

Company : Land marks Co.

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (6)
- Alamein to Hoka

Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

Test Location: Station (425 + 120 to 425 + 290) .

Test Date : 11/1/2024

Report Date : 13/1/2024

Type of soil :---

Test level : prepared (Sub grade) (+0.5)

Report No. : 94.100

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

Apparatus

1. Loading plates consists of two plates with 600 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plates 600 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 2.5 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads

Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
 - location of test site - Dimension of loading plate
 - Measuring device used - Type of soil
 - Type of Bedding material below the plate -Weathering condition
 - Time and date of measurements - Unusual observation made during test
 - Dial gauge reading and corresponding normal stress - Loading-settlement curve
 - Description of the soil condition below the plate after testing

Report

- Job requirement : $E_{v2} > (80 \text{ MPa})$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	11/1/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		First Cycle	Second Cycle	E_{v2}/ E_{v1} Ratio
	From	To	$E_{v1}(\text{Mpa})$	$E_{v2}(\text{Mpa})$	
1	425+120	425+145	128	217	1.7
2	425+145	425+170	116	207	1.8
3	425+170	425+195	112	199	1.8
4	425+195	425+220	120	219	1.8
5	425+220	425+245	128	207	1.6
6	425+245	425+270	111	215	1.9
7	425+270	425+290	103	210	2.0

Signature /

CEL
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الاستشارات الهندسية
إدارة العمل الفني
319-951-537
إدارة العمل الفني

Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokina to Narsa Matrouh Priority Sector (B) - Alamin to Foka
 Test Date : 11/1/2024
 report date : 13/1/2024
 Location : Station 425+120 to 425+145
 Test No. : 1

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.82	0.18	19.73	0.27	19.80	0.20	0.22
2	0.83	19.70	0.30	19.54	0.46	19.65	0.35	0.37
3	1.25	19.59	0.41	19.41	0.59	19.44	0.56	0.52
4	1.67	19.45	0.54	19.29	0.71	19.27	0.73	0.66
5	2.08	19.30	0.70	19.17	0.83	19.16	0.84	0.79
6	2.50	19.13	0.87	19.01	0.99	19.03	0.97	0.94

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.13	0.87	19.01	0.99	19.03	0.97	0.94
2	1.25	19.17	0.83	19.05	0.95	19.06	0.92	0.96
3	0.625	19.22	0.78	19.10	0.90	19.14	0.88	0.89
4	0.01	19.51	0.49	19.42	0.58	19.36	0.64	0.57

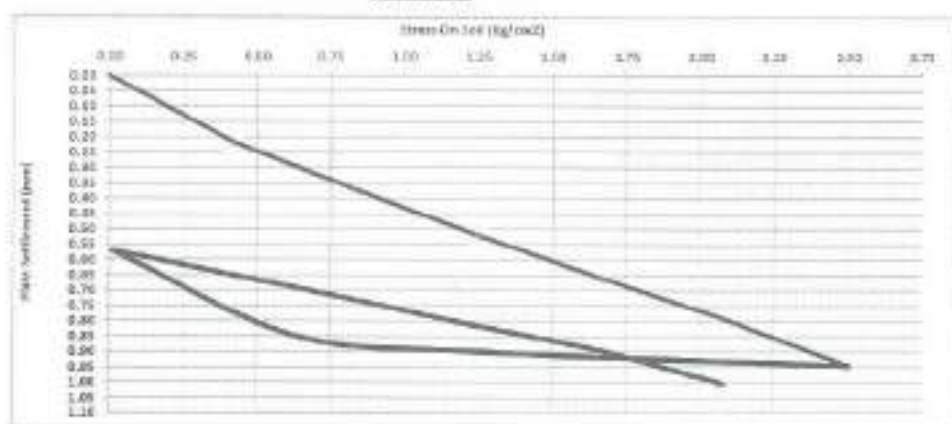
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.44	0.56	19.33	0.67	19.28	0.72	0.65
1	0.83	19.37	0.63	19.22	0.78	19.22	0.78	0.73
2	1.25	19.28	0.72	19.13	0.87	19.14	0.86	0.82
3	1.67	19.21	0.79	19.04	0.96	19.05	0.94	0.90
4	2.08	19.13	0.87	18.92	1.08	18.94	1.06	1.00



Company Name: Land marks Co.
Project: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) - Alamein to Foka
Test Date: 11/12/2024
Report Date: 13/12/2024
Location: Station 495+120 to 495+145
Test No: 1

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.22	0.37	0.52	0.66	0.79	0.94

Unloading (t)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.94	0.90	0.85	0.57

D (mm) =	600	S1 (mm) =	0.34	S2 (mm) =	0.68	ΔS =	0.35
E1 (Mpa) =	(0.75 * D² * Δσ) / ΔS						
	128						

Loading (t)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.57	0.65	0.73	0.82	0.90	1.00

Ev2/Ev1 =	1.7
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D (mm) =	600	S1 (mm) =	0.21	S2 (mm) =	0.52	ΔS =	0.30
E1 (Mpa) =	(0.75 * D² * Δσ) / ΔS						
	217						

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Baraa Matruh Priority Sector (E) - Alamein to Foka
 Test Date : 11/1/2024
 report date : 13/1/2024
 Location : Station 425+145 to 425+170
 Test No. : 002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.84	0.16	19.70	0.30	19.69	0.31	0.28
2	0.83	19.71	0.29	19.50	0.50	19.48	0.52	0.44
3	1.25	19.55	0.45	19.35	0.65	19.32	0.68	0.59
4	1.67	19.41	0.59	19.19	0.81	19.15	0.85	0.75
5	2.08	19.23	0.77	19.05	0.94	18.98	1.02	0.91
6	2.50	19.11	0.89	18.92	1.08	18.83	1.17	1.05

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.11	0.89	18.92	1.08	18.83	1.17	1.05
2	1.25	19.15	0.85	18.96	1.04	18.89	1.11	1.00
3	0.625	19.20	0.80	19.03	0.97	18.94	1.06	0.94
4	0.01	19.47	0.53	19.27	0.73	19.26	0.74	0.67

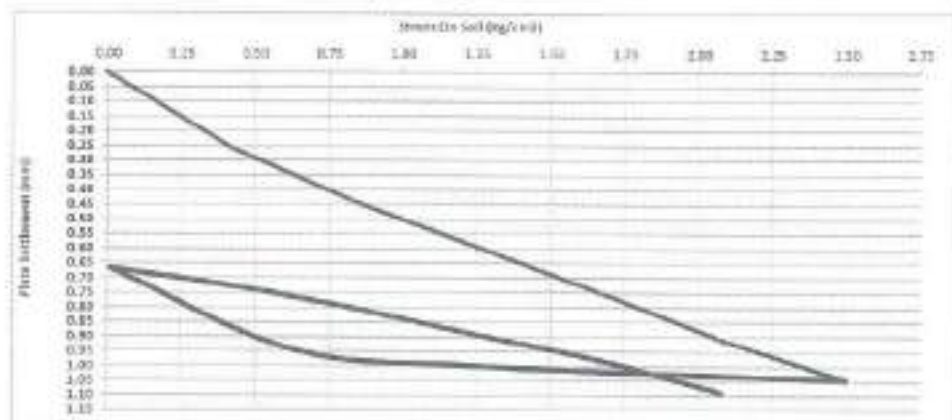
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.41	0.59	19.21	0.79	19.20	0.80	0.73
1	0.83	19.34	0.66	19.14	0.86	19.11	0.89	0.80
2	1.25	19.23	0.77	19.05	0.95	19.04	0.96	0.89
3	1.67	19.15	0.85	18.98	1.02	18.93	1.07	0.98
4	2.08	19.04	0.96	18.87	1.13	18.82	1.18	1.09



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Section (3) - Alamein to Fuka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+145 to 425+170
Test No. : 092

**Nonrepitative Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.26	0.44	0.59	0.75	0.91	1.05

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.05	1.00	0.94	0.87

D (mm) = 600	S1 (mm) = 0.40	S2 (mm) = 0.75	ΔS = 0.35
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	118		

$Ev2/Ev1 = 1.8$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.87	0.73	0.80	0.88	0.88	1.09

D (mm) = 600	S1 (mm) = 0.78	S2 (mm) = 1.00	ΔS = 0.21
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	207		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

S1 = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)

S2 = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Soudina to Marsa Matruh Priority Sector (S) - Almaria to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+170 to 425+195
Test No. : 003

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.77	0.23	19.81	0.19	19.90	0.10	0.17
2	0.83	19.63	0.37	19.66	0.34	19.68	0.32	0.34
3	1.25	19.51	0.49	19.42	0.58	19.44	0.56	0.54
4	1.67	19.39	0.61	19.27	0.73	19.31	0.69	0.68
5	2.08	19.24	0.76	19.16	0.84	19.17	0.83	0.81
6	2.50	19.11	0.89	19.04	0.96	19.06	0.94	0.93

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.11	0.89	19.04	0.96	19.06	0.94	0.93
2	1.25	19.13	0.85	19.08	0.92	19.10	0.90	0.89
3	0.625	19.22	0.78	19.14	0.86	19.15	0.85	0.83
4	0.01	19.34	0.46	19.36	0.64	19.41	0.59	0.56

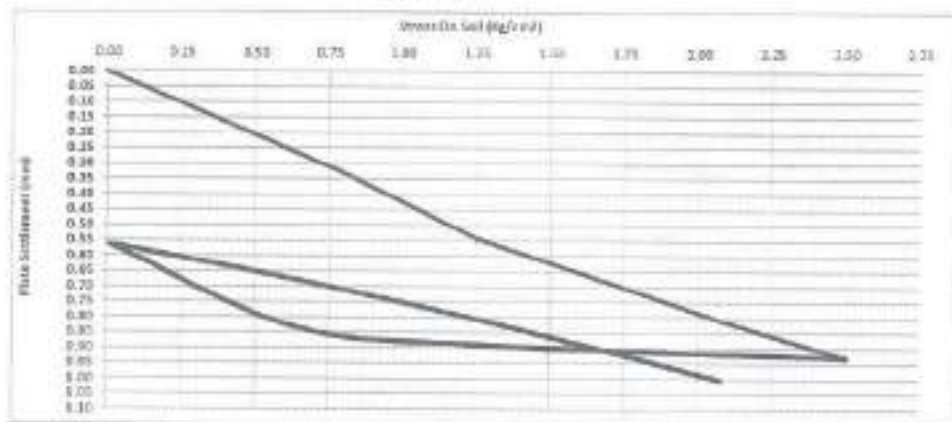
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.45	0.55	19.29	0.71	19.35	0.65	0.64
1	0.83	19.38	0.62	19.21	0.79	19.26	0.74	0.72
2	1.25	19.26	0.74	19.12	0.88	19.20	0.80	0.81
3	1.67	19.15	0.85	19.03	0.97	19.11	0.89	0.90
4	2.08	19.03	0.97	18.94	1.06	19.02	0.98	1.00



Company Name: Land marks Co.
Project: Electric Express Train, from Al Ain Sokhra to Marsa Matrouh Priority Sector (S) - Alamein to Foka
Test Date: 11/1/2024
report date: 13/1/2024
Location: Station 425+170 to 425+195
Test No.: 603

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.17	0.34	0.54	0.80	0.81	0.93

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.00	1.25	0.625	0.01
Settlement (mm)	0.63	0.89	0.93	0.56

D (mm) = 600	S1 (mm) = 0.31	S2 (mm) = 0.70	ΔS = 0.39
Ev1 (Mpa) = (0.71 * D² * ΔS) / ΔS	112		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.56	0.64	0.72	0.81	0.90	1.00

Ev2/Ev1 =	1.8
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D (mm) = 600	S1 (mm) = 0.70	S2 (mm) = 1.52	ΔS = 0.22
Ev2 (Mpa) = (0.71 * D² * ΔS) / ΔS	193		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

ΔS = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)

ΔS = Difference in settlements corresponding to 1.3 and 0.7 from the maximum loading (mm)



Company Name : Land mark Co.
Project : Electric Express Train, from Al Ain Sakhna to Marsa Matruh Priority Sector (S) - Alamein to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+185 to 425+220
Test No. : 004

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.76	0.24	19.67	0.33	19.82	0.18	0.25
2	0.83	19.62	0.38	19.44	0.56	19.70	0.30	0.41
3	1.25	19.49	0.51	19.25	0.75	19.55	0.45	0.57
4	1.67	19.32	0.68	19.13	0.87	19.40	0.60	0.72
5	2.08	19.16	0.84	18.97	1.03	19.21	0.79	0.89
6	2.50	19.02	0.98	18.83	1.19	19.07	0.93	1.03

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.02	0.98	18.81	1.19	19.07	0.93	1.03
2	1.25	19.08	0.92	18.87	1.13	19.11	0.89	0.98
3	0.825	19.14	0.86	18.92	1.08	19.18	0.82	0.92
4	0.01	19.35	0.65	19.28	0.72	19.41	0.59	0.65

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.29	0.71	19.19	0.81	19.34	0.68	0.73
1	0.83	19.21	0.79	19.12	0.88	19.27	0.73	0.80
2	1.25	19.14	0.86	19.03	0.97	19.18	0.82	0.88
3	1.67	19.06	0.94	18.95	1.05	19.09	0.91	0.97
4	2.08	18.94	1.06	18.84	1.16	19.01	0.99	1.07



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (S) - Alamin to Foka
Test Date : 11/6/2024
report date : 13/6/2024
Location : Station 425+195 to 425+229
Test No. : 004

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.32	2345.6	3532.5	4719.4	5878.1	7066
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.25	0.41	0.57	0.72	0.89	1.33

UnLoading (1)	1	2	3	4
Stage(Kg)	7066	3633	1768	0
Stress (Kg/cm²)	2.50	1.20	0.625	0.01
Settlement (mm)	1.03	0.88	0.92	0.65

$D \text{ (mm)} = 600$	$S1 \text{ (mm)} = 0.58$	$S2 \text{ (mm)} = 0.78$	$\Delta S = 0.20$
$E_{v1} \text{ (Mpa)} = (0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	129		

$E_{v2}/E_{v1} = 1.5$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.55	0.72	0.80	0.88	0.97	1.07

$D \text{ (mm)} = 600$	$S1 \text{ (mm)} = 0.78$	$S2 \text{ (mm)} = 0.98$	$\Delta S = 0.20$
$E_{v2} \text{ (Mpa)} = (0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	219		

E_{v1} = Modulus of deformation during the loading stage.

