

Company : Sun Rise Construction

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 : (450+700 to 450+825)
Test Date : 21/06/2023
Report Date : 26/07/2023
Type of soil : —
Test level : Sub ballast .
Report No. : 285:289

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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > 1200 \text{ Kg/cm}^2$ (120 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	21/06/2023
- 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	$E_{v1} \text{ (kg/cm}^2\text{)}$	$E_{v2} \text{ (kg/cm}^2\text{)}$	
1	450+700	450+725	1516	1257	0.8
2	450+725	450+750	1690	1436	0.9
3	450+750	450+775	1806	1250	0.8
4	450+775	450+800	1568	1391	0.9
5	450+800	450+825	830	1744	2.1



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Namein to Foka
 Test Date : 21/06/2023
 report date : 26/07/2023
 Location : Station 450+700 to 450+725
 Test No. : 01

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	19.87	0.13	19.72	0.28	0.17
2	0.83	19.80	0.20	19.73	0.27	19.61	0.39	0.29
3	1.25	19.67	0.33	19.60	0.40	19.50	0.50	0.41
4	1.67	19.53	0.47	19.49	0.51	19.38	0.62	0.53
5	2.08	19.39	0.61	19.34	0.66	19.26	0.74	0.67
6	2.50	19.28	0.72	19.20	0.80	19.10	0.90	0.81

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.28	0.72	19.20	0.80	19.10	0.90	0.81
2	1.25	19.34	0.66	19.30	0.70	19.19	0.81	0.72
3	0.625	19.42	0.58	19.46	0.54	19.38	0.62	0.58
4	0.01	19.60	0.20	19.78	0.22	19.65	0.35	0.26

Loading Stage (2)

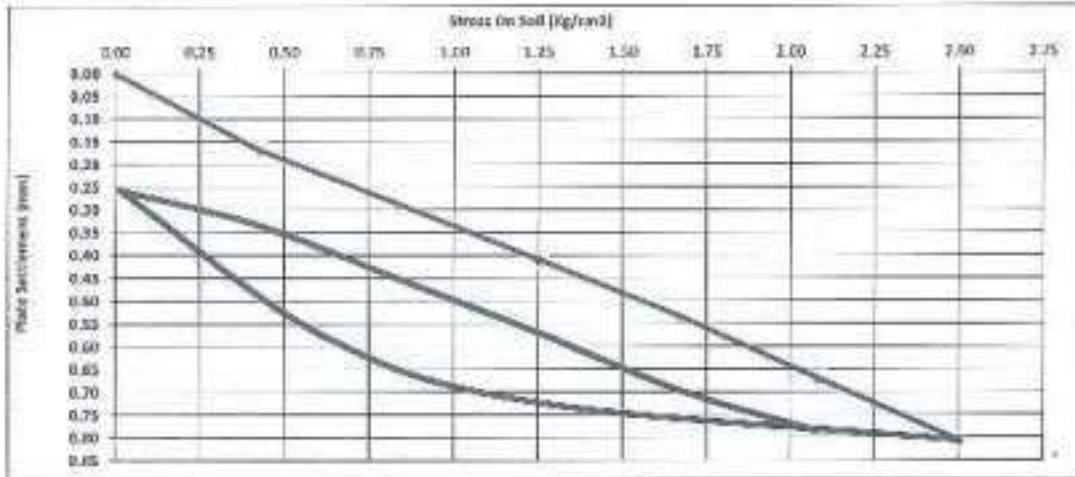
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.72	0.28	19.69	0.31	19.59	0.41	0.33
1	0.83	19.61	0.39	19.54	0.46	19.50	0.50	0.45
2	1.25	19.49	0.51	19.41	0.59	19.39	0.61	0.57
3	1.67	19.36	0.64	19.31	0.69	19.24	0.76	0.70
4	2.08	19.27	0.73	19.22	0.78	19.15	0.85	0.79



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Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Souda to Marsa Matrouh Priority Sector (6) -- Alamein to Foka
Test Date : 21/06/2023
report date : 26/07/2023
Location : Station 450+700 to 450+725
Test No. : 01

**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	0.17	0.29	0.41	0.53	0.67	0.81

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)	0.81	0.72	0.58	0.26

D (mm) = 600	S1 (mm) = 0.28	S2 (mm) = 0.16	ΔS = 0.30
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1518		

Ev2/Ev1 = 0.8

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)	0.26	0.33	0.45	0.57	0.70	0.79

D (mm) = 600	S1 (mm) = 0.56	S2 (mm) = 0.71	ΔS = 0.36
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1257		

Ev1 = Modules of deformation during the loading stage.
Ev2 = Modules 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)



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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Solihna to Mersa Matrouh Priority Sector (8) – Alamein to Foka
 Test Date : 21/06/2023
 report date : 26/07/2023
 Location : Station 450+725 to 450+750
 Test No. : 02

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	19.64	0.36	19.56	0.44	0.32
2	0.83	19.68	0.32	19.54	0.46	19.46	0.54	0.44
3	1.25	19.54	0.46	19.41	0.59	19.38	0.62	0.56
4	1.67	19.41	0.59	19.30	0.70	19.29	0.71	0.67
5	2.08	19.30	0.70	19.24	0.76	19.21	0.79	0.75
6	2.50	19.15	0.85	19.10	0.90	19.09	0.91	0.89

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.15	0.85	19.10	0.90	19.09	0.91	0.89
2	1.25	19.24	0.76	19.20	0.80	19.18	0.82	0.79
3	0.625	19.36	0.64	19.35	0.65	19.33	0.67	0.65
4	0.01	19.64	0.36	19.71	0.29	19.62	0.38	0.34

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.52	0.48	19.60	0.40	19.51	0.49	0.46
1	0.83	19.40	0.60	19.51	0.49	19.42	0.58	0.56
2	1.25	19.29	0.71	19.40	0.60	19.29	0.71	0.67
3	1.67	19.18	0.82	19.31	0.69	19.20	0.80	0.77
4	2.08	19.10	0.90	19.20	0.80	19.09	0.91	0.87



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamaia to Foka
Test Date : 21/06/2023
report date : 26/07/2023
Location : Station 450+725 to 450+750
Test No. : 02

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	2.50
Settlement (mm)	0.00	0.32	0.44	0.56	0.67	0.75	0.89

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)	0.89	0.79	0.65	0.34

D (mm) = 600	S1 (mm) = 0.42	S2 (mm) = 0.89	ΔS = 0.27
Ev1 (kg/cm2) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	1690		

Ev2/Ev1 = 0.9

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	0.46	0.56	0.67	0.77	0.87

D (mm) = 600	S1 (mm) = 0.48	S2 (mm) = 6.73	ΔS = 0.31
Ev2 (kg/cm2) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	1436		

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 in 0.3 and 0.7 from the maximum loading (mm)



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamein to Foka
 Test Date : 21/06/2023
 report date : 26/07/2023
 Location : Station 450+750 to 450+775
 Test No. : 03

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	19.87	0.13	19.73	0.27	0.20
2	0.83	19.68	0.32	19.75	0.25	19.62	0.38	0.32
3	1.25	19.56	0.44	19.62	0.38	19.50	0.50	0.44
4	1.67	19.45	0.55	19.51	0.49	19.39	0.61	0.55
5	2.08	19.32	0.68	19.40	0.60	19.27	0.73	0.67
6	2.50	19.18	0.82	19.28	0.72	19.11	0.89	0.81

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.18	0.82	19.28	0.72	19.11	0.89	0.81
2	1.25	19.29	0.71	19.36	0.64	19.18	0.82	0.72
3	0.625	19.46	0.54	19.50	0.50	19.36	0.64	0.56
4	0.01	19.78	0.22	19.82	0.18	19.68	0.32	0.24

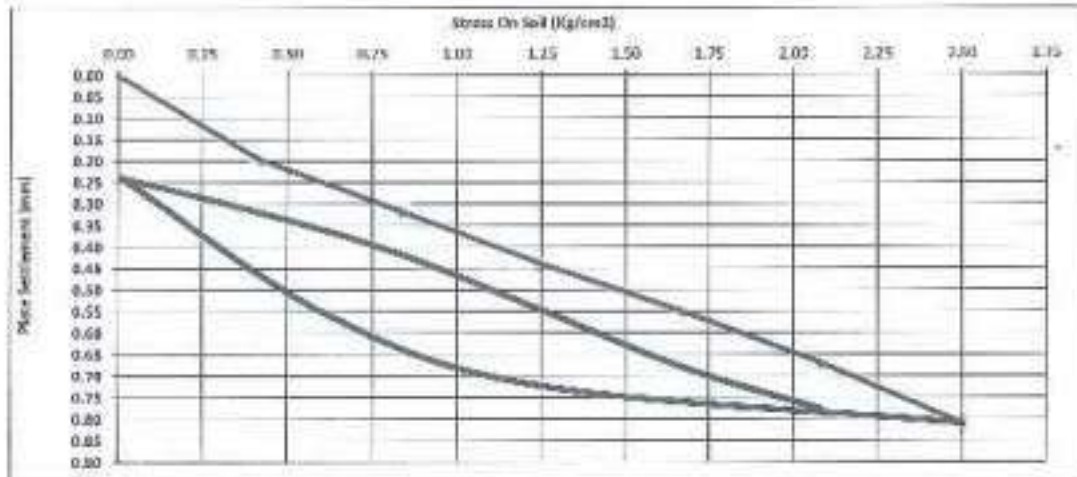
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.70	0.30	19.73	0.27	19.61	0.39	0.32
1	0.83	19.59	0.41	19.64	0.36	19.52	0.48	0.42
2	1.25	19.46	0.54	19.52	0.48	19.38	0.62	0.55
3	1.67	19.31	0.69	19.40	0.60	19.25	0.75	0.68
4	2.08	19.20	0.80	19.31	0.69	19.16	0.84	0.78



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Adamsin to Foka
Test Date : 21/06/2023
report date : 26/07/2023
Location : Station 450+750 to 450+775
Test No. : 03

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	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	0.20	0.32	0.44	0.55	0.67	0.81

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)	0.81	0.72	0.58	0.24

D (mm) = 600	S1 (mm) = 0.39	S2 (mm) = 0.57	ΔS = 0.28
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1606		

Ev2/Ev1 = 0.8

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	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)	0.24	0.32	0.42	0.55	0.68	0.78

D (mm) = 600	S1 (mm) = 0.34	S2 (mm) = 0.70	ΔS = 0.36
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1250		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 21/06/2023
 report date : 26/07/2023
 Location : Station 450+775 to 450+800
 Test No. : 04

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	19.90	0.10	19.84	0.16	19.81	0.19	0.15
2	0.83	19.79	0.21	19.73	0.27	19.70	0.30	0.26
3	1.25	19.67	0.33	19.62	0.38	19.58	0.42	0.38
4	1.67	19.53	0.47	19.49	0.51	19.47	0.53	0.50
5	2.08	19.45	0.55	19.36	0.64	19.34	0.66	0.62
6	2.50	19.29	0.71	19.21	0.79	19.19	0.81	0.77

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.29	0.71	19.21	0.79	19.19	0.81	0.77
2	1.25	19.29	0.71	19.25	0.75	19.22	0.78	0.75
3	0.625	19.36	0.64	19.37	0.63	19.36	0.64	0.64
4	0.01	19.72	0.28	19.74	0.26	19.71	0.29	0.28

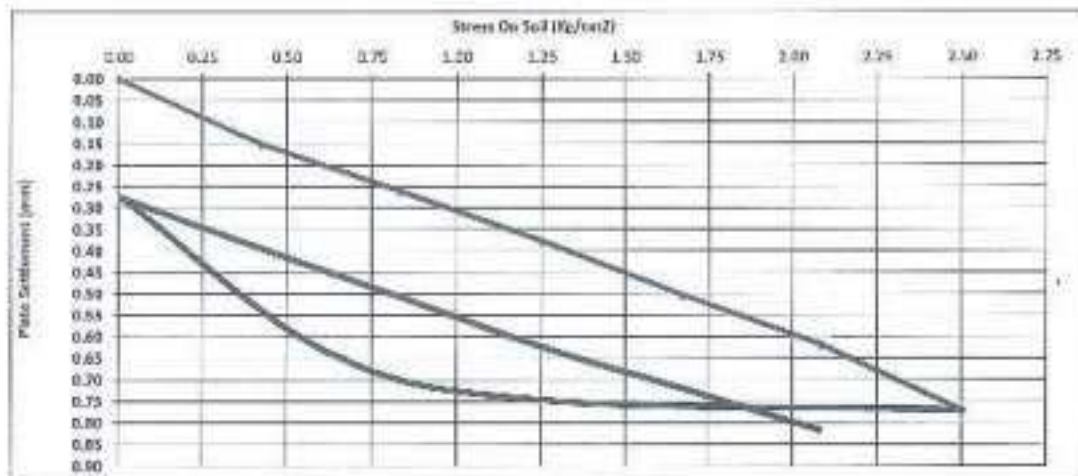
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.61	0.39	19.62	0.38	19.59	0.41	0.39
1	0.83	19.50	0.50	19.50	0.50	19.48	0.52	0.51
2	1.25	19.39	0.61	19.38	0.62	19.36	0.64	0.62
3	1.67	19.28	0.72	19.29	0.71	19.27	0.73	0.72
4	2.08	19.20	0.80	19.18	0.82	19.17	0.83	0.82



Company Name : Sun Rise Construction
Project : Electric Express Trains, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 21/06/2023
report date : 26/07/2023
Location : Station 450+775 to 450+800
Test No. : 04

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	2.50
Settlement (mm)	0.00	0.15	0.28	0.38	0.50	0.62	0.77

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)	0.77	0.75	0.64	0.28

D (mm) = 600	S1 (mm) = 0.24	S2 (mm) = 0.53	ΔS = 0.29
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1568		

$$Ev2/Ev1 = 0.9$$

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)	0.28	0.38	0.51	0.62	0.72	0.82

D (mm) = 600	S1 (mm) = 0.42	S2 (mm) = 0.74	ΔS = 0.32
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1291		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Almain to Foka
 Test Date : 21/06/2023
 report date : 26/07/2023
 Location : Station 450+800 to 450+825
 Test No. : 05

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	19.90	0.10	19.80	0.20	19.75	0.25	0.18
2	0.83	19.79	0.21	19.58	0.42	19.50	0.50	0.38
3	1.25	19.56	0.44	19.24	0.76	19.28	0.72	0.64
4	1.67	19.46	0.54	18.95	1.05	19.30	0.90	0.83
5	2.08	19.08	0.92	18.66	1.34	18.98	1.02	1.09
6	2.50	18.83	1.17	18.44	1.56	18.90	1.10	1.28

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.83	1.17	18.44	1.56	18.90	1.10	1.28
2	1.25	18.85	1.15	18.50	1.50	18.98	1.02	1.22
3	0.625	18.88	1.12	18.60	1.40	19.08	0.92	1.15
4	0.01	19.02	0.98	18.86	1.14	19.25	0.75	0.96

