



ESTUDIO Y PROYECTO PARA LA CONSTRUCCIÓN DEL COMPLEJO VIAL
METROPOLITANO "TLAXCALA"



PROYECTO:	COMPLEJO VIAL TLAXCALA	DESCRIPCIÓN:	uu-0.25
	PUENTE MOLINITO - TEXMELUCAN	POZO	SPT 2
MUESTRA:	M-4	FECHA:	30-nov-17
PROF.:	1.80 - 2.60	OPERADOR:	ABJ

H0= 9.670 cm
D0= 3.593 cm
A0= 10.141 cm²
σ₃= 0.250 kg/cm²

Registrados en el ensaye		Parámetros calculados			
Carga	Desplazamiento	Def. unitaria axial	Area corregida	Esfuerzo desviador	Esfuerzo cortante
P kg	δ mm	ε mm/mm	Ac cm ²	q kg/cm ²	τ kg/cm ²
0.000	0.000	0.000	10.141	0.000	0.000
1.037	0.127	0.001	10.154	0.102	0.051
1.556	0.254	0.003	10.168	0.153	0.076
2.178	0.381	0.004	10.181	0.214	0.107
2.593	0.508	0.005	10.195	0.254	0.127
2.852	0.670	0.007	10.212	0.279	0.140
3.370	0.790	0.008	10.225	0.330	0.165
3.889	0.900	0.009	10.236	0.380	0.190
4.148	1.016	0.011	10.249	0.405	0.202
4.408	1.143	0.012	10.262	0.429	0.215
4.926	1.270	0.013	10.276	0.479	0.240
5.185	1.397	0.014	10.290	0.504	0.252
5.600	1.524	0.016	10.304	0.544	0.272
5.963	1.651	0.017	10.317	0.578	0.289
6.222	1.778	0.018	10.331	0.602	0.301
6.482	1.905	0.020	10.345	0.627	0.313
6.741	2.032	0.021	10.359	0.651	0.325
7.000	2.159	0.022	10.373	0.675	0.337
7.259	2.310	0.024	10.389	0.699	0.349
7.519	2.432	0.025	10.403	0.723	0.361
7.622	2.564	0.027	10.417	0.732	0.366
7.778	2.696	0.028	10.432	0.746	0.373
7.985	2.831	0.029	10.447	0.764	0.382
8.141	2.964	0.031	10.462	0.778	0.389
8.297	3.097	0.032	10.477	0.792	0.396
8.452	3.230	0.033	10.492	0.806	0.403
8.556	3.363	0.035	10.507	0.814	0.407
8.660	3.496	0.036	10.522	0.823	0.412
8.815	3.629	0.038	10.537	0.837	0.418
8.971	3.762	0.039	10.552	0.850	0.425
9.074	3.895	0.040	10.567	0.859	0.429
9.178	4.028	0.042	10.582	0.867	0.434
9.334	4.161	0.043	10.597	0.881	0.440
9.437	4.294	0.044	10.612	0.889	0.445
9.593	4.428	0.046	10.628	0.903	0.451
9.748	4.561	0.047	10.643	0.916	0.458
9.852	4.694	0.049	10.658	0.924	0.462
9.956	4.827	0.050	10.674	0.933	0.466
10.060	4.960	0.051	10.689	0.941	0.471
10.163	5.093	0.053	10.705	0.949	0.475
10.267	5.226	0.054	10.720	0.958	0.479
10.319	5.359	0.055	10.736	0.961	0.481
10.319	5.492	0.057	10.752	0.960	0.480
10.371	5.625	0.058	10.767	0.963	0.482
10.423	5.758	0.060	10.783	0.967	0.483
10.474	5.891	0.061	10.799	0.970	0.485
10.526	6.024	0.062	10.815	0.973	0.487
10.578	6.157	0.064	10.831	0.977	0.488
10.630	6.290	0.065	10.847	0.980	0.490
10.578	6.423	0.066	10.863	0.974	0.487
10.474	6.556	0.068	10.879	0.963	0.481
10.371	6.689	0.069	10.895	0.952	0.476
10.267	6.822	0.071	10.911	0.941	0.470
10.163	6.955	0.072	10.927	0.930	0.465
10.060	7.088	0.073	10.943	0.919	0.460



ESTUDIO Y PROYECTO PARA LA CONSTRUCCIÓN DEL COMPLEJO VIAL
METROPOLITANO "TLAXCALA"



PROYECTO:	COMPLEJO VIAL TLAXCALA	DESCRIPCIÓN:	uu-0.75
	PUENTE MOLINITO - TEXMELUCAN	POZO	SPT 2
MUESTRA:	M-4	FECHA:	30-nov-17
PROF.:	1.80 - 2.60	OPERADOR:	ABJ