E_{v2} = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

ΔS = The difference between $S1$ and $S2$ from the maximum loading (mm) (kg/cm²)

ΔS = Difference in settlements corresponding to $S1$ and $S2$ from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (R) - Almarai to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+220 to 425+245
Test No. : 005

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.85	0.15	19.75	0.25	19.74	0.26	0.23
2	0.83	19.73	0.27	19.63	0.37	19.59	0.41	0.35
3	1.25	19.61	0.39	19.47	0.53	19.41	0.59	0.50
4	1.67	19.48	0.52	19.31	0.69	19.28	0.72	0.64
5	2.08	19.35	0.65	19.18	0.82	19.14	0.86	0.76
6	2.50	19.22	0.78	19.04	0.96	18.97	1.03	0.92

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.22	0.78	19.04	0.96	18.97	1.03	0.92
2	1.25	19.27	0.73	19.09	0.91	19.01	0.99	0.88
3	0.825	19.32	0.68	19.16	0.84	19.07	0.93	0.82
4	0.01	19.66	0.34	19.45	0.55	19.31	0.69	0.53

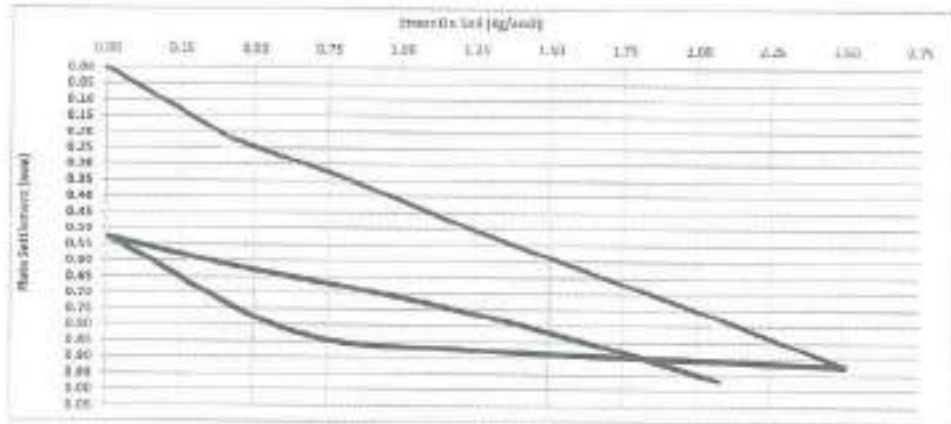
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.38	0.62	19.23	0.77	0.61
1	0.83	19.49	0.51	19.32	0.68	19.14	0.86	0.68
2	1.25	19.41	0.59	19.24	0.76	19.06	0.94	0.76
3	1.67	19.32	0.68	19.15	0.86	18.95	1.06	0.88
4	2.08	19.20	0.80	19.03	0.97	18.86	1.14	0.97



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Mares Matrouh Priority Sector (B) Alamein to Felix
Test Date : 11/10/2024
report date : 13/10/2024
Location : Station 425+220 to 425+245
Test No. : 100

**Nonrespetive Static Plate Load Tests of Soils
DIN 18134**



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.62	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.22	0.35	0.50	0.64	0.78	0.92

UnLoading (t)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.92	0.68	0.62	0.53

D (mm) = 600	S1 (mm) = 0.32	S2 (mm) = 0.67	ΔS = 0.34
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	128		

$Ev2/Ev1 = 1.6$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.62	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.53	0.61	0.68	0.78	0.88	0.97

D (mm) = 600	S1 (mm) = 0.67	S2 (mm) = 0.88	ΔS = 0.21
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	287		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate Diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (G) - Alamein to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+245 to 425+270
Test No. : 006

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.71	0.29	19.82	0.18	19.45	0.35	0.27
2	0.83	19.50	0.50	19.66	0.34	19.52	0.48	0.44
3	1.25	19.29	0.71	19.51	0.49	19.33	0.67	0.62
4	1.67	19.17	0.83	19.35	0.65	19.15	0.85	0.78
5	2.08	19.03	0.97	19.21	0.79	18.98	1.02	0.93
6	2.50	18.88	1.12	19.05	0.95	18.83	1.17	1.08

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.88	1.12	19.05	0.95	18.83	1.17	1.08
2	1.25	18.97	1.03	19.11	0.89	18.89	1.11	1.01
3	0.825	19.00	1.00	19.19	0.81	18.95	1.05	0.95
4	0.01	19.25	0.75	19.44	0.56	19.28	0.72	0.68

Loading Stage (2)

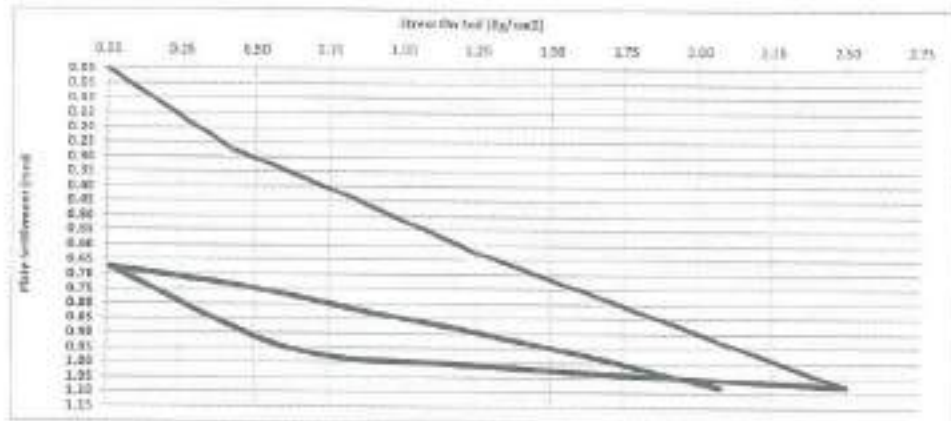
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.19	0.81	19.39	0.61	19.22	0.78	0.73
1	0.83	19.11	0.89	19.32	0.68	19.12	0.88	0.82
2	1.25	19.04	0.96	19.23	0.77	19.04	0.96	0.90
3	1.67	18.93	1.07	19.15	0.85	18.96	1.04	0.99
4	2.08	18.81	1.19	19.06	0.94	18.88	1.12	1.08



Company Name
Project
Test Date
report date
Location
Test No.

Land mark Co.
Electric Express Train, from Al Ain Sekhna to Marwa Matrouh Priority Sector (6) Alamein to Foka
11/12/2024
13/12/2024
Station 425+245 to 425+276
1606

**Nonrepulsive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.09	2.50
Settlement (mm)	0.00	0.27	0.44	0.62	0.78	0.93	1.08

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.08	1.01	0.96	0.68

D (mm) = 600	S1 (mm) = 0.61	S2 (mm) = 1.01	ΔS = 0.40
Ev1 (Mpa) = $(0.77 \cdot D^2 \cdot \Delta S) / \Delta S$	111		

Ev2/Ev1 =	1.9
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.68	0.73	0.82	0.90	0.99	1.08

D (mm) = 600	S1 (mm) = 0.80	S2 (mm) = 1.01	ΔS = 0.21
Ev2 (Mpa) = $(0.77 \cdot D^2 \cdot \Delta S) / \Delta S$	210		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Re-loading stage.

D = Plate diameter (mm)

ΔS = The difference between 0.3 and 0.7 from the maximum loading (μmax) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (E) - Alamein to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+270 to 425+290
Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.81	0.19	19.64	0.36	19.60	0.40	0.32
2	0.83	19.68	0.32	19.49	0.51	19.41	0.59	0.47
3	1.25	19.44	0.56	19.31	0.69	19.23	0.77	0.67
4	1.67	19.27	0.73	19.15	0.85	19.05	0.95	0.84
5	2.08	19.15	0.85	19.01	0.98	18.91	1.09	0.98
6	2.50	19.02	0.98	18.94	1.16	18.78	1.22	1.12

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.02	0.98	18.94	1.16	18.78	1.22	1.12
2	1.25	19.07	0.93	18.90	1.10	18.83	1.17	1.07
3	0.825	19.13	0.88	18.97	1.03	18.92	1.08	1.00
4	0.01	19.35	0.55	19.24	0.76	19.21	0.79	0.73

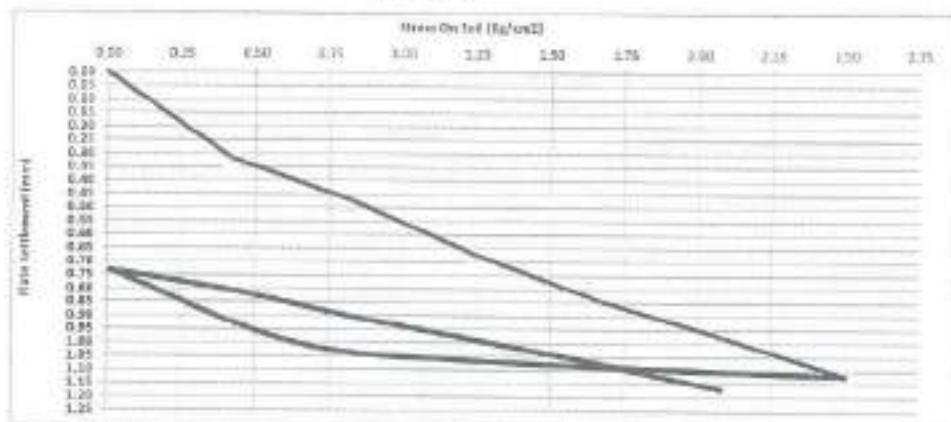
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.27	0.73	19.18	0.82	19.13	0.87	0.81
1	0.83	19.18	0.82	19.09	0.91	19.02	0.96	0.90
2	1.25	19.09	0.91	19.01	0.99	18.93	1.07	0.99
3	1.67	19.01	0.89	18.94	1.06	18.82	1.18	1.08
4	2.08	18.91	1.09	18.85	1.15	18.74	1.27	1.17



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority factor (6) – Almain to Foka
Test Date : 11/12/2024
report date : 13/1/2025
Location : Station 425+270 to 425+290
Test No. : 067

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.60
Settlement (mm)	0.00	0.32	0.47	0.67	0.84	0.98	1.12

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.60	1.25	0.625	0.01
Settlement (mm)	1.12	1.07	1.00	0.73

D (mm) = 600	E1 (Mpa) = 0.75 * D³ / (64 * ΔS)	E1 (Mpa) = 103
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Loading (2)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08	
Settlement (mm)	0.73	0.81	0.90	0.99	1.08	1.17	

Ev2/Ev1 =	2.0
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D (mm) = 600	E2 (Mpa) = 0.75 * D³ / (64 * ΔS)	E2 (Mpa) = 210
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Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the ReLoading stage.
D = Plate diameter (mm)

0.5 = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company : Land marks Co.

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (6)
- Alamein to Foka

Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

Test Location: Station (427 + 780 to 424 + 905) .

Test Date : 5/1/2024

Report Date : 6/1/2024

Type of soil :---

Test level : Sub grade

Report No. : 85-89

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

Apparatus

1. Loading plates consists of two plates with 600 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plates 600 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 2.5 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads

Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
 - location of test site - Dimension of loading plate
 - Measuring device used - Type of soil
 - Type of Bedding material below the plate -Weathering condition
 - Time and date of measurements - Unusual observation made during test
 - Dial gauge reading and corresponding normal stress - Loading-settlement curve
 - Description of the soil condition below the plate after testing

Report

- Job requirement : $E_{v2} > (80 \text{ MPa})$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	5/01/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To	$E_{v1}(\text{Mpa})$	$E_{v2}(\text{Mpa})$	
1	424+780	424+805	100	157	1.6
2	424+805	424+830	122	159	1.3
3	424+830	424+855	100	221	2.2
4	424+855	424+880	136	181	1.3
5	424+880	424+905	110	189	1.7



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (E) - Alamein to Foka
 Test Date : 5/1/2024
 report date : 6/1/2024
 Location : Station 424+780 to 424+805
 Test No. : 1

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.87	0.13	19.89	0.11	19.85	0.15	0.13
2	0.83	19.76	0.24	19.76	0.20	19.71	0.29	0.28
3	1.25	19.48	0.52	19.51	0.49	19.50	0.50	0.50
4	1.67	19.34	0.66	19.33	0.67	19.35	0.65	0.66
5	2.08	19.18	0.82	19.16	0.84	19.20	0.80	0.82
6	2.50	19.04	0.96	18.98	1.02	19.08	0.92	0.97

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.04	0.96	18.98	1.02	19.08	0.92	0.97
2	1.25	19.17	0.83	19.13	0.87	19.12	0.88	0.86
3	0.825	19.32	0.68	19.29	0.71	19.22	0.78	0.72
4	0.01	19.57	0.43	19.59	0.41	19.65	0.35	0.40

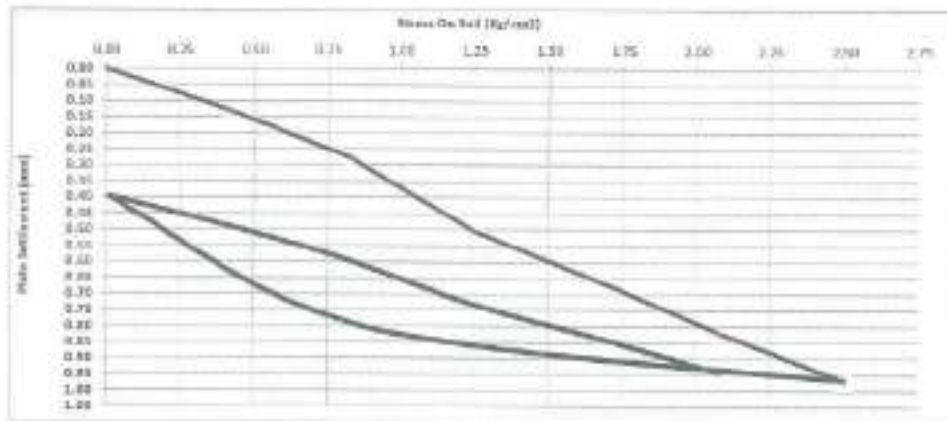
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.50	0.50	19.52	0.48	19.51	0.49	0.49
1	0.83	19.40	0.60	19.43	0.57	19.38	0.62	0.60
2	1.25	19.26	0.74	19.28	0.72	19.26	0.74	0.73
3	1.67	19.17	0.83	19.14	0.86	19.18	0.82	0.84
4	2.08	19.03	0.97	19.08	0.92	19.05	0.94	0.94



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sukhna to Marsa Matruh Priority Sector (b) – Alamein to Foka
 Test Date : 5/1/2024
 report date : 6/1/2024
 Location : Station 424+780 to 424+805
 Test No. : 1

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.32	2345.8	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.13	0.28	0.50	0.66	0.82	0.97

UnLoading (t)	1	2	3	4
Stage(Kg)	7965	3533	1760	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.97	0.66	0.32	0.40

D (mm) = 600	S1 (mm) = 0.25	S2 (mm) = 0.82	ΔS = 0.57
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	180		

Ev2/Ev1 = 1.5

Loading (t)	0	1	2	3	4	5
Stage(Kg)	0	1188.32	2345.8	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.40	0.49	0.60	0.73	0.84	0.94

D (mm) = 600	S1 (mm) = 0.58	S2 (mm) = 0.86	ΔS = 0.28
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	187		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Resedding stage.

D = Plate diameter (mm)

Sx = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)

Sy = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Narea Matrouh Priority Sector (B) - Almarah to Puka
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+805 to 424+830
Test No. : 2

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.85	0.15	19.82	0.18	19.80	0.20	0.18
2	0.83	19.68	0.32	19.51	0.49	19.66	0.34	0.38
3	1.25	19.44	0.56	19.40	0.60	19.48	0.52	0.56
4	1.67	19.34	0.66	19.32	0.68	19.31	0.69	0.68
5	2.08	19.16	0.84	19.17	0.83	19.19	0.81	0.83
6	2.50	18.97	1.03	19.03	0.97	19.06	0.94	0.98

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.97	1.03	19.03	0.97	19.06	0.94	0.98
2	1.25	19.09	0.91	19.12	0.88	19.14	0.86	0.88
3	0.825	19.23	0.77	19.26	0.74	19.29	0.71	0.74
4	0.01	19.52	0.48	19.47	0.53	19.54	0.46	0.49

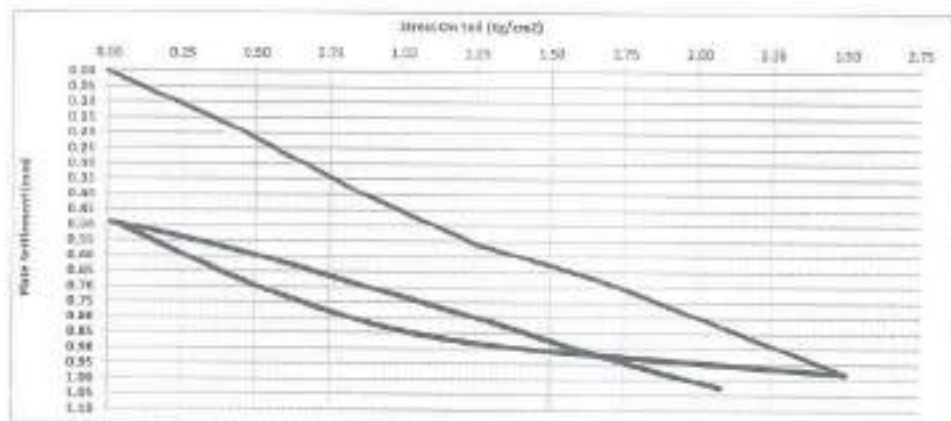
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.41	0.59	19.39	0.61	19.47	0.53	0.58
1	0.83	19.31	0.69	19.26	0.74	19.37	0.63	0.69
2	1.25	19.21	0.79	19.13	0.87	19.26	0.74	0.80
3	1.67	19.10	0.90	19.01	0.99	19.12	0.88	0.92
4	2.08	19.00	1.09	18.91	1.09	19.01	0.99	1.03



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) Alameda to Foku
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+806 to 424+830
Test No. : 2

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.60
Settlement (mm)	0.00	0.18	0.38	0.66	0.88	0.93	0.95