Loading Stage (2)

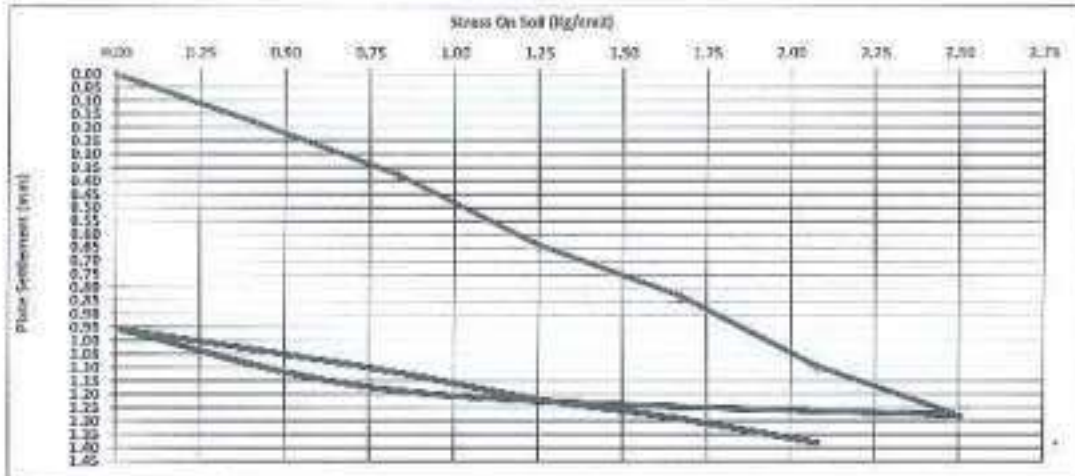
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.95	1.05	18.75	1.25	19.20	0.80	1.03
1	0.83	18.88	1.12	18.63	1.37	19.14	0.86	1.12
2	1.25	18.80	1.20	18.55	1.45	19.00	1.00	1.22
3	1.67	18.72	1.28	18.48	1.52	18.93	1.07	1.29
4	2.08	18.60	1.40	18.41	1.59	18.85	1.15	1.38



Company Name
Project
Test Date
report date
Location
Test No.

: Sun Rise Construction
: Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
: 21/06/2023
: 26/07/2023
: Station 450+800 to 450+825
: 05

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	0.18	0.36	0.64	0.83	1.09	1.28

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)	1.28	1.22	1.15	0.96

D (mm) =	600	S1 (mm) =	0.34	S2 (mm) =	0.88	ΔS =	0.54
Ev1 (kg/cm²) = (0.75 * D * Δσ) / ΔS			0.30				

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)	0.96	1.03	1.12	1.22	1.29	1.38

D (mm) =	600	S1 (mm) =	1.06	S2 (mm) =	1.31	ΔS =	0.26
Ev2 (kg/cm²) = (0.75 * D * Δσ) / ΔS			1744				

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)



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



ش. الملك الأفضل
الزمالك - القاهرة
تليفون - فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egypt.com

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
Sample No. : 02

Dear Gentleman,

Attached here with the Sub-Ballast delivered on 26/03/2023

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.

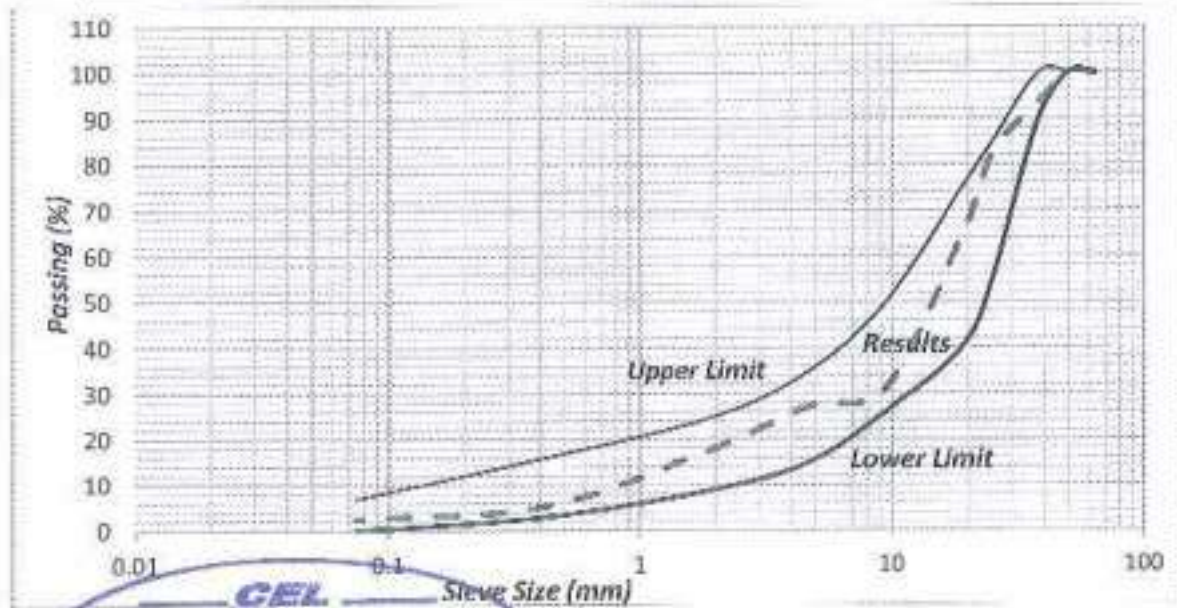
Note: The sample was brought by the client to our laboratory and the laboratory is not responsible for the way it is taken

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الساحل الشمالي
Signature /
ر.م. حسن محمد
البرق الرئيسي : ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٢٣١ - القاهرة

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
Sample No. : 02

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	93.6	90	100
25	82.3	55	85
19	64.6	40	75
12.5	35.6	--	--
9.5	31.2	26	50
4.75	27.2	15	35
2.00	18.1	9	25
0.425	5.4	3	16
0.075	2.5	0	7



The test results are (☒ Comply - ☐ Not Comply) with specifications limits.

Signature :

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
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)	2.5

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مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: info@cel-egypt.com
رقم تسجيل الشركة: ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
البريد الإلكتروني: info@cel-egypt.com

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
Sample No. : 02

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

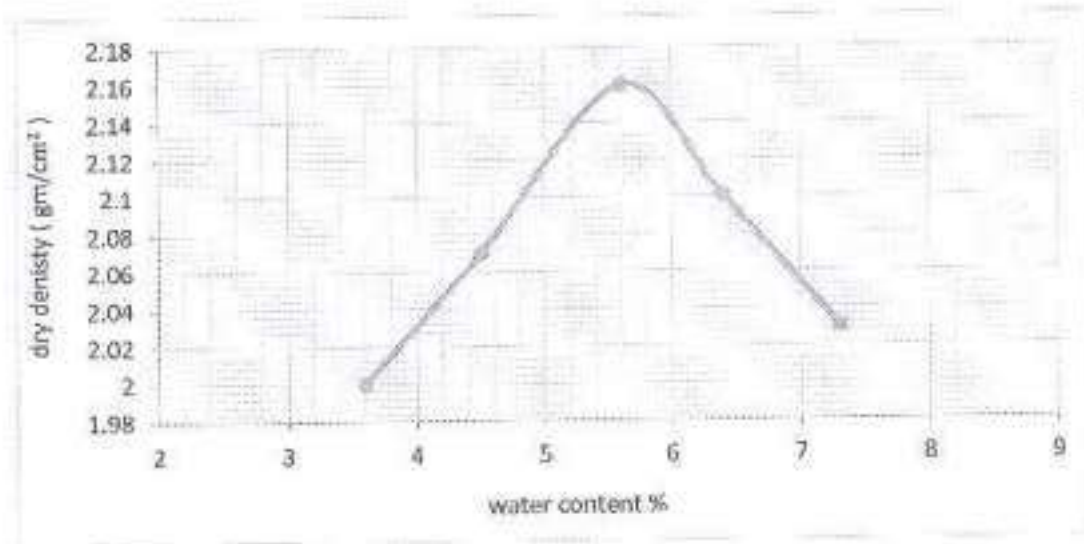
Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

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المسجل المهنى
رقم التسجيل: ٢٠٠٩/٢٠٠٩
الهيئة العامة للغرفة التجارية - القاهرة

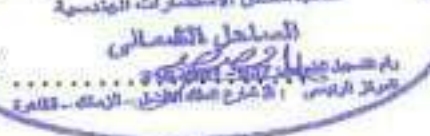
Signature /

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
Sample No. : 02

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



- Max dry density (gm/cm³) : 2.16
- Optimum moisture content % : 5.6

Signature / 

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St. (448+600) : (449+600)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 60
Sample No. : 02

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

Test	Results
Bulk Specific Gravity (OD)	2.51
Bulk Specific Gravity (SSD)	2.53
Apparent Specific Gravity.	2.61
Absorption %	4.2

Note:

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

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شركة المساهمة

Signature /

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
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Reporting Date : 03/04/2023
Reporting No. : 60
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	4.10
1.27	0.050	4.64
1.91	0.075	5.20
2.54	0.100	5.76
3.18	0.125	6.36
3.81	0.150	6.82
4.45	0.175	7.38
5.08	0.200	7.94
5.71	0.225	8.51
6.35	0.250	9.07

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	83.4
	6.90	5.76	

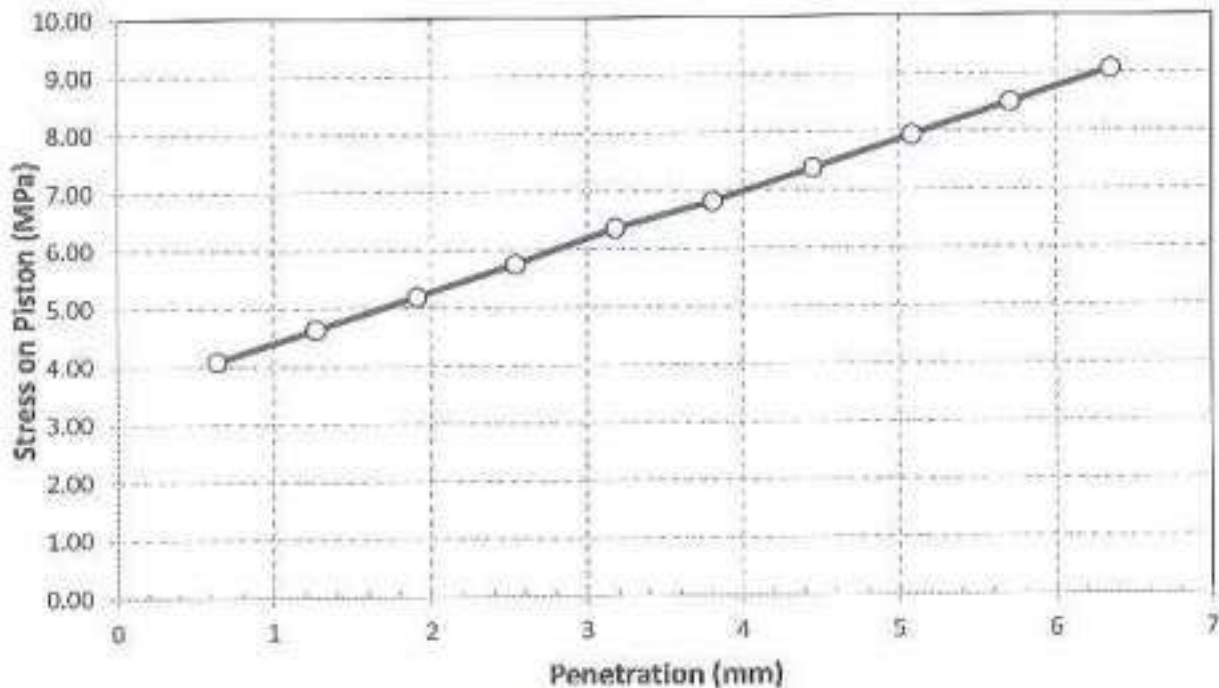
Notes :

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.16 (gm/cm³) at 5.6 % optimum water content.
- 3- Surcharge load 4.50 kg.

Signature

Company Name : Sun Rise
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Sample No. : 02

Load Penetration Curve of CBR Test
ASTM D-1883



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رقم التسجيل: ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
العنوان: ٣ شارع الملك الأفندي - القاهرة

1314760

وثيقة تأمين جميع اخطار المقاولين

بموجب هذه الوثيقة تم الاتفاق بين شركة وثائق التأمين التكملي (المتوعد عنها فيما بعد بالشاركة) والمشتراك في توريد اسمه بجنون الوثيقة على أن تتحدد الشراكة وفقاً لشروط هذه الوثيقة ومقابل تمام مصاد الاشتراك الشمين بجنون وإيجال الوثيقة بتعويض المشتراك من الخسائر والأضرار التي تحدث بسبب تقصير أي من الأعضاء المسجلة الواردة بالوثيقة وذلك خلال السنة السيلة بهذه الوثيقة أو أي ملاحق لها وذلك في حدود الشروط والأحكام والاشتراكات الواردة بهذه الوثيقة.

