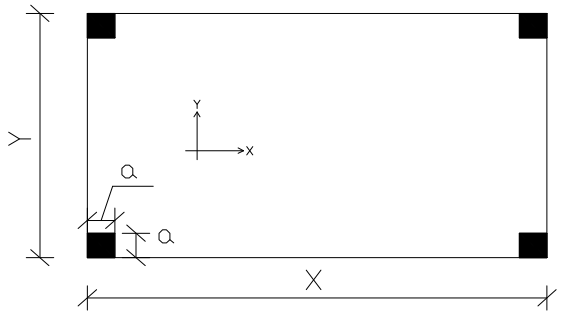
TWO WAY SIMPLY SUPPORTED FLAT SLAB - DEFLECTION ACCORDING TO ACI318 (EQUIVALENT FRAME METHOD)

Column dimension(m):	0.25	Elasticity modulus E(T/m2):	3000000
Slab Thickness(m):	0.2		
Story Height(m):	2.5	Support:	Fix
Slab width X(m):	5	Dead load + SW(T/m2):	0.8
Slab length Y(m):	4	Live load (T/m2):	0.25
		Sustain load factor:	0.4



1. Moment of inertia calculation:

a) X direction:

I-frame-x:	0.00133333
I-col-x:	0.00070833
I-mid-x:	0.000625

b) Y direction:

I-frame-y:	0.00166667
I-col-y:	0.00070833
I-mid-y:	0.00095833

2. Reference deflection (DL):

a) X direction: Δfx = 0.053027751 cm

b) Y direction: Δfy = 0.020599365 cm

3. Distribution factor:

a) X direction: Cfx= 67.5 %, Mfx= 32.5 %

b) Y direction: Cfy= 81 %, Mfy= 19 %

4. Equivalent column stifness:

Column stifness Kc= 1562.5

Constant C= 0.000331

a) X direction : Ktx = 6663.463557, Kecx = 1265.707262

b) Y direction : Kty = 4898.765432, Kecy = 1184.647352

5. Static moment (DL):

a) X direction :	Mox = 4.5125 T.m	b) Y direction:	Moy = 3.515625 T.m

6. Release deflection Δθ (DL):

a) X direction :	b) Y direction:
Release Coefficient = 0.325	Release Coefficient = 0.19
Release deflection Δθx = 0.0688 cm	Release deflection Δθy = 0.02643 cm

7. Partial deflections (DL):

a) X direction :	b) Y direction:
Δcolx = 0.20497 cm	Δcoly = 0.09212 cm
Δmidx = 0.17436 cm	Δmidy = 0.05967 cm

8. Total deflection check:

Δmax (DL)= 0.26648 cm	Short term admissible deflection : 0.97222 cm	OK
Δmax (LL)= 0.08328 cm	Long term admissible deflection : 1.45833 cm	OK
Δ long-term = 0.98265 cm		