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.60	1.25	0.625	0.01
Settlement (mm)	0.03	0.05	0.74	0.49

D (mm) = 600	S1 (mm) = 0.34	S2 (mm) = 0.71	ΔS = 0.36
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	122		

Ev2/Ev1 =	1.3
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.49	0.58	0.69	0.80	0.92	1.00

D (mm) = 600	S1 (mm) = 0.67	S2 (mm) = 0.94	ΔS = 0.28
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	129		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 5.3 and 0.7 from the maximum loading (σmax) (kg/cm²)

ΔS = Difference in settlements corresponding to 5.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (E) - Alamein to Pasha
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+830 to 424+855
Test No. : 3

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.83	0.17	19.80	0.20	19.83	0.18	0.18
2	0.83	19.68	0.32	19.66	0.34	19.70	0.30	0.32
3	1.25	19.47	0.53	19.44	0.56	19.52	0.48	0.52
4	1.87	19.25	0.74	19.30	0.70	19.31	0.69	0.71
5	2.08	19.13	0.87	19.16	0.84	19.18	0.82	0.84
6	2.50	18.95	1.04	19.04	0.96	19.07	0.93	0.98

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.96	1.04	19.04	0.96	19.07	0.93	0.98
2	1.25	19.00	1.00	19.08	0.92	19.11	0.89	0.94
3	0.825	19.08	0.92	19.15	0.85	19.17	0.83	0.87
4	0.01	19.17	0.63	19.45	0.55	19.43	0.57	0.68

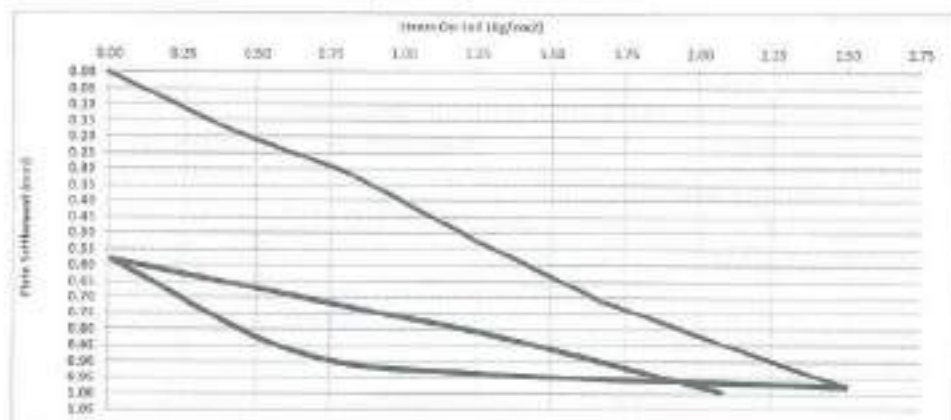
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.27	0.73	19.30	0.61	19.37	0.63	0.66
1	0.83	19.20	0.80	19.29	0.71	19.31	0.69	0.75
2	1.25	19.11	0.89	19.25	0.75	19.22	0.78	0.81
3	1.67	19.00	1.00	19.17	0.83	19.15	0.87	0.90
4	2.08	18.93	1.07	19.08	0.92	19.01	0.99	0.99



Company Name : Land marks Co.
Project : Electric Express Train, from A/ Als Sidiya to Marsa Matruh Priority Sector (6) - Alameda to Fuka
Test Date : 3/1/2024
report date : 6/1/2024
Location : Station 424+830 to 424+855
Test No. : 3

**Nonrepesitive Static Plate Load Tests of Soils
DIN 18134**



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.8	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.18	0.32	0.52	0.71	0.94	0.98

Unloading (t)	1	2	3	4
Stage(Kg)	7065	3633	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.98	0.94	0.87	0.55

D (mm) = 600	S1 (mm) = 0.38	S2 (mm) = 0.34	ΔS = 0.44
E _{v1} (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	100		

E _{v2} /E _{v1} =	2.2
------------------------------------	-----

Loading (t)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.8	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.58	0.68	0.73	0.81	0.90	0.99

D (mm) = 600	S1 (mm) = 0.72	S2 (mm) = 0.32	ΔS = 0.20
E _{v2} (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	221		

E_{v1} = Modulus of deformation during the loading stage.

E_{v2} = Modulus of deformation during the reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (R) - Alamin to Foka
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+855 to 424+880
Test No. : 4

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.84	0.16	19.91	0.09	19.87	0.13	0.13
2	0.83	19.71	0.29	19.79	0.21	19.63	0.37	0.29
3	1.25	19.59	0.41	19.61	0.39	19.54	0.46	0.43
4	1.67	19.43	0.57	19.46	0.54	19.43	0.57	0.56
5	2.08	19.32	0.68	19.36	0.64	19.28	0.72	0.68
6	2.50	19.13	0.87	19.21	0.79	19.20	0.80	0.82

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.13	0.87	19.21	0.79	19.20	0.80	0.82
2	1.25	19.17	0.83	19.28	0.72	19.27	0.73	0.76
3	0.825	19.26	0.74	19.35	0.65	19.33	0.67	0.69
4	0.01	19.52	0.48	19.56	0.44	19.50	0.50	0.47

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.43	0.57	19.45	0.55	19.41	0.59	0.57
1	0.83	19.31	0.69	19.33	0.67	19.30	0.70	0.69
2	1.25	19.19	0.81	19.21	0.79	19.26	0.74	0.78
3	1.67	19.08	0.92	19.07	0.93	19.18	0.82	0.89
4	2.08	18.94	1.08	19.00	1.00	19.11	0.89	0.98



Company Name

: Land marks Co.

Project

: Electric Express Train, from Al Ain Shihwa to Marsa Matruh Priority Sector (B) – Alamein to Foka

Test Date

: 2/1/2024

Report date

: 6/1/2024

Location

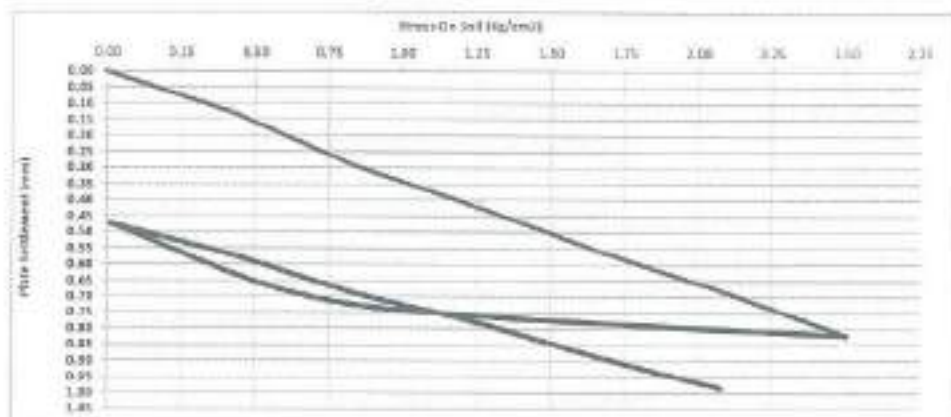
: Station 424+855 to 424+880

Test No.

: 4

Nonrepetitive Static Plate Load Tests of Soils

QIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.8	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.13	0.29	0.42	0.56	0.65	0.82

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1798	0
Stress (Kg/cm²)	2.50	1.25	0.825	0.01
Settlement (mm)	0.82	0.70	0.69	0.47

D (mm) =	600	S1 (mm) =	0.28	S2 (mm) =	0.56	ΔS =	0.33
Ev1 (Mpa) =	(0.75 D³ Δσ) / ΔS						
	126						

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.8	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.47	0.57	0.69	0.78	0.89	0.98

Ev2/Ev1 =	1.3
-----------	-----

D (mm) =	600	S1 (mm) =	0.69	S2 (mm) =	1.01	ΔS =	0.34
Ev2 (Mpa) =	(0.75 D³ Δσ) / ΔS						
	181						

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

S1 = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)

S2 = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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مكتب معامل الاستشارات الهندسية

Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sukhna to Marsa Matruh Priority Sector (E) – Alamein to Foka
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+880 to 424+905
Test No. : 5

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.80	0.20	19.75	0.25	19.83	0.17	0.21
2	0.83	19.69	0.31	19.56	0.44	19.78	0.22	0.32
3	1.25	19.60	0.40	19.41	0.59	19.53	0.47	0.49
4	1.67	19.42	0.58	19.28	0.72	19.29	0.71	0.67
5	2.08	19.28	0.72	19.05	0.91	19.11	0.89	0.84
6	2.50	19.10	0.90	18.98	1.02	19.00	1.00	0.97

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.10	0.90	18.98	1.02	19.00	1.00	0.97
2	1.25	19.18	0.82	19.09	0.91	19.06	0.94	0.89
3	0.825	19.30	0.70	19.22	0.78	19.17	0.83	0.77
4	0.01	19.54	0.46	19.52	0.48	19.42	0.58	0.51

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.45	0.55	19.45	0.55	19.38	0.62	0.57
1	0.83	19.36	0.64	19.32	0.68	19.31	0.69	0.67
2	1.25	19.25	0.75	19.19	0.81	19.21	0.79	0.78
3	1.67	19.19	0.81	19.11	0.89	19.10	0.90	0.87
4	2.08	19.09	0.81	19.01	0.99	19.03	0.97	0.96



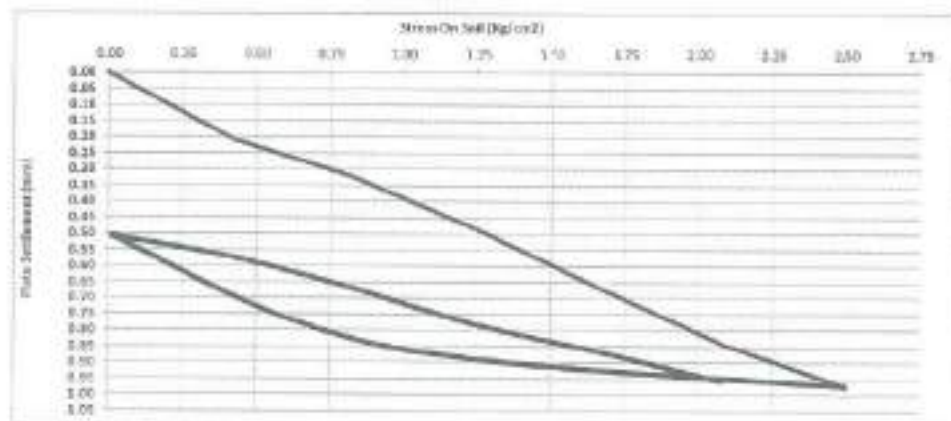
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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Goldna to Marsa Matruh Priority Sector (B) Almalek to Fuku
Test Date : 5/1/2024
report date : 6/1/2024
Location : Station 424+890 to 424+905
Test No. : 5

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.52	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.21	0.32	0.49	0.67	0.84	0.97

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1750	0
Stress (Kg/cm²)	2.50	1.25	0.825	0.01
Settlement (mm)	0.97	0.65	0.77	0.51

D (mm) = 600	S1 (mm) = 0.38	S2 (mm) = 0.70	ΔS = 0.30
Ev1 (Mpa) = $(0.77 \cdot D^2 \cdot \Delta S) / \Delta S$	110		

Ev2/Ev1 = 1.7

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.52	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.51	0.67	0.67	0.78	0.87	0.96

D (mm) = 600	S1 (mm) = 0.55	S2 (mm) = 0.53	ΔS = 0.23
Ev2 (Mpa) = $(0.77 \cdot D^2 \cdot \Delta S) / \Delta S$	189		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Re-loading stage.

D = Plate diameter (mm)

ΔS = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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Company : Land marks Co.

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (6)
- Alamein to Foka

Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

Test Location: Station (425 + 000 to 425 + 100)

Test Date : 9/1/2024

Report Date : 10/1/2024

Type of soil :----

Test level : prepared (Sub grade) (+0.5)

Report No. : 90:93

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

Apparatus

1. Loading plates consists of two plates with 600 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plates 600 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 2.5 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads

Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
 - location of test site - Dimension of loading plate
 - Measuring device used - Type of soil
 - Type of Bedding material below the plate -Weathering condition
 - Time and date of measurements - Unusual observation made during test
 - Dial gauge reading and corresponding normal stress - Loading-settlement curve
 - Description of the soil condition below the plate after testing

Report

- Job requirement : $E_{v2} > (80 \text{ MPa})$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	9/1/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To	$E_{v1}(\text{Mpa})$	$E_{v2}(\text{Mpa})$	
1	425+000	425+025	105	198	1.9
2	425+025	425+050	106	210	2.0
3	425+050	425+075	101	151	1.5
4	425+075	425+100	115	224	1.9


 Signature /
 ٢١٩ - ٥٣٧ - ٥٣١
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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (S) – Almalek to Foka
Test Date : 9/1/2024
report date : 10/1/2024
Location : Station 425+000 to 425+025
Test No. : 1

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.91	0.09	19.86	0.14	19.81	0.19	0.14
2	0.83	19.83	0.17	19.68	0.32	19.60	0.40	0.30
3	1.25	19.71	0.29	19.50	0.50	19.37	0.63	0.47
4	1.67	19.54	0.46	19.33	0.67	19.18	0.82	0.65
5	2.08	19.33	0.67	19.10	0.90	18.98	1.02	0.84
6	2.50	19.17	0.83	18.92	0.98	18.86	1.14	0.98

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.17	0.83	18.92	0.98	18.86	1.14	0.98
2	1.25	19.20	0.80	19.18	0.82	18.96	1.04	0.89
3	0.625	19.26	0.74	19.33	0.67	19.30	0.90	0.77
4	0.01	19.47	0.53	19.66	0.34	19.42	0.58	0.48

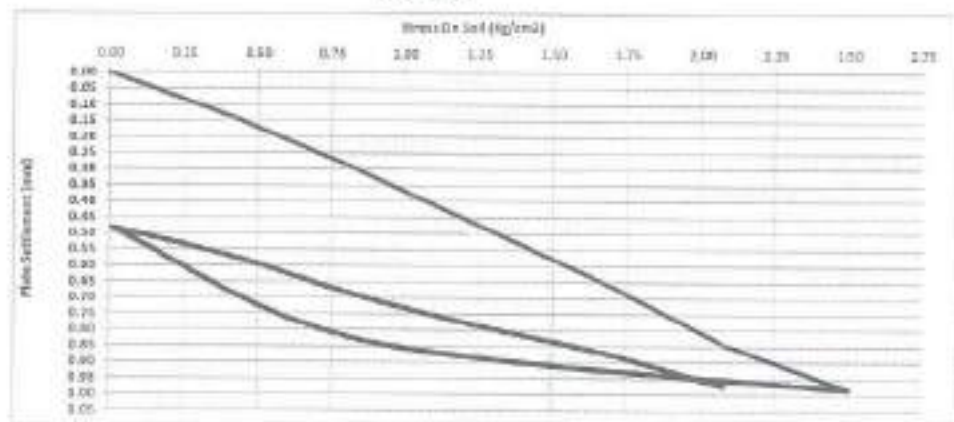
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.41	0.59	19.54	0.46	19.33	0.67	0.57
1	0.83	19.33	0.67	19.40	0.60	19.20	0.80	0.69
2	1.25	19.27	0.73	19.29	0.71	19.08	0.92	0.78
3	1.67	19.21	0.79	19.19	0.81	18.94	1.01	0.87
4	2.08	19.08	0.92	19.10	0.90	18.90	1.10	0.97



Company Name: Land marks Co.
Project: Electric Express Train, from Al Ain Solhna to Marsa Matrouh Priority Sector (S) – Alamein to Foka
Test Date: 5/1/2024
report date: 10/1/2024
Location: Station 425+000 to 425+025
Test No: 1

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.8	3532.5	4719.4	5878.1	7065
Stress (Kg/cm2)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.14	0.30	0.47	0.65	0.84	0.95

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1766	0
Stress (Kg/cm2)	2.50	1.25	0.625	0.01
Settlement (mm)	0.95	0.89	0.77	0.48

D (mm) =	600	S1 (mm) =	0.27	S2 (mm) =	0.63	ΔS =	0.42
Ev1 (Mpa) =	(0.75 * D * ΔS) / ΔS		103				

Ev2/Ev1 =	1.5
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.8	3532.5	4719.4	5878.1
Stress (Kg/cm2)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.48	0.57	0.69	0.79	0.87	0.97