جدول الوثيقة		رقم الوثيقة :
اسم المستفيد :	شركة من رايز للخدمات الهندسية	2188/2023
اسم المقاول :	شركة من رايز للخدمات الهندسية	اسم المقاول :
موقع العمل :	الجهة العامة للطرق والكباري	اسم المقاول :
مدة التنفيذ :	شامكا على حد رقم (2024/2023/420) أصل الجسر القوي والاعمال الصغرية لمسار القطار الكهربائي السريع الخط الاول (المنطقة - العاصمة الإدارية - العلمين - مطروح) قطاع (العلمين - فوكه) مراحل أصل الأسفلت والاعمال الترميمية المسافة من الكم 449,850 إلى الكم 451,100 بطول 1.250 كم قطاع (العلمين - فوكه)	اسم المقاول :
أ. بالنسبة للأعمال :	يبدأ التنفيذ في : 2023/09/20	اسم المقاول :
ب. بالنسبة لأعمال الصيانة :	ويعتبر في : 2024/09/19	اسم المقاول :
مبلغ التأمين :	18,164,486.00	اسم المقاول :
القسم الأول :	الاعمال المدنية	اسم المقاول :
القسم الثاني :	المستوفيات المدنية قبل التسليم	اسم المقاول :



20/09/2023	تموز افي
هاني عطف	اسم المستخدم
23697	كود المنتج

مصطفى محمد مصطفى

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1314764

تاريخ جدول وثيقة تأمين جسيم الخطر العقاري رقم: 2188/2023 إصدار

الشروط والتغطيات

يجب تخزين الأثاث العائلي بما في ذلك المعدات وخلافة - في حالة استئجارها في منزل أو خزانة بعيدا عن المنزل أو العائلي بمسافات كافية
يجب الاحتفاظ بالجزء المتكافلة الحريق في الموقع وأن تكون جاهزة للاستعمال الفوري ومسلّمة للاستخدام
يجب تركيب حديد كسك من المعدن تدريجيا كاسلا على استخدام المعدات ويشترط تواجدهم باستمرار للتدخل الفوري
يجب تجنب استخدام سمّات الحمار والتعليق في الأماكن المظلمة أو التي يكون بها مراد قابلة للاشتعال
من المعروف والمطلوب على لا تعريض خطره الممنوع أو السرقة بالاحكام على العدد والتأمينات والمؤمن عليها الا داخل المنزل فقط وبالاخذاء الممنوع على المقراء أو أفراد الأمن المظلمين بالحراسة
يشترط تعيين حراسة مسلحة بسعة دائمة طوال 24 ساعة على المخازن والا معطوق للمشارك في التعويض
من المعلوم والمطلوب على بناء على الشروط العامة لوثيقة جميع اخطار الممتلكات ان الوثيقة تشمل على الحريق والسرقة
شروط الامتثال
بأن المشترك يملك على كافة شروط واستثناءاتها بعدالة للتأكد من انها تلي باحتياجاته التأمينية قبل سدادها الذي يعتبر الفول منه بكتابة الشروط والاستثناءات
انه في حالة وقوع حادث تملّيه هذه الوثيقة تكفي كافة التبعيات المستحقة لمصلحة الجهة العامة للطريق والكفاري
انه لا يجوز إجراء أي تعديل أو تغيير أو إلغاء على هذه الوثيقة الا بعد أخذ موافقة كتابية من الجهة العامة للطريق والكفاري
استثناء للعنف السياسي والإرهاب والتخريب والتشغب والاضطرابات الأهلية والاضطرابات السياسية والاضطرابات الطبيعية
استثناء للممتلكات الثمن والمحيطة بالمشروع وأزالة الانقاض والحطام
استثناء فيروس كورونا (مرفق)
استثناء الأمراض المعدية (مرفق)
ملاحظات:
لا يعد بالوثيقة بدون وجود رمز الامتدادية السريع "QR-CODE"
ملحق رقم 009 استثناء الخسارة والضرر أو المسؤولية الناتجة عن الزلازل (مرفق)
ملحق رقم 010 استثناء الخسارة أو الضرر أو المسؤولية الناتجة عن الفيضان أو غمر بالمياه (مرفق)
ملحق رقم 012 استثناء الخسارة أو الضرر أو التلف أو المسؤولية الناتجة عن العواصف أو الرياح المحملة بالمياه (مرفق)
ملحق رقم 106 التحويلات الخاصة بالملوك الأسماء المتعددة (مرفق)

شركة وثاق للتأمين التكافلي - مصر

20/09/2023

تحريرا في

هاني عاطف

اسم المستخدم

1314766

من قذات وثيقة تأمين جميع الخطوط المقارنات 2188/2023 اصناف

المؤلفات

* تعتبر الشروط المبينة في الوثيقة العامة والإقامة المالية لوثيقة جميع أعمال المفاوضين والملاحق التالية المرفقة جزءاً لا يتجزأ من هذه الوثيقة.

* شرط امتداد فیروں کو روٹا

هذا التكمين لا يغطي أية مطالبات بالتعويض بأي حال من أي ضرر وقع بسبب أو نتج عن:

(۱) فیروس کورونا (COVID-19)

١٦) فيروس كورونا المرتبط بالمتلازمة التنفسية الحادة الشديدة النوع (SARS-COV-2)

٤) أي خسائر مالية نتيجة خوف وباء أو تهديد من جراء ما سبق اعلاه .

* شرط إستقاء الأمراض المعدية

من المعلوم والمتفق عليه انه بغض النظر عن أي من الشروط والإستثناءات والأحكام والاشتراطات المنصوص عليها في هذه الوثيقة أو أي من ملاحقها ، فإنه يستثنى كافة الفسائر والأضرار وفقد الأيراد وإلوا فقد الأيراد الطارئ والتكليف المتشقة والتأخيرة بشكل مباشر أو بشكل غير مباشر من تغطية عتدي وإلوا أمراض المعدية بما في ذلك حالات التلوث وإلوا أصاب التلطيير وإلوا أعمال التلطيير أو أي قرارات صائرة من سلطات قانونية فيما يتعلق بالإغلاق وإلوا التقييد وإلوا منع الوصول عند التعامل مع تغطية هذه الأمراض المعدية.

* ملحق رقم 0009 استثناء الفسلفة والضرر أو المسؤولية الناتجة عن قتل لاول

من العلوم والخلق عليه، ومع عدم الاحلال والنزوح والاستعدادات والاحكام والاشترطات المنصوص عليها في الفوعة أو الملحقة بها، أن الشركة ليست مسئولة عن تويض المشترك عن الفسار أو الضرر أو المسوئله الناشئة أو غير المبثورة النسيبة من أو نتيجة عن الاراك

* ملحق رقم 010 استثناء الصلابة أو الضرر أو المميزية الناشئة عن القرض أو عمر الملكية

من المعلوم والمتفق عليه ، ومع عدم الإخلال بالشروط والاستثناءات والأحكام والأشراط المنصوص عليها في الوثيقة أو الملحقه بها ، أن الشركة ليست مسئولة عن تعويض المشترك عن الخسارة أو التلف أو المقتوليه المبثورة أو غير المبثورة المتسببة من أو الناجمة عن القرض أو ضم المياه.

* ملحق رقم 012) اشتياء الحسارة أو الضرر أو التلف أو المسؤولية الناتجة عن العواصف أو الرياح المحملة بالرماد

من المعلوم والمتفق عليه أن الشركة لن تعرض المشترك عن الخسارة أو التلف أو المسؤولية المباشرة أو غير المباشرة الناشئة

من أو الناجية عن العواصف التي تعطل أو تزيده عن 8 درجات على مقياس بور فوريت (بمعنى أن تتجاوز سرعة الرياح على 62 كم/ساعة) أو أي خسارة أو تلف يسبب المياه المصاحبة أو الناشئة عن تلك العواصف

* ملحق رقم 106 للمؤرخين الخاص بالحوال الأقسام المتعددة

من المعلوم واليقين عليه، ومع عدم الإخلال بأشروط الاستصحابات والأحكام والاشتراطات المتضمنة عليها في الزاوية أو المصلحة بها، فإن الشركة سوف تقوم بعموم مشترك فقط عن أي تلف أو خسارة أو مسؤولية تحدث مباشرة أو غير مباشرة للجور والقرصع والتهديدات والتسويق والقنوات وأعمال الشريك قد نشئت على أساس لا تنحصر في مجموعها الأمور المحددة لذلك. وذلك بغض النظر عن حالة إتمام الأعمال المزمع عليها، ويكون التوضيح عن أي حالت مستحقة

شركة واتق للتأمين التكميلي - مصر

20/09/2023 تحرير الى

اسم المستقيم علي حليف

HA-2



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مرفقات وثيقة تأمين جميع الخطوط المقاولين

أربعة كل وحدة تغزير : 125,000 جيم

أحمد المصلح



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 Newcastle Branch

[illegible][illegible]

مطالبة سداد

1314768

اصدار

نوع الاستدراك اخطار الهيكلي

نوع التأمين : جميع اخطار المقاولين
ملحق رقم :وثيقة رقم 2188/2023
الفرع : للمركز الرئيسي

اسم المشارك : شركة صن رايز للمقاولات المعميه

الاعتوان : شارع المحار القطره غرب الاسماعيليه

لصالح : الهيئه اعلنه للمطرق والكبارى

مدة التأمين : من 20/09/2023

الى 19/09/2024

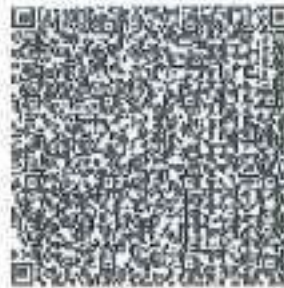
العملة : ج م

مبلغ التأمين : 18,164,486.00

فقط ثمانية عشر مليوناً ومائة وأربعة وستون ألفاً وأربعمائة ومئة وثمانون جنيه مصري

ج م	1,714.00	:	الاشتراك
ج م	94.27	:	نصف الدفعة النسبية
ج م	50.20	:	مصاريف الاصدار
ج م	26.10	:	الضريبة النوعية
ج م	10.28	:	رسم الاشراف والرقابة / سنة في الألف
ج م	3.43	:	اشتراك صندوق حملة الوثائق / اثنان في الألف
ج م	1.71	:	مقابل خدمات مراجعة واعتماد / واحد في الألف
ج م	1,900.00	:	إجمالي الاشتراك

(فقط ألف وتسعمائة جنيه مصري)



تحريراً في 20/09/2023

اسم المستخدم هتي علف

كود المنتج 23697 مصطفى محمد مصطفى

قيمة العمولات الأساسية قبل الاستقطاعات

5 % 85.70

Head Office: 25 Marouty St., Dokki, Giza
 Minya Branch: 25 Wad El-Ahmed, Minya
 Near City Branch: 6 Marouty St., Near City, Giza
 Alexandria Branch: 10 El-Dokki St., El-Dokki, Alexandria
 Suez Branch: 10 El-Dokki St., El-Dokki, Suez
 El-Matruh Branch: 10 El-Dokki St., El-Dokki, Matruh
 Port Said Branch: 10 El-Dokki St., El-Dokki, Port Said
 Damietta Branch: 10 El-Dokki St., El-Dokki, Damietta

9 من 9
19685

البريد الإلكتروني: 25 شارع مروت - دقي - الجيزة
 فرع القاهرة: 25 شارع مروت - دقي - الجيزة
 فرع مينا: 25 شارع مروت - دقي - الجيزة
 فرع الدقهية: 10 شارع مروت - دقي - الجيزة
 فرع السويس: 10 شارع مروت - دقي - الجيزة
 فرع بورسعيد: 10 شارع مروت - دقي - الجيزة
 فرع دمياط: 10 شارع مروت - دقي - الجيزة
 فرع شبراخيت: 10 شارع مروت - دقي - الجيزة
 فرع طنطا: 10 شارع مروت - دقي - الجيزة
 فرع الزقازيق: 10 شارع مروت - دقي - الجيزة
 فرع سيدي باريقي: 10 شارع مروت - دقي - الجيزة
 فرع المنيا: 10 شارع مروت - دقي - الجيزة
 فرع أسيوط: 10 شارع مروت - دقي - الجيزة
 فرع سوهاج: 10 شارع مروت - دقي - الجيزة
 فرع قنا: 10 شارع مروت - دقي - الجيزة
 فرع الأقصر: 10 شارع مروت - دقي - الجيزة
 فرع الفيوم: 10 شارع مروت - دقي - الجيزة
 فرع البحيرة: 10 شارع مروت - دقي - الجيزة
 فرع شبراخيت: 10 شارع مروت - دقي - الجيزة
 فرع طنطا: 10 شارع مروت - دقي - الجيزة
 فرع الزقازيق: 10 شارع مروت - دقي - الجيزة
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 فرع المنيا: 10 شارع مروت - دقي - الجيزة
 فرع أسيوط: 10 شارع مروت - دقي - الجيزة
 فرع سوهاج: 10 شارع مروت - دقي - الجيزة
 فرع قنا: 10 شارع مروت - دقي - الجيزة
 فرع الأقصر: 10 شارع مروت - دقي - الجيزة
 فرع الفيوم: 10 شارع مروت - دقي - الجيزة
 فرع البحيرة: 10 شارع مروت - دقي - الجيزة

1339014

جدول وثيقة تأمين الحوادث الشخصية

[illegible]

^a $\chi^2_{(1)} = 1.1$, $p = .30$.

الحدود للفرد	التغطية
طبقاً لحدود التغطية الواردة بالتأمينية التأمينية لكل فرد	قوة تغطية حاد
طبقاً لحدود التغطية الواردة بالتغطية التأمينية لكل فرد	الميزان المالي المستديم قيمة حاد
طبقاً لنسبة الواردة بالتشريع العامة بالتغطية	الميزان المالي المستديم نتيجة حاد
غير مفصل	الميزان المالي الموقت نتيجة حاد
غير مفصل	أرجاع التكاليف الطبية نتيجة حاد

130,000.00	م	قطر مائة وثلاثون ألفاً وخمسة مئة
130,000.00	م	قطر مائة وثلاثون ألفاً وخمسة مئة

بعد الألفي. فني الزرم به شركة عن فمشت الزمعد (مهما باع جند الأسطوخودوس) :-
بعد الألفي فني الزرم به شركة خلال هذا الطريق :-



20/09/2023	: شعرا في :
21/09/2023	: الفريخ الشفاة :
لثوم صفت اليوم لثوم	: لثوم :

مکتوبہ نمبر: 23897 مصطفیٰ احمد مصطفیٰ

Head Office
Wakarusa Street
Near City Branch
Alexandria Branch
Salem Branch
Elmore Branch
Fort Cold Spring
Lima Branch
Fort Cold Spring
Charlotte Branch

28 Milwaukee st, Erie Pa 16501
 29 Wicks st, Northampton
 30 Wilson St, Appleton, Wis 54912
 31 Pennell st, 221 North Main, Greenville
 32 Family Music Store, 2200 S. 2nd St., St. Paul, Minn
 33 Jewel Arts Building, 45 Grand st., St. Matthews
 34 217 N. Milwaukee and Universal Radio Store - East Side in AA's Town where Arts District
 35 Gibson Street, Amesbury, Maine - Point of Historical Importance
 36 Grand Central Station, New York - 4th Avenue North Building, and to 2nd Avenue Grand Central
 37 1000 E. 4th Street, St. Paul, Minn. 55104 Building, above 4th and 4th St.