H0= 9.450 cm
D0= 3.620 cm
A0= 10.292 cm²
 σ_3 = 0.500 kg/cm²

Registrados en el ensaye		Parámetros calculados			
Carga	Desplazamiento	Def. unitaria axial	Área corregida	Esfuerzo desviador	Esfuerzo cortante
P kg	δ mm	ϵ mm/mm	Ac cm ²	q kg/cm ²	τ kg/cm ²
0.00	0.000	0.000	10.292	0.000	0.000
1.34	0.127	0.001	10.306	0.130	0.065
2.14	0.254	0.003	10.320	0.207	0.104
2.94	0.381	0.004	10.334	0.284	0.142
3.74	0.508	0.005	10.348	0.362	0.181
4.28	0.635	0.007	10.362	0.413	0.206
4.81	0.762	0.008	10.376	0.464	0.232
5.34	0.889	0.009	10.390	0.514	0.257
5.77	1.016	0.011	10.404	0.555	0.277
6.15	1.143	0.012	10.418	0.590	0.295
6.41	1.270	0.013	10.432	0.615	0.307
6.84	1.397	0.015	10.447	0.655	0.327
7.21	1.524	0.016	10.461	0.690	0.345
7.48	1.651	0.017	10.475	0.714	0.357
7.75	1.778	0.019	10.490	0.739	0.369
8.02	1.905	0.020	10.504	0.763	0.382
8.28	2.032	0.022	10.518	0.788	0.394
8.55	2.159	0.023	10.533	0.812	0.406
8.82	2.286	0.024	10.547	0.836	0.418
9.08	2.413	0.026	10.562	0.860	0.430
9.30	2.540	0.027	10.576	0.879	0.440
9.46	2.667	0.028	10.591	0.893	0.447
9.62	2.794	0.030	10.606	0.907	0.453
9.89	2.921	0.031	10.620	0.931	0.465
9.99	3.048	0.032	10.635	0.940	0.470
10.15	3.175	0.034	10.650	0.953	0.477
10.21	3.302	0.035	10.665	0.957	0.479
10.37	3.429	0.036	10.680	0.971	0.485
10.47	3.556	0.038	10.695	0.979	0.490
10.58	3.683	0.039	10.710	0.988	0.494
10.69	3.810	0.040	10.725	0.997	0.498
10.80	3.937	0.042	10.740	1.005	0.503
10.90	4.064	0.043	10.755	1.014	0.507
11.01	4.191	0.044	10.770	1.022	0.511
11.12	4.318	0.046	10.785	1.031	0.515
11.22	4.445	0.047	10.800	1.039	0.520
11.33	4.572	0.048	10.815	1.048	0.524
11.44	4.699	0.050	10.831	1.056	0.528
11.54	4.826	0.051	10.846	1.064	0.532
11.65	4.953	0.052	10.861	1.073	0.536
11.76	5.080	0.054	10.877	1.081	0.540
11.86	5.207	0.055	10.892	1.089	0.545
11.92	5.334	0.056	10.908	1.093	0.546
11.97	5.461	0.058	10.923	1.096	0.548
12.02	5.588	0.059	10.939	1.099	0.550
12.08	5.715	0.060	10.955	1.103	0.551
12.13	5.842	0.062	10.970	1.106	0.553
12.08	5.969	0.063	10.986	1.099	0.550
12.02	6.096	0.065	11.002	1.093	0.546
11.97	6.223	0.066	11.018	1.086	0.543
11.92	6.350	0.067	11.034	1.080	0.540
11.86	6.477	0.069	11.050	1.074	0.537
11.81	6.604	0.070	11.065	1.067	0.534
11.76	6.731	0.071	11.082	1.061	0.530
11.70	6.858	0.073	11.098	1.055	0.527
11.60	6.985	0.074	11.114	1.043	0.522



ESTUDIO Y PROYECTO PARA LA CONSTRUCCIÓN DEL COMPLEJO VIAL
METROPOLITANO "TLAXCALA"



PROYECTO:	COMPLEJO VIAL TLAXCALA	DESCRIPCIÓN:	uu-1.0
	PUENTE MOLINITO - TEXMELUCAN	POZO	SPT 2
MUESTRA:	M-4	FECHA:	30-nov-17
PROF.:	1.80 - 2.60	OPERADOR:	ABJ