D (mm) =	600	S1 (mm) =	0.47	S2 (mm) =	0.55	ΔS =	0.22
Ev2 (Mpa) =	(0.75 * D * ΔS) / ΔS		188				

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

ΔS = The difference between 0.3 and 0.7 from the maximum loading (Δmax) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Almanshi to Foka
Test Date : 9/1/2024
report date : 10/1/2024
Location : Station 425+025 to 425+050
Test No. : 2

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.81	0.19	19.74	0.26	19.78	0.22	0.22
2	0.83	19.69	0.31	19.63	0.37	19.64	0.36	0.35
3	1.25	19.54	0.46	19.48	0.52	19.49	0.51	0.50
4	1.67	19.32	0.68	19.26	0.74	19.30	0.70	0.71
5	2.08	19.16	0.84	19.11	0.89	19.13	0.87	0.87
6	2.50	18.99	1.01	18.96	1.05	18.96	1.04	1.03

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.99	1.01	18.96	1.05	18.96	1.04	1.03
2	1.25	19.06	0.94	19.02	0.98	19.04	0.96	0.96
3	0.825	19.14	0.86	19.13	0.89	19.12	0.88	0.88
4	0.01	19.39	0.61	19.33	0.67	19.36	0.64	0.64

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.33	0.67	19.25	0.75	19.30	0.70	0.71
1	0.83	19.25	0.75	19.16	0.84	19.21	0.79	0.79
2	1.25	19.17	0.83	19.07	0.93	19.10	0.90	0.89
3	1.67	19.09	0.91	18.99	1.01	19.01	0.99	0.97
4	2.08	19.00	1.00	18.91	1.09	18.92	1.08	1.06



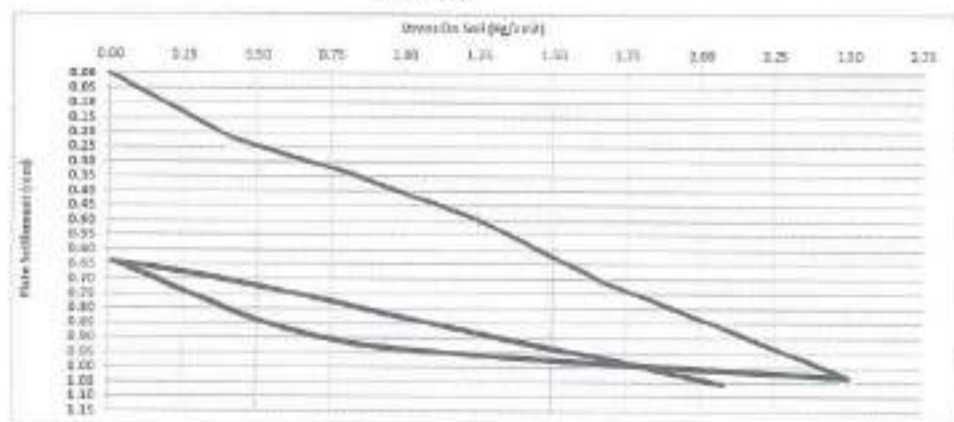
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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhra to Marsa Matrouh Priority Sector (S) Adamein to Faka
Test Date : 9/5/2024
report date : 10/1/2024
Location : Station 425+025 to 425+050
Test No.: 2

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm2)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.22	0.35	0.50	0.71	0.87	1.03

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3833	1708	0
Stress (Kg/cm2)	2.00	1.25	0.625	0.01
Settlement (mm)	1.03	0.86	0.88	0.64

D (mm) = 600	S1 (mm) = 0.32	S2 (mm) = 0.74	ΔS = 0.42
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	106		

Ev2/Ev1 =	2.8
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm2)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.34	0.71	0.79	0.89	0.97	1.06

D (mm) = 600	S1 (mm) = 0.78	S2 (mm) = 0.99	ΔS = 0.21
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	211		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

ΔS = The difference between S1 and S2 from the maximum loading (σmax) (kg/cm²)

ΔS = Difference in settlements corresponding to S1 and S2 from the maximum loading (mm)



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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (E) - Alamein to Foka
Test Date : 9/1/2024
report date : 10/1/2024
Location : Station 425+050 to 425+075
Test No. : 3

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.86	0.14	19.87	0.13	19.80	0.20	0.16
2	0.83	19.75	0.25	19.66	0.34	19.63	0.37	0.32
3	1.25	19.61	0.39	19.53	0.47	19.44	0.56	0.47
4	1.67	19.43	0.57	19.27	0.73	19.27	0.73	0.68
5	2.08	19.26	0.74	18.94	1.06	19.06	0.94	0.91
6	2.50	19.03	0.97	18.74	1.26	18.96	1.04	1.08

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.03	0.97	18.74	1.26	18.96	1.04	1.08
2	1.25	19.10	0.90	18.83	1.17	19.18	0.92	0.96
3	0.825	19.18	0.81	18.91	1.09	19.36	0.84	0.85
4	0.01	19.44	0.56	19.38	0.62	19.65	0.35	0.51

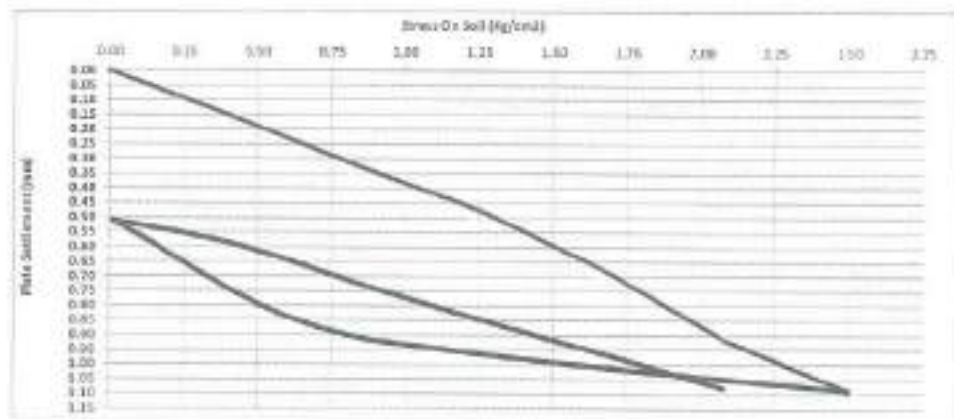
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.87	0.83	19.29	0.71	19.57	0.43	0.69
1	0.83	19.23	0.77	19.18	0.82	19.43	0.57	0.72
2	1.25	19.15	0.85	19.05	0.95	19.26	0.74	0.85
3	1.67	19.05	0.95	18.94	1.06	19.12	0.88	0.98
4	2.08	18.91	1.09	18.84	1.16	19.01	0.99	1.08



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhra to Marsa Matruh Priority Sector (S) – Alamein to Foka
Test Date : 6/1/2024
Report date : 10/1/2024
Location : Station 425+050 to 425+075
Test No. : 3

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.16	0.32	0.47	0.68	0.81	1.09

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1798	0
Stress (Kg/cm²)	2.08	1.25	0.625	0.01
Settlement (mm)	1.09	0.98	0.85	0.51

D (mm) = 600	S1 (mm) = 0.29	S2 (mm) = 0.72	ΔS = 0.43
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	101		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.51	0.59	0.72	0.85	0.95	1.08

Ev2/Ev1 =	1.5
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D (mm) = 600	S1 (mm) = 0.89	S2 (mm) = 0.95	ΔS = 0.29
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	101		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the reloading stage.

D = Plate diameter (mm)

ΔS = The difference between S2 and S1 from the maximum loading (mm) (Kg/cm²)

ΔS = Difference in settlements corresponding to S2 and S1 from the maximum loading (mm)



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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Alamein to Foka
Test Date : 9/1/2024
report date : 10/1/2024
Location : Station 425+075 to 425+100
Test No. : 4

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.84	0.16	19.81	0.19	19.77	0.23	0.18
2	0.83	19.72	0.28	19.58	0.32	19.61	0.39	0.33
3	1.25	19.59	0.41	19.51	0.49	19.47	0.53	0.48
4	1.67	19.42	0.58	19.32	0.68	19.28	0.72	0.66
5	2.08	19.25	0.76	19.19	0.81	19.16	0.84	0.80
6	2.50	19.16	0.84	19.06	0.94	19.01	0.99	0.92

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.16	0.84	19.06	0.94	19.01	0.99	0.92
2	1.25	19.20	0.80	19.10	0.90	19.05	0.95	0.88
3	0.625	19.27	0.73	19.14	0.86	19.12	0.88	0.83
4	0.01	19.53	0.47	19.45	0.54	19.40	0.60	0.54

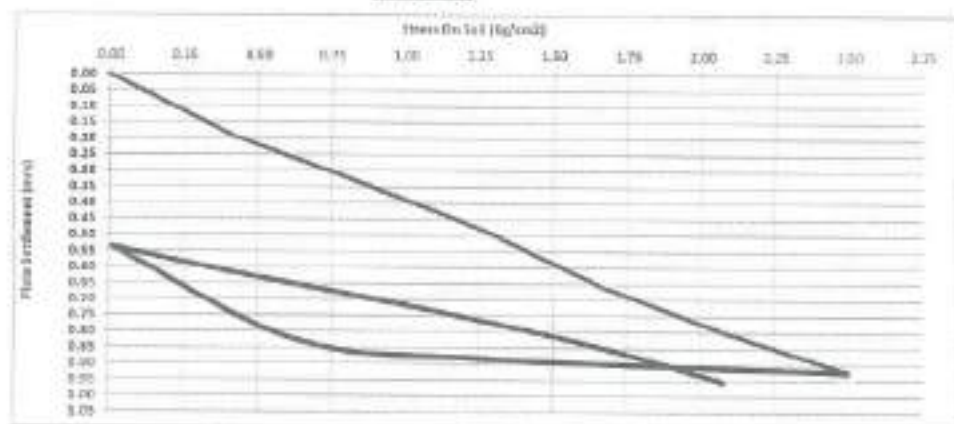
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.45	0.55	19.38	0.62	19.32	0.68	0.62
1	0.83	19.37	0.63	19.31	0.69	19.25	0.74	0.69
2	1.25	19.29	0.71	19.23	0.77	19.19	0.81	0.78
3	1.67	19.20	0.80	19.15	0.85	19.10	0.90	0.85
4	2.08	19.09	0.81	19.04	0.96	19.01	0.99	0.96



Company Name : Land marks Co.
Project : Electric Express Train, from Al Aik Sukhna to Marssa Matruh Priority Sector (5) – Alamein to Foka
Test Date : 8/1/2024
report date : 18/1/2024
Location : Station 425+075 to 425+100
Test No. : 4

**Nonrepetitive Static Plate Load Tests of Soils
DIN 18134**



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.09	2.50
Settlement (mm)	0.00	0.19	0.33	0.46	0.60	0.80	0.92

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1708	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.52	0.85	0.82	0.54

D (mm) = 600	S1 (mm) = 0.30	S2 (mm) = 0.80	ΔS = 0.38
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	115		

Ev2/Ev1 = 1.9

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.34	0.62	0.69	0.78	0.95	0.95

D (mm) = 600	S1 (mm) = 0.87	S2 (mm) = 0.87	ΔS = 0.20
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	224		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

ΔS = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)

ΔS = Difference in settlements corresponding to 1.3 and 0.7 from the maximum loading (mm)



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مكتب معامل الإستشارات الهندسية

Company : Land marks Co.

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (6)
- Alamein to Foka

Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

Test Location: Station (425+020 to 425+270)

Test Date : 16/01/2024

Report Date : 17/01/2024

Type of soil : Sub ballast

Test level : (+0.90)

Report No. : 106:115

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

Apparatus

1. Loading plates consists of two plates with 600 mm and 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plates 600 mm and 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 2.5 kg/cm²
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2nd) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads

Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
 - location of test site - Dimension of loading plate
 - Measuring device used - Type of soil
 - Type of Bedding material below the plate -Weathering condition
 - Time and date of measurements - Unusual observation made during test
 - Dial gauge reading and corresponding normal stress - Loading-settlement curve
 - Description of the soil condition below the plate after testing

Report:

Test level : Sub ballast

- Job requirement : $E_{v2} > (120 \text{ MPa})$, $E_{v2}/E_{v1} \leq 2.2$

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	16/01/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station		First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
	From	To	E_{v1} (Mpa)	E_{v2} (Mpa)	
1	425+020	425+045	81	143	1.8
2	425+045	425+070	86	182	2.1
3	425+070	425+095	71	182	2.6
4	425+095	425+120	98	183	1.9
5	425+120	425+145	64	141	2.2
6	425+145	425+170	70	115	1.6
7	425+170	425+195	58	102	1.8
8	425+195	425+220	82	137	1.7
9	425+220	425+245	70	127	1.8
10	425+245	425+270	67	142	2.1

Signature /

Khaled
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 رقم الترخيص: 537-991-119
 2023-2025

Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Almain to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+920 to 425+045
Test No. : 001

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.68	0.32	19.63	0.37	19.85	0.15	0.28
2	0.83	19.43	0.57	19.36	0.64	19.50	0.50	0.57
3	1.25	19.17	0.83	19.08	0.92	19.25	0.75	0.83
4	1.67	18.99	1.01	18.86	1.14	19.07	0.93	1.03
5	2.08	18.86	1.14	18.67	1.33	18.88	1.12	1.20
6	2.50	18.71	1.29	18.48	1.52	18.73	1.27	1.36

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.71	1.29	18.48	1.52	18.73	1.27	1.36
2	1.25	18.76	1.24	18.54	1.36	18.79	1.21	1.27
3	0.625	18.98	1.02	18.90	1.10	18.93	1.07	1.06
4	0.01	19.30	0.70	19.45	0.55	19.16	0.84	0.70

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.17	0.83	19.17	0.83	19.13	0.87	0.86
1	0.83	19.00	1.00	18.97	1.03	19.04	0.96	1.00
2	1.25	18.89	1.11	18.81	1.19	18.93	1.07	1.12
3	1.67	18.76	1.24	18.65	1.35	18.80	1.20	1.26
4	2.08	18.69	1.31	18.55	1.45	18.73	1.27	1.34

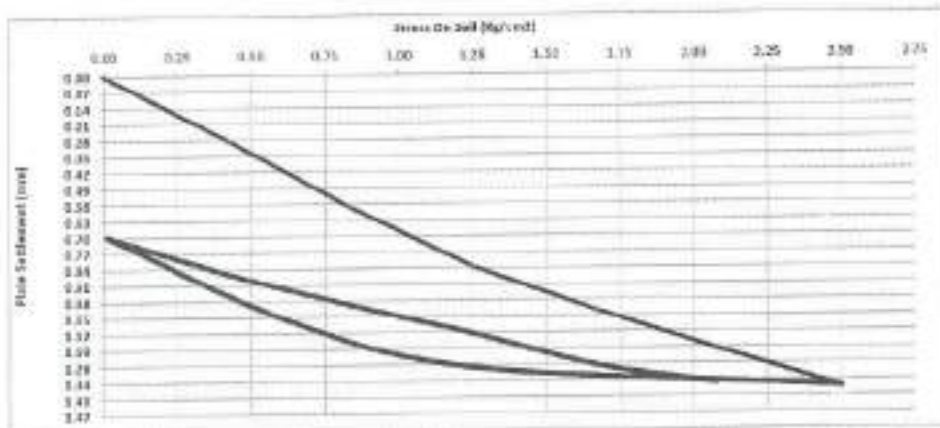


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Company Name : Land marka Co.
Project : Electric Express Train, from Al Ain Solhna to Marsa Matrouh Priority Sector (S) - Alamein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+020 to 425+045
Test No. : 001

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm2)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.25	0.57	0.83	1.00	1.26	1.36

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm2)	2.50	1.25	0.625	0.01
Settlement (mm)	1.36	1.27	1.06	0.70

D (mm) = 500	E1 (mm) = 8.51	S2(mm) = 1.16	ΔS = 0.55
E1 (Mpa) = (0.75*0*Δs)/ΔS	81		

$$E2/E1 = 1.8$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.82	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm2)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.70	0.86	1.00	1.12	1.26	1.34

D (mm) = 500	E1 (mm) = 0.97	S2(mm) = 1.26	ΔS = 0.31
E2 (Mpa) = (0.75*0*Δs)/ΔS	543		

