c/d	C1	J
0.1250	4.854	0.826
0.1375	4.640	0.821
0.1500	4.455	0.817
0.1625	4.291	0.813
0.1750	4.146	0.808
0.1875	4.016	0.804
0.2000	3.899	0.800
0.2125	3.793	0.796
0.2250	3.697	0.791
0.2375	3.608	0.786
0.2500	3.526	0.782
0.2625	3.451	0.778
0.2750	3.381	0.773
0.2875	3.316	0.769
0.3000	3.255	0.766
0.3125	3.199	0.760
0.3250	3.146	0.756
0.3375	3.096	0.752
0.3500	3.049	0.747
0.3625	3.004	0.743
0.3750	2.963	0.739
0.3875	2.923	0.734
0.4000	2.885	0.730
0.4125	2.850	0.726
0.4250	2.816	0.721
0.4375	2.784	0.717
0.4500	2.753	0.713
0.4625	2.724	0.708
0.4750	2.696	0.704
0.4875	2.670	0.700
0.5000	2.645	0.695

$$J = \frac{1}{\gamma_s}(1-0.4c/d)$$

$$C1 = \frac{1}{\sqrt{0.3573\ c/d\ (1-0.4c/d)}}$$

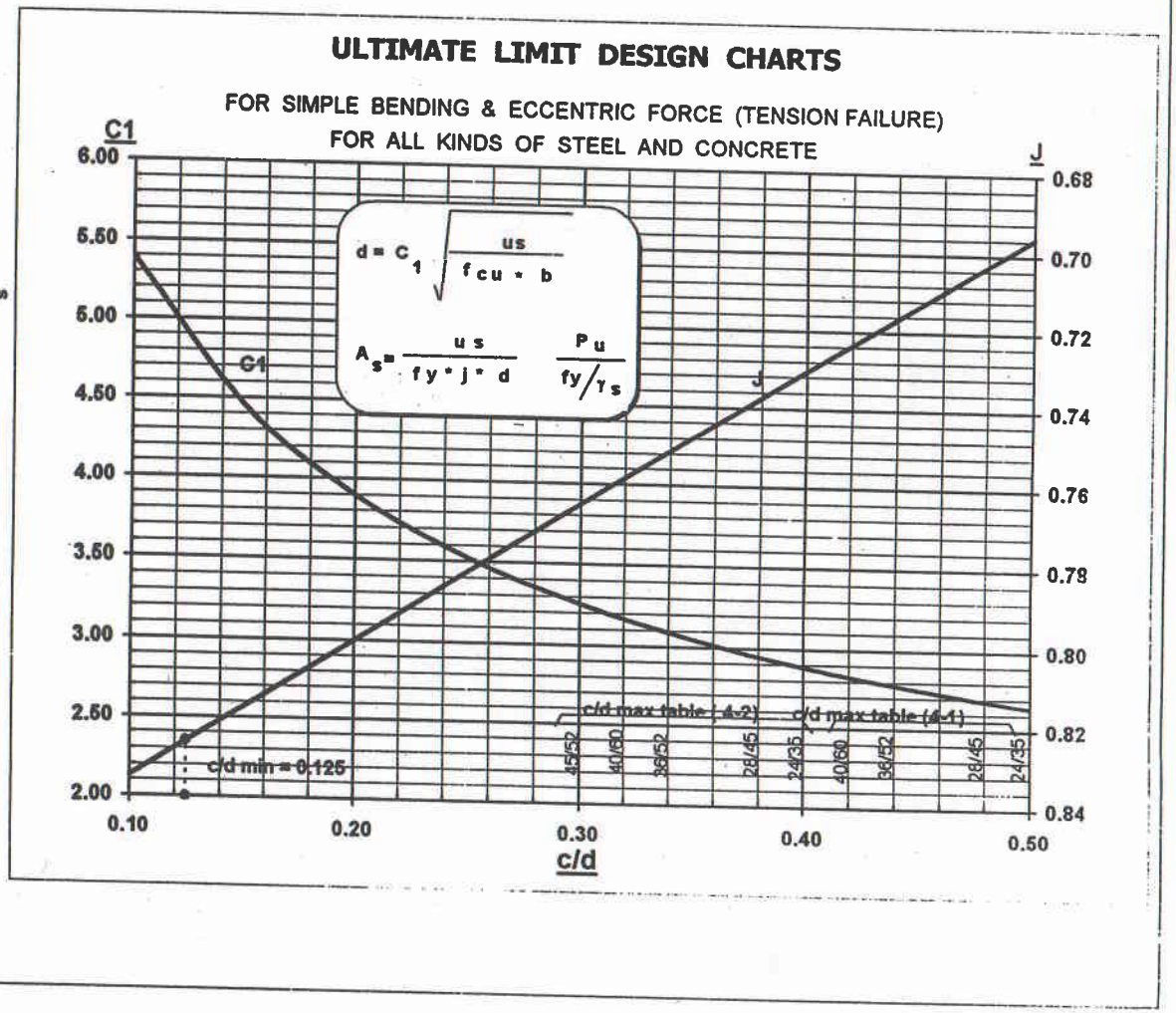


Chart (C)