[illegible]

1339015

المستطوي

تأريخ جدول وثيقة تأمين الحوادث الشخصية رقم 1848/2023

الشروط والتعليقات

الشيخ وعلو المناصب

- يشترط ألا يقل عمر المؤمن عليهم عن 18 عام ولا يزيد عن 65 عام.
- يلزم على المشترك الاختلاع على كافة شروط الوثيقة واستثناءاتها إضافة لذلك من أنها تغطي الاحتياجات التأمينية قبل بدئها وتعتبر بمثابة قبولاً منه بكافة شروط وأحكام الوثيقة.
- يشترط أن يكون عدد الأفراد الفعلي داخل موقع العمل لا يتعدى عدد الأفراد المؤمن عليهم بالوثيقة وإلا سقط حق المشترك في التحويل.
- تقتصر التغطية التأمينية لسبعة الزمن عليهم داخل موقع العمل فقط ولتأمينات المشروع المشار إليه ولموضوع التأمين بجدول الوثيقة.
- يتعين أن يتخذ المشترك كافة الاحتياطات والتدابير لضمان سلامة أرواح المؤمن عليهم.
- في حالة الوفاة نتيجة حادث مغربي تلحق كافة التحويلات لصالح الورثة الآخرين.
- يشترط وجود علاقة عمل تربط بين أقارب المؤمن عليهم والمشارك.
- لا يتم بالوثيقة بدون وجود رمز الاستجابة السريع "QR-CODE"

الإمكانيات

- استثناء الأختان السواسية .
- استثناء فيروس كورونا (مرفق)
- استثناء الأمراض المعدية (مرفق)



4.2

20/09/2023

21/09/2023 : تاريخ الطابعة

أعذار - مدني - سميت القوم أعذار

مطافی محمد مصطفیٰ	23697	گود شادی
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1339016

المصادر

مرفقات وثيقة تأمين الحوادث الشخصية رقم 1848/2023

• شرط إستثناء الأمر أحد المصطفية

من المعلوم والمتفق عليه انه بعض النظر عن أي من الشروط والامتنعيات والاحكام والاشتراطات المنصوص عليها في هذه الوثيقة او أي من ملاحقها ، فإنه يستلزم كافة الضرر والاضرار وفقد الإيراد والافراد الطارئ والتكاليف المتعلقة والناجية بشكل مباشر أو بشكل غير مباشر من نشأته ، و/أو أمراض المعنوية بما في ذلك حالات الفجوت و/أو أعمال التطهير و/أو أعمال التعقيم او أي أضرار صادرة من سلطات قكونية فيما يتعلق بالإعلاق و/أو التقييد و/أو منع الوصول هذا التعامل مع نشأته هذه الأمراض المعنوية

• شرط استثناء قروض كورونا

هذا التأمين لا يغني أية مطالبات بالتعويض بأي حال من الأحوال وفيما يخص أو نتيجة عن:

(۱) فیروس کورونا (COVID-19)

(ب) فيروس كورونا المرتبط بالمتلازمة التنفسية الحادة الشديدة النوع (SARS-CoV-2)

ج) أي تحويرات أو تحيزات أو ملاحظة تنشأ عن فيروس كورونا المرتبط بالمتلازمة التنفسية الحادة الشديدة النوع (SARS-CoV-2)

د) أي خسائر مالية نتيجة خوف و/أو تهديد من جراء ما سبق اعلاه

20/09/2023

تعريف ١٠

21/09/2023

تاريخ الطباعة:

Dr. محمد فوز احمد

244

23697 مصطفیٰ، محمد مصطفیٰ

تكون المبتدئين



4-0-3

نوع الأصناف : حوانات علمية

الفروع : المركز الرئيسي

18 June 1966 : 2142

430.00	:	الإشتراك الصافي
4.30	:	أصناف الذمعة النسبية
11.60	:	المسبوبة الموزعة
50.23	:	مصاريف الإصدار
2.58	:	رسم الإشراف و الرقابة / ستة في الألف
0.86	:	إشتراك صندوق حملة الوثائق / اثنان في الألف
0.43	:	مقابل خدمات مراجعة / واحد في الألف
500.00	:	إجمالي الإشتراك
		قطعة خمسمائة جنيه مصري

كود المنتج : 23697 مصطفى محمد مصطفى

قيمة المعولات الأساسية قبل الاستقطاب

شركة وثائق التأمين التكاثري - مصر

10%

43.00

424

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St (449+600) : (451+100)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 62
Sample No. : 04

Dear Gentleman,

Attached here with the Sub-Ballast delivered on 26/03/2023

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

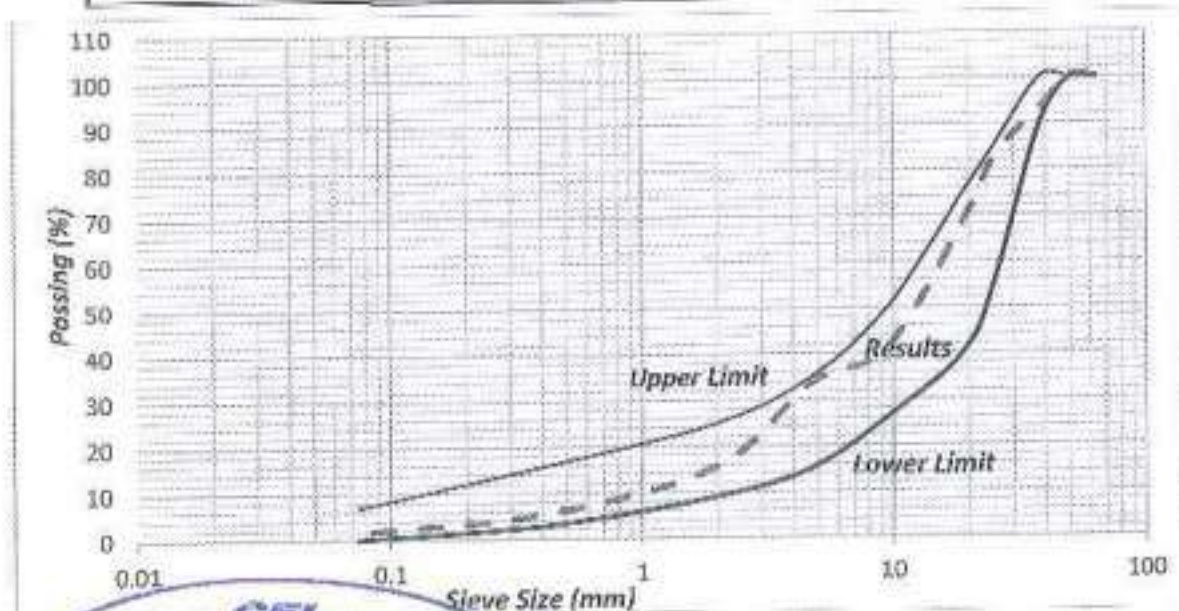
CEL
مكتب معامل الاستشارات الهندسية
البريد الإلكتروني: cel@cel-egypt.com
رقم الترخيص: ٢٧٣١٧٢٢١ - ٢٧٣١٣٠٩٣
شعاع الملك الأفضل - القاهرة

Signature /

Company Name : Sun Rise
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Sub-Ballast
 Location : St (449+600) : (451+100)
 Delivery Date : 26/03/2023
 Reporting Date : 03/04/2023
 Reporting No. : 62
 Sample No. : 04

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	93.2	90	100
25	82.4	55	85
19	72.3	40	75
12.5	50.2	--	--
9.5	41.2	26	50
4.75	33.6	15	35
2.00	15.6	9	25
0.425	5.6	3	16
0.075	1.5	0	7



The test results are ☒ Comply - ☐ Not Comply) with specifications limits.

Signature :

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St (449+600) : (451+100)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 62
Sample No. : 04

**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)	1.5

CEL
مكتب معامل الاستشارات الهندسية
Signature / **الشيخ محمد عبد الله**
رئيس المكتب الهندسي
215 - 601 - 637
شارع الملك فيصل - القاهرة

Company Name : Sun Rise
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Sub-Ballast
 Location : St (449+600) : (451+100)
 Delivery Date : 26/03/2023
 Reporting Date : 03/04/2023
 Reporting No. : 62
 Sample No. : 04

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

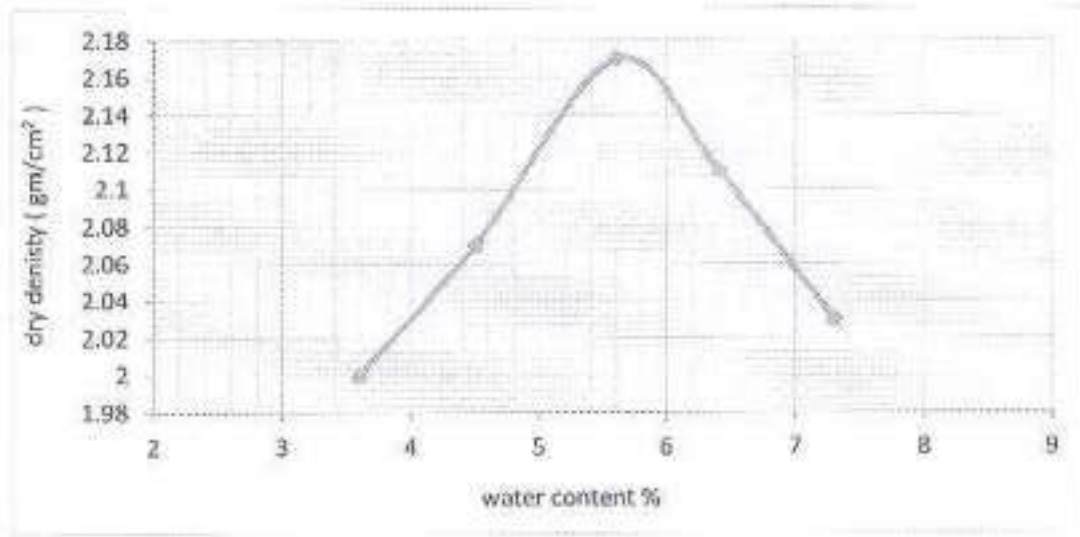
Test	Results (%)
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP

Signature /

 مكتب معامل الاستشارات الهندسية
 المنطقه الصناعيه
 رقم التسجيل رقم 229 - 091 - 210
 صراف رئيس : شارع الملك فيصل - الزمالك - القاهرة

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St (449+600) : (451+100)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 62
Sample No. : 04

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



- Max dry density (gm/cm³) : 2.17
- Optimum moisture content % : 5.6

Signature / 

Company Name : Sun Rise
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
 Type of sample : Sub-Ballast
 Location : St (449+600) : (451+100)
 Delivery Date : 26/03/2023
 Reporting Date : 03/04/2023
 Reporting No. : 62
 Sample No. : 04

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

Test	Results
Bulk Specific Gravity (OD)	2.53
Bulk Specific Gravity (SSD)	2.55
Apparent Specific Gravity.	2.60
Absorption %	2.9

Note:

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

Signature /


Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh
Type of sample : Sub-Ballast
Location : St (449+600) : (451+100)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 62
Sample No. : 04

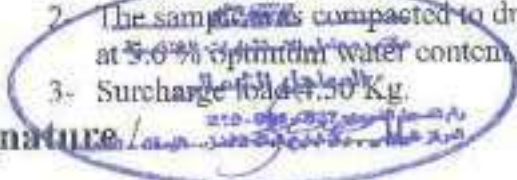
Test Results of California Bearing Ratio on Base Materials ASTM D 1883

penetration		stress on piston (Mpa)
mm	Inch	
0.64	0.025	4.06
1.27	0.050	4.69
1.91	0.075	5.25
2.54	0.100	5.81
3.18	0.125	6.42
3.81	0.150	6.98
4.45	0.175	7.55
5.08	0.200	8.11
5.71	0.225	8.67
6.35	0.250	9.23

CBR Result	Stress (Mpa)		CBR %
At 0.1 inch (2.54 mm) penetration	St. Value	Sample results	84.2
	6.90	5.81	

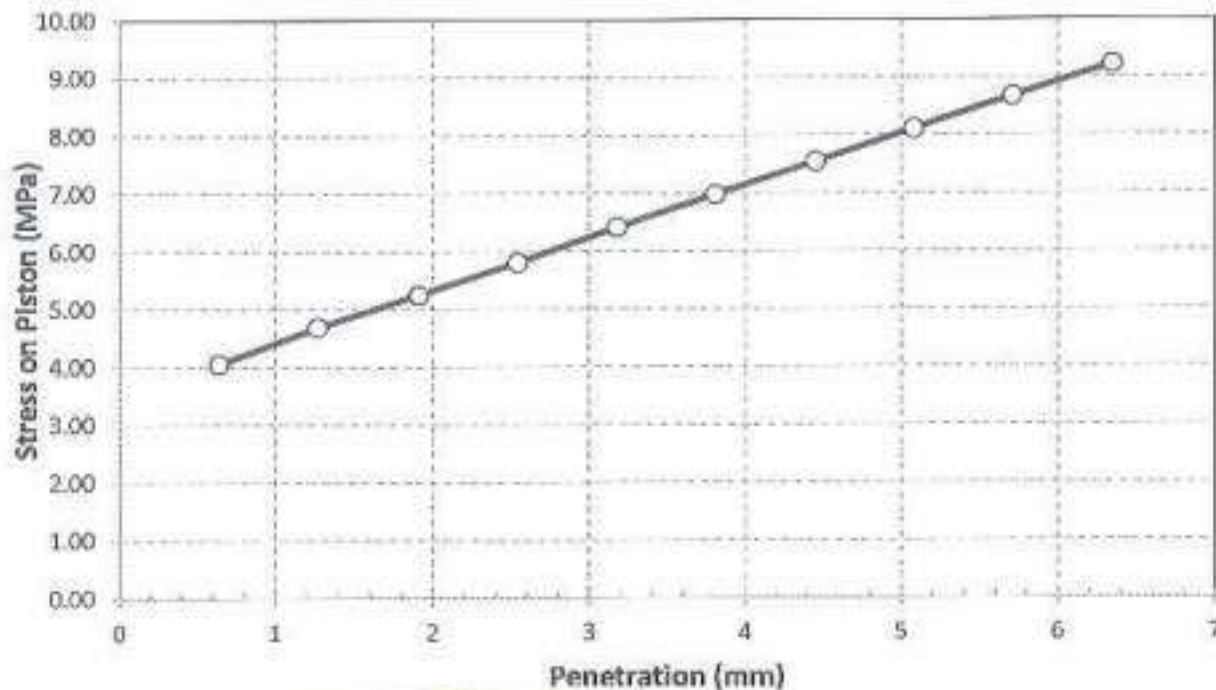
Notes :

- 1- Attached graph shows penetration resistance versus penetration magnitude.
- 2- The sample was compacted to dry density of 2.17 (gm/cm³) at 5.6% optimum water content.
- 3- Surcharge load 4.50 Kg.