E1 = Modulus of deformation during the loading stage.
E2 = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)
Δs = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) - Alamein to Foka
 Test Date : 16/01/2024
 report date : 17/01/2024
 Location : Station 425+045 to 425+070
 Test No. : 002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.76	0.24	19.65	0.35	19.54	0.46	0.35
2	0.83	19.54	0.46	19.47	0.53	19.38	0.62	0.54
3	1.25	19.36	0.64	19.21	0.79	19.15	0.85	0.76
4	1.67	19.11	0.89	19.03	0.97	18.96	1.04	0.97
5	2.08	18.92	1.08	18.86	1.14	18.63	1.37	1.20
6	2.50	18.76	1.24	18.72	1.28	18.31	1.69	1.40

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.76	1.24	18.72	1.28	18.31	1.69	1.40
2	1.25	18.98	1.02	18.93	1.07	18.52	1.48	1.19
3	0.625	19.32	0.68	19.25	0.75	18.63	1.33	0.92
4	0.01	19.57	0.43	19.39	0.61	19.03	0.97	0.67

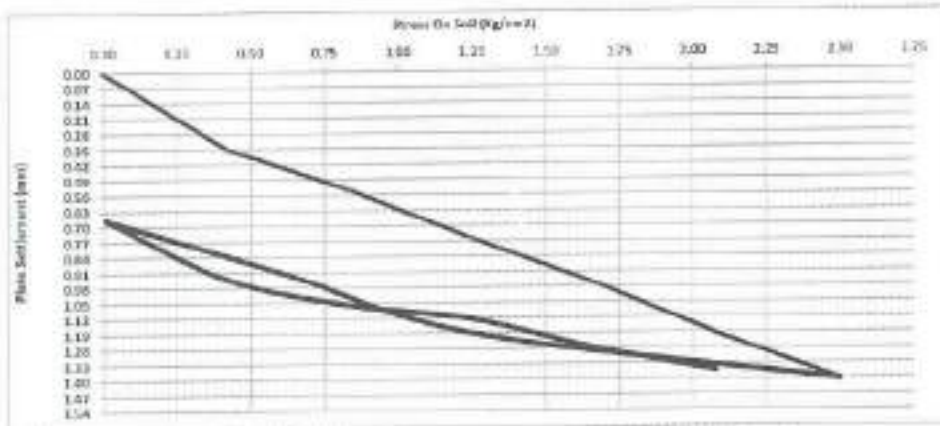
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.17	0.83	19.08	0.91	18.92	1.08	0.94
1	0.83	19.04	0.96	18.96	1.04	18.82	1.18	1.06
2	1.25	18.97	1.03	18.80	1.11	18.76	1.24	1.13
3	1.67	18.88	1.12	18.82	1.18	18.52	1.48	1.26
4	2.08	18.79	1.21	18.75	1.25	18.34	1.62	1.36



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sekhna to Mansa Mairouh Priority Sector (B) - Alamein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+045 to 425+070
Test No. : 002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.63	1.29	1.67	2.08	2.50
Settlement (mm)	0.00	0.35	0.54	0.78	0.97	1.20	1.40

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.65	1.25	0.625	0.01
Settlement (mm)	1.40	1.19	0.92	0.67

D (mm) = 600	S1 (mm) = 0.50	S2 (mm) = 1.01	ΔS = 0.51
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	98		

Ev2/Ev1 = 2.1

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.63	1.29	1.67	2.08
Settlement (mm)	0.67	0.94	1.06	1.13	1.26	1.30

D (mm) = 600	S1 (mm) = 1.04	S2 (mm) = 1.28	ΔS = 0.24
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	182		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Cs = The difference between 0.3 and 0.7 from the maximum loading (mm) (Kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alemein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+970 to 425+995
Test No. : 003

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.68	0.32	19.88	0.12	19.75	0.25	0.23
2	0.83	19.51	0.49	19.45	0.55	19.43	0.57	0.54
3	1.25	19.27	0.73	19.15	0.85	19.19	0.81	0.80
4	1.67	19.08	0.92	18.80	1.20	18.92	1.08	1.07
5	2.08	18.98	1.02	18.59	1.41	18.74	1.26	1.23
6	2.50	18.73	1.27	18.26	1.74	18.46	1.54	1.52

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.73	1.27	18.26	1.74	18.46	1.54	1.52
2	1.25	18.84	1.16	18.34	1.66	18.51	1.49	1.44
3	0.825	18.98	1.02	18.59	1.41	18.67	1.33	1.25
4	0.01	19.39	0.61	18.99	1.01	19.01	0.99	0.87

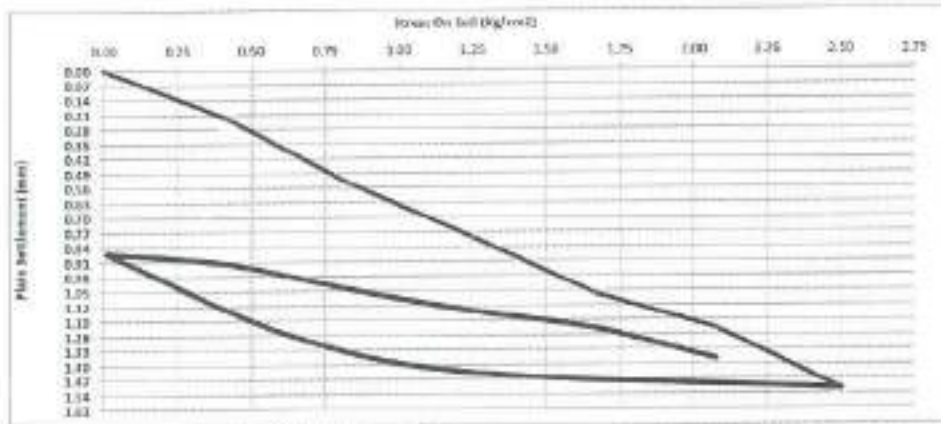
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.36	0.64	18.92	1.08	18.96	1.04	0.92
1	0.83	19.20	0.80	18.86	1.14	18.82	1.18	1.04
2	1.25	19.08	0.92	18.74	1.26	18.74	1.26	1.15
3	1.67	18.97	1.03	18.68	1.32	18.66	1.34	1.23
4	2.08	18.81	1.19	18.55	1.47	18.53	1.47	1.38



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Mama Matrouh Priority Sector (6) – Alamsin to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+070 to 425+095
Test No. : 003

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.8	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.23	0.54	0.80	1.07	1.23	1.52

Unloading (1)	1	2	3	4
Stage(Kg)	7065	5533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.52	1.41	1.25	0.87

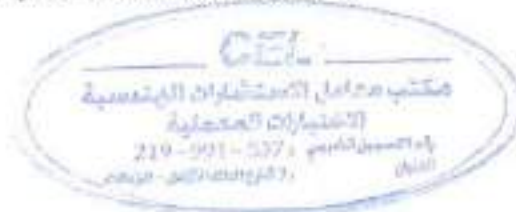
D (mm) = 300	S1 (mm) = 0.80	S2 (mm) = 1.10	ΔS = 0.62
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	71		

Ev2/Ev1 = 2.6

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.8	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.87	0.92	1.04	1.15	1.23	1.28

D (mm) = 300	S1 (mm) = 1.02	S2 (mm) = 1.28	ΔS = 0.24
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	182		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Ds = The difference between 1.3 and 0.7 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)





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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+095 to 425+120
Test No. : 004

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	19.60	0.00	19.66	0.00	19.70	0.00	0.00
1	0.42	19.23	0.37	19.43	0.23	19.53	0.19	0.26
2	0.83	18.89	0.71	19.35	0.31	19.41	0.29	0.44
3	1.25	18.57	1.03	19.22	0.44	19.29	0.41	0.63
4	1.67	18.35	1.25	19.06	0.60	19.09	0.61	0.82
5	2.08	18.20	1.40	18.88	0.78	18.94	0.76	0.96
6	2.50	17.99	1.61	18.56	1.10	18.63	1.07	1.26

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	17.99	1.61	18.56	1.10	18.63	1.07	1.26
2	1.25	18.04	1.56	18.62	1.04	18.67	1.03	1.21
3	0.625	18.23	1.37	18.75	0.91	18.75	0.96	1.06
4	0.01	18.69	0.91	18.84	0.82	18.92	0.78	0.84

Loading Stage (2)

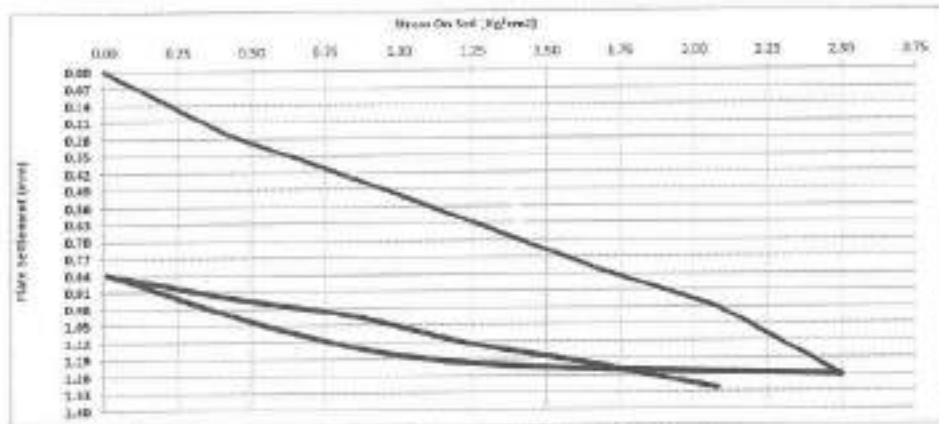
Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.52	1.08	18.80	0.86	18.84	0.86	0.93
1	0.83	18.42	1.18	18.72	0.94	18.79	0.91	1.01
2	1.25	18.25	1.35	18.61	1.05	18.71	0.99	1.13
3	1.67	18.11	1.49	18.55	1.11	18.65	1.05	1.22
4	2.08	17.97	1.63	18.48	1.18	18.56	1.14	1.32



Company Name
Project
Test Date
report date
Location
Test No.

Land mark Co.
Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
16/01/2024
17/01/2024
Station 425+095 to 425+120
804

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1195.92	2348.8	3532.5	4719.4	5878.1	7065
Stress (Kg/cm ²)	0.00	0.42	0.83	1.25	1.67	2.00	2.50
Settlement (mm)	0.00	0.26	0.44	0.63	0.82	0.98	1.28

Unloading (t)	1	2	3	4
Stage(Kg)	7965	3533	1768	9
Stress (Kg/cm ²)	2.60	1.25	0.625	0.01
Settlement (mm)	1.26	1.21	1.05	0.84

D (mm) = 800	S1 (mm) = 0.60	S2 (mm) = 0.85	$\Delta S = 0.45$
E ₁ (Mpa) = (0.75 * ΔS) / ΔS		88	

Loading (Z)	0	1	2	3	4	5
Stages(Kg)	0	1186.92	2346.6	3532.5	4710.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.00
Settlement (mm)	0.84	0.93	1.01	1.13	1.22	1.32

$U_{v2}/U_{v1} =$	1.0
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D [mm] =	600	S1 [mm] =	1.00	S2 [mm] =	1.24	$\Delta S =$	0.24
E _{v2} [Npa] =	(0.75 · D · Δσ) / ΔS	183					

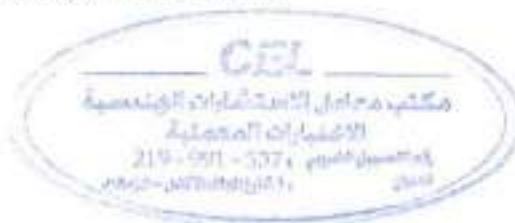
 E_{VI} = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage

$D =$ Plate diameter (mm)

D_5 = The difference between 0.5 and 0.7 from the maximum loading (w_{max}) (kip/in²)

DS = Difference in sediments corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (S) - Alamein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+120 to 425+145
Test No. : 005

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.72	0.28	19.47	0.53	19.24	0.76	0.52
2	0.83	19.55	0.45	19.04	0.96	18.98	1.02	0.81
3	1.25	19.36	0.64	18.84	1.16	18.63	1.37	1.06
4	1.67	18.83	1.17	18.53	1.47	18.45	1.55	1.40
5	2.08	18.51	1.49	18.29	1.71	18.30	1.70	1.63
6	2.50	18.23	1.77	18.02	1.98	18.09	1.91	1.89

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.23	1.77	18.02	1.98	18.09	1.91	1.89
2	1.25	18.31	1.69	18.30	1.70	18.24	1.76	1.72
3	0.625	18.50	1.50	18.37	1.63	18.47	1.53	1.55
4	0.01	18.02	1.06	18.49	1.51	18.62	1.38	1.32

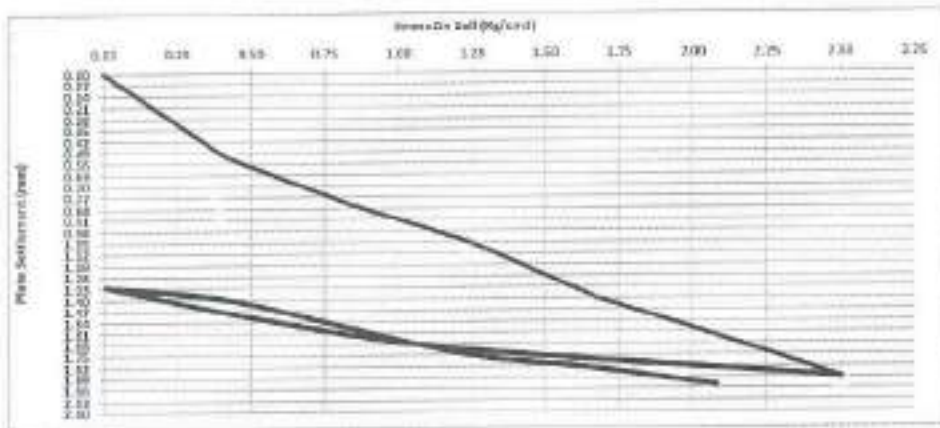
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.87	1.13	18.42	1.58	18.51	1.49	1.40
1	0.83	18.65	1.35	18.28	1.72	18.34	1.66	1.58
2	1.25	18.48	1.52	18.01	1.99	18.26	1.74	1.75
3	1.67	18.36	1.64	17.97	2.03	18.17	1.83	1.83
4	2.08	18.24	1.76	17.91	2.09	18.03	1.97	1.94



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (E) - Alamein to Foka
 Test Date : 16/01/2024
 report date : 17/01/2024
 Location : Station 425+120 to 425+145
 Test No. : 005

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.26	1.67	2.08	2.50
Settlement (mm)	0.00	0.52	0.81	1.06	1.40	1.63	1.88

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.89	1.72	1.56	1.32

D (mm) =	600	St (mm) =	0.75	S20mm =	1.44	ΔS =	0.69
Ev1 (Mpa) =	(0.75 * D * Δσ) / ΔS						
	64						

$Ev2/Ev1 = 2.2$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.26	1.67	2.08
Settlement (mm)	1.32	1.49	1.58	1.75	1.83	1.94

D (mm) =	600	St (mm) =	1.14	S20mm =	1.85	ΔS =	0.31
Ev2 (Mpa) =	(0.75 * D * Δσ) / ΔS						
	141						

Ev1 = Modulus of deformation during the loading stage.
 Ev2 = Modulus of deformation during the Reloading stage.
 D = Plate diameter (mm)
 Δσ = The difference between 0.3 and 0.7 from the maximum loading (stress) (kg/cm²)
 ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (N) - Alnain to Foka
 Test Date : 16/01/2024
 report date : 17/01/2024
 Location : Station 425+145 to 425+170
 Test No. : 006

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.78	0.22	19.71	0.29	19.67	0.33	0.28
2	0.83	19.53	0.47	19.50	0.50	19.46	0.54	0.50
3	1.25	19.35	0.65	19.26	0.74	19.12	0.88	0.76
4	1.67	19.06	0.94	18.98	1.02	18.84	1.16	1.04
5	2.08	18.95	1.14	18.76	1.24	18.54	1.46	1.28
6	2.50	18.63	1.37	18.37	1.63	18.15	1.85	1.62

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.63	1.37	18.37	1.63	18.15	1.85	1.62
2	1.25	18.69	1.31	18.54	1.46	18.34	1.66	1.48
3	0.625	18.82	1.18	18.76	1.24	18.49	1.51	1.31
4	0.01	19.03	0.97	18.98	1.02	18.87	1.13	1.04

