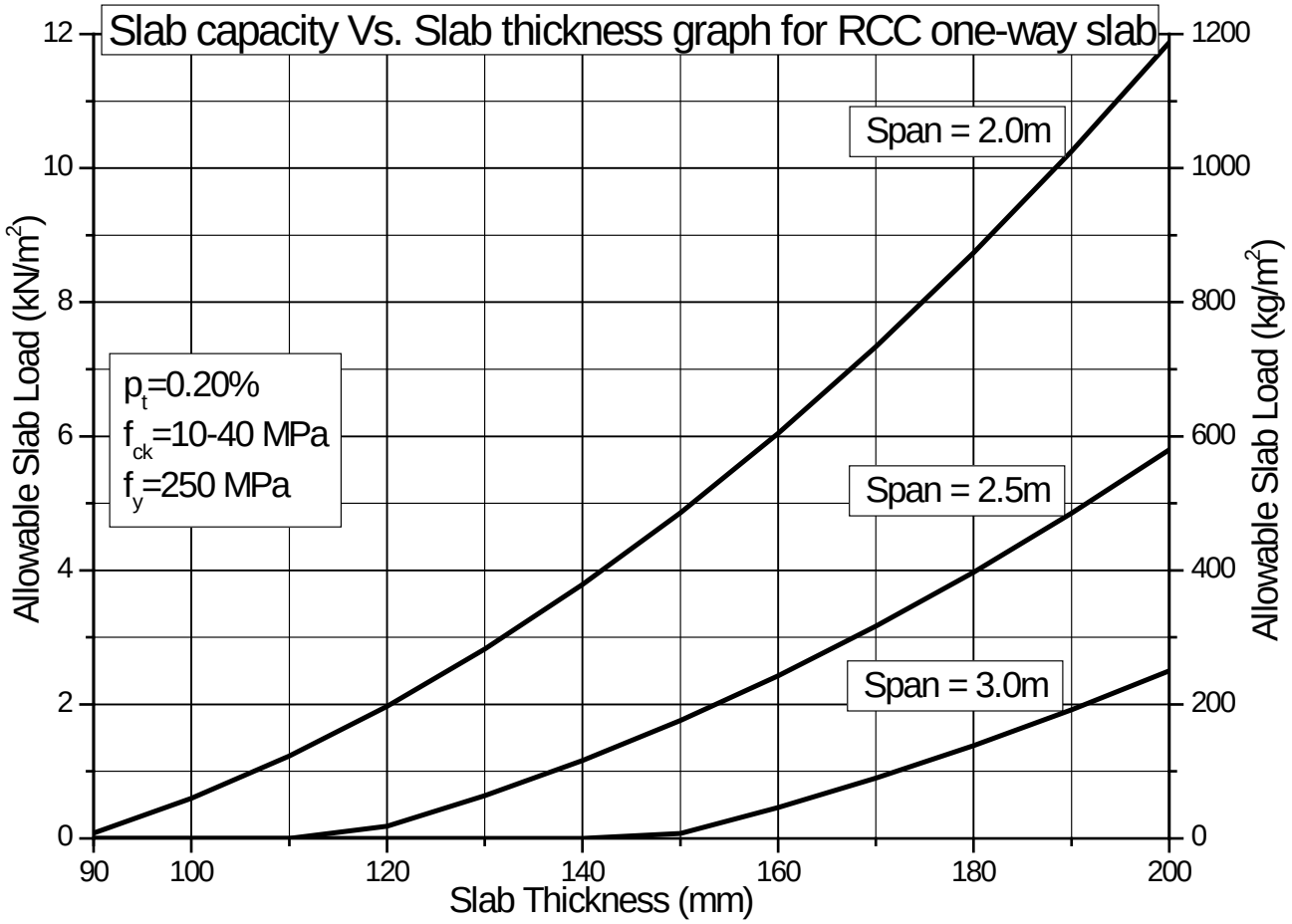

Slab capacity Vs. Slab thickness graph for RCC two-way slab
Ly/Lx = 1.0
pt= 0.12%
fck= 10-40 MPa
fy= 415 MPa
Span = 2.0m
Span = 3.0m
Span = 4.0m
Allowable Superimposed DL + LL (kN/m2)
Allowable Superimposed DL + LL (kg/m2)
Slab Thickness (mm)
0
5
10
15
20
25
30
0
500
1000
1500
2000
2500
3000
90
100
120
140
160
180
200

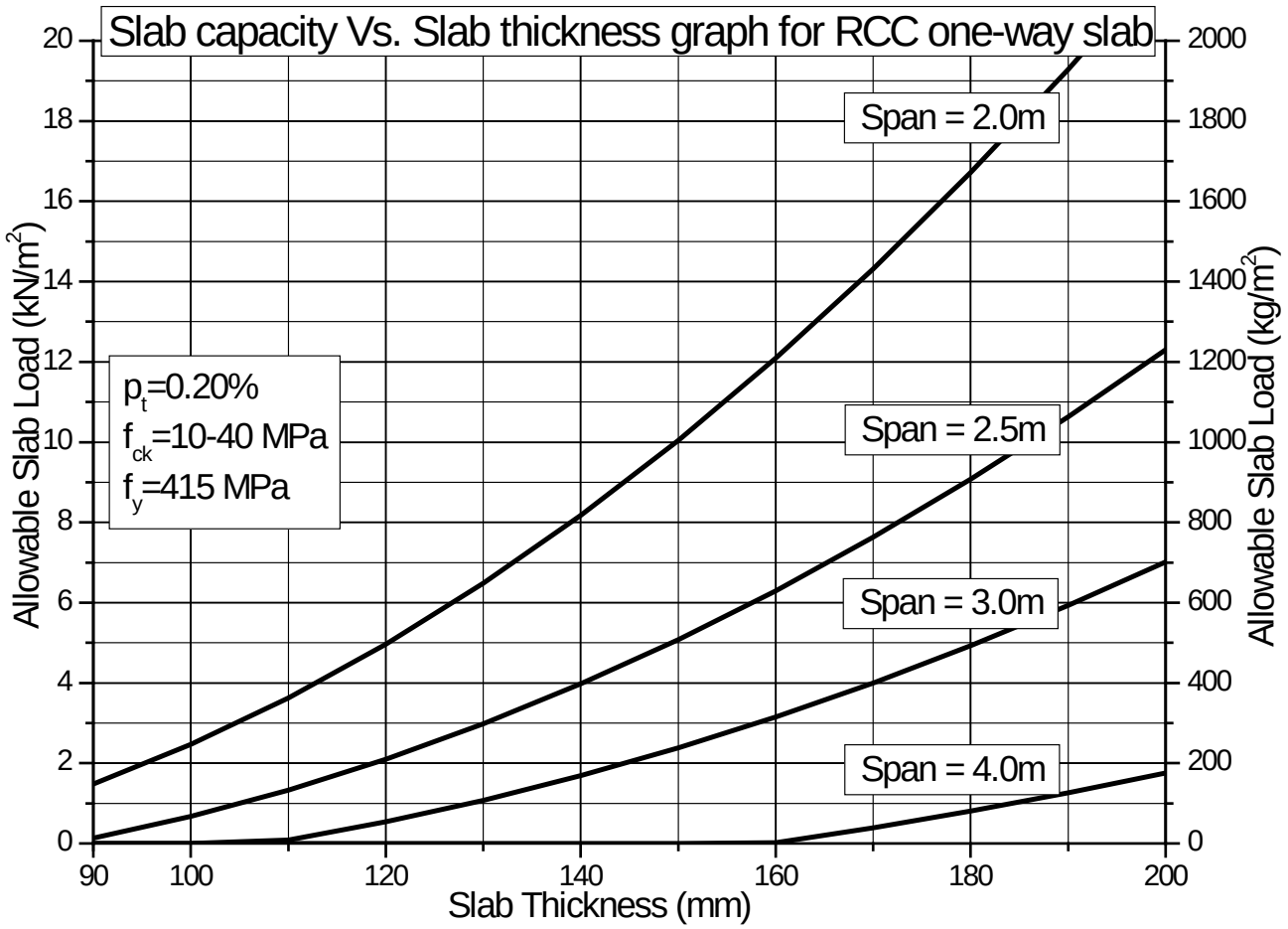

Slab capacity Vs. Slab thickness graph for RCC two-way slab
Span = 2.0m
Span = 3.0m
Span = 4.0m
L_y/L_x = 1.0
p_t= 0.20%
f_{ck}= 10-40 MPa
f_y= 250 MPa
Allowable Superimposed DL + LL (kN/m^2)
Allowable Superimposed DL + LL (kg/m^2)
Slab Thickness (mm)
0
5
10
15
20
25
30
0
500
1000
1500
2000
2500
3000
90
100
120
140
160
180
200


Slab capacity Vs. Slab thickness graph for RCC two-way slab
Span = 2.0m
Span = 3.0m
Span = 4.0m
Span = 5.0m
L_y/L_x = 1.0
p_t= 0.20%
f_{ck}= 10-40 MPa
f_y= 415 MPa
Allowable Superimposed DL + LL (kN/m^2)
Allowable Superimposed DL + LL (kg/m^2)
Slab Thickness (mm)
0
5
10
15
20
25
30
0
500
1000
1500
2000
2500
3000
90
100
120
140
160
180
200


Slab capacity Vs. Slab thickness graph for RCC one-way slab
Allowable Slab Load (kN/m2)
Allowable Slab Load (kg/m2)
Slab Thickness (mm)
pt=0.12%
fck=10-40 MPa
fy=250 MPa
Span = 2.0m
Span = 2.5m
0
1
2
3
4
5
6
0
100
200
300
400
500
600
90
100
120
140
160
180
200


Slab capacity Vs. Slab thickness graph for RCC one-way slab
Allowable Slab Load (kN/m2)
Allowable Slab Load (kg/m2)
Slab Thickness (mm)
pt=0.12%
fck=10-40 MPa
fy=415 MPa
Span = 2.0m
Span = 2.5m
Span = 3.0m
0
2
4
6
8
10
12
0
200
400
600
800
1000
1200
90
100
120
140
160
180
200


Slab capacity Vs. Slab thickness graph for RCC one-way slab
Span = 2.0m
Span = 2.5m
Span = 3.0m
p_t=0.20%
f_{ck}=10-40 MPa
f_y=250 MPa
Allowable Slab Load (kN/m^2)
Allowable Slab Load (kg/m^2)
Slab Thickness (mm)
0
2
4
6
8
10
12
0
200
400
600
800
1000
1200
90
100
120
140
160
180
200