Signature: 

Company Name : Sun Rise
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh
Type of sample : Sub-Ballast
Location : St (449+600) : (451+100)
Delivery Date : 26/03/2023
Reporting Date : 03/04/2023
Reporting No. : 62
Sample No. : 04

Load Penetration Curve of CBR Test ASTM D-1883



Signature



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 nominal stress - Loading-settlement curve
 - Description of the soil condition below the plate after testing

Report

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > 1200 \text{ Kg/cm}^2$ (120 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	05/08/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	448+850	448+875	1097	1559	1.1
2	448+875	448+900	1319	1352	1.0
3	448+900	448+925	1442	1395	1.0
4	448+925	448+950	1397	1715	1.2
5	448+950	448+975	1547	1436	0.9
6	448+975	449+000	1152	1487	1.3
7	449+000	449+025	1534	1446	0.9
8	449+025	449+050	1458	1272	0.9
9	449+050	449+075	1329	1360	1.0
10	449+075	449+100	1480	1442	1.0

Signature / 



Consulting Engineering Bureau & Laboratories

مكتب معمل الاستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sekhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+850 to 448+876
Test No. : 01

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	19.78	0.22	19.55	0.45	0.27
2	0.83	19.80	0.20	19.62	0.38	19.19	0.81	0.46
3	1.25	19.78	0.22	19.45	0.51	18.81	1.19	0.64
4	1.67	19.66	0.34	19.38	0.62	18.54	1.46	0.81
5	2.08	19.46	0.54	19.26	0.74	18.40	1.60	0.96
6	2.50	19.14	0.86	19.14	0.86	18.35	1.65	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	19.14	0.86	19.14	0.86	18.35	1.65	1.12
2	1.25	19.20	0.80	19.23	0.77	18.59	1.41	0.99
3	0.625	19.30	0.70	19.38	0.62	18.84	1.16	0.83
4	0.01	19.58	0.42	19.55	0.45	19.03	1.00	0.62

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.35	0.65	19.46	0.54	18.95	1.05	0.75
1	0.83	19.21	0.79	19.32	0.68	18.85	1.15	0.87
2	1.25	19.15	0.85	19.26	0.74	18.71	1.20	0.96
3	1.67	19.10	0.90	19.20	0.80	18.59	1.41	1.04
4	2.08	19.00	1.00	19.12	0.88	18.41	1.59	1.16



Company Name:

Sun Rise Construction

Project:

Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamin to Fika

Test Date:

06/05/2023

report date:

06/05/2023

Location:

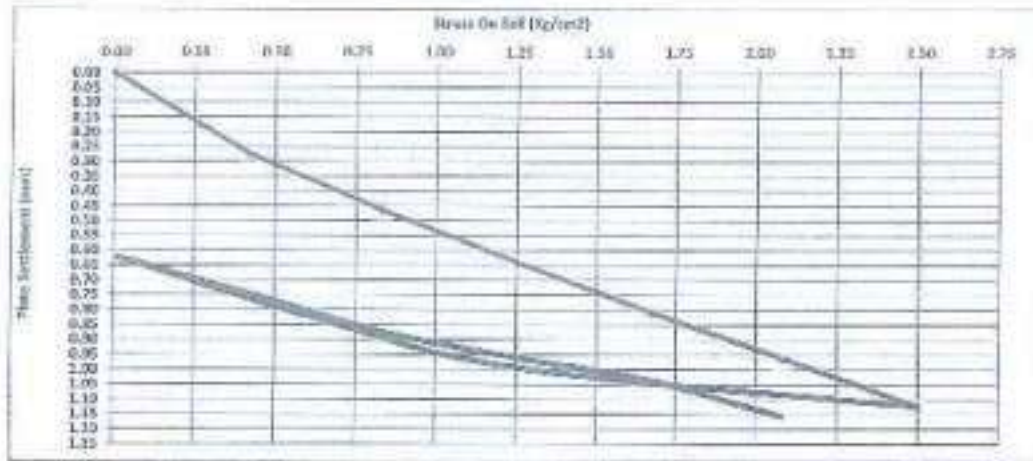
Station 448+850 to 448+875

Test No.:

01

Nonrepetitive Static Plate Load Tests of Soils

DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	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	0.27	0.46	0.64	0.81	0.96	1.12

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.828	0.01
Settlement (mm)	1.12	0.99	0.63	0.62

D (mm) = 600	S1 (mm) = 0.43	S2 (mm) = 0.64	ΔS = 0.41
Ev1 (kg/cm²) = (0.75 * D² * Δσ) / ΔS	1097		

Loading (2)	6	1	2	3	4	5
Stage(Kg)	0	1188.92	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)	0.02	0.75	0.87	0.96	1.04	1.18

Ev2/Ev1 =	1.4
-----------	-----

D (mm) = 600	S1 (mm) = 0.77	S2 (mm) = 1.06	ΔS = 0.29
Ev2 (kg/cm²) = (0.75 * D² * Δσ) / ΔS	1558		

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)





Consulting Engineering Bureau & Laboratories

مكتب محامل الاستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+875 to 448+900
Test No. : 02

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	19.90	0.10	19.73	0.27	19.91	0.09	0.15
2	0.83	19.81	0.19	19.68	0.32	19.64	0.36	0.36
3	1.25	19.73	0.27	19.21	0.79	19.48	0.52	0.53
4	1.67	19.65	0.34	19.03	0.97	19.40	0.60	0.64
5	2.08	19.59	0.41	18.88	1.12	19.29	0.71	0.75
6	2.50	19.49	0.51	18.72	1.28	19.18	0.82	0.87

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.49	0.51	18.72	1.28	19.18	0.82	0.87
2	1.25	19.55	0.45	18.87	1.13	19.32	0.68	0.75
3	0.625	19.67	0.33	19.05	0.95	19.41	0.59	0.62
4	0.01	19.84	0.16	19.45	0.55	19.62	0.38	0.36

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.74	0.26	19.31	0.69	19.51	0.49	0.48
1	0.83	19.65	0.35	19.14	0.86	19.43	0.57	0.59
2	1.25	19.52	0.48	19.01	0.99	19.35	0.65	0.71
3	1.87	19.39	0.61	18.90	1.10	19.26	0.74	0.82
4	2.08	19.40	0.70	18.87	1.18	19.15	0.85	0.91



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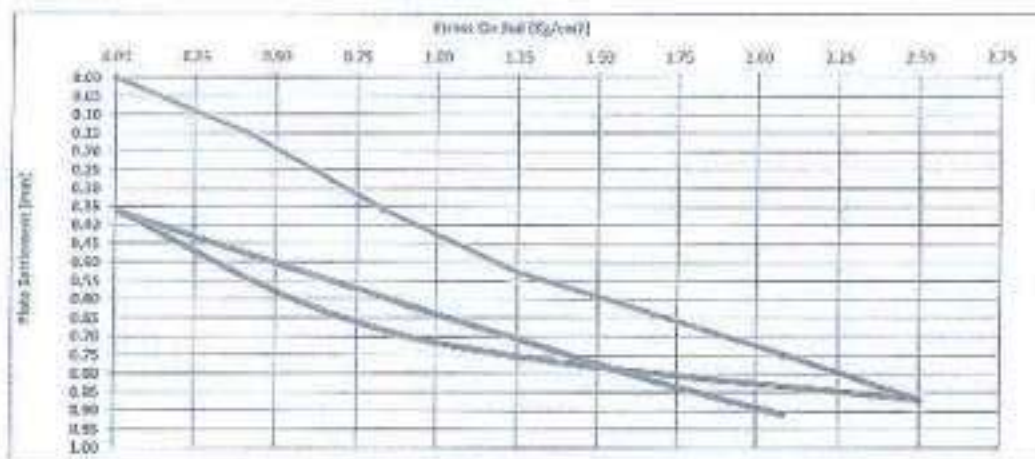


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Company Name
Project
Test Date
report date
Location
Test No.

: Sun Rise Construction
: Electric Express Train, from Al Ain Sokhna to Mersa Matruh Priority Sector (6) - Alamein to Foka
: 05/06/2023
: 06/06/2023
: Station 448+875 to 448+900
: 02

Nonresistive Static Plate Load Tests of Soils
DN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.0	3532.5	4719.4	5878.1	7085
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.15	0.30	0.53	0.64	0.75	0.87

Unloading (1)	1	2	3	4
Stage(Kg)	7085	3533	1760	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.87	0.70	0.62	0.35

D (mm) = 600	S1 (mm) = 0.22	S2 (mm) = 0.64	ΔS = 0.34
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1319		

Ev2/Ev1 =	1.0
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.0	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.35	0.48	0.60	0.71	0.82	0.91

D (mm) = 500	S1 (mm) = 0.69	S2 (mm) = 0.83	ΔS = 0.33
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1352		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the unloading stage.

D = Plate diameter (mm)

Δσ = 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)





Consulting Engineering Bureau & Laboratories

مكتب معامل الإستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (S) - Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+900 to 448+925
Test No. : 03

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	19.74	0.26	19.81	0.19	19.68	0.32	0.26
2	0.83	19.60	0.40	19.68	0.32	19.52	0.48	0.40
3	1.25	19.48	0.52	19.52	0.48	19.40	0.60	0.53
4	1.67	19.32	0.68	19.40	0.60	19.30	0.70	0.66
5	2.08	19.21	0.79	19.27	0.73	19.17	0.83	0.78
6	2.50	19.06	0.94	19.14	0.86	19.03	0.97	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	19.06	0.94	19.14	0.86	19.03	0.97	0.92
2	1.25	19.15	0.85	19.22	0.78	19.30	0.90	0.84
3	0.625	19.35	0.65	19.44	0.56	19.26	0.74	0.65
4	0.01	19.64	0.36	19.76	0.24	19.58	0.42	0.34

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.67	0.33	19.49	0.51	0.44
1	0.83	19.42	0.58	19.56	0.44	19.38	0.62	0.56
2	1.25	19.30	0.70	19.46	0.54	19.27	0.73	0.68
3	1.67	19.19	0.81	19.37	0.63	19.17	0.83	0.76
4	2.08	19.10	0.90	19.20	0.80	19.06	0.94	0.88



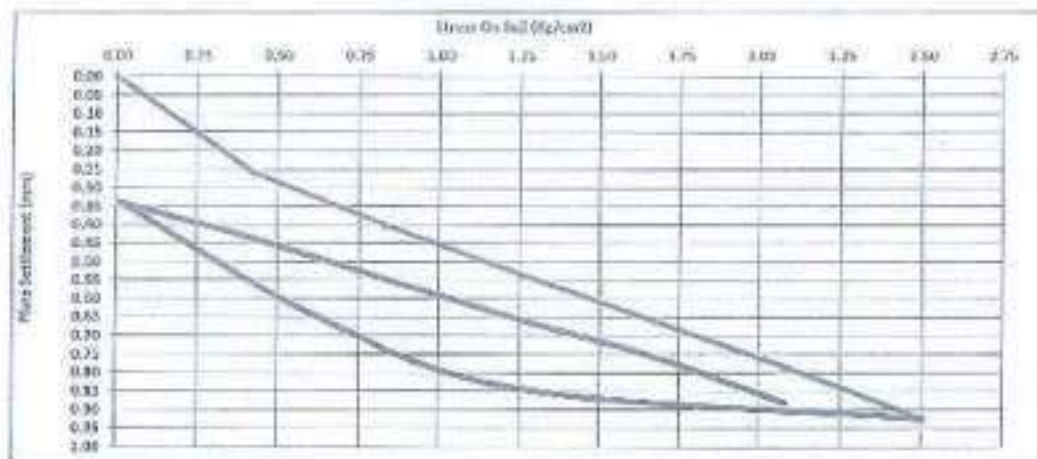
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Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Afameh to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 440+000 to 440+025
Test No. : 103

Nonrepetitive Static Plate Load Test 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	7005
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.26	0.40	0.53	0.65	0.76	0.92

UnLoading (1)	1	2	3	4
Stage(Kg)	7005	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.92	0.84	0.65	0.34

D (mm) = 500	S1 (mm) = 0.37	S2 (mm) = 0.68	ΔS = 0.31
Ev1 (kg/cm²) = (0.75*D³ΔS)/AS	1402		

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	0.44	0.55	0.68	0.76	0.85

Ev2/Ev1 =	1.0
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D (mm) = 600	S1 (mm) = 0.68	S2 (mm) = 0.76	ΔS = 0.08
Ev2 (kg/cm²) = (0.75*D³ΔS)/ΔS	1395		

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 (stage) (mm)

ΔS = Difference in settlements corresponding to 0.2 and 0.7 from the maximum loading (mm)





Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) – Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+925 to 448+950
Test No. : 04

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	19.81	0.19	19.85	0.15	0.17
2	0.83	19.71	0.29	19.70	0.30	19.73	0.27	0.29
3	1.25	19.54	0.46	19.56	0.44	19.61	0.39	0.43
4	1.67	19.46	0.54	19.40	0.60	19.46	0.54	0.56
5	2.08	19.35	0.65	19.26	0.74	19.31	0.69	0.69
6	2.50	19.24	0.76	19.14	0.86	19.19	0.81	0.81

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.24	0.76	19.14	0.86	19.15	0.81	0.81
2	1.25	19.28	0.72	19.09	0.91	19.23	0.77	0.80
3	0.625	19.34	0.66	19.16	0.84	19.28	0.72	0.74
4	0.01	19.61	0.39	19.40	0.60	19.59	0.41	0.47

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.30	0.70	19.51	0.49	0.55
1	0.83	19.45	0.55	19.26	0.74	19.43	0.57	0.62
2	1.25	19.37	0.63	19.19	0.81	19.32	0.68	0.71
3	1.67	19.28	0.72	19.11	0.89	19.19	0.81	0.81
4	2.08	19.19	0.81	19.02	0.98	19.03	0.97	0.92



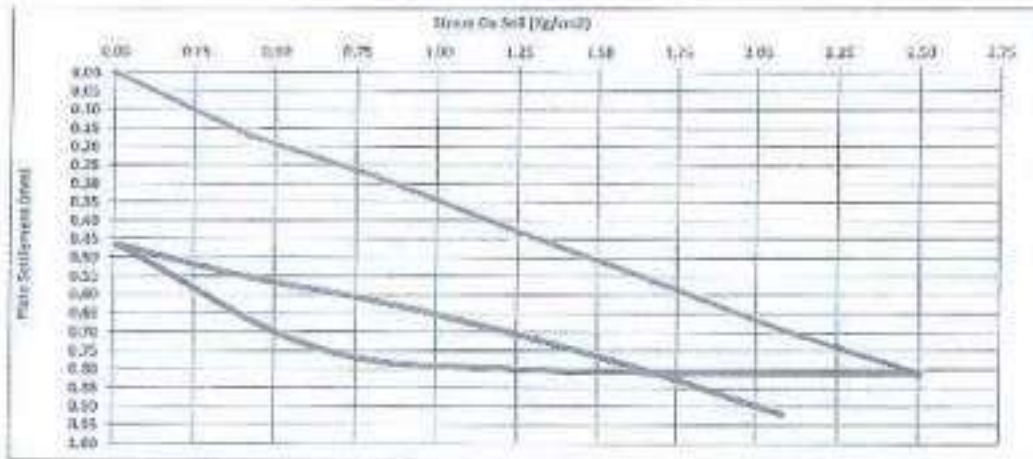
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Company Name: Sun Rise Construction
Project: Electric Express Train, from Al Ain Sidiya to Marsa Matruh Priority Sector (9) - Ahmed to Fala
Test Date: 05/06/2023
Report Date: 06/06/2023
Location: Station 448+925 to 448+958
Test No.: 04

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1185.92	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	0.17	0.29	0.40	0.55	0.89	0.31