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.97	1.03	18.88	1.12	18.82	1.18	1.11
1	0.83	18.90	1.10	18.81	1.19	18.64	1.36	1.22
2	1.25	18.78	1.22	18.58	1.42	18.42	1.58	1.41
3	1.67	18.68	1.32	18.42	1.58	18.21	1.79	1.56
4	2.08	18.63	1.37	18.33	1.67	18.09	1.91	1.65

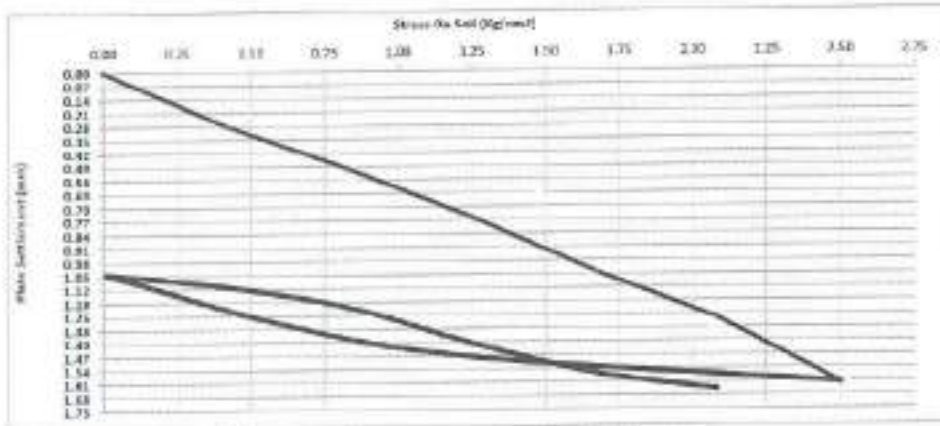


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Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (8) - Alamein to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+145 to 425+170
Test No. : 008

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.63	1.25	1.67	2.06	2.50
Settlement (mm)	0.00	0.26	0.50	0.76	1.04	1.26	1.62

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.62	1.48	1.31	1.04

D (mm) =	600	S1 (mm) =	0.66	S2 (mm) =	1.02	ΔS =	0.63
Ev1 (Mpa) =	$(0.75 \cdot D \cdot \Delta\sigma) / \Delta S$						
	78						

Ev2/Ev1 =	1.8
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.63	1.25	1.67	2.06
Settlement (mm)	1.04	1.11	1.22	1.41	1.58	1.65

D (mm) =	600	S1 (mm) =	1.26	S2 (mm) =	1.58	ΔS =	0.34
Ev2 (Mpa) =	$(0.75 \cdot D \cdot \Delta\sigma) / \Delta S$						
	115						

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Δσ = The difference between 0.3 and 0.7 from the maximum loading (sigma) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Alamin to Foka
 Test Date : 16/01/2024
 report date : 17/01/2024
 Location : Station 425+170 to 425+195
 Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.57	0.43	19.63	0.37	19.72	0.28	0.36
2	0.83	19.36	0.64	19.26	0.74	19.41	0.59	0.65
3	1.25	18.97	1.03	18.98	1.02	19.23	0.77	0.94
4	1.67	18.65	1.35	18.74	1.26	18.69	1.31	1.31
5	2.08	18.51	1.49	18.38	1.62	18.47	1.53	1.55
6	2.50	18.11	1.89	18.14	1.86	18.14	1.86	1.87

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.11	1.89	18.14	1.86	18.14	1.86	1.87
2	1.25	18.22	1.76	18.18	1.82	18.37	1.63	1.74
3	0.625	18.50	1.50	18.35	1.65	18.53	1.47	1.54
4	0.01	18.78	1.22	18.70	1.21	18.94	1.06	1.16

Loading Stage (2)

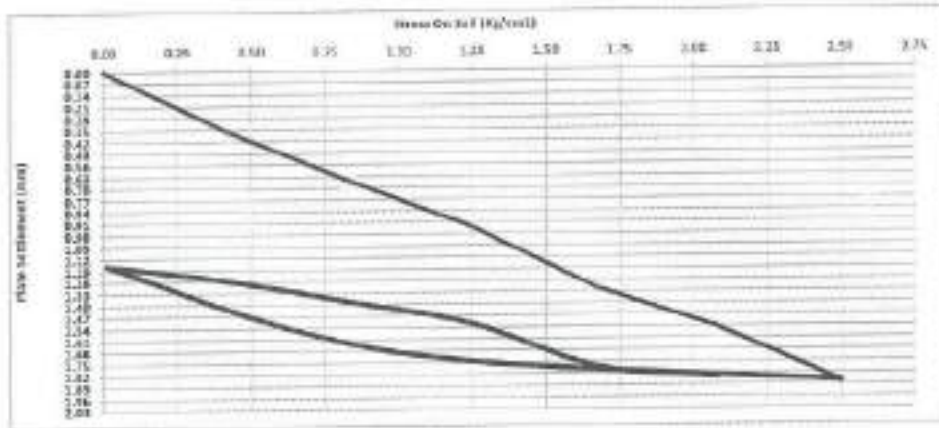
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.73	1.27	18.68	1.32	18.82	1.18	1.26
1	0.83	18.63	1.37	18.54	1.46	18.68	1.32	1.38
2	1.25	18.47	1.53	18.47	1.53	18.50	1.50	1.52
3	1.67	18.20	1.80	18.20	1.80	18.27	1.73	1.76
4	2.08	18.16	1.84	18.08	1.92	18.23	1.77	1.84



Company Name
Project
Test Date
report date
Location
Test No.

Land marks Co.
: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (E) - Alamein to Foka
: 16/01/2024
: 17/01/2024
: Station 425+170 to 425+185
: 007

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.43	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.36	0.66	0.94	1.31	1.56	1.87

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.825	0.01
Settlement (mm)	1.57	1.74	1.54	1.15

D (mm) = 600	S1 (mm) = 0.98	S2 (mm) = 1.35	ΔS = 0.75
Ev1 (Mpa) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	50		

$$Ev2/Ev1 = 1.8$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.43	0.83	1.25	1.67	2.08
Settlement (mm)	1.16	1.26	1.38	1.52	1.75	1.84

D (mm) = 600	S1 (mm) = 1.36	S2 (mm) = 1.79	ΔS = 0.43
Ev2 (Mpa) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	112		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (σmax) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (G) - Alamin to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+195 to 425+220
Test No. : 008

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.68	0.32	19.65	0.35	19.58	0.42	0.36
2	0.83	19.46	0.54	19.33	0.67	19.20	0.80	0.67
3	1.25	19.22	0.78	19.22	0.78	18.82	1.18	0.91
4	1.67	19.03	0.97	18.87	1.13	18.75	1.25	1.12
5	2.08	18.91	1.09	18.63	1.37	18.63	1.37	1.28
6	2.50	18.68	1.32	18.40	1.60	18.09	1.91	1.61

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.68	1.32	18.40	1.60	18.09	1.91	1.61
2	1.25	18.73	1.27	18.48	1.52	18.15	1.85	1.55
3	0.825	18.88	1.12	18.57	1.43	18.34	1.66	1.40
4	0.01	19.40	0.60	18.90	1.10	18.70	1.30	1.00

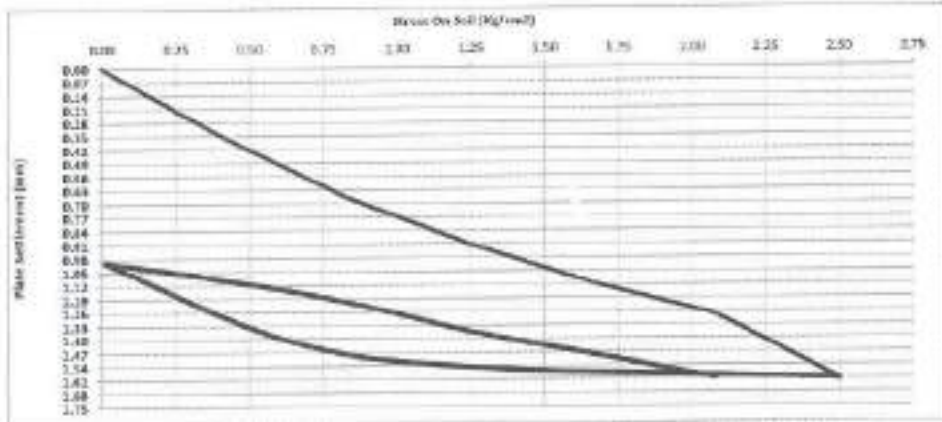
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.31	0.69	18.85	1.15	18.56	1.44	1.09
1	0.83	19.15	0.85	18.76	1.24	18.47	1.53	1.21
2	1.25	18.98	1.02	18.63	1.37	18.30	1.70	1.38
3	1.67	18.87	1.13	18.49	1.51	18.19	1.81	1.48
4	2.08	18.72	1.28	18.40	1.60	18.06	1.94	1.61



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Soihna to Marsa Matrouh Priority Sector (6) – Alamsin to Foka
Test Date : 18/01/2024
report date : 17/01/2024
Location : Station 425+195 to 425+220
Test No. : 008

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.1	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.36	0.57	0.91	1.12	1.28	1.61

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.825	0.01
Settlement (mm)	1.61	1.55	1.40	1.00

D (mm) = 600	S1 (mm) = 1.51	S2 (mm) = 1.15	ΔS = 0.36
Ev1 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	82		

$$Ev2/Ev1 = 1.7$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.1	4719.4	5878.1
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	1.00	1.09	1.21	1.38	1.48	1.61

D (mm) = 600	S1 (mm) = 1.18	S2 (mm) = 1.51	ΔS = 0.32
Ev2 (Mpa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	137		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
ΔS = The difference between 1.3 and 4.7 from the maximum loading (mm)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sakina to Mersa Matruh Priority Sector (6) - Almon to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+220 to 425+245
Test No. : 009

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.35	0.65	19.57	0.43	19.64	0.36	0.48
2	0.83	19.08	0.92	19.36	0.64	19.29	0.71	0.76
3	1.25	18.69	1.31	19.06	0.94	19.09	0.91	1.05
4	1.67	18.47	1.53	18.74	1.26	18.93	1.07	1.29
5	2.08	18.32	1.68	18.50	1.50	18.61	1.39	1.52
6	2.50	18.13	1.87	18.29	1.71	18.34	1.66	1.75

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.13	1.87	18.29	1.71	18.34	1.66	1.75
2	1.25	18.26	1.74	18.33	1.67	18.39	1.61	1.87
3	0.625	18.48	1.52	18.50	1.50	18.46	1.34	1.45
4	0.01	18.94	1.06	18.98	1.02	19.07	0.93	1.00

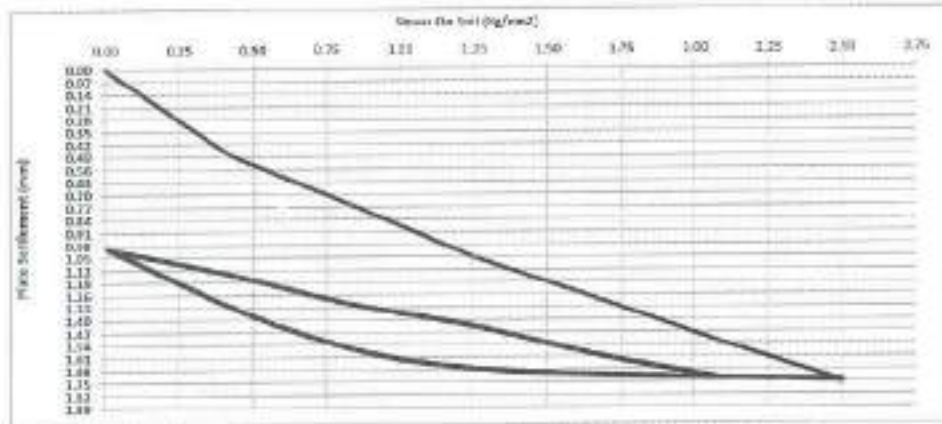
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.76	1.24	18.87	1.13	18.94	1.06	1.14
1	0.83	18.64	1.36	18.67	1.33	18.75	1.24	1.31
2	1.25	18.47	1.53	18.54	1.46	18.68	1.32	1.44
3	1.67	18.28	1.72	18.36	1.64	18.55	1.44	1.60
4	2.08	18.17	1.83	18.25	1.75	18.40	1.60	1.73



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sakhna to Marsa Matrouh Priority Sector (6) - Alamein to Foka
Test Date : 16/01/2024
Report date : 17/01/2024
Location : Station 425+220 to 425+245
Test No. : 009

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	2345.8	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.45	0.76	1.05	1.29	1.52	1.75

UnLoading (T)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.75	1.67	1.45	1.00

D (mm) =	600	S1 (mm) =	0.70	S2 (mm) =	1.33	ΔS =	0.63
Ev1 (Mpa) =	$(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$						
	78						

$Ev2/Ev1 = 1.3$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	2345.8	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	1.00	1.14	1.31	1.44	1.60	1.73

D (mm) =	600	S1 (mm) =	1.20	S2 (mm) =	1.62	ΔS =	0.35
Ev2 (Mpa) =	$(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$						
	127						

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
ΔS = The difference between 0.3 and 0.7 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sukhna to Marsa Matruh Priority Sector (S) - Almain to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+245 to 425+270
Test No. : 010

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.51	0.49	19.67	0.33	19.72	0.28	0.37
2	0.83	19.07	0.93	19.07	0.93	19.43	0.57	0.81
3	1.25	18.67	1.33	18.80	1.20	19.29	0.71	1.08
4	1.67	18.33	1.67	18.45	1.55	19.17	0.83	1.35
5	2.08	18.19	1.81	18.23	1.77	19.04	0.96	1.51
6	2.50	18.06	1.94	18.02	1.98	18.75	1.25	1.72

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.06	1.94	18.02	1.98	18.75	1.25	1.72
2	1.25	18.15	1.85	18.09	1.91	18.94	1.06	1.61
3	0.825	18.29	1.71	18.35	1.65	19.08	0.92	1.43
4	0.01	18.43	1.57	18.58	1.42	19.37	0.63	1.21

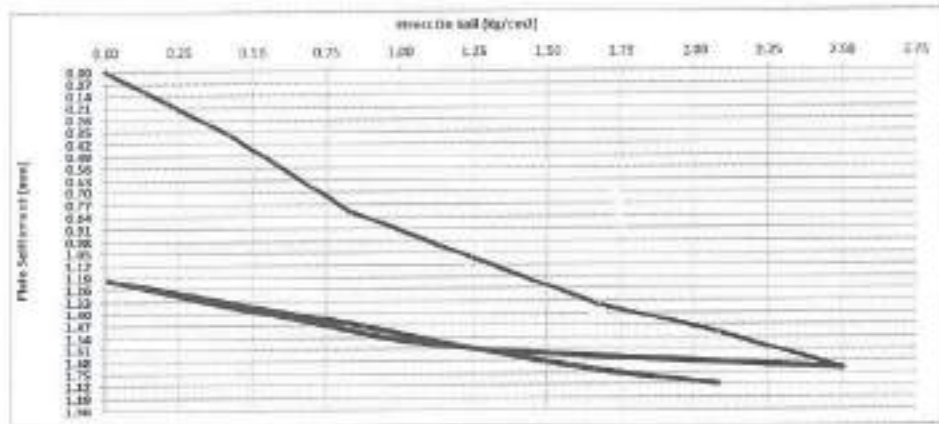
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.37	1.63	18.52	1.48	19.10	0.90	1.34
1	0.83	18.22	1.78	18.42	1.58	18.98	1.02	1.46
2	1.25	18.08	1.92	18.26	1.76	18.86	1.14	1.61
3	1.67	17.96	2.04	18.10	1.90	18.75	1.25	1.73
4	2.08	17.88	2.12	18.00	2.00	18.67	1.33	1.82



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Alamin to Foka
Test Date : 16/01/2024
report date : 17/01/2024
Location : Station 425+245 to 425+270
Test No. : 010

Nonrepitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.37	0.81	1.08	1.35	1.51	1.72

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.72	1.61	1.43	1.21

D (mm) = 600	S1 (mm) = 1.72	S2 (mm) = 1.38	ΔS = 0.66
Ev1 (Mpa) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	67		