Slab capacity Vs. Slab thickness graph for RCC one-way slab
Span = 2.0m
Span = 2.5m
Span = 3.0m
Span = 4.0m
p_t=0.20%
f_{ck}=10-40 MPa
f_y=415 MPa
Allowable Slab Load (kN/m^2)
Allowable Slab Load (kg/m^2)
Slab Thickness (mm)
0
2
4
6
8
10
12
14
16
18
20
0
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800
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1200
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1600
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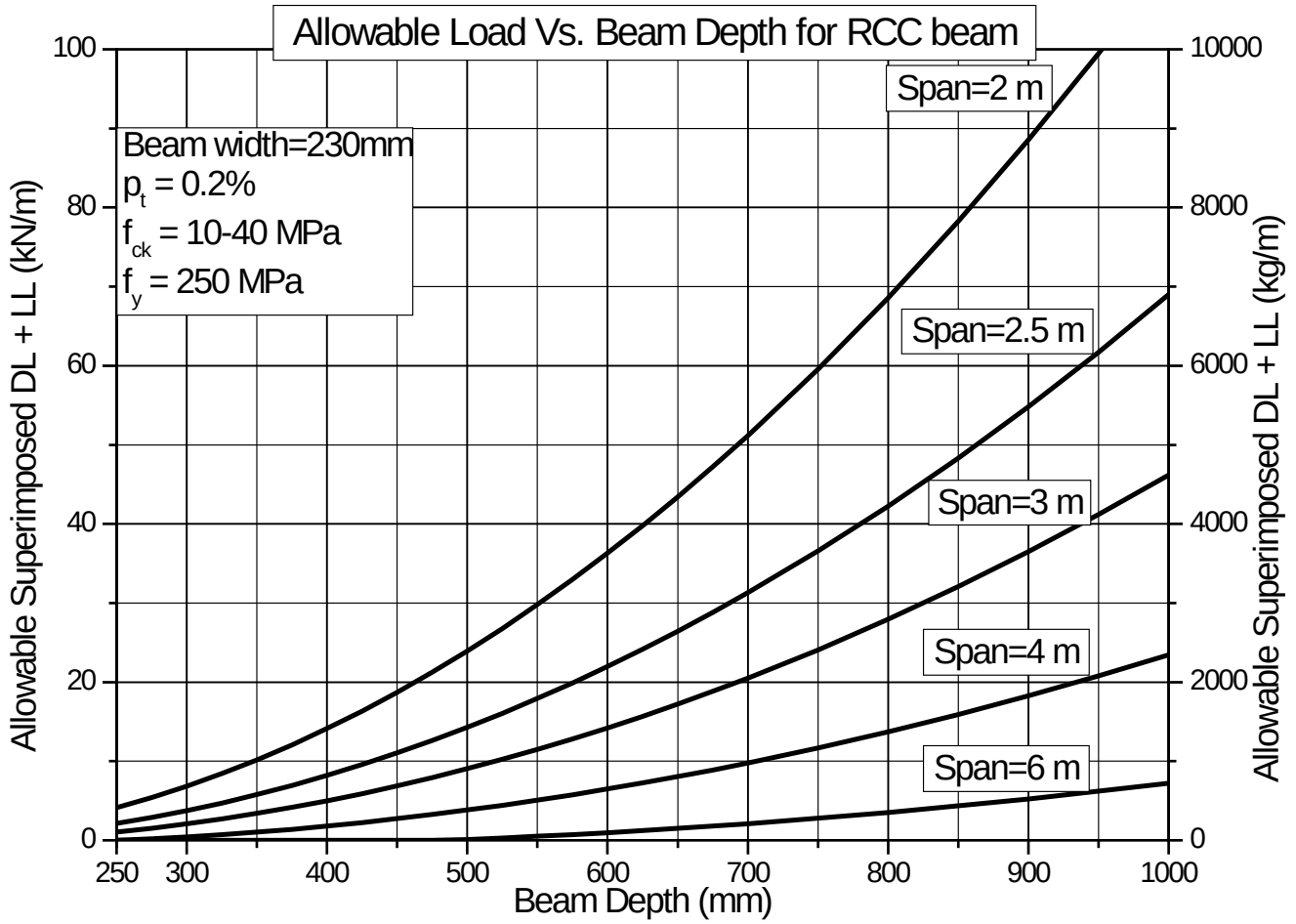
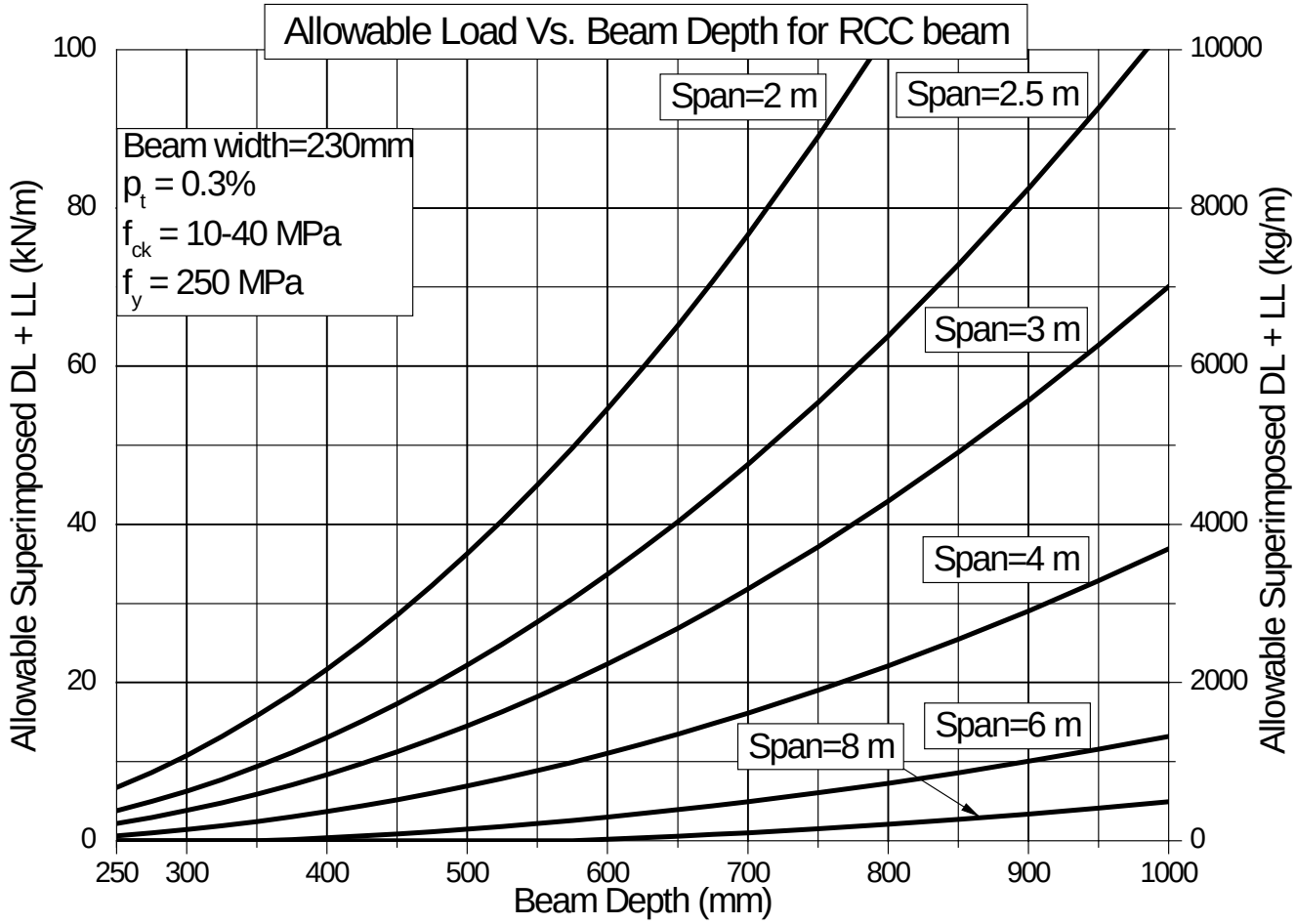
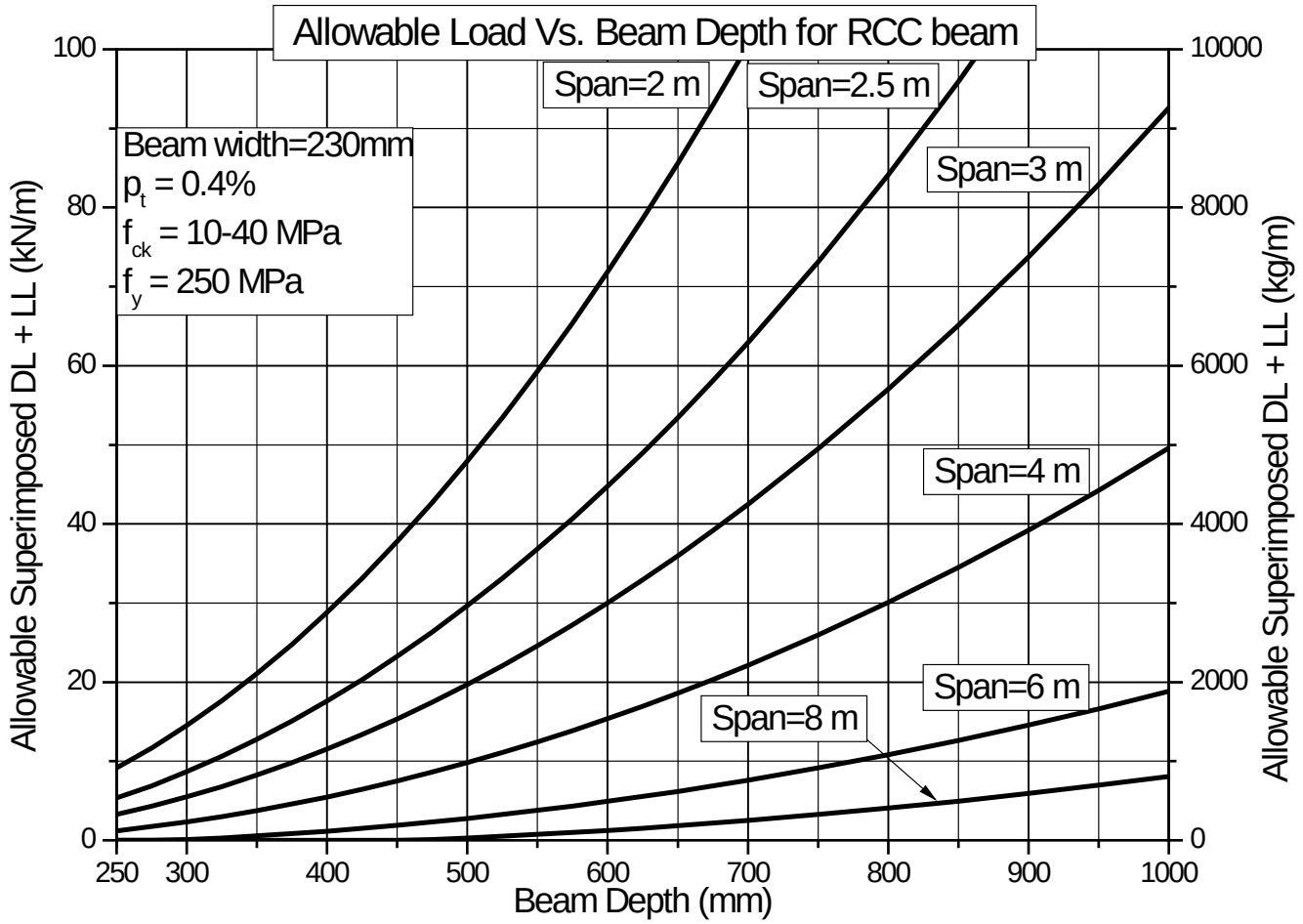
180
200