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)	0.81	0.80	0.74	0.47

D (mm) = 600	E1 (mm) = 0.26	E2 (mm) = 0.59	ΔS = 0.32
Ev1 (kg/cm²) = (0.75 * D * ΔS) / ΔS	1397		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1185.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.09
Settlement (mm)	0.47	0.55	0.62	0.71	0.81	0.82

Ev2/Ev1 =	1.2
-----------	-----

D (mm) = 600	E1 (mm) = 0.57	E2 (mm) = 0.83	ΔS = 0.26
Ev2 (kg/cm²) = (0.75 * D * ΔS) / ΔS	1715		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the unloading stage.
D = Plate diameter (mm)
ΔS = The difference between E1 and E2 from the maximum loading (stress) (kg/cm²)
ΔS = Difference in settlements corresponding to E1 and E2 from the maximum loading (mm)





Consulting Engineering Bureau & Laboratories

مكتب معامل الإستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (8) - Abmeim to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+950 to 448+975
Test No. : 05

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	19.65	0.35	19.64	0.36	0.30
2	0.83	19.68	0.32	19.54	0.46	19.50	0.50	0.43
3	1.25	19.54	0.46	19.43	0.59	19.38	0.62	0.56
4	1.67	19.42	0.58	19.30	0.70	19.27	0.73	0.67
5	2.08	19.30	0.70	19.15	0.85	19.18	0.82	0.79
6	2.50	19.14	0.86	19.00	1.00	19.03	0.97	0.94

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.14	0.86	19.00	1.00	19.03	0.97	0.94
2	1.25	19.24	0.76	19.09	0.91	19.12	0.88	0.85
3	0.625	19.42	0.58	19.30	0.70	19.26	0.74	0.67
4	0.01	19.75	0.25	19.62	0.38	19.58	0.42	0.35

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.56	0.34	19.52	0.48	19.47	0.53	0.45
1	0.83	19.54	0.46	19.41	0.59	19.36	0.64	0.56
2	1.25	19.42	0.58	19.30	0.70	19.27	0.73	0.67
3	1.67	19.31	0.69	19.22	0.78	19.18	0.82	0.78
4	2.08	19.20	0.80	19.10	0.90	19.07	0.93	0.88



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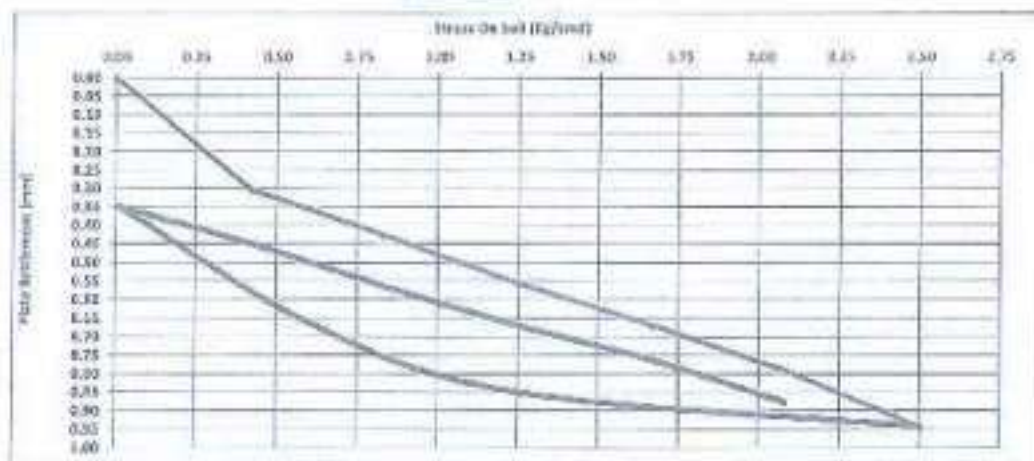


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مكتب معامل الاستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Alamein to Fuka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+950 to 448+975
Test No. : 05

Nonrepertive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.0	3532.5	4719.4	5878.1	7005
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.30	0.43	0.56	0.67	0.78	0.94

D (mm) =	600	E1 (mm) =	0.40	E2 (mm) =	0.49	ΔS =	0.29
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta s) / \Delta S$			1547				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.0	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.35	0.45	0.56	0.67	0.78	0.88

D (mm) =	600	E1 (mm) =	0.47	E2 (mm) =	0.73	ΔS =	0.31
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta s) / \Delta S$			1430				

UnLoading (1)	1	2	3	4
Stage(Kg)	7005	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.94	0.85	0.67	0.35

Ev2/Ev1 =	0.9
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E1 = Modulus of deformation during the loading stage.
E2 = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)
Ds = The difference between E1 and E2 from the maximum loading (mm)
ΔS = Difference in settlements corresponding to E1 and E2 from the maximum loading (mm)



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مكتب معامل الإستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+975 to 449+000
Test No. : 06

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	19.77	0.23	19.79	0.21	0.20
2	0.83	19.69	0.31	19.65	0.35	19.61	0.39	0.35
3	1.25	19.52	0.48	19.47	0.53	19.48	0.52	0.51
4	1.67	19.33	0.67	19.29	0.71	19.31	0.68	0.69
5	2.08	19.21	0.79	19.17	0.83	19.22	0.78	0.80
6	2.50	19.08	0.92	19.03	0.97	19.06	0.94	0.94

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.08	0.92	19.03	0.97	19.06	0.94	0.94
2	1.25	19.13	0.87	19.09	0.91	19.11	0.89	0.89
3	0.825	19.25	0.75	19.18	0.82	19.20	0.80	0.79
4	0.01	19.60	0.40	19.53	0.47	19.55	0.45	0.46

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.47	0.53	19.46	0.54	0.51
1	0.83	19.43	0.57	19.35	0.65	19.39	0.61	0.61
2	1.25	19.32	0.68	19.26	0.74	19.31	0.69	0.70
3	1.67	19.23	0.77	19.14	0.86	19.20	0.80	0.81
4	2.08	19.11	0.89	19.05	0.95	19.11	0.89	0.91



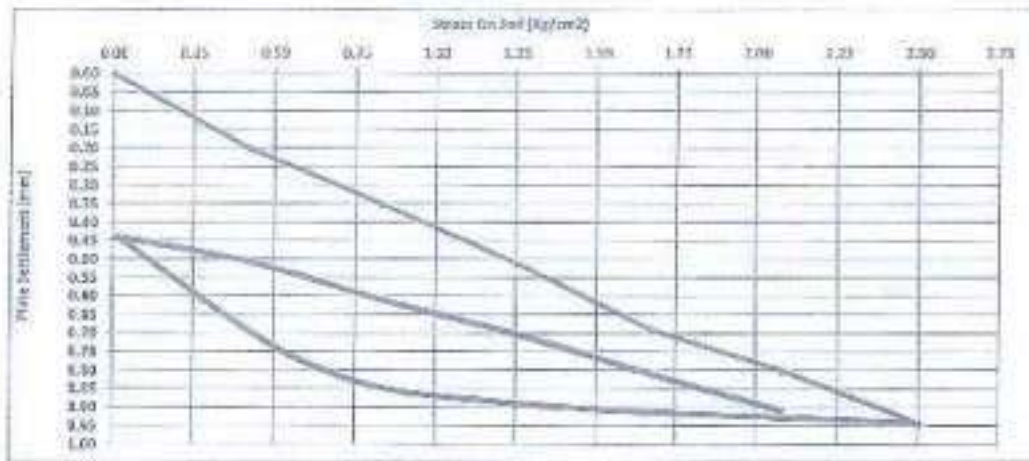
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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Aio Solihna to Marsa Matruh Priority Sector (S) – Alamin in Foka
 Test Date : 05/06/2023
 report date : 08/06/2023
 Location : Station 448+9/5 to 449+000
 Test No. : 06

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	0.20	0.35	0.51	0.69	0.80	0.94

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)	0.94	0.89	0.79	0.44

D (mm) = 600	S1 (mm) = 0.32	S2 (mm) = 0.71	ΔS = 0.39
Ev1 (kg/cm²) = $(6.75 \cdot D \cdot \Delta S) / \Delta S$	1182		

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)	0.44	0.51	0.61	0.70	0.81	0.91

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

D (mm) = 600	S1 (mm) = 0.53	S2 (mm) = 0.83	ΔS = 0.30
Ev2 (kg/cm²) = $(0.75 \cdot D \cdot \Delta S) / \Delta S$	1487		

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





Consulting Engineering Bureau & Laboratories

مكتب محامل الإستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 449+000 to 449+025
Test No. : 07

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	19.88	0.12	19.75	0.25	19.82	0.18	0.18
2	0.83	19.72	0.28	19.61	0.39	19.68	0.32	0.33
3	1.25	19.60	0.40	19.49	0.51	19.56	0.44	0.45
4	1.67	19.48	0.52	19.37	0.63	19.44	0.56	0.57
5	2.08	19.35	0.65	19.25	0.75	19.31	0.69	0.70
6	2.50	19.22	0.78	19.12	0.88	19.16	0.84	0.83

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.22	0.78	19.12	0.88	19.16	0.84	0.83
2	1.25	19.31	0.69	19.23	0.77	19.25	0.75	0.74
3	0.825	19.46	0.54	19.33	0.67	19.41	0.59	0.60
4	0.01	19.78	0.22	19.65	0.35	19.74	0.26	0.28

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.70	0.30	19.56	0.44	19.66	0.34	0.36
1	0.83	19.60	0.40	19.47	0.53	19.58	0.42	0.45
2	1.25	19.49	0.51	19.36	0.64	19.47	0.53	0.56
3	1.67	19.38	0.62	19.26	0.74	19.35	0.65	0.67
4	2.08	19.29	0.71	19.15	0.85	19.26	0.74	0.77



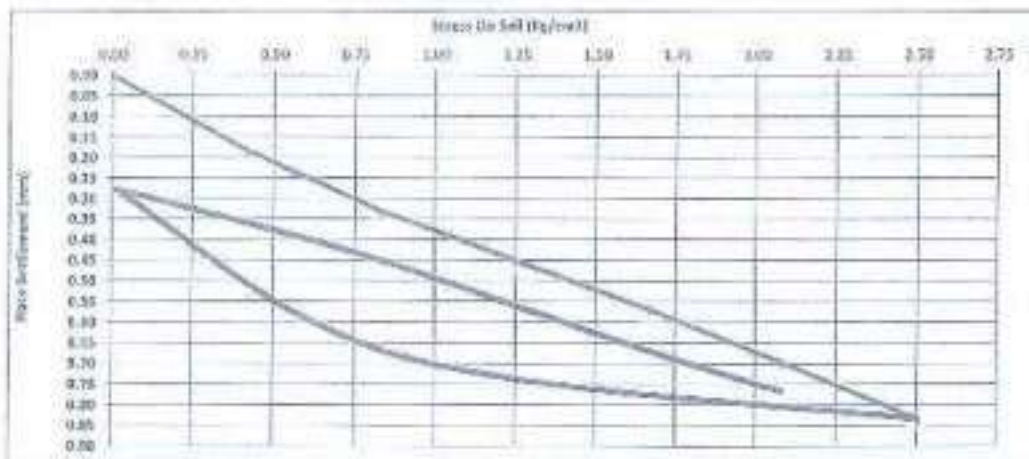
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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamein to Fekki
 Test Date : 05/06/2023
 report date : 06/06/2023
 Location : Station 449+000 to 449+025
 Test No. : 07

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	7005
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.18	0.33	0.45	0.57	0.70	0.83

UnLoading (1)	1	2	3	4
Stage(Kg)	7005	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.83	0.74	0.60	0.28

D (mm) = 600	S1 (mm) = 0.33	S2 (mm) = 0.59	ΔS = 0.26
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1534		

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	1.25	1.67	2.08
Settlement (mm)	0.25	0.36	0.45	0.56	0.67	0.77

Ev2/Ev1 =	0.9
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D (mm) = 500	S1 (mm) = 0.36	S2 (mm) = 0.69	ΔS = 0.31
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1446		

Ev1 = Modulus of deformation during the loading stage.
 Ev2 = Modulus of deformation during the reloading stage.
 D = Plate diameter (mm)
 ΔS = The difference between 0.5 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)



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Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (S) - Alemeln to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 449+025 to 449+050
Test No. : 08

Nonrepettive 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	19.64	0.36	19.72	0.28	19.79	0.21	0.28
2	0.83	19.50	0.50	19.57	0.43	19.66	0.34	0.42
3	1.25	19.38	0.62	19.44	0.56	19.52	0.48	0.55
4	1.67	19.25	0.75	19.31	0.69	19.41	0.59	0.68
5	2.08	19.12	0.88	19.15	0.85	19.27	0.73	0.82
6	2.50	19.00	1.00	19.04	0.96	19.15	0.85	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	19.00	1.00	19.04	0.96	19.15	0.85	0.94
2	1.25	19.10	0.90	19.12	0.88	19.24	0.76	0.85
3	0.625	19.25	0.75	19.25	0.75	19.37	0.63	0.71
4	0.01	19.58	0.42	19.60	0.40	19.69	0.31	0.38

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.49	0.51	19.57	0.43	19.54	0.46	0.47
1	0.83	19.31	0.69	19.41	0.59	19.39	0.61	0.63
2	1.25	19.21	0.79	19.30	0.70	19.26	0.74	0.74
3	1.67	19.16	0.84	19.21	0.79	19.13	0.87	0.83
4	2.08	19.05	0.95	19.10	0.90	19.06	0.94	0.93



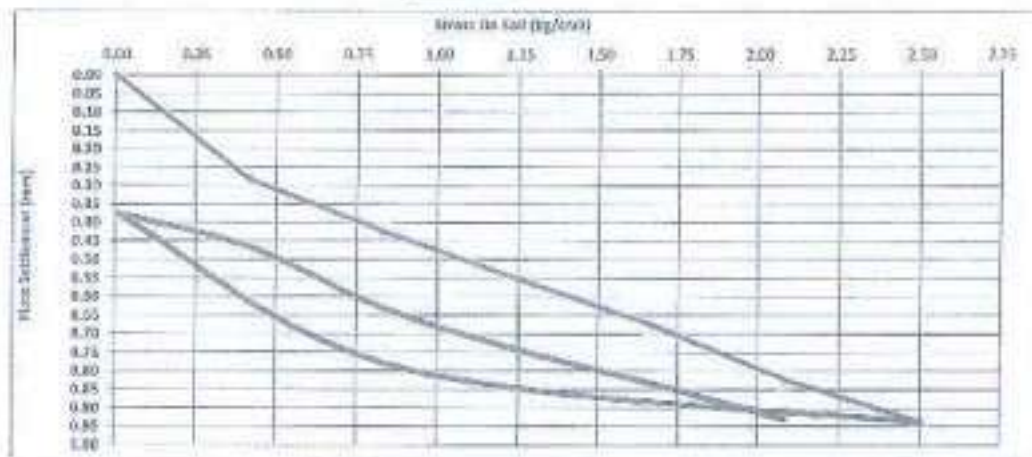
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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Alamein to Foien
 Test Date : 05/06/2023
 report date : 06/06/2023
 Location : Station 448+035 to 448+050
 Test No. : 00