VII.1. LOAD DISTRIBUTION ON TWO WAY SLABS

1. *Load Distribution According to U.A.R.*

r	1.00	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.00
α	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85
β	0.35	0.29	0.25	0.21	0.18	0.16	0.14	0.12	0.11	0.09	0.08

2. *Load Distribution According to Marcus* :

r	1.00	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.00
α	.396	.473	.543	.606	.660	.706	.746	.778	.806	.830	.849
β	.396	.323	.262	.212	.172	.140	.113	.093	.077	.063	.053

3. *Load Distribution According to Grashoff* :

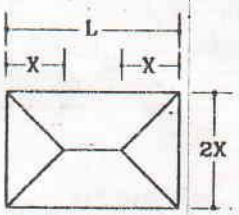
r	1.00	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.00
α	.500	.595	.672	.742	.797	.834	.869	.893	.914	.928	.941
β	.500	.405	.328	.258	.203	.166	.131	.107	.086	.072	.059

$r = \frac{m.b}{m.a}$; where m= 0.87 for continuity at one end of the slab

=0.76 for continuity at both ends of the slab

VII.2. EQUIVALENT LOAD FOR DESIGN OF BEAMS :

supporting two way Slabs :



$\frac{L}{2x}$	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
α	.667	.725	.769	.803	.829	.852	.870	.885	.897	.908	.917
β	.500	.545	.583	.615	.643	.667	.688	.706	.722	.737	.750

Area of Steel Bars in cm^2 (used in Egypt)

Φ	Weight	Cross sectional area (cm^2)											
mm	kg/m'	1	2	3	4	5	6	7	8	9	10	11	12
6	0.222	0.28	0.57	0.85	1.13	1.41	1.70	1.98	2.26	2.54	2.83	3.11	3.39
8	0.395	0.50	1.01	1.51	2.01	2.51	3.02	3.52	4.02	4.52	5.03	5.53	6.03
10	0.617	0.79	1.57	2.36	3.14	3.93	4.71	5.50	6.28	7.07	7.85	8.64	9.42
12	0.888	1.13	2.26	3.39	4.52	5.65	6.79	7.92	9.05	10.18	11.31	12.44	13.57
14	1.208	1.54	3.08	4.62	6.16	7.70	9.24	10.78	12.32	13.85	15.39	16.93	18.47
16	1.578	2.01	4.02	6.03	8.04	10.05	12.06	14.07	16.08	18.10	20.11	22.12	24.13
18	1.998	2.54	5.09	7.63	10.18	12.72	15.27	17.81	20.36	22.90	25.45	27.99	30.54
20	2.466	3.14	6.28	9.42	12.57	15.71	18.85	21.99	25.13	28.27	31.42	34.56	37.70
22	2.984	3.80	7.60	11.40	15.21	19.01	22.81	26.61	30.41	34.21	38.01	41.81	45.62
25	3.853	4.91	9.82	14.73	19.63	24.54	29.45	34.36	39.27	44.18	49.09	54.00	58.90
28	4.834	6.16	12.32	18.47	24.63	30.79	36.95	43.10	49.26	55.42	61.58	67.73	73.89
32	6.313	8.04	16.08	24.13	32.17	40.21	48.25	56.30	64.34	72.38	80.42	88.47	96.51
38	8.903	11.34	22.68	34.02	45.36	56.71	68.05	79.39	90.73	102.1	113.4	124.8	136.1

Area of Other Steel Bars in cm^2

Φ	Weight	Cross sectional area (cm^2)											
mm	kg/m'	1	2	3	4	5	6	7	8	9	10	11	12
6	0.222	0.28	0.57	0.85	1.13	1.41	1.70	1.98	2.26	2.54	2.83	3.11	3.39
8	0.395	0.50	1.01	1.51	2.01	2.51	3.02	3.52	4.02	4.52	5.03	5.53	6.03
10	0.617	0.79	1.57	2.36	3.14	3.93	4.71	5.50	6.28	7.07	7.85	8.64	9.42
13	1.042	1.33	2.65	3.98	5.31	6.64	7.96	9.29	10.62	11.95	13.27	14.60	15.93
16	1.578	2.01	4.02	6.03	8.04	10.05	12.06	14.07	16.08	18.10	20.11	22.12	24.13
19	2.226	2.84	5.67	8.51	11.34	14.18	17.01	19.85	22.68	25.52	28.35	31.19	34.02
22	2.984	3.80	7.60	11.40	15.21	19.01	22.81	26.61	30.41	34.21	38.01	41.81	45.62
25	3.853	4.91	9.82	14.73	19.63	24.54	29.45	34.36	39.27	44.18	49.09	54.00	58.90
28	4.834	6.16	12.32	18.47	24.63	30.79	36.95	43.10	49.26	55.42	61.58	67.73	73.89
32	6.313	8.04	16.08	24.13	32.17	40.21	48.25	56.30	64.34	72.38	80.42	88.47	96.5
38	8.903	11.34	22.68	34.02	45.36	56.71	68.05	79.39	90.73	102.1	113.4	124.8	136.1