Allowable Load Vs. Beam Depth for RCC beam
Beam width=230mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=230mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=230mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
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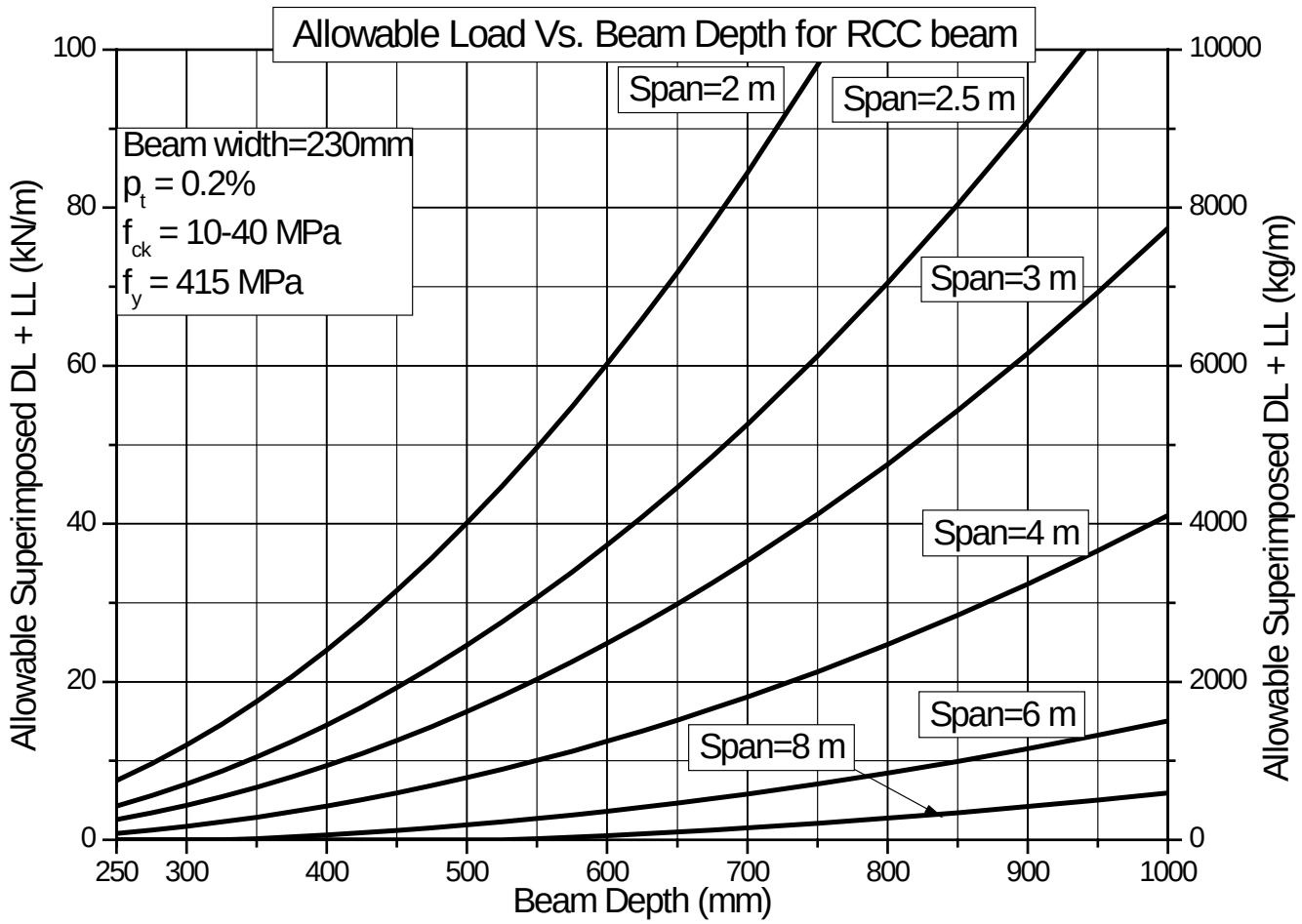
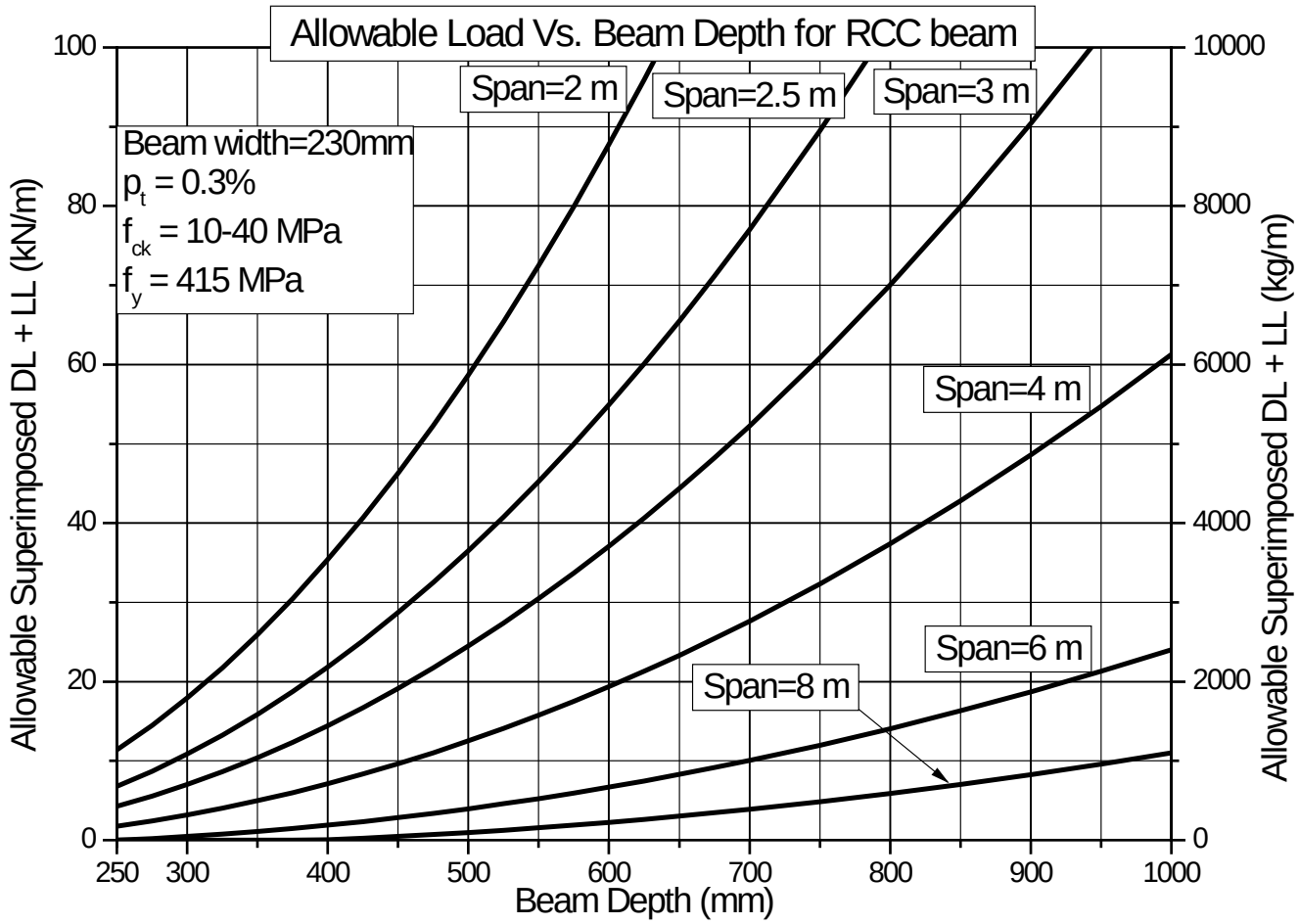
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=230mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=230mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
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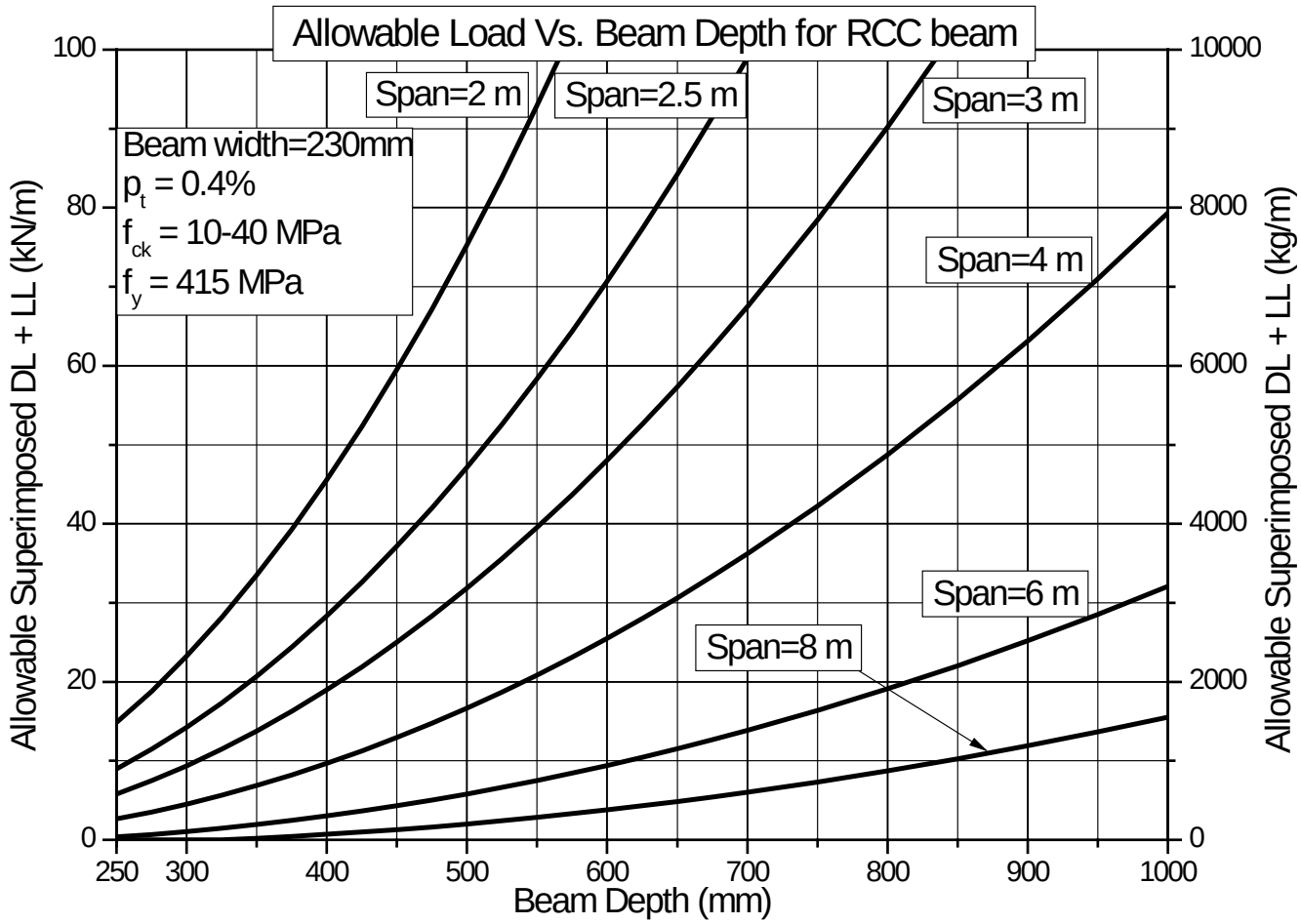
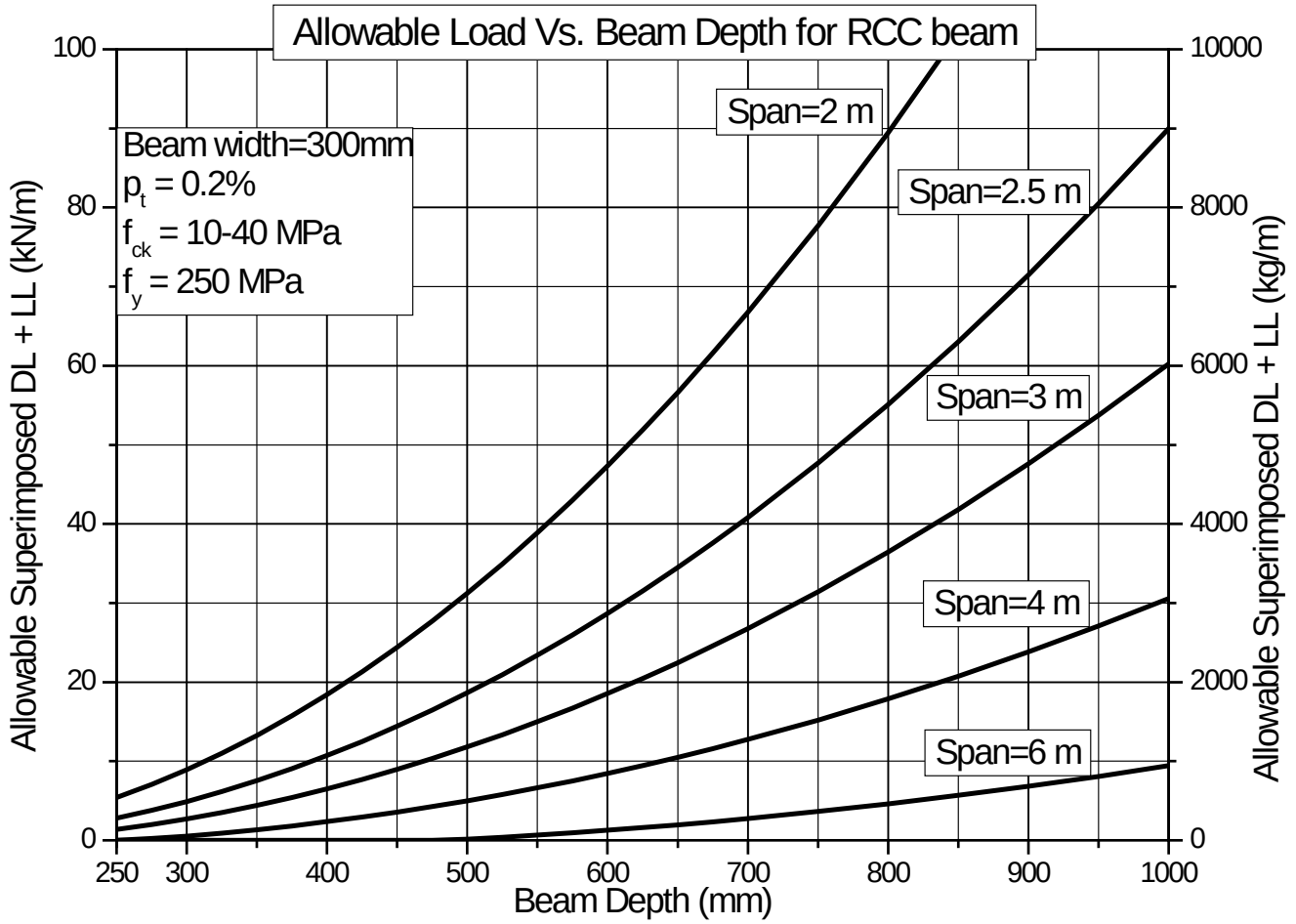
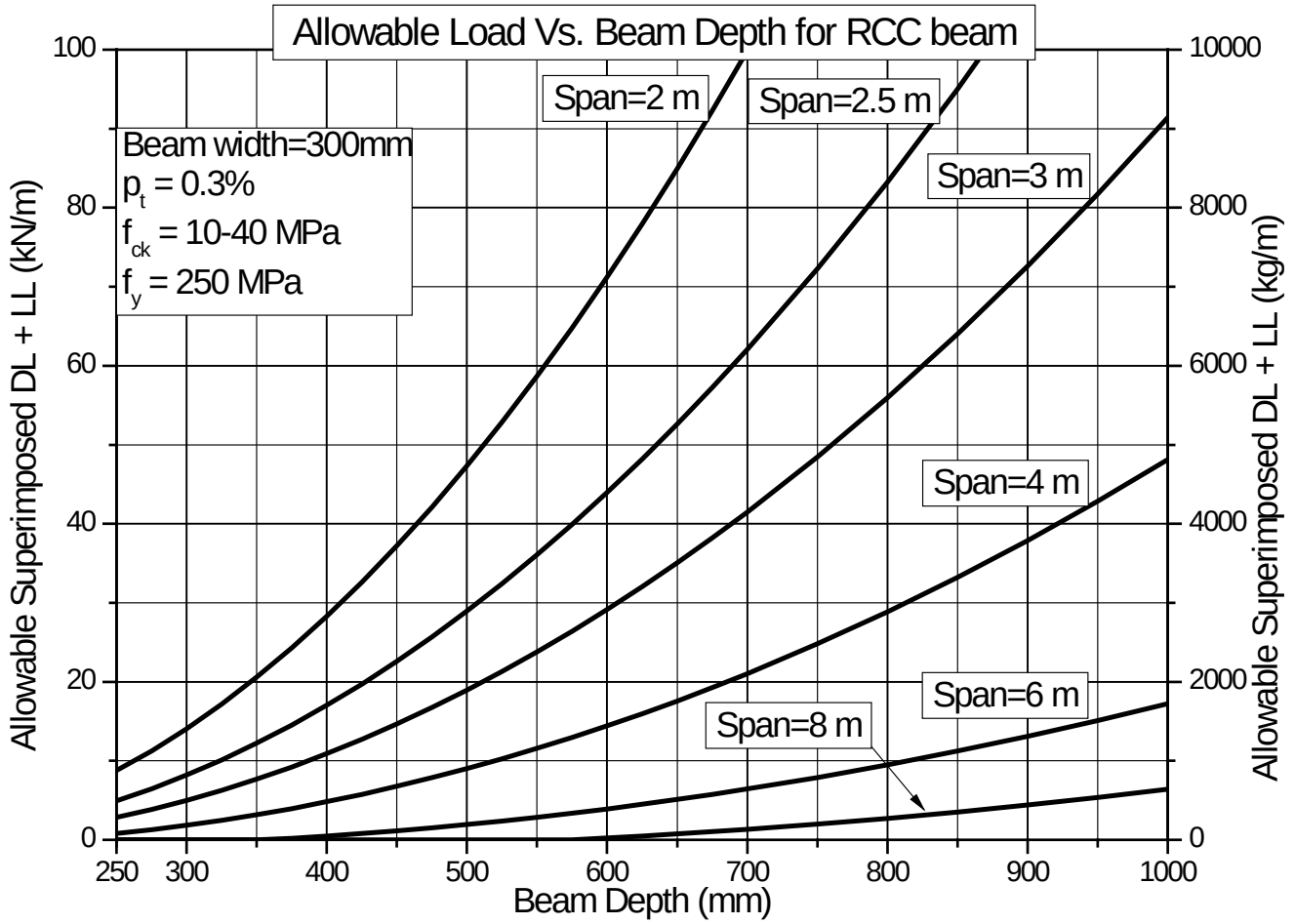
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=230mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=300mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=300mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