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	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.28	0.42	0.55	0.68	0.82	0.94

D (mm) = 600	S1 (mm) = 0.40	S2(mm) = 0.75	ΔS = 0.34
Ev1 (kg/cm²) = $(0.75 \cdot D \cdot \Delta S) / \Delta S$	1650		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.36	0.47	0.63	0.74	0.83	0.93

D (mm) = 600	S1 (mm) = 0.60	S2(mm) = 0.95	ΔS = 0.35
Ev2 (kg/cm²) = $(0.75 \cdot D \cdot \Delta S) / \Delta S$	1272		

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)	0.04	0.80	0.71	0.33

Ev2/Ev1 =	0.9
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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 0.5 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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مكتب محامل الإستشارات الهندسية

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) -/ Alsmeln to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 449+050 to 449+075
Test No. : 09

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	19.79	0.21	19.84	0.16	19.58	0.42	0.26
2	0.83	19.64	0.36	19.69	0.31	19.43	0.57	0.41
3	1.25	19.50	0.50	19.55	0.45	19.29	0.71	0.55
4	1.57	19.36	0.64	19.41	0.59	19.15	0.85	0.69
5	2.08	19.21	0.79	19.26	0.74	19.00	1.00	0.84
6	2.50	19.08	0.92	19.14	0.86	18.84	1.16	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	19.08	0.92	19.14	0.86	18.84	1.16	0.98
2	1.25	19.18	0.82	19.24	0.76	19.00	1.00	0.86
3	0.625	19.33	0.67	19.38	0.62	19.16	0.84	0.71
4	0.01	19.66	0.34	19.70	0.30	19.57	0.43	0.37

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.57	0.43	19.65	0.35	19.42	0.58	0.45
1	0.83	19.43	0.57	19.51	0.49	19.31	0.69	0.58
2	1.25	19.32	0.68	19.42	0.58	19.22	0.78	0.68
3	1.67	19.22	0.78	19.34	0.66	19.07	0.93	0.79
4	2.08	19.13	0.87	19.24	0.76	18.96	1.04	0.80



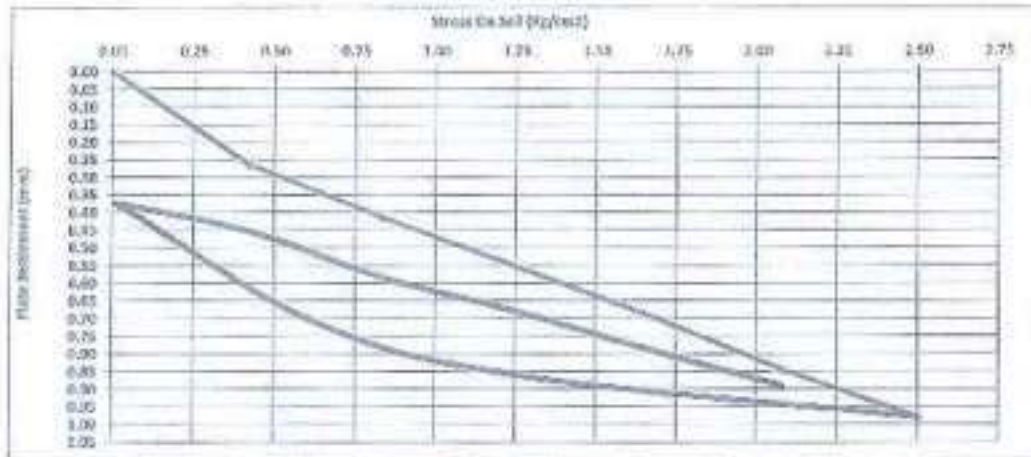
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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Helwan to Mersa Matruh Priority Sector (6) - Alamein to Felix
 Test Date : 05/06/2023
 report date : 08/06/2023
 Location : Station 449+050 to 449+075
 Test No. : 08

Nonrepetitive Static Plate Load Tests of Gells
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	0.26	0.41	0.55	0.69	0.84	0.98

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)	0.98	0.86	0.71	0.37

D (mm) = 600	S1 (mm) = 0.26	S2 (mm) = 0.72	ΔS = 0.34
Ev1 (kg/cm²) = (0.75 * D * ΔS) / ΔS	1329		

Ev2/Ev1 = 1.0

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)	0.37	0.48	0.58	0.65	0.70	0.89

D (mm) = 600	S1 (mm) = 0.48	S2 (mm) = 0.81	ΔS = 0.33
Ev2 (kg/cm²) = (0.75 * D * ΔS) / ΔS	1380		

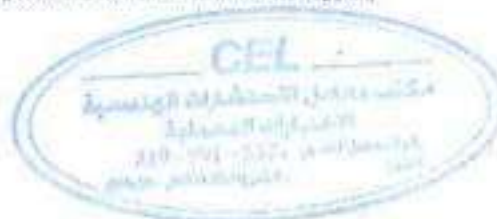
Ev1 = Modulus of deformation during the loading stage.

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 (stress) (kg/cm²)

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





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Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (8) – Alamein to Foka
Test Date : 05/06/2023
report date : 06/06/2023
Location : Station 448+075 to 449+100
Test No. : 10

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	0.14	19.70	0.30	19.77	0.23	0.22
2	0.83	19.70	0.30	19.57	0.43	19.62	0.38	0.37
3	1.25	19.58	0.42	19.41	0.59	19.50	0.50	0.50
4	1.67	19.46	0.54	19.30	0.70	19.38	0.62	0.62
5	2.08	19.32	0.68	19.18	0.82	19.25	0.75	0.75
6	2.50	19.19	0.81	19.00	1.00	19.12	0.88	0.90

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.19	0.81	19.00	1.00	19.12	0.88	0.90
2	1.25	19.27	0.73	19.10	0.90	19.23	0.77	0.80
3	0.625	19.45	0.55	19.25	0.75	19.32	0.68	0.66
4	0.01	19.74	0.26	19.58	0.42	19.63	0.37	0.35

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.35	19.47	0.53	19.51	0.49	0.46
1	0.83	19.53	0.47	19.38	0.62	19.40	0.60	0.55
2	1.25	19.42	0.58	19.26	0.74	19.30	0.70	0.67
3	1.67	19.33	0.67	19.15	0.85	19.21	0.79	0.77
4	2.08	19.24	0.76	19.05	0.95	19.10	0.90	0.87



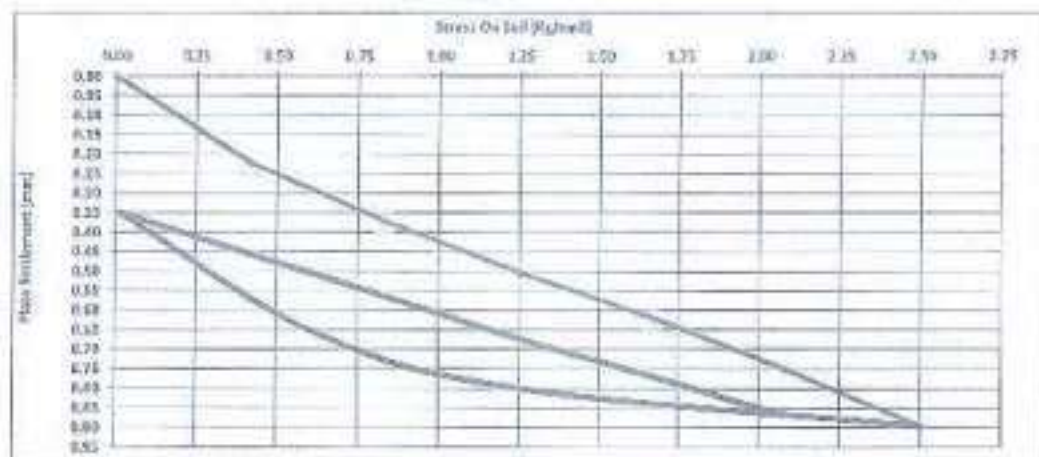
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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Solihia to Mersa Matruh Priority Sector (C) – Alamein to Foka
 Test Date : 06/06/2023
 report date : 06/06/2023
 Location : Station 449+076 to 449+100
 Test No. : 10

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	2345.6	3532.0	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	0.50	0.62	0.75	0.90

D (mm) =	600	S1 (mm) =	0.34	S2 (mm) =	0.80	ΔS =	0.30
Ev1 (kg/cm²) =	$(0.75 \cdot D \cdot \Delta S) / \Delta S$						
	1400						

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	2345.6	3532.0	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.35	0.46	0.56	0.62	0.77	0.87

D (mm) =	600	S1 (mm) =	0.48	S2 (mm) =	0.78	ΔS =	0.31
Ev2 (kg/cm²) =	$(0.75 \cdot D \cdot \Delta S) / \Delta S$						
	1442						

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)	0.90	0.80	0.65	0.35

Ev2/Ev1 =	1.0
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Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the unloading 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 : Sun Rise Construction

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 : (450+125 to 450+425)
Test Date : 18/06/2023
Report Date : 26/06/2023
Type of soil : —
Test level : Sub ballast .
Report No. : 277:248

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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	18/06/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	450+125	450+150	2151	2085	1.0
2	450+150	450+175	1021	1915	1.9
3	450+175	450+200	915	1602	1.8
4	450+200	450+225	1397	2029	1.5
5	450+225	450+250	1273	1326	1.0
6	450+350	450+375	1152	1878	1.6
7	450+375	450+400	1483	1568	1.1
8	450+400	450+425	1179	1792	1.5



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 18/06/2023
report date : 26/07/2023
Location : Station 450+125 to 450+150
Test No. : 01

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	19.90	0.10	19.80	0.20	19.75	0.25	0.18
2	0.83	19.79	0.21	19.58	0.42	19.50	0.50	0.38
3	1.25	19.56	0.44	19.14	0.86	19.28	0.72	0.67
4	1.67	19.40	0.60	18.95	1.05	19.10	0.90	0.85
5	2.08	19.08	0.92	18.66	1.34	18.98	1.02	1.09
6	2.50	18.83	1.17	18.44	1.56	18.90	1.10	1.28

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.83	1.17	18.44	1.56	18.90	1.10	1.28
2	1.25	18.85	1.15	18.50	1.50	18.98	1.02	1.22
3	0.625	18.88	1.12	18.60	1.40	19.08	0.92	1.15
4	0.01	19.02	0.98	18.86	1.14	19.25	0.75	0.96

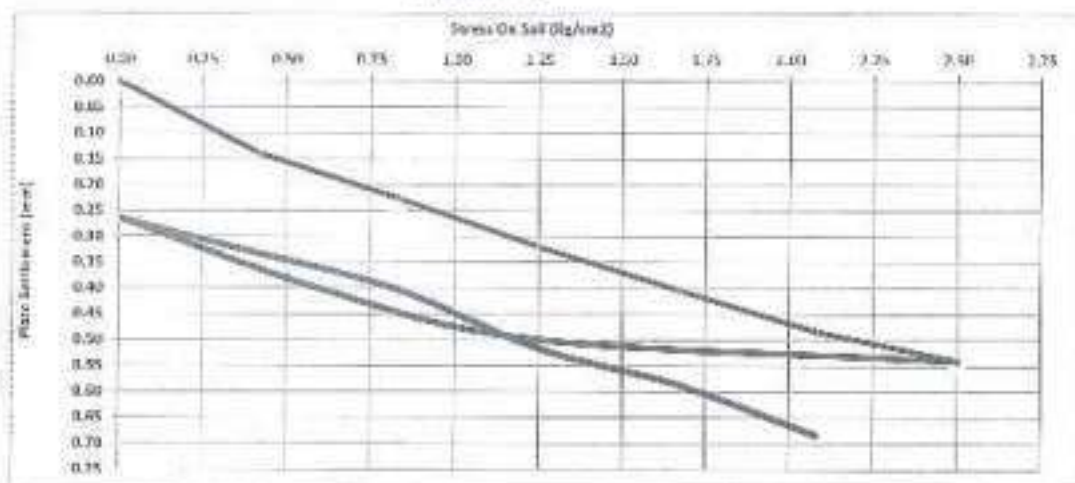
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	18.95	1.05	18.75	1.25	19.20	0.80	1.03
1	0.83	18.88	1.12	18.63	1.37	19.14	0.86	1.12
2	1.25	18.80	1.20	18.55	1.45	19.00	1.00	1.22
3	1.67	18.72	1.28	18.48	1.52	18.93	1.07	1.29
4	2.08	18.60	1.40	18.41	1.59	18.85	1.15	1.38



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 18/06/2023
report date : 26/07/2023
Location : Station 450+125 to 450+150
Test No. : 01

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	0.14	0.23	0.32	0.40	0.48	0.54

UnLoading (T)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.825	0.01
Settlement (mm)	0.54	0.50	0.41	0.27

D (mm) = 600	S1 (mm) = 0.31	S2 (mm) = 0.42	ΔS = 0.21
Ev1 (kg/cm²) = $(0.75 \cdot D \cdot \Delta\sigma / \Delta S)$	2151		

Ev2/Ev1 = 1.0

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)	0.27	0.33	0.40	0.52	0.59	0.68

D (mm) = 600	S1 (mm) = 0.39	S2 (mm) = 0.61	ΔS = 0.22
Ev2 (kg/cm²) = $(0.75 \cdot D \cdot \Delta\sigma / \Delta S)$	2085		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date :18/06/2023
 report date :26/07/2023
 Location : Station 450+150 to 450+175
 Test No. : 02

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	19.79	0.21	19.60	0.40	0.26
2	0.83	19.72	0.28	19.26	0.74	19.51	0.49	0.50
3	1.25	19.56	0.44	19.00	1.00	19.35	0.65	0.70
4	1.67	19.42	0.58	18.76	1.24	19.21	0.79	0.87
5	2.08	19.26	0.74	18.61	1.39	19.11	0.89	1.01
6	2.50	19.10	0.90	18.49	1.51	18.99	1.01	1.14

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	18.49	1.51	18.99	1.01	1.14
2	1.25	19.19	0.81	18.55	1.45	19.08	0.92	1.06
3	0.625	19.33	0.67	18.63	1.37	19.25	0.75	0.93
4	0.01	19.54	0.46	18.78	1.22	19.86	0.14	0.61

Loading Stage (2)