H0= 9.580 cm
D0= 3.637 cm
A0= 10.387 cm²
 σ_3 = 0.750 kg/cm²

Registrados en el ensaye		Parámetros calculados			
Carga	Desplazamiento	Def. unitaria axial	Área corregida	Esfuerzo desviador	Esfuerzo cortante
P kg	δ mm	ε mm/mm	Ac cm ²	q kg/cm ²	τ kg/cm ²
0.00	0.000	0.000	10.387	0.000	0.000
1.51	0.127	0.001	10.401	0.145	0.072
2.41	0.254	0.003	10.415	0.231	0.116
3.31	0.381	0.004	10.429	0.318	0.159
4.22	0.508	0.005	10.443	0.404	0.202
4.82	0.635	0.007	10.456	0.461	0.231
5.42	0.762	0.008	10.470	0.518	0.259
6.03	0.889	0.009	10.484	0.575	0.287
6.51	1.016	0.011	10.499	0.620	0.310
6.93	1.143	0.012	10.513	0.659	0.330
7.23	1.270	0.013	10.527	0.687	0.344
7.71	1.397	0.015	10.541	0.732	0.366
8.14	1.524	0.016	10.555	0.771	0.385
8.44	1.651	0.017	10.569	0.798	0.399
8.74	1.778	0.019	10.584	0.826	0.413
9.04	1.905	0.020	10.598	0.853	0.427
9.34	2.032	0.021	10.612	0.880	0.440
9.64	2.159	0.023	10.627	0.907	0.454
9.94	2.286	0.024	10.641	0.935	0.467
10.25	2.413	0.025	10.656	0.962	0.481
10.49	2.540	0.027	10.670	0.983	0.491
10.67	2.667	0.028	10.685	0.998	0.499
10.85	2.794	0.029	10.699	1.014	0.507
11.15	2.921	0.030	10.714	1.041	0.520
11.27	3.048	0.032	10.729	1.051	0.525
11.45	3.175	0.033	10.743	1.066	0.533
11.51	3.302	0.034	10.758	1.070	0.535
11.69	3.429	0.036	10.773	1.085	0.543
11.81	3.556	0.037	10.788	1.095	0.548
11.93	3.683	0.038	10.802	1.105	0.552
12.05	3.810	0.040	10.817	1.114	0.557
12.18	3.937	0.041	10.832	1.124	0.562
12.30	4.064	0.042	10.847	1.134	0.567
12.42	4.191	0.044	10.862	1.143	0.572
12.54	4.318	0.045	10.877	1.153	0.576
12.66	4.445	0.046	10.893	1.162	0.581
12.78	4.572	0.048	10.908	1.171	0.586
12.90	4.699	0.049	10.923	1.181	0.590
13.02	4.826	0.050	10.938	1.190	0.595
13.14	4.953	0.052	10.953	1.200	0.600
13.26	5.080	0.053	10.969	1.209	0.604
13.38	5.207	0.054	10.984	1.218	0.609
13.44	5.334	0.056	11.000	1.222	0.611
13.50	5.461	0.057	11.015	1.226	0.613
13.56	5.588	0.058	11.031	1.229	0.615
13.62	5.715	0.060	11.046	1.233	0.617
13.68	5.842	0.061	11.062	1.237	0.618
13.62	5.969	0.062	11.077	1.230	0.615
13.56	6.096	0.064	11.093	1.223	0.611
13.50	6.223	0.065	11.109	1.215	0.608
13.44	6.350	0.066	11.125	1.208	0.604
13.38	6.477	0.068	11.140	1.201	0.601
13.32	6.604	0.069	11.156	1.194	0.597
13.26	6.731	0.070	11.172	1.187	0.593
13.20	6.858	0.072	11.188	1.180	0.590
13.08	6.985	0.073	11.204	1.167	0.584



ESTUDIO Y PROYECTO PARA LA CONSTRUCCIÓN DEL COMPLEJO VIAL
METROPOLITANO "TLAXCALA"



PROYECTO:	COMPLEJO VIAL TLAXCALA	DESCRIPCIÓN:	GRAFICA ESFUERZO DEFORMACIÓN
MUESTRA:	M-4	FECHA:	30-nov-17
PROF.:	1.80 - 2.60	OPERADOR:	ABJ

Ensaye:	uu-0.25	Ensaye:	uu-0.50	Ensaye:	uu-0.75
H_0 =	9.670 cm	H_0 =	9.450 cm	H_0 =	9.580 cm
D_0 =	3.593 cm	D_0 =	3.620 cm	D_0 =	3.637 cm
A_0 =	10.141 cm ²	A_0 =	10.292 cm ²	A_0 =	10.387 cm ²
σ_3 =	0.250 kg/cm ²	σ_3 =	0.500 kg/cm ²	σ_3 =	0.750 kg/cm ²
w=	%	w=	%	w=	%
Wm=	168.9 g	Wm=	172.5 g	Wm=	175.6 g
γ	1.722 g/cm ³	γ	1.774 g/cm ³	γ	1.765 g/cm ³