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60
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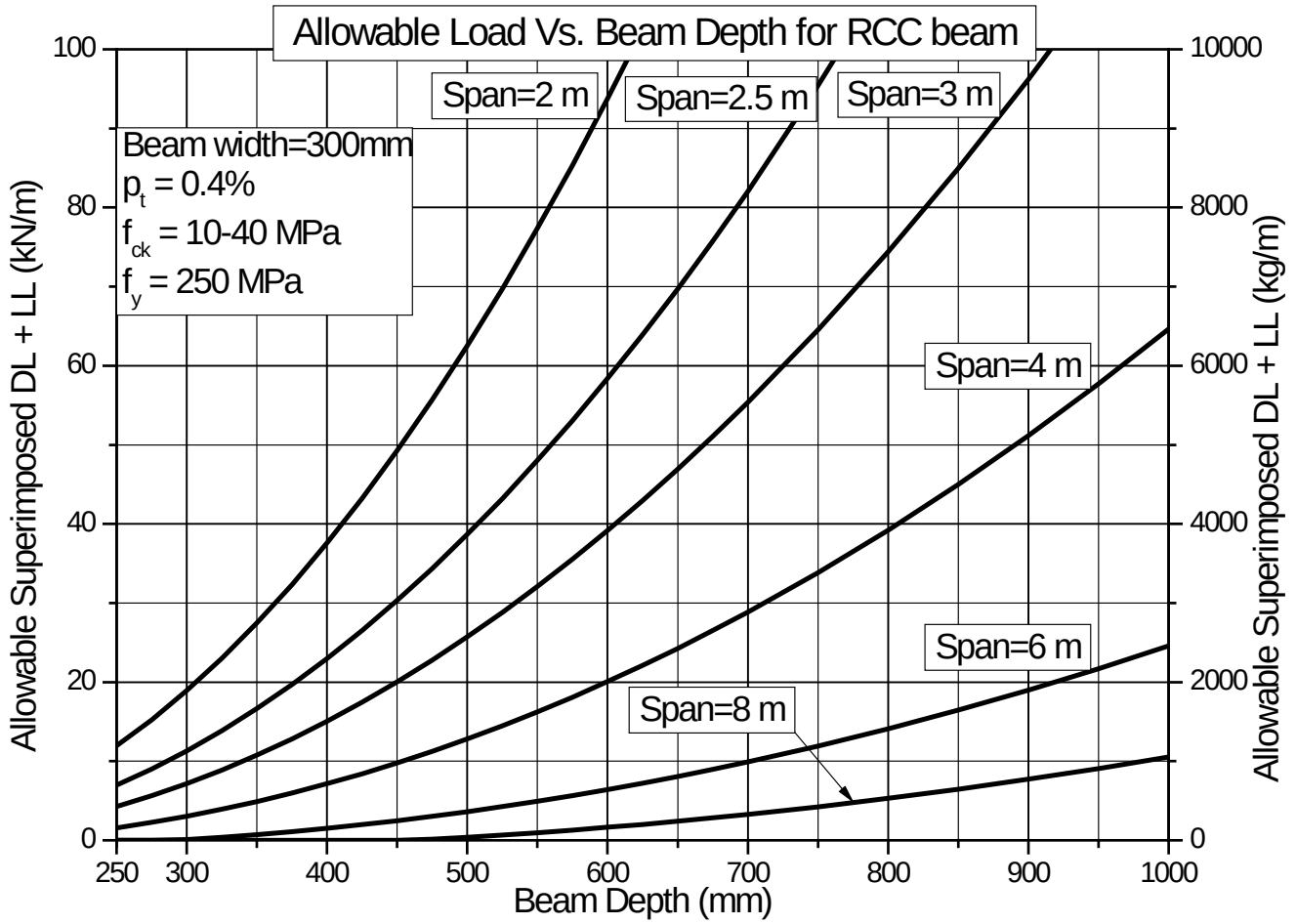
Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=300mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
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100
0
2000
4000
6000
8000
10000
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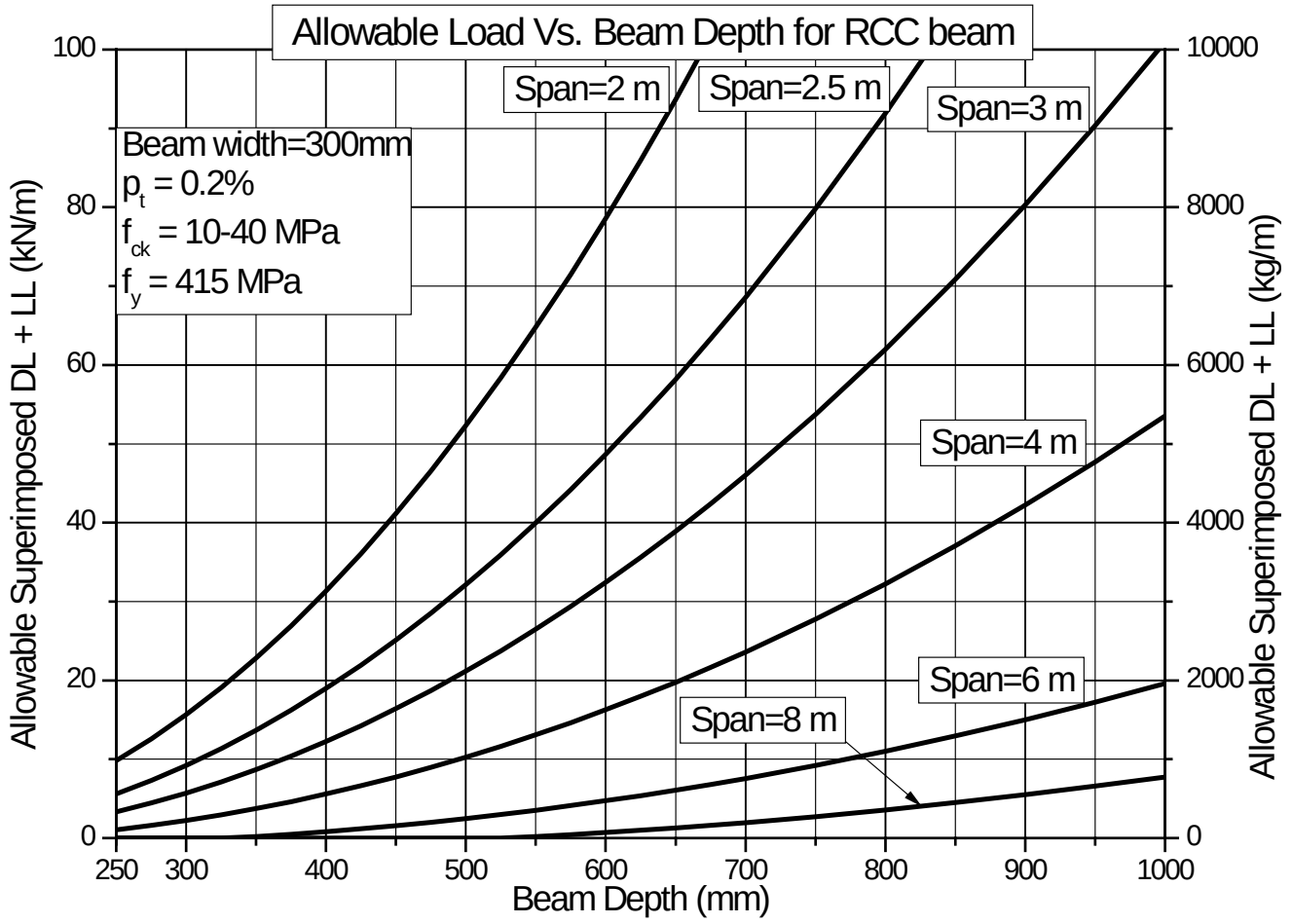
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=300mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
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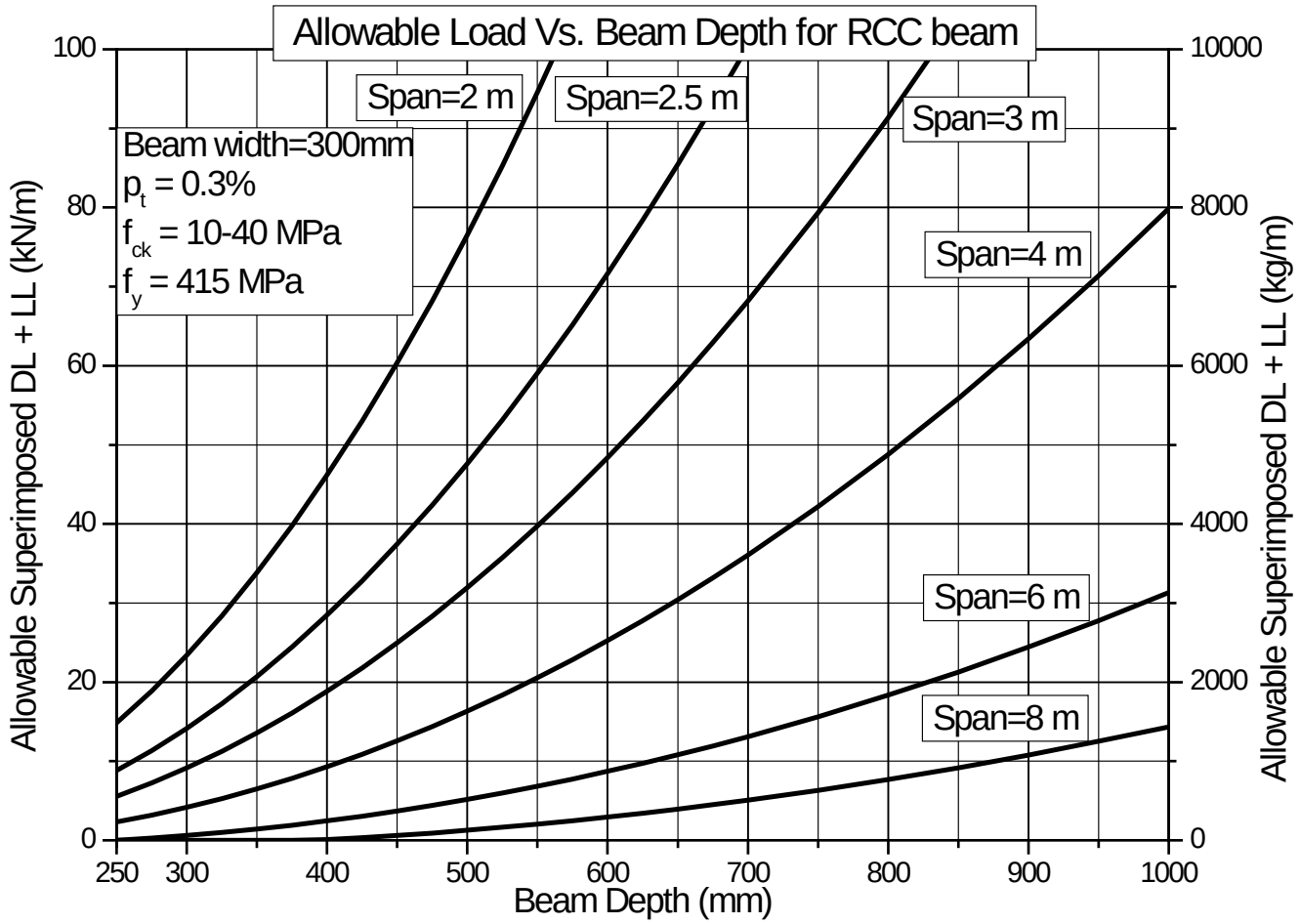
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=300mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
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0
2000
4000
6000
8000
10000