Ev2/Ev1 = 2.1

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	1.21	1.34	1.46	1.61	1.73	1.82

D (mm) = 600	S1 (mm) = 1.44	S2 (mm) = 1.75	ΔS = 0.31
Ev2 (Mpa) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	142		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Cs = The difference between 1.3 and 0.7 from the maximum loading (s max) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)

Company Name : Land marks Co.
Project : Elcotric Express Train, from Al Ain Sokhne to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+270 to 425+290
Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.81	0.19	19.64	0.36	19.60	0.40	0.32
2	0.83	19.58	0.32	19.49	0.51	19.41	0.59	0.47
3	1.25	19.44	0.56	19.31	0.69	19.29	0.77	0.67
4	1.67	19.27	0.73	19.15	0.85	19.05	0.95	0.84
5	2.08	19.15	0.85	19.01	0.99	18.91	1.09	0.96
6	2.50	19.02	0.98	18.84	1.16	18.78	1.22	1.12

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.02	0.98	18.84	1.16	18.78	1.22	1.12
2	1.25	19.07	0.93	18.90	1.10	18.83	1.17	1.07
3	0.825	19.12	0.88	18.97	1.03	18.92	1.08	1.00
4	0.01	19.35	0.66	19.24	0.76	19.21	0.79	0.73

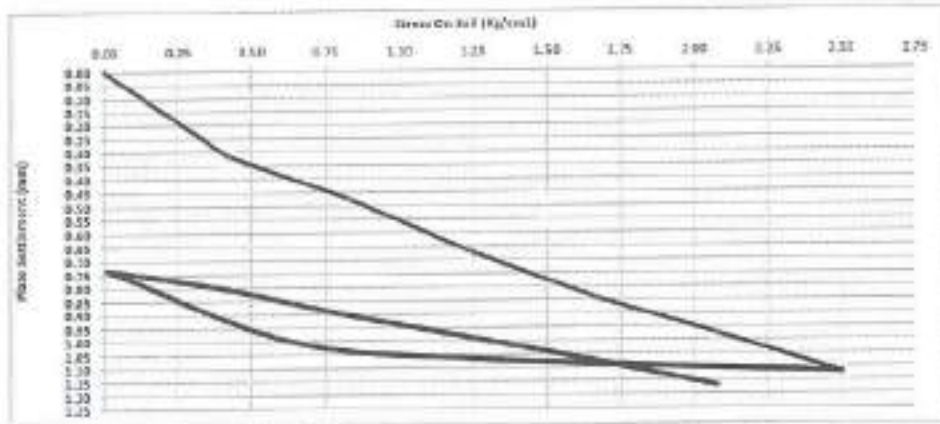
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.27	0.73	19.18	0.82	19.13	0.87	0.81
1	0.83	19.18	0.82	19.09	0.91	19.02	0.98	0.90
2	1.25	19.09	0.91	19.01	0.99	18.93	1.07	0.98
3	1.67	19.01	0.99	18.94	1.06	18.82	1.18	1.08
4	2.08	18.91	1.09	18.85	1.15	18.73	1.27	1.17



Company Name : Land marks Co.
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 11/1/2024
report date : 13/1/2024
Location : Station 425+270 to 425+290
Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.1	4718.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.87	2.08	2.50
Settlement (mm)	0.00	0.32	0.47	0.67	0.84	0.96	1.12

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.26	0.625	0.01
Settlement (mm)	1.12	1.07	1.00	0.73

D (mm) =	600	S1 (mm) =	0.44	S2 (mm) =	0.37	ΔS =	0.07
Ev1 (Mpa) =	$(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$						
	193						

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.1	4718.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.87	2.08
Settlement (mm)	0.73	0.81	0.90	0.99	1.08	1.17

$Ev2/Ev1 = 2.0$

D (mm) =	600	S1 (mm) =	0.88	S2 (mm) =	1.09	ΔS =	0.21
Ev2 (Mpa) =	$(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$						
	219						

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)

ΔS = The difference between 3.3 and 4.7 from the maximum loading (stress) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Dear Gentleman,

Attached here with the Sub-Ballast delivered on 15/03/2023

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Proctor test according to ASTM D-1557.
5. Specific Gravity & Absorption according to ASTM C-127 & D 6473.
6. CBR according to ASTM D-1883
7. Los Anglos according to ASTM C-131.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

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Tel & Fax : 27367231 - 27363093

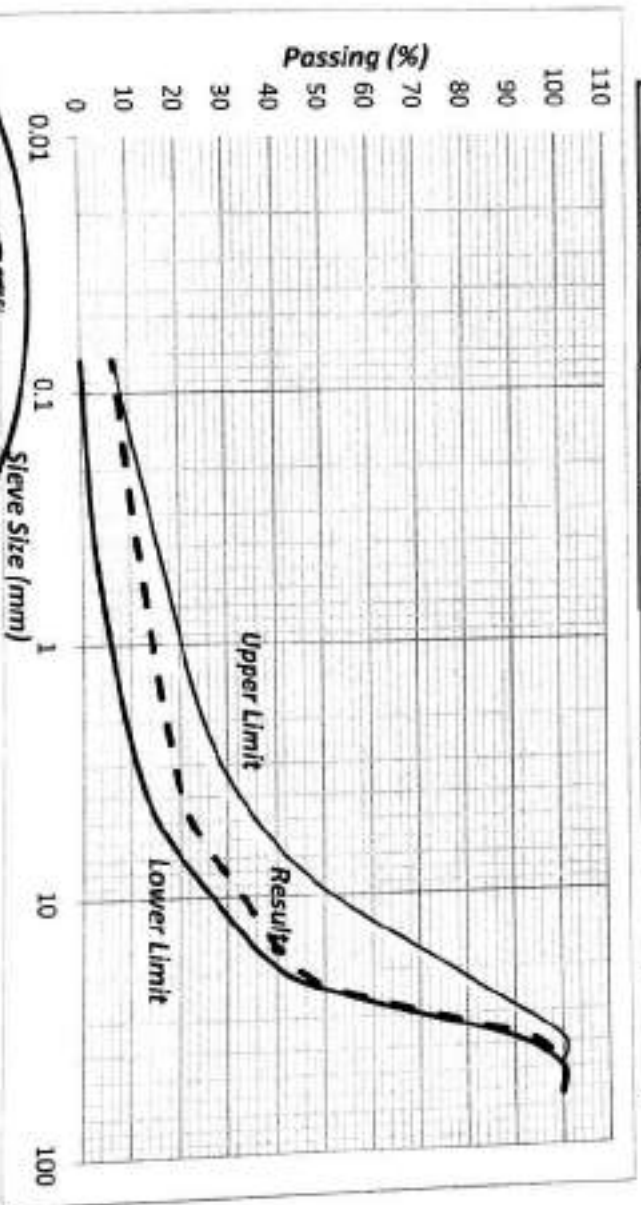
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www.celevent.com

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Results of sieve analysis according to ASTM D-422.

Sieve Size (mm)	Passing %	Job specification limits (ASTM D-422)	
		Min.	Max.
63.5	100	100	100
50	100	100	100
38	93.1	90	100
25	56.8	55	85
19	43.7	40	75
12.5	34.9	--	--
9.5	32.3	26	50
4.75	22.0	15	35
2.00	17.2	9	25
0.425	11.7	3	16
0.075	6.8	0	7



The test results are **Not Comply** with specifications limits.

Signature /
مدير المختبر
CEL
مكتب محاسن الاستشارات الهندسية
3 El Malek El Afdal Street
Zamalek, Cairo.
Tel & Fax : 27367231 - 27363093

Company Name : Land Marks
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Sub-Ballast
 Location : St. (424+600) : (425+600)
 Delivery Date : 15/03/2023
 Reporting Date : 22/03/2023
 Reporting No. : 21
 Sample No. : 01

Materials finer than 75 µm (no.200) sieve
 by washing ASTM D-1140.

Test	Results (%)
Percentage of material finer than Sieve Size 75 µm (No.200)	6.8

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 مكتب محاسب الاستشارات الهندسية
 Signature /
 ٢٠٢٣ - ٢٠٢٤

3 El Malek El Afdal Street
 Zamalek, Cairo.
 Tel & Fax : 27367231 - 27363093



ش. المالك الأفضل
 الزمالة - القاهرة
 ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١ : تليفون + فاكس
 www.cel-eqvnl.com

Company Name	: Land Marks
Project	: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample	: Sub-Ballast
Location	: St. (424+600) : (425+600)
Delivery Date	: 15/03/2023
Reporting Date	: 22/03/2023
Reporting No.	: 21
Sample No.	: 01

Results of liquid limit and plasticity index of soils according to ASTM D-4318

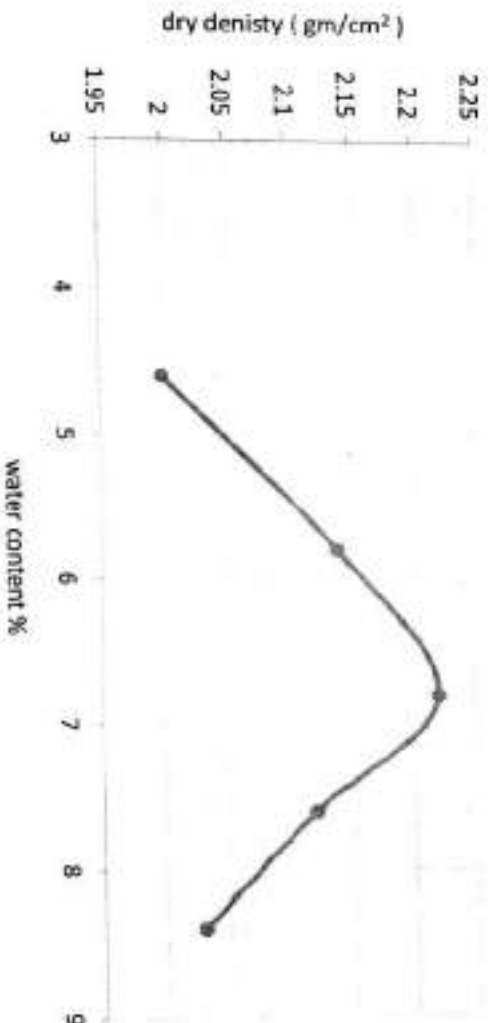
Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature / *[Signature]*

CEL
 شركة الخدمات الإلكترونية
 الإلكترونيات /
 ٥١٥-٥٥٤١ - ٥٥٥٧ ص.ب. ٥٥٥٥
 الرياض - ٥٥٥٧ - ٥٥٥٧ ص.ب. ٥ : ٥٥٥٥

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



- Max dry density (gm/cm³) : 2.22
- Optimum moisture content % : 6.8

Signature

CEL
مكتب محامل الاستشارات الهندسية
للحلول الجيوتقنية
بمصر
1505 : 010 - 27367231 : 27363093

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Results of Specific Gravity and Absorption
of Course Aggregate
ASTM C127 & D 6473

Test	Results
Bulk Specific Gravity (OD)	2.32
Bulk Specific Gravity (SSD)	2.40
Apparent Specific Gravity.	2.52
Absorption %	2.41

Note:

- (OD) Refer to Oven Dry.
- (SSD) Refer to Saturated Surface Dry.

CEL
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المساحة الهندسية
Signature /
في مكتب معامل الاستشارات الهندسية
بمصر - شارع النيل - القاهرة

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	4.07	
1.27	0.050	4.59	
1.91	0.075	5.10	
2.54	0.100	5.58	
3.18	0.125	6.11	
3.81	0.150	6.59	
4.45	0.175	7.10	
5.08	0.200	7.61	
5.71	0.225	8.11	
6.35	0.250	8.62	

CBR Result	Stress (Mpa)		CBR %
	St. Value	Sample results	
At 0.1 inch (2.54 mm) penetration	6.90	5.58	80.9

Notes :

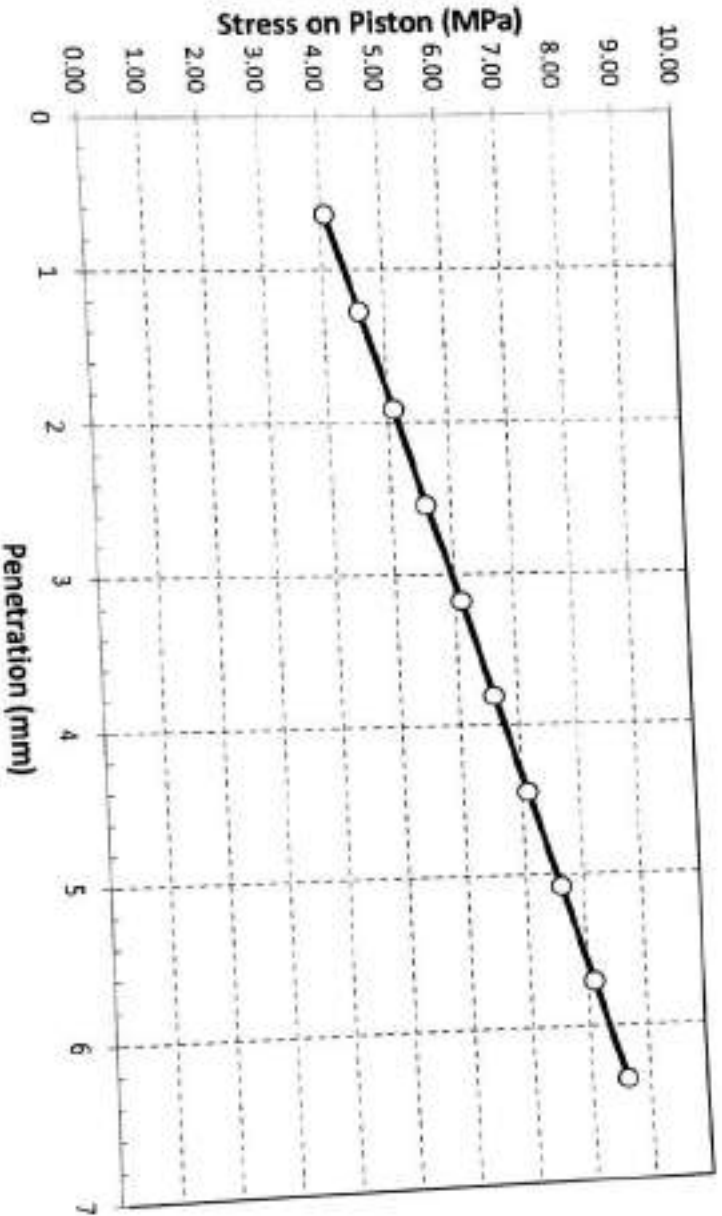
- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.22 (gm /cm³) at 6.8 % optimum water content.
- 3- Surcharge level is 50kN/m²

Signature : 

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (424+600) : (425+600)
Delivery Date : 15/03/2023
Reporting Date : 22/03/2023
Reporting No. : 21
Sample No. : 01

Load Penetration Curve of CBR Test

ASTM D-1883



CEL
مكتب معامل الاستشارات الهندسية
Signature / 
الشيخ محمد عبد الله العبدالله
مهندس
011 555 5555 - 011 555 5555
011 555 5555 - 011 555 5555

Land marks

```

: Electric express train.
: 06/04/2023
: 12/04/2023
: Sub-ballast sample No.1
: Coarse Aggregate
: Site
: 01

```

ASTM C 535

Test	Results
Amount of loss by abrasion and impact (%)	19.7
Coarse Aggregate	

- Signature /
-

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Prepared Subgrade
Delivery Date : 13-04-2023
Reporting Date : 17-04-2023
Reporting No. : 23
Sample No. : 02

Dear Gentleman,

Attached here with the Prepared Subgrade delivered on 13-04-2023

Materials test

1. Sieve analysis according to ASTM D-422.
2. Material finer than sieve No. 200 according ASTM D-1140.
3. Liquid limits and plasticity index of soil according to ASTM D-4318.
4. Proctor test according to ASTM D-1557.
5. CBR according to ASTM D-1883
6. Los Anglos according to ASTM C-131.

Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

CEL
مكتب ماسجل الاستشارات والهندسة
Signature / توقيع

3 El Malek El Afdal Street
Zamalek, Cairo.
Tel & Fax : 27367231 - 27363093



ش. المالك الأفطس
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Company Name : Land Marks

Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh

Type of sample : Prepared Subgrade

Delivery Date : 13-04-2023

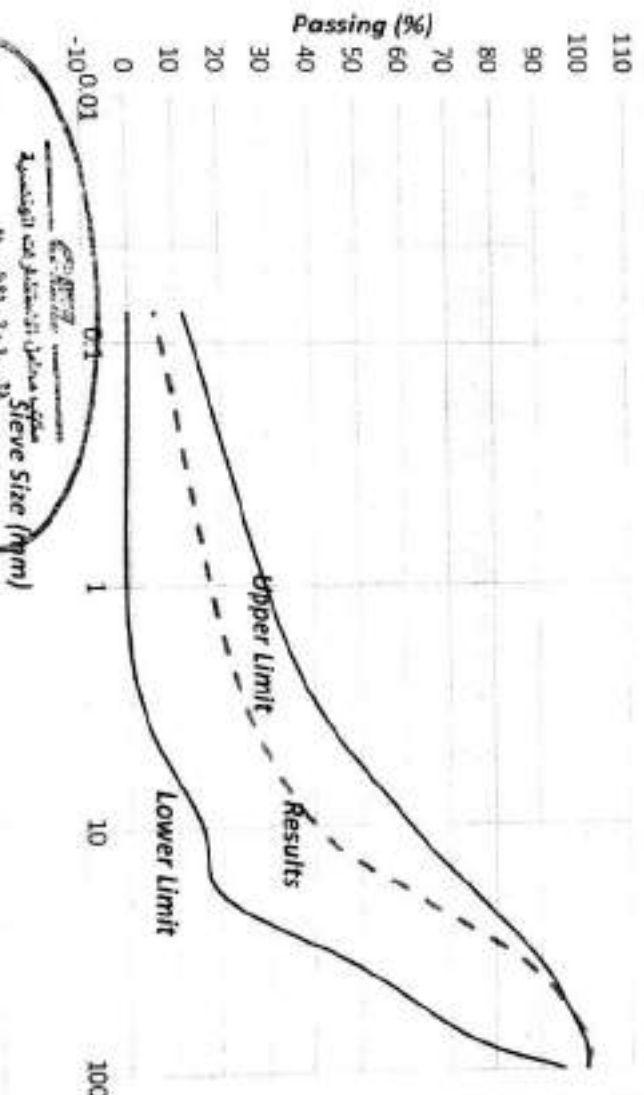
Reporting Date : 17-04-2023

Reporting No. : 23

Sample No. : 02

Results of sieve analysis according to ASTM D-422.

Sieve Size (mm)	Passing %	Job specification limits (ASTM D-422)	
		Min.	Max.
100	100	90	100
75	100	75	100
50	100	--	--
38	86.9	50	100
25	72.3	--	100
19	61.6	20	75
12.5	43.2	--	--
9.5	39.2	15	60
4.75	24.6	--	--
2.00	21.3	0	35
0.425	15.0	0	--
0.075	6.5	0	12



The test results are **Not Comply** with specifications limits.

Signature /

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Prepared Subgrade
Delivery Date : 13-04-2023
Reporting Date : 17-04-2023
Reporting No. : 23
Sample No. : 02

Materials finer than 75 μ m (no.200) sieve
by washing ASTM D-1140.

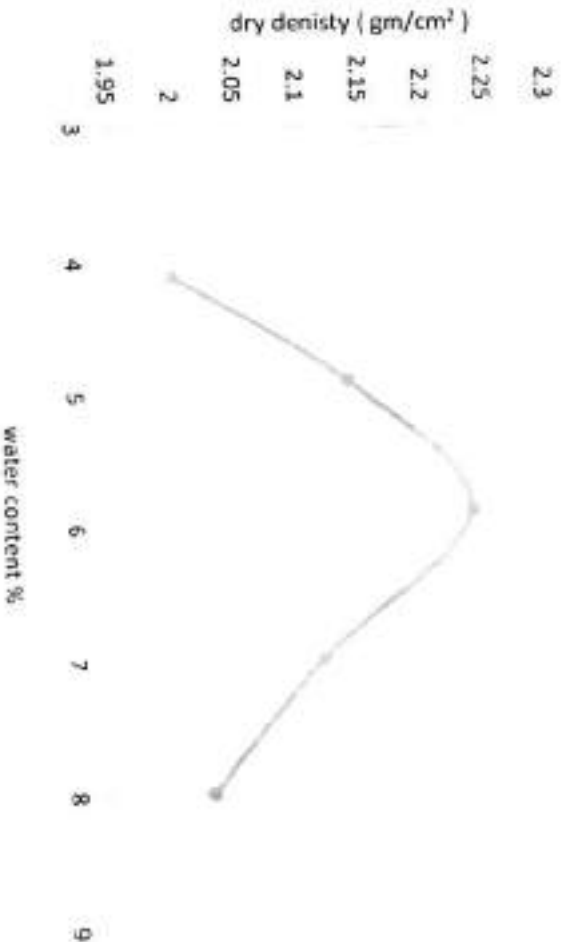
Test	Results (%)
Percentage of material finer than Sieve Size 75 μ M (No.200)	5.9

Signature /.....


٣ شىء الملك الأفضل
الزم ملك - القاهرة

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Prepared Subgrade
Delivery Date : 13-04-2023
Reporting Date : 17-04-2023
Reporting No. : 23
Sample No. : 02

Moisture – Density relation of soil
Test result (Modified proctor test)
ASTM D-1557



- Max dry density (gm/cm³) : 2.24
- Optimum moisture content % : 5.9

Signature /

مكتب معامل الاستشارات الهندسية
الشارع الثالث
بمصر الجديدة
219-6791-6792
219-6791-6792
219-6791-6792

Company Name : Land Marks
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Prepared Subgrade
Delivery Date : 13-04-2023
Reporting Date : 17-04-2023
Reporting No. : 23
Sample No. : 02

Test Results of California Bearing Ratio on Base Materials
ASTM D 1883

penetration		stress on piston (Mpa)	
mm	Inch		
0.64	0.025	4.06	
1.27	0.050	4.34	
1.91	0.075	4.56	
2.54	0.100	4.91	
3.18	0.125	5.40	
3.81	0.150	5.70	
4.45	0.175	6.14	
5.08	0.200	6.64	
5.71	0.225	7.09	
6.35	0.250	7.48	
CBR Result		Stress (Mpa)	
At 0.1 inch (2.54 mm) penetration		St. Value	Sample results
		6.90	4.91
		CBR %	
		71.7	

Notes :

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.24 (gm /cm³) at 5.9% optimum water content.
- 3- Surcharge load 4.50 Kg

Signature /

[Handwritten Signature]
م. محمد عبد الله
م. محمد عبد الله
م. محمد عبد الله

Load Penetration Curve of CBR Test



Company:

Land marks

Project : Electric express train.
Delivery Date : 01/05/2023
Report Date : 15/05/2023
Sample Id : Prepared subgrade sample No.2
Type : Coarse Aggregate
Source : Site
Report No. : 02

RESISTANCE TO DEGRADATION OF SMALL SIZE AGGREGATE BY ABRASION AND IMPACT IN LOS ANGELES MACHINE ASTM C 535

Test	Results
Amount of loss by abrasion and impact (%)	
Coarse Aggregate	23.2

- According to project specs :

The amount of loss by abrasion and impact for moderate weathering:

- Shall not exceed 40 % (when Subjected to 500 revolutions)

The Test Results is ☒ Comply

☐ Not Comply with Spec. Limits

Signature /.....

219-021-217
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219-021-217

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Zamalek, Cairo.
Tel& Fax : 27367231 - 27363093

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ACCREDITED
Testing Laboratory

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الزمالك - القاهرة
تليفون : ٢٧٣٦٧٢٣١ - ٢٧٣٦٧٢٣٠
www.cel-egypt.com



قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطر الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ إلى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند و بيانه : (١-٤) اعمال توريد وفرش طبقة الأساس (PREPARED SUBGRADE)

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : ٢م

الكمية	الابعاد (متر)		الموقع الكيلومترى		بيان الاعمال بالمقاييس
	مساحة المقطع	طول	الى	من	
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+١٠٠	٤٢٤+٦٠٠	القطاع الأول
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+٦٠٠	٤٢٥+١٠٠	القطاع الثانى
٨٠٣٧	اجمالي الكميات خلال فترة المستخلص الحالية (٢م)				
٨٠٣٧	الاجمالي الكلى (٢م)				

مهندس الهيئة

م / احمد عبد الحامد

مهندس الاستشاري

مكتب د/ سعد الجيوشى

م / مصطفى نجم

م / مصطفى نجم

مهندس الاستشاري

مكتب XYZ

م / محمد خليل

م / محمد خليل

مهندس الشركة

م / احمد ابوبكر

احمد ابوبكر



قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ إلى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي
رقم البند و بيانه : (١-٤) علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية
تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م ٢

الكمية	الأبعاد (متر)		الموقع الكيلومري		بيان الاعمال بالمقايسة
	مساحة المقطع	طول	الى	من	
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+١٠٠	٤٢٤+٦٠٠	القطاع الأول
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+٦٠٠	٤٢٥+١٠٠	القطاع الثاني
٨٠٣٧	اجمالي الكميات خلال فترة المستخلص الحالية (٣م)				
٨٠٣٧	الاجمالي الكلي (٣م)				

مهندس الهيئة

م / إبراهيم الحكاوي

مهندس الاستشاري

مكتب د/ سعد الجيوشي
م/ مصطفى نجم

الشيخ

مهندس الاستشاري

مكتب XYZ

م / محمد خليل

م / محمد خليل

مهندس الشركة

م / احمد ابو بكر

احمد ابو بكر

قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ الى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند و بيانه : (١-٤) علاوة مسافة النقل ١٤٧ كم

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م ٢

الكمية	الابعاد (متر)		الموقع الكيلومترى		بيان الاعمال بالمقايضة
	مساحة المقطع	طول	الى	من	
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+١٠٠	٤٢٤+٦٠٠	القطاع الأول
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+٦٠٠	٤٢٥+١٠٠	القطاع الثاني
٨٠٣٧	اجمالي الكميات خلال فترة المستخلص الحالية (م ٢)				
٨٠٣٧	الاجمالي الكلي (م ٢)				

مهندس كهربة
م / إبراهيم الحظوة

مهندس الاستشاري
مكتب د/ سعد الجيوشي
م/ مصطفى نجم

مهندس الاستشاري
مكتب XYZ
م / محمد خليل

مهندس شركة
م / احمد أبوبكر
احمد أبوبكر



قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ الى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند وبيانه : (١-٤) قيمة المادة المحجوبة

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م٢

الكمية	الابعاد (متر)		الموقع الكيلومترى		بيان الاعمال بالمقايسة
	مساحة المقطع	طول	الى	من	
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+١٠٠	٤٢٤+٦٠٠	القطاع الأول
٤٠١٨,٥٠	٨,٠٣٧	٥٠٠	٤٢٥+٦٠٠	٤٢٥+١٠٠	القطاع الثاني
٨٠٣٧	اجمالي الكميات خلال فترة المستخلص الحالية (م٢)				
٨٠٣٧	الاجمالي الكلي (م٢)				

مهندس الهيئة

م / ايمن الحفوي

مهندس الاستشاري

مكتب د/سعد الجيوشي

م/مصطفى نجم

مهندس الاستشاري

مكتب XYZ

م/محمد خليل

مهندس الشركة

م / احمد ابوبكر

احمد ابوبكر



قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)

قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ الى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند و بيانه : (٢-٤) أعمال توريد وفرش طبقة الأساس (SUB BALLAST)

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م٣

الكمية	الأبعاد (متر)		الموقع الكيلومري		بيان الأعمال بالمقاييس
	مساحة المقطع	طول	من	إلى	
٣٢٧٨,٨٠	٥,٨٥٥	٥٦٠	٤٢٥+١٦٠	٤٢٤+٦٠٠	القطاع الأول
٣٢٧٨,٨٠	اجمالي الكميات خلال فترة المستخلص الحالية (م٣)				
٣٢٧٨,٨٠	الاجمالي الكلي (م٣)				

مهندس الهيئة

م / إبراهيم الحديدي

مهندس الاستشاري

مكتب د/ سعد الجيوشي

م / مصطفى نجم

المستشار

مهندس الاستشاري

مكتب XYZ

م / محمد خليل

المستشار

مهندس الشركة

م / احمد أبو بكر

احمد أبو بكر

قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الثرابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ الى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي
رقم البند و بيانه : (٤-٢) علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية
تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م٢

الكمية	الأبعاد (متر)		الموقع الكيلومتری		بيان الاعمال بالمقايسة
	مساحة المقطع	طول	الى	من	
٣٢٧٨,٨٠	٥,٨٥٥	٥٦٠	٤٢٥+١٦٠	٤٢٤+٦٠٠	القطاع الأول
٣٢٧٨,٨٠	اجمالي الكميات خلال فترة المستخلص الحالية (م٢)				
٣٢٧٨,٨٠	الاجمالي الكلي (م٢)				

مهندس الهيئة



مهندس الاستشاري

مكتب د/سعد الجيوشي

م/مصطفى نجم



مهندس الاستشاري


مكتب XYZ

م/محمد خليل



مهندس الشركة

م / أحمد أبو بكر



قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ إلى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند وبيانه : (٢-٤) علاوة مسافة النقل ١٤٧ كم

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م٢

الكمية	الأبعاد (متر)		الموقع الكيلومتری		بيان الأعمال بالمقاييس
	مساحة المقطع	طول	إلى	من	
٣٢٧٨,٨٠	٥,٨٥٥	٥٦٠	٤٢٥+١٦٠	٤٢٤+٦٠٠	القطاع الأول
٣٢٧٨,٨٠	اجمالي الكميات خلال فترة المستخلص الحالية (م٢)				
٣٢٧٨,٨٠	الاجمالي الكلي (م٢)				

مهندس الهيئة

م / إبراهيم الحظوي

مهندس الاستشاري

مكتب د/سعد الجيوشي

م / مصطفى نجم

مهندس الاستشاري

مكتب XYZ

م / محمد خليل

مهندس الشركة

م / أحمد أبو بكر

أحمد أبو بكر

قائمة الكميات الواردة بالمستخلص جاري (٢)

مشروع: أعمال الجسر الترابي والأعمال الصناعية لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع غرب النيل لتنفيذ المسافة من الكم ٤٢٤+٦٠٠ الى الكم ٤٢٥+٦٠٠ بطول ١ كم اتجاه الطريق الساحلي

رقم البند وبيانه : (٢-٤) قيمة المادة المحجوبة

تنفيذ : شركة لاندماركس للمقاولات العمومية

مقدار العمل السابق : م٢

الكمية	الأبعاد (متر)		المواقع الكيلومترية		بيان الاعمال بالمقايضة
	مساحة المقطع	طول	من	الى	
٣٢٧٨,٨٠	٥,٨٥٥	٥٦٠	٤٢٥+٦٦٠	٤٢٤+٦٠٠	القطاع الأول
٣٢٧٨,٨٠	اجمالي الكميات خلال فترة المستخلص الحالية (م٢)				
٣٢٧٨,٨٠	الاجمالي الكلي (م٢)				

مهندس الهيئة

م / /

مهندس الاستشاري

مكتب د/ سعد الجيوشي
م/ مصطفى نجم

مهندس الاستشاري

مكتب XYZ

م / محمد خليل

مهندس الشركة

م / احمد أبو بكر

احمد ابو بكر

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة.. وبعد،،،

بالإحالة إلى مشروع القطار الكهربائي فائق السرعة (العلمين - فوكة) (القطاع السادس)
نتشرف بأن نرفق لميادنتكم طيه المقايمة المعدلة بعد المفاوضات لبنود الأعمال بتاريخ
١٨-١٢-٢٠٢٣ للقطاع الآتي:

مسلسل	اسم الشركة	من المحطة	إلى المحطة	الاتجاه
١	لائنماركس للمقاولات العمومية	٤٢٤+٦٠٠	٤٢٥+٦٠٠	الطريق الساحلي

يرجاء من سيادتكم التفضل بالأحاطة والتوجيه بالالزم

وتفضلوا بقبول فائق الاحترام والتقدير،،،

رئيس الإدارة المركزية

المنطقة الخامسة - غرب الدلتا

عميد مهندس /
٢٠٢٤/١٢/١٩

" هاني محمد محمود طه "