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300
400
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700
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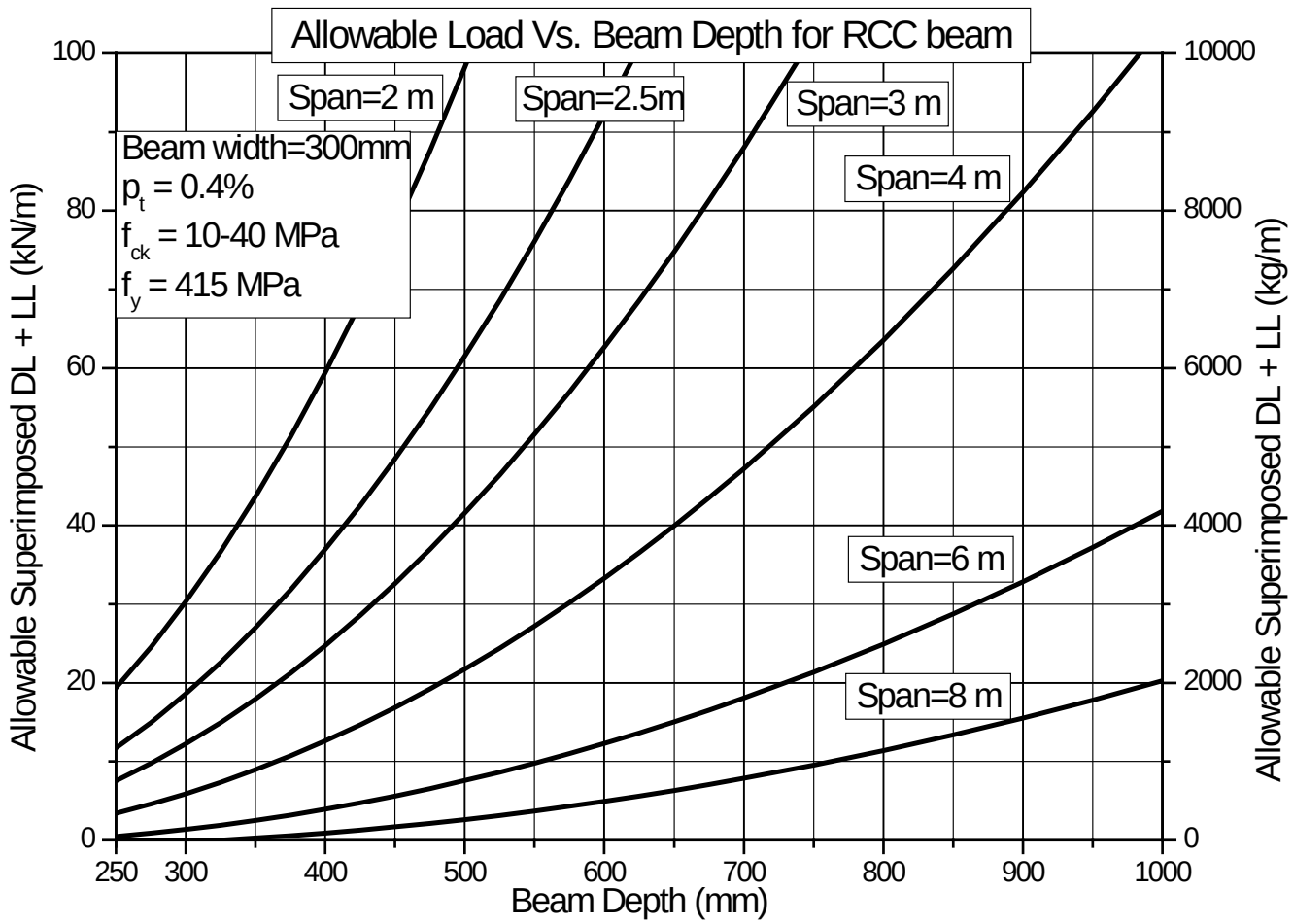
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=300mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
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100
0
2000
4000
6000
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10000
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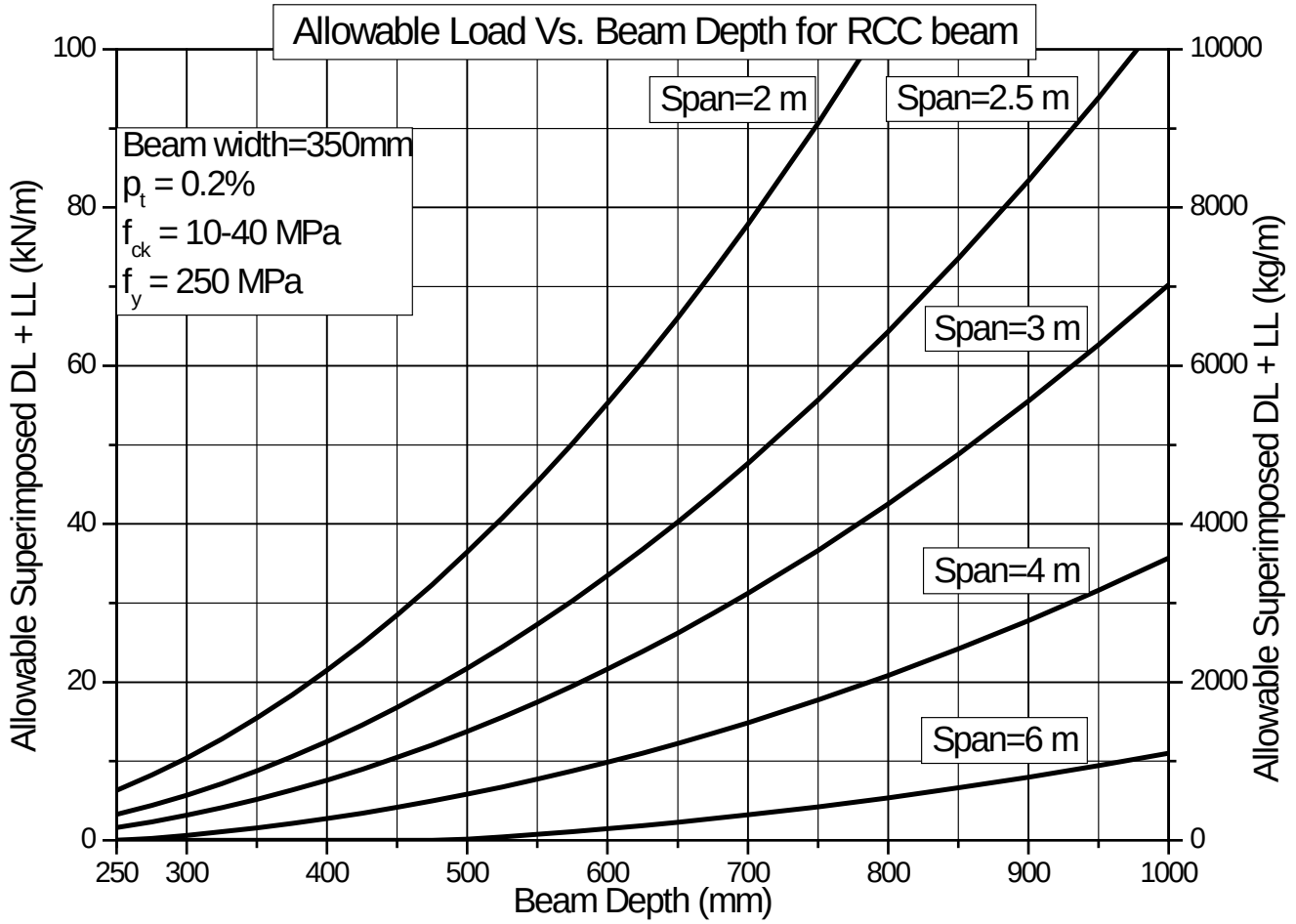
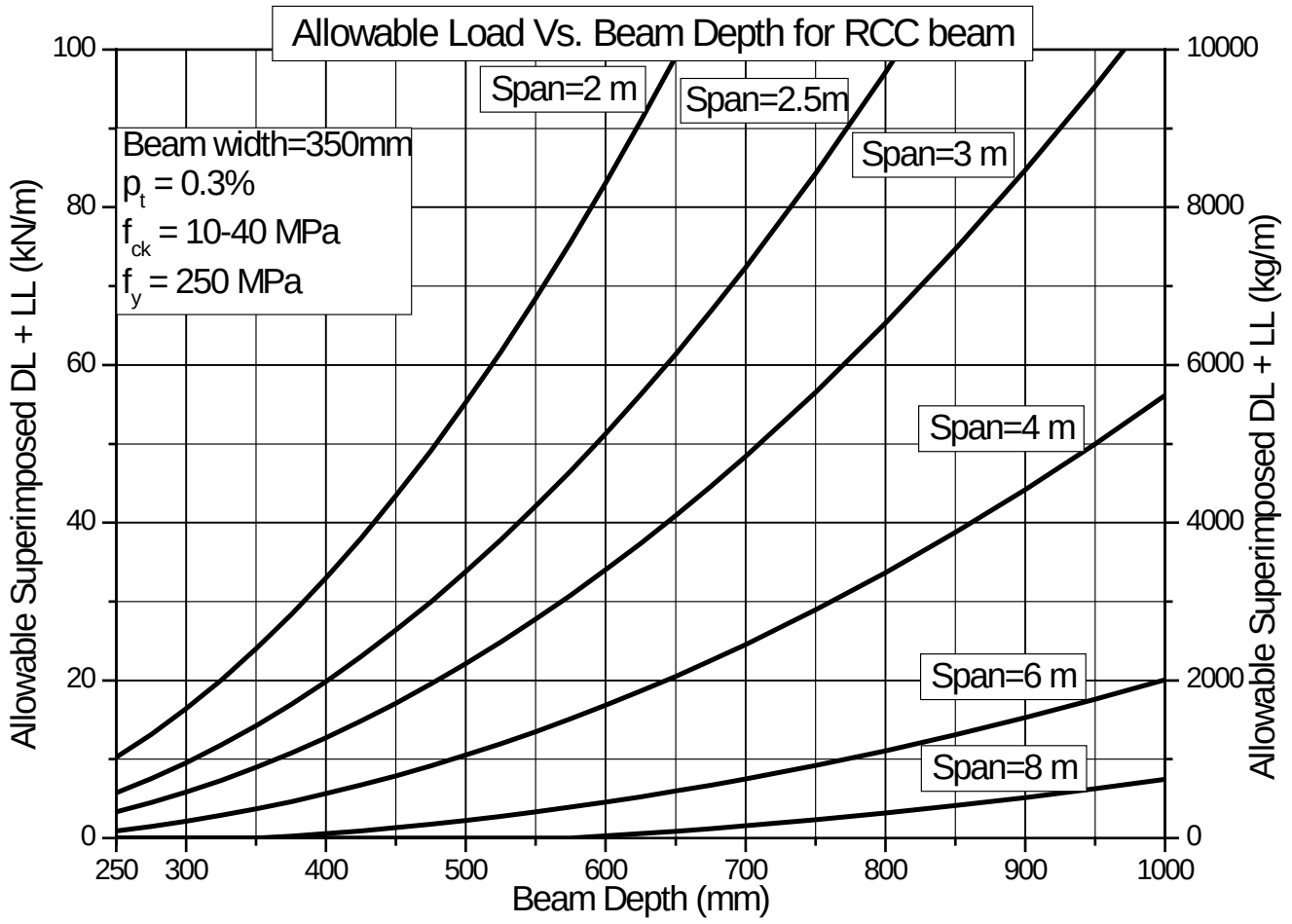
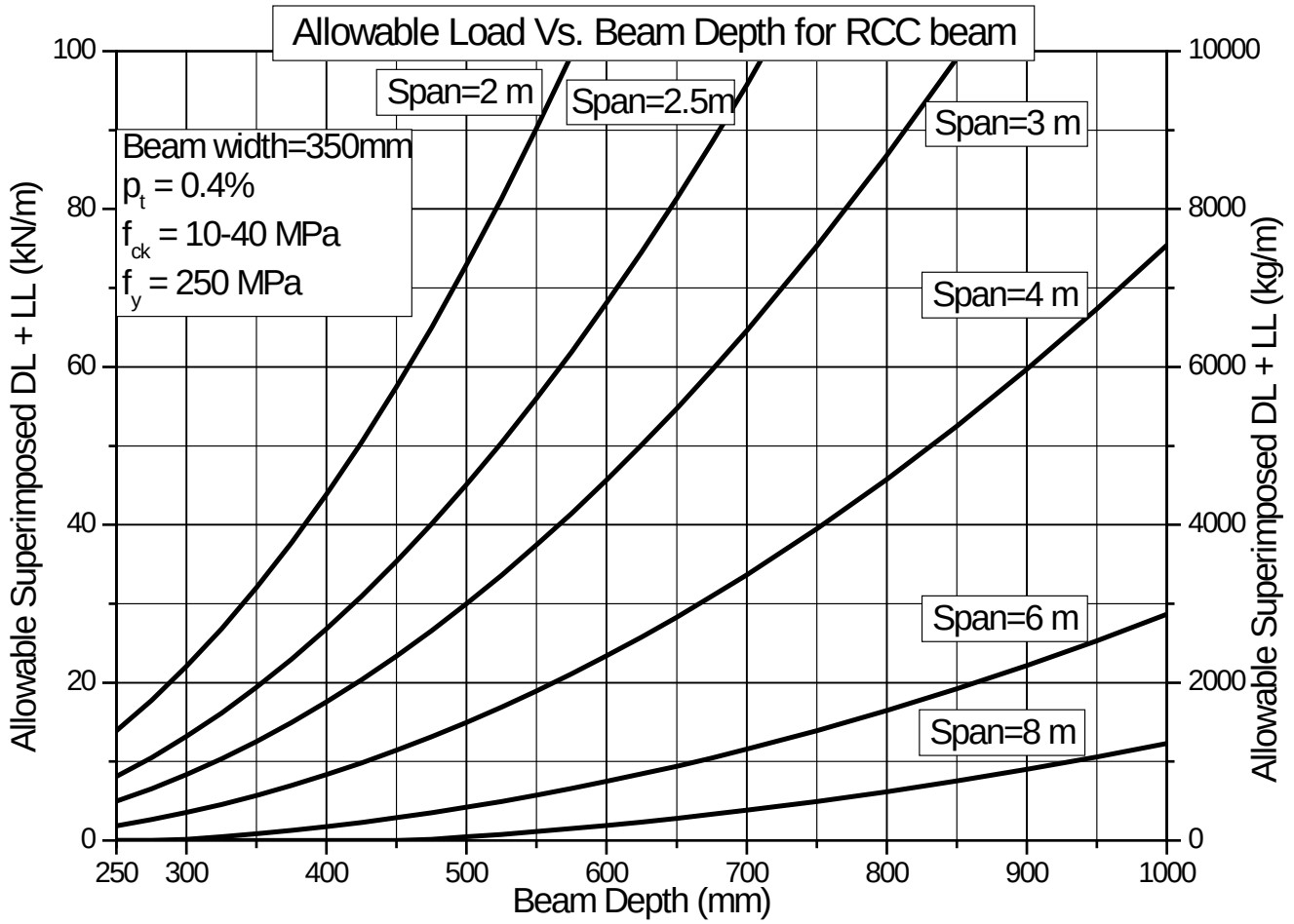
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=350mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Beam width=350mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Span=2 m
Span=2.5m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000


Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=350mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 250 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
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60
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0
2000
4000
6000
8000
10000
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300
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700
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900
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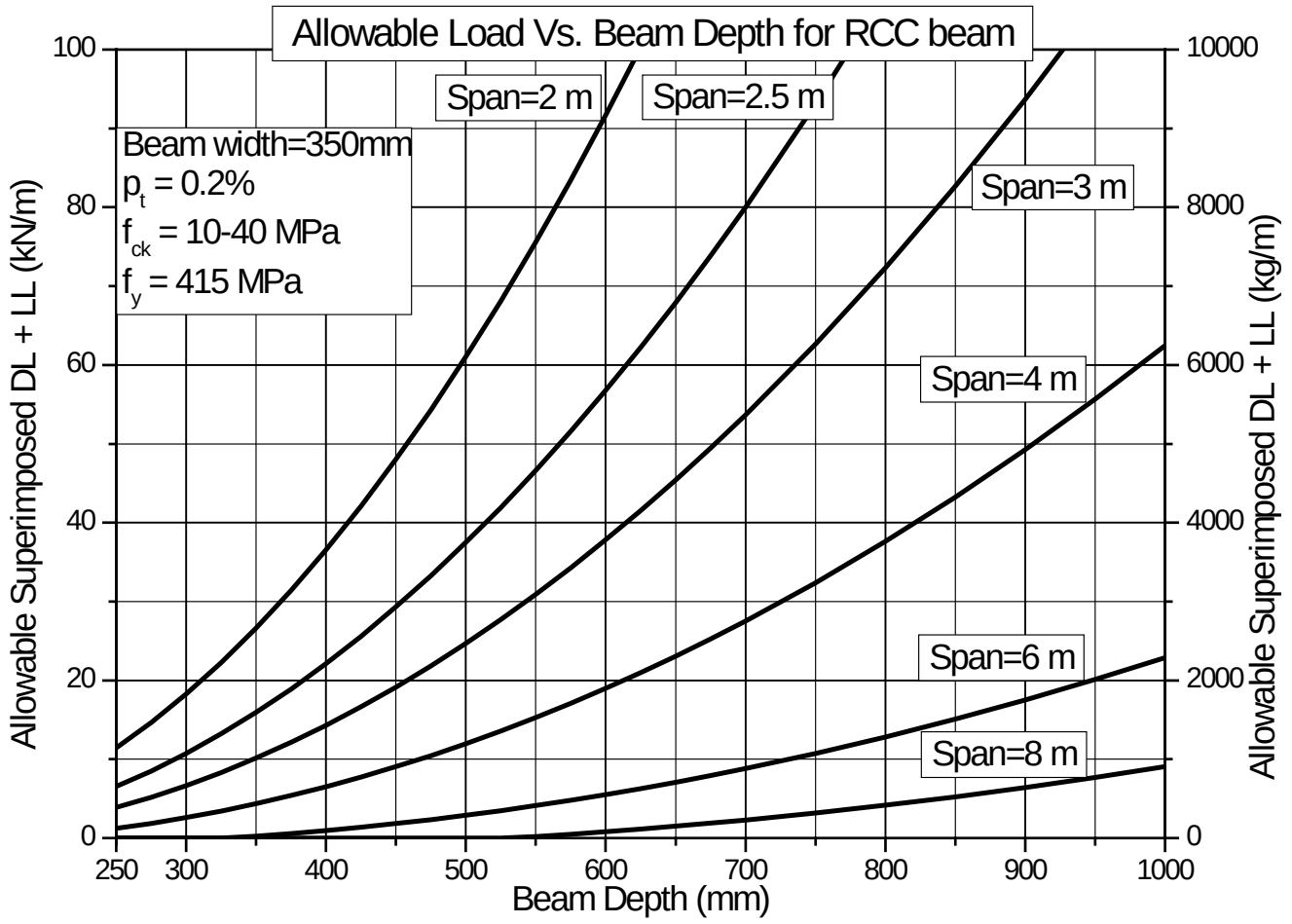
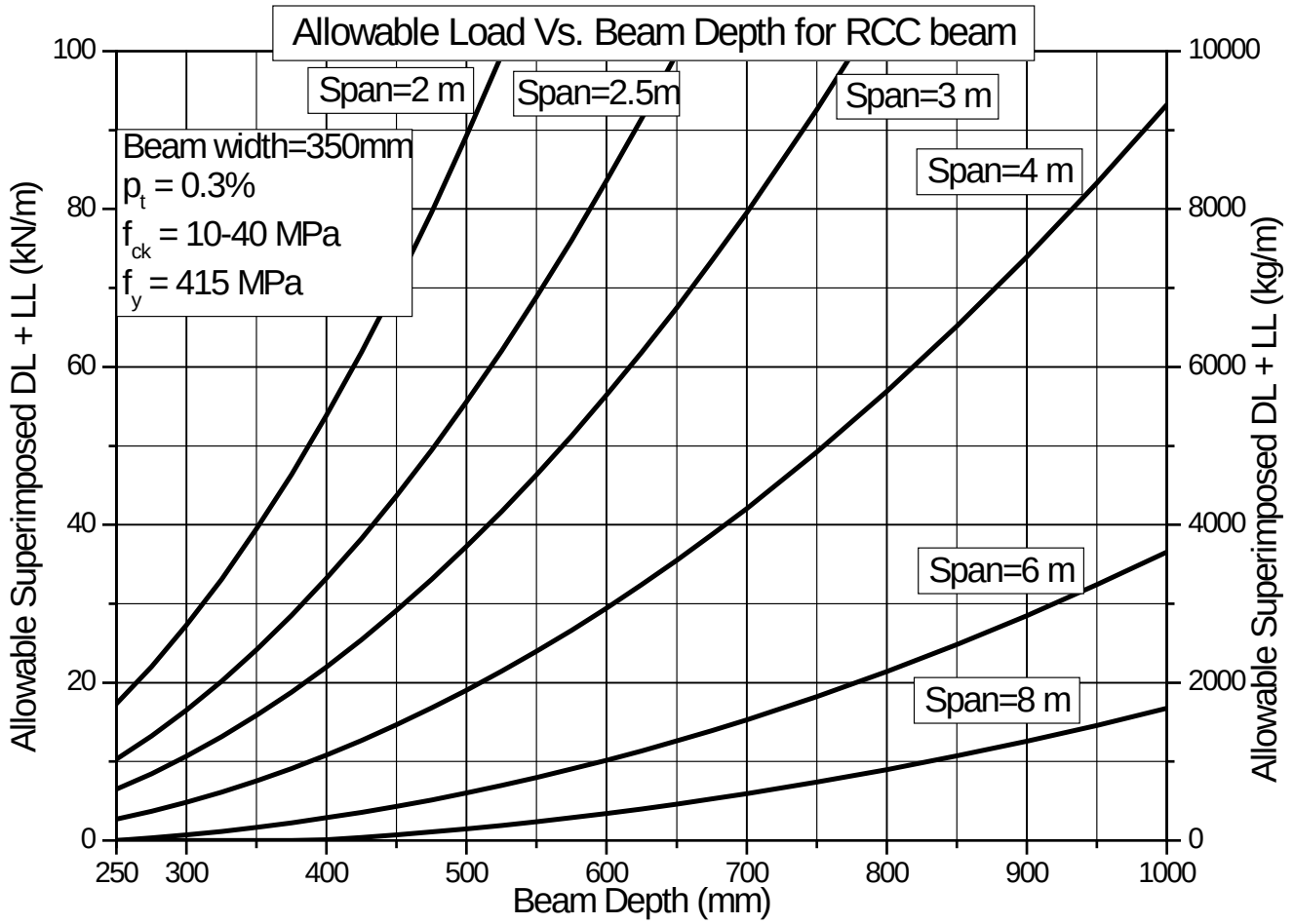
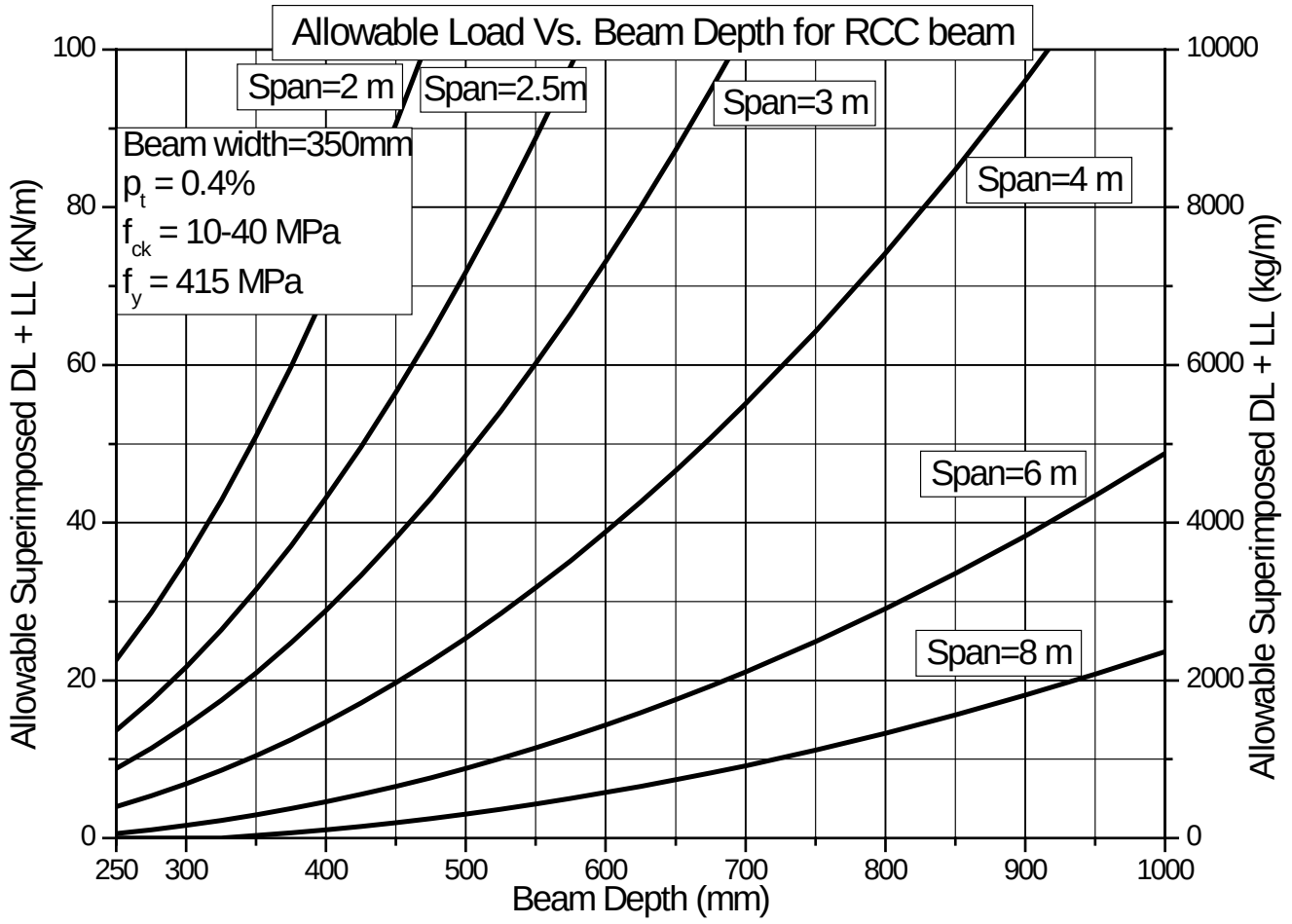
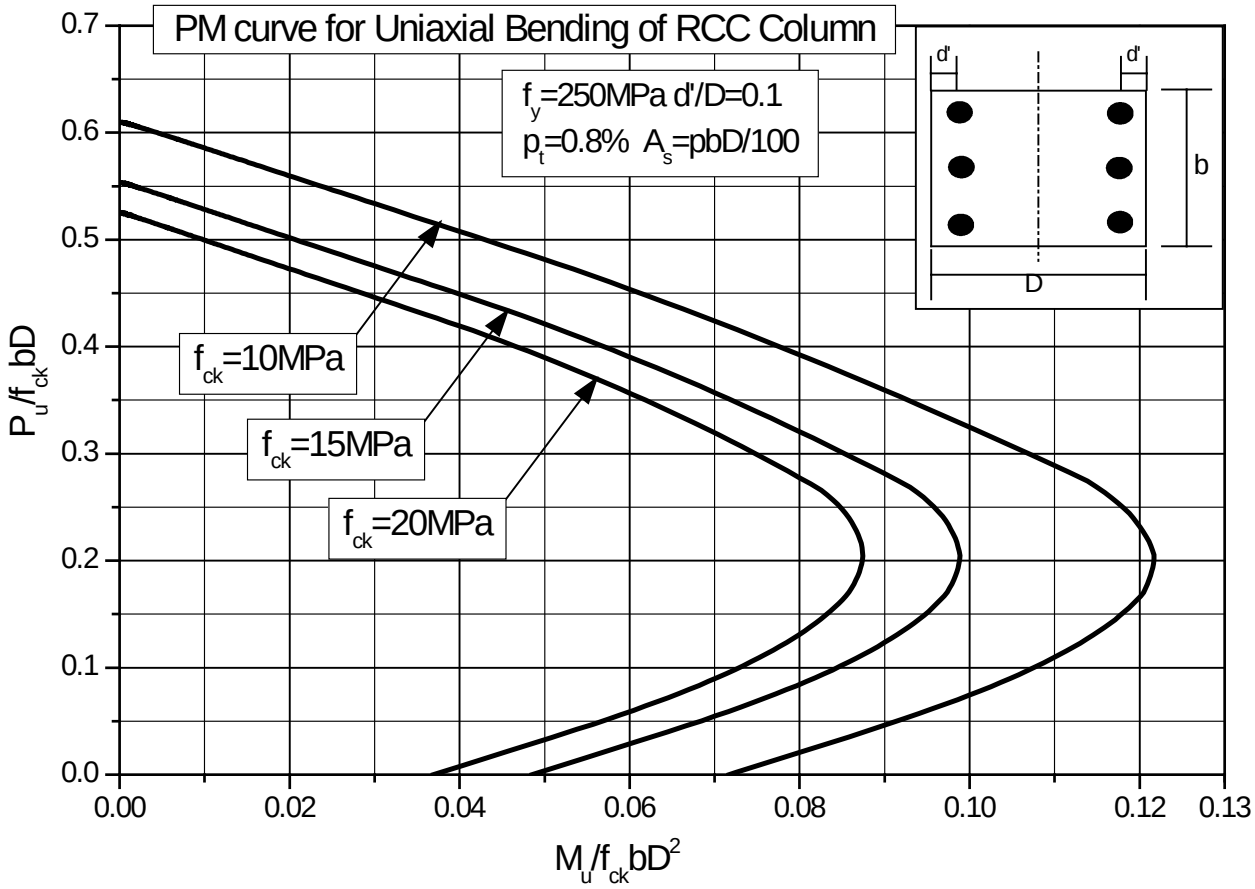
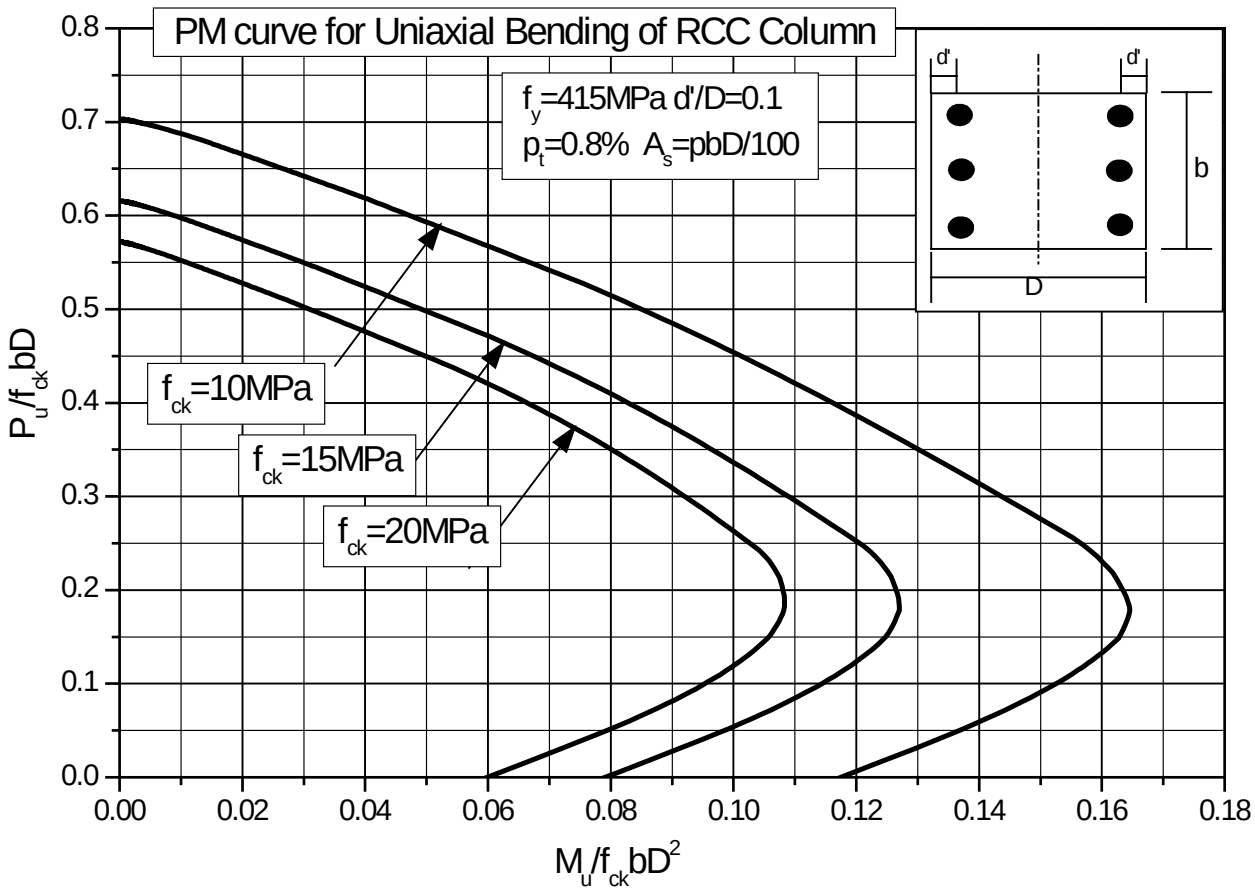
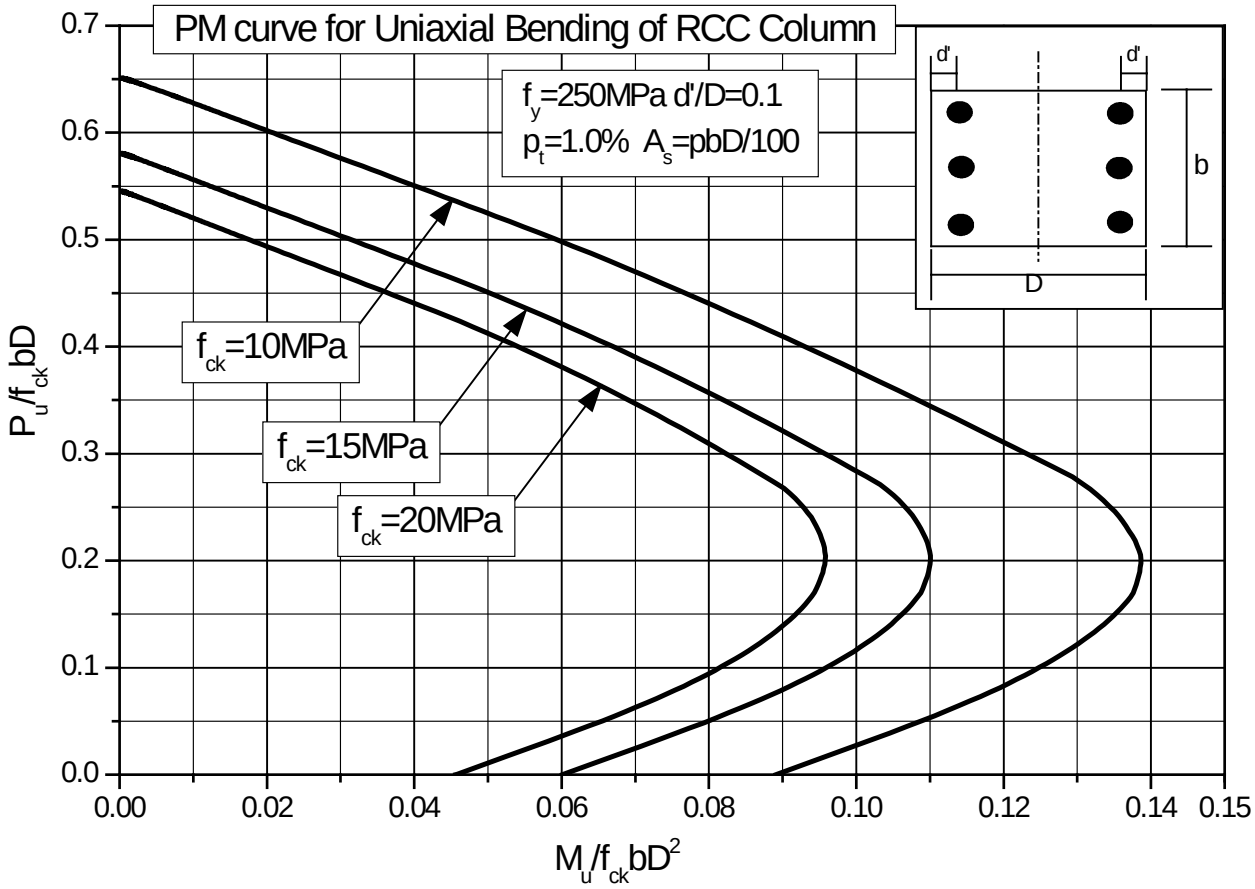

Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5 m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=350mm
p_t = 0.2%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000

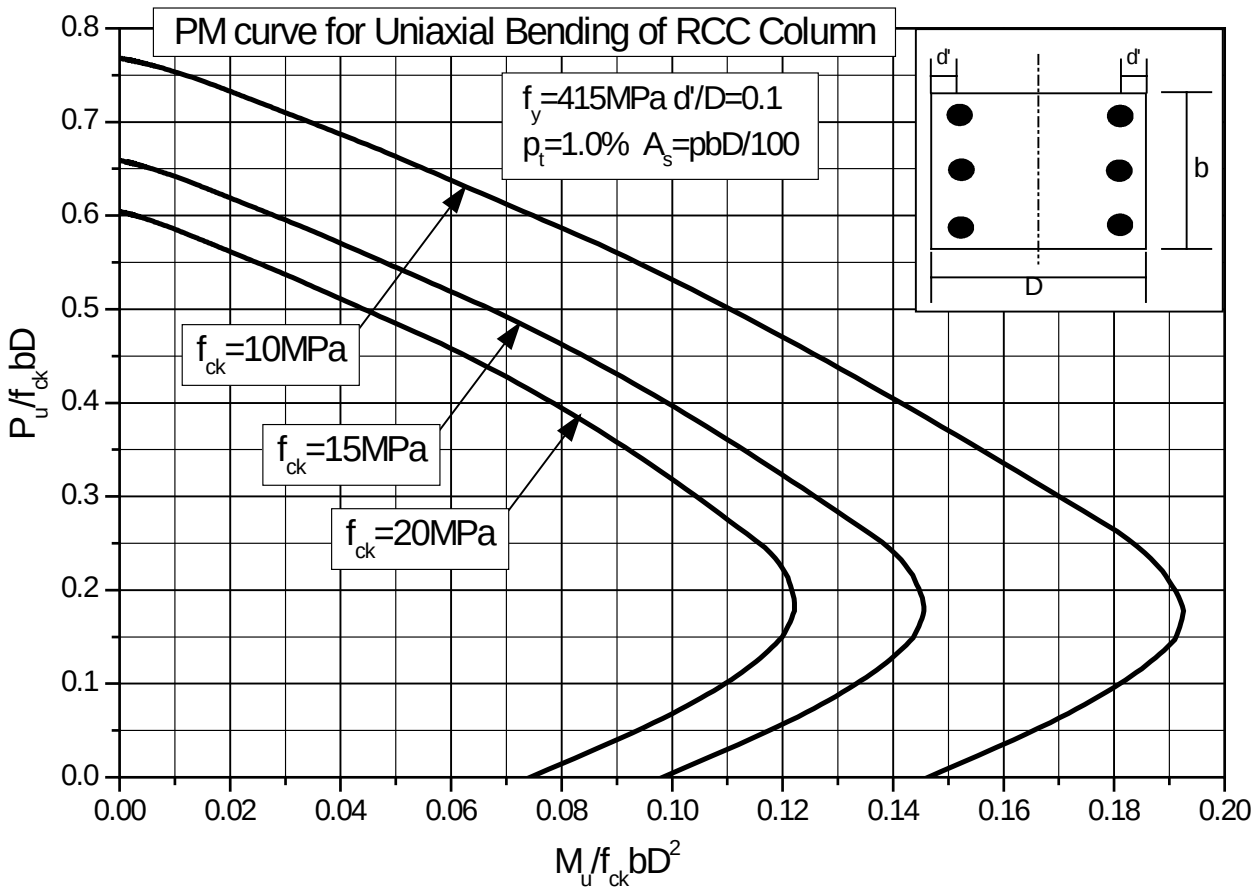

Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=350mm
p_t = 0.3%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000

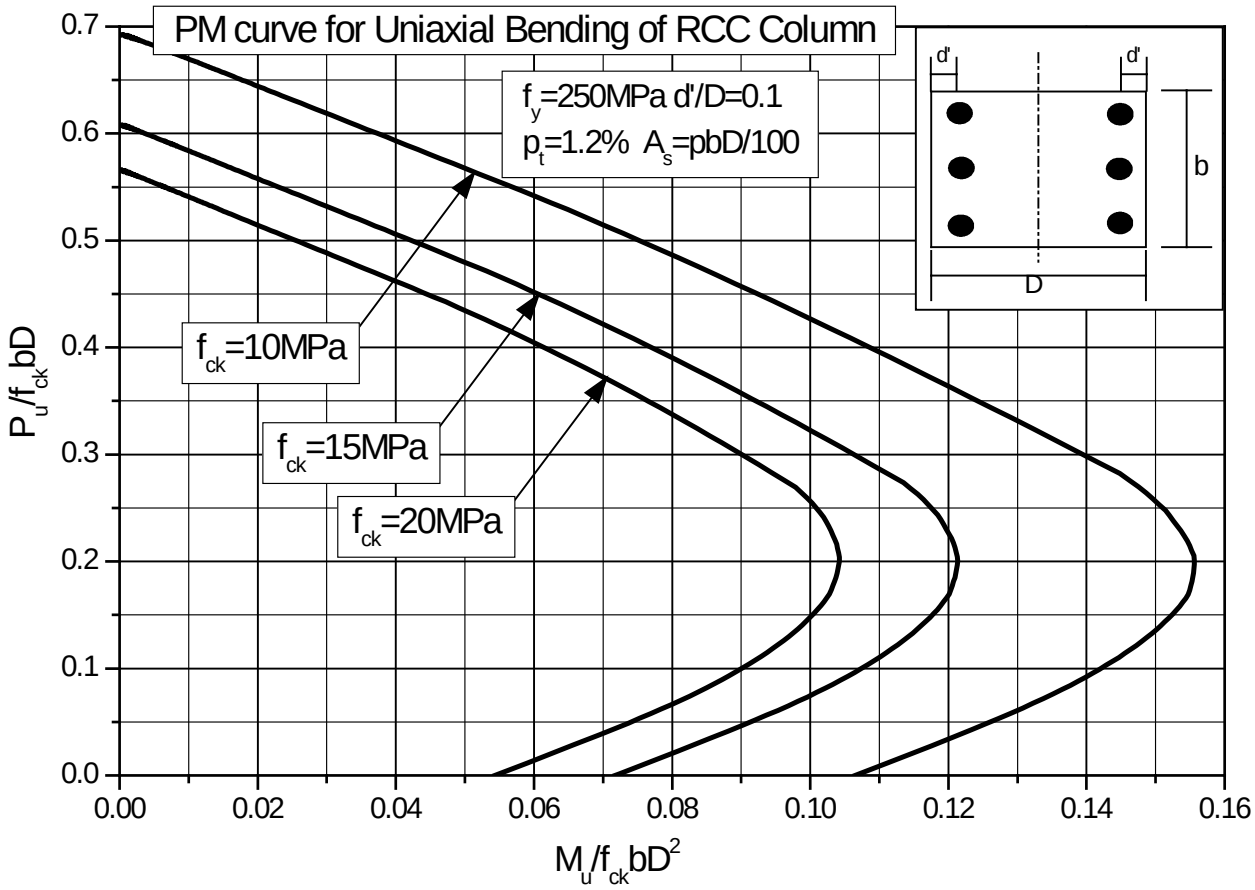

Allowable Load Vs. Beam Depth for RCC beam
Span=2 m
Span=2.5m
Span=3 m
Span=4 m
Span=6 m
Span=8 m
Beam width=350mm
p_t = 0.4%
f_{ck} = 10-40 MPa
f_y = 415 MPa
Allowable Superimposed DL + LL (kN/m)
Allowable Superimposed DL + LL (kg/m)
Beam Depth (mm)
0
20
40
60
80
100
0
2000
4000
6000
8000
10000
250
300
400
500
600
700
800
900
1000

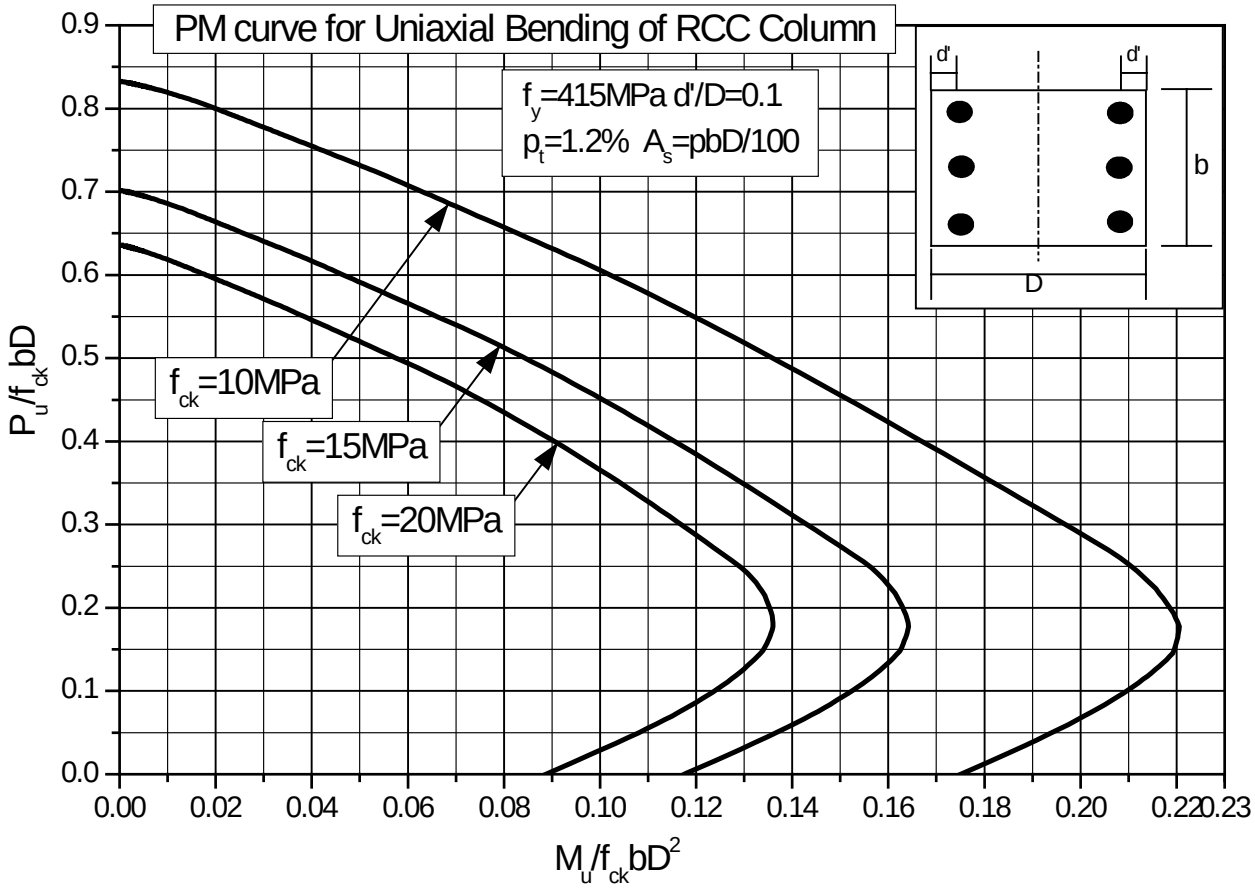

PM curve for Uniaxial Bending of RCC Column
f_y=250MPa d'/D=0.1
p_t=0.8% A_s=pbD/100
f_{ck}=10MPa
f_{ck}=15MPa
f_{ck}=20MPa
d'
d'
b
D
$P_u/f_{ck}bD$
$M_u/f_{ck}bD^2$
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.13


PM curve for Uniaxial Bending of RCC Column
f_y=415MPa d'/D=0.1
p_t=0.8% A_s=pbD/100
f_{ck}=10MPa
f_{ck}=15MPa
f_{ck}=20MPa
d'
d'
b
D
$P_u/f_{ck}bD$
$M_u/f_{ck}bD^2$
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18


PM curve for Uniaxial Bending of RCC Column
fy=250MPa d'/D=0.1
pt=1.0% As=pbD/100
fck=10MPa
fck=15MPa
fck=20MPa
d'
d'
b
D
Pu/fckbD
Mu/fckbD2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.15


PM curve for Uniaxial Bending of RCC Column
fy=415MPa d'/D=0.1
pt=1.0% As=pbD/100
fck=10MPa
fck=15MPa
fck=20MPa
d'
d'
b
D
Pu/fckbD
Mu/fckbD2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20


PM curve for Uniaxial Bending of RCC Column
fy=250MPa d'/D=0.1
pt=1.2% As=pbD/100
fck=10MPa
fck=15MPa
fck=20MPa
d'
d'
b
D
Pu/fckbD
Mu/fckbD2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16


PM curve for Uniaxial Bending of RCC Column
fy=415MPa d'/D=0.1
pt=1.2% As=pbD/100
fck=10MPa
fck=15MPa
fck=20MPa
d'
d'
b
D
Pu/fckbD
Mu/fckbD2
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.22
0.23