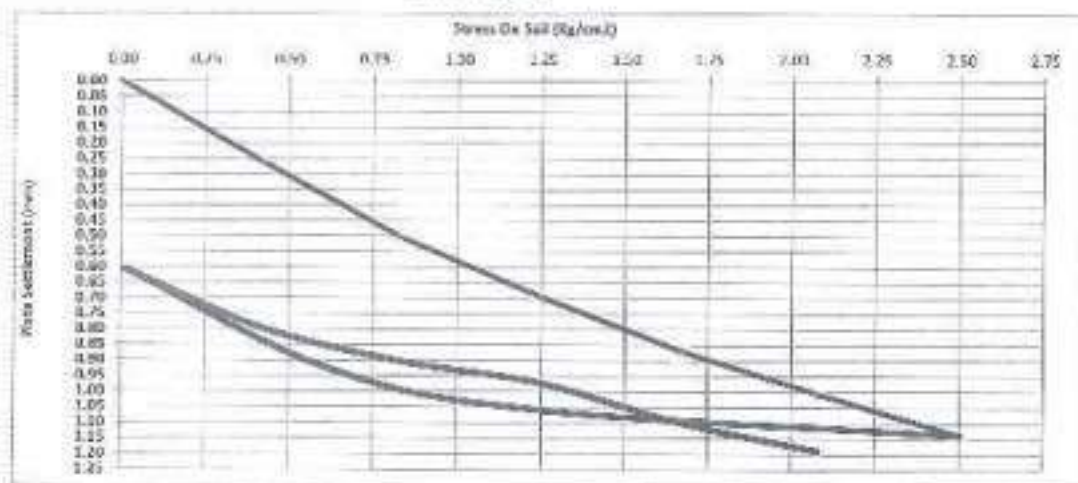
Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.40	0.60	18.70	1.30	19.51	0.49	0.80
1	0.83	19.34	0.66	18.65	1.35	19.30	0.70	0.90
2	1.25	19.28	0.72	18.60	1.40	19.20	0.80	0.97
3	1.67	19.09	0.91	18.54	1.46	19.07	0.93	1.10
4	2.08	18.92	1.08	18.48	1.52	19.03	0.97	1.19



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamain to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+150 to 450+175
 Test No. : 02

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	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.26	0.50	0.70	0.87	1.01	1.14

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)	1.14	1.06	0.93	0.61

D (mm) = 600	S1 (mm) = 0.46	S2 (mm) = 0.90	ΔS = 0.44
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1021		

$$Ev2/Ev1 = 1.9$$

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	1.25	1.67	2.08
Settlement (mm)	0.01	0.80	0.80	0.97	1.10	1.19

D (mm) = 600	S1 (mm) = 0.58	S2 (mm) = 1.12	ΔS = 0.24
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1915		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+175 to 449+200
 Test No. : 03

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	19.63	0.37	19.72	0.28	0.29
2	0.83	19.59	0.41	19.23	0.77	19.45	0.55	0.58
3	1.25	19.50	0.50	19.00	1.00	19.22	0.78	0.76
4	1.67	19.33	0.67	18.77	1.23	18.94	1.06	0.99
5	2.08	19.24	0.76	18.62	1.38	18.78	1.22	1.12
6	2.50	19.13	0.87	18.46	1.54	18.64	1.36	1.26

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	18.46	1.54	18.64	1.36	1.26
2	1.25	19.20	0.80	18.51	1.49	18.75	1.25	1.18
3	0.625	19.28	0.72	18.59	1.41	18.86	1.14	1.09
4	0.01	19.44	0.56	18.86	1.14	19.26	0.74	0.81

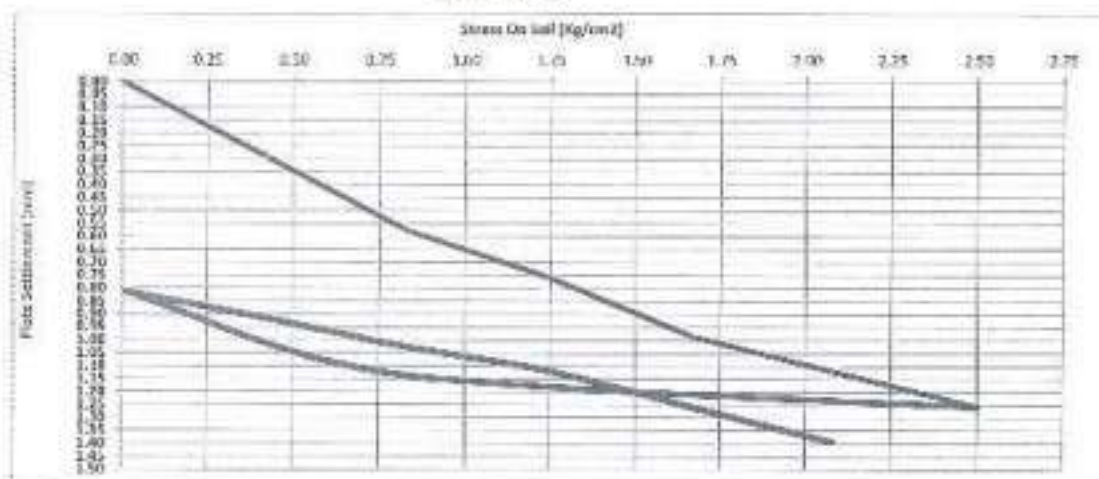
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.38	0.62	18.74	1.26	19.13	0.87	0.92
1	0.83	19.30	0.70	18.64	1.36	18.98	1.02	1.03
2	1.25	19.19	0.81	18.57	1.43	18.88	1.12	1.12
3	1.67	19.04	0.96	18.43	1.57	18.75	1.25	1.26
4	2.08	18.89	1.11	18.31	1.69	18.62	1.38	1.39



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 18/06/2023
report date : 26/07/2023
Location : Station 450+175 to 449+200
Test No. : 03

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	0.29	0.58	0.78	0.99	1.12	1.25

UnLoading (t)	1	2	3	4
Stage(Kg)	7065	3533	1758	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.28	1.16	1.00	0.81

D (mm) = 600	S1 (mm) = 0.52	S2 (mm) = 1.01	ΔS = 0.49
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	915		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.81	0.92	1.03	1.12	1.28	1.30

Ev2/Ev1 =	1.0
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D (mm) = 600	S1 (mm) = 1.81	S2 (mm) = 1.29	ΔS = 0.28
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1602		

Ev1 = Modulus of deformation during the loading stage.

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

D = Plate diameter (mm)

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

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+200 to 450+225
 Test No. : 04

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	19.83	0.17	19.81	0.19	19.85	0.15	0.17
2	0.83	19.71	0.29	19.70	0.30	19.73	0.27	0.29
3	1.25	19.54	0.46	19.56	0.44	19.61	0.39	0.43
4	1.67	19.46	0.54	19.40	0.60	19.46	0.54	0.56
5	2.08	19.35	0.65	19.26	0.74	19.31	0.69	0.69
6	2.50	19.24	0.76	19.14	0.86	19.19	0.81	0.81

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.24	0.76	19.14	0.86	19.19	0.81	0.81
2	1.25	19.28	0.72	19.09	0.91	19.23	0.77	0.80
3	0.625	19.34	0.66	19.16	0.84	19.28	0.72	0.74
4	0.01	19.61	0.39	19.40	0.60	19.59	0.41	0.47

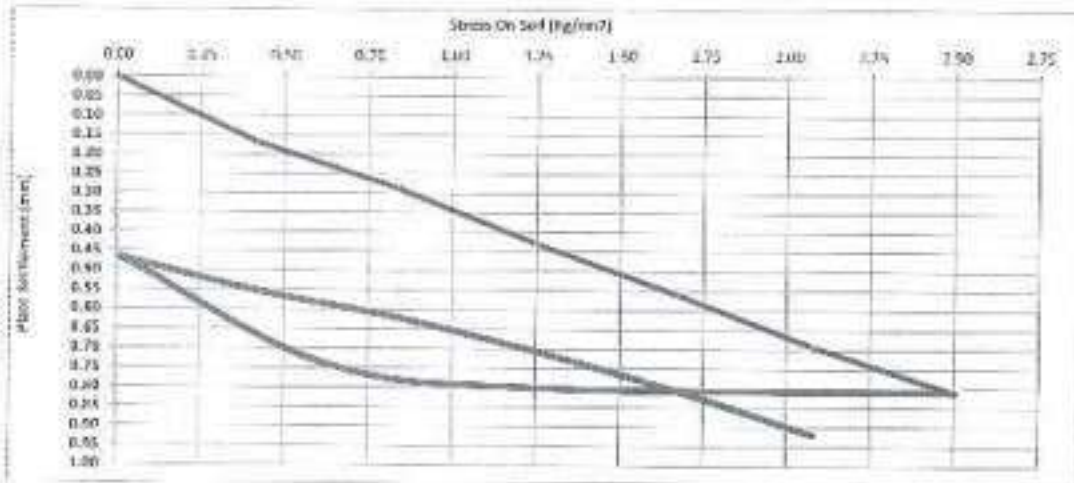
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.30	0.70	19.51	0.49	0.55
1	0.83	19.45	0.55	19.26	0.74	19.43	0.57	0.62
2	1.25	19.37	0.63	19.19	0.81	19.32	0.68	0.71
3	1.67	19.28	0.72	19.11	0.89	19.19	0.81	0.81
4	2.08	19.19	0.81	19.02	0.98	19.03	0.97	0.92



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+200 to 450+225
 Test No. : 04

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	2.50
Settlement (mm)	0.00	0.17	0.29	0.43	0.56	0.69	0.81

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.828	0.01
Settlement (mm)	0.81	0.80	0.74	0.47

D (mm) = 600	S1 (mm) = 0.26	S2 (mm) = 0.50	ΔS = 0.32
Ev1 (kg/cm²) = (0.75*D*Δs)/ΔS	1397		

$$Ev2/Ev1 = 1.5$$

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)	0.47	0.55	0.62	0.71	0.81	0.92

D (mm) = 600	S1 (mm) = 0.61	S2 (mm) = 0.83	ΔS = 0.22
Ev2 (kg/cm²) = (0.75*D*Δs)/ΔS	2029		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δs = 1% difference between S2 and S1 from the maximum loading (smax) (kg/cm²)

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (8) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+225 to 450+250
 Test No. : 05

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	19.90	0.10	19.90	0.10	19.87	0.13	0.11
2	0.83	19.78	0.22	19.82	0.18	19.40	0.60	0.33
3	1.25	19.61	0.39	19.67	0.33	19.29	0.71	0.48
4	1.67	19.46	0.54	19.57	0.43	19.13	0.87	0.61
5	2.08	19.30	0.70	19.38	0.62	19.02	0.98	0.77
6	2.50	19.16	0.84	19.21	0.79	18.84	1.16	0.93

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	19.21	0.79	18.84	1.16	0.93
2	1.25	19.20	0.80	19.26	0.74	18.90	1.10	0.88
3	0.825	19.26	0.74	19.35	0.65	18.98	1.02	0.80
4	0.01	19.47	0.53	19.52	0.48	19.21	0.79	0.60

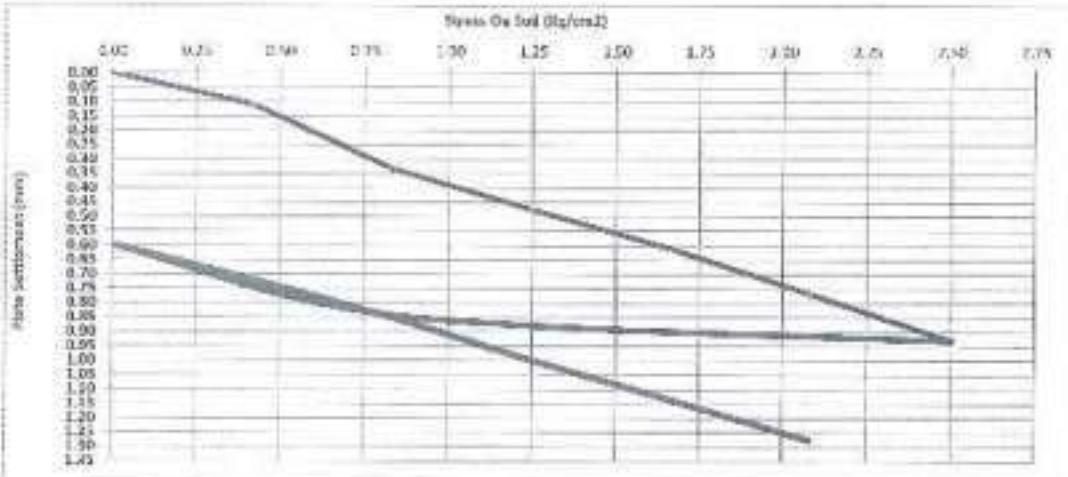
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.34	0.66	19.41	0.50	19.09	0.91	0.72
1	0.83	19.20	0.80	19.29	0.71	18.96	1.04	0.85
2	1.25	19.06	0.94	19.12	0.88	18.82	1.18	1.00
3	1.67	18.91	1.09	18.98	1.02	18.70	1.30	1.14
4	2.08	18.78	1.22	18.81	1.19	18.58	1.42	1.28



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Alamein to Folta
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+225 to 450+250
 Test No. : 05

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	0.11	0.33	0.48	0.61	0.77	0.93

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)	0.93	0.88	0.80	0.60

Q (mm) = 600	S1 (mm) = 0.29	S2 (mm) = 0.64	ΔS = 0.35
Ev1 (kg/cm²) = (0.75*Q*Δσ)/ΔS	1273		

Ev2/Ev1 =	1.0
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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)	0.80	0.72	0.85	1.00	1.14	1.28

Q (mm) = 600	S1 (mm) = 0.82	S2 (mm) = 1.16	ΔS = 0.34
Ev2 (kg/cm²) = (0.75*Q*Δσ)/ΔS	1326		

Ev1 = Modulus of deformation during the loading stage.
 Ev2 = Modulus of deformation during the reloading stage.
 Q = Plate diameter (mm)
 Δσ = The difference between 0.5 and 0.7 from the maximum loading (stress) (kg/cm²)
 ΔS = Difference in settlements corresponding to 0.5 and 0.7 from the maximum loading (mm)



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sakhna to Marsa Matrouh Priority Sector (0) -- Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+350 to 450+375
 Test No. : 06

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	19.77	0.23	19.79	0.21	0.20
2	0.83	19.69	0.31	19.65	0.35	19.61	0.39	0.35
3	1.25	19.52	0.48	19.47	0.53	19.48	0.52	0.51
4	1.67	19.33	0.67	19.29	0.71	19.31	0.69	0.69
5	2.08	19.21	0.79	19.17	0.83	19.22	0.78	0.80
6	2.50	19.08	0.92	19.03	0.97	19.06	0.94	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	19.08	0.92	19.03	0.97	19.06	0.94	0.94
2	1.25	19.13	0.87	19.09	0.91	19.11	0.89	0.89
3	0.625	19.25	0.75	19.18	0.82	19.20	0.80	0.79
4	0.01	19.60	0.40	19.53	0.47	19.55	0.45	0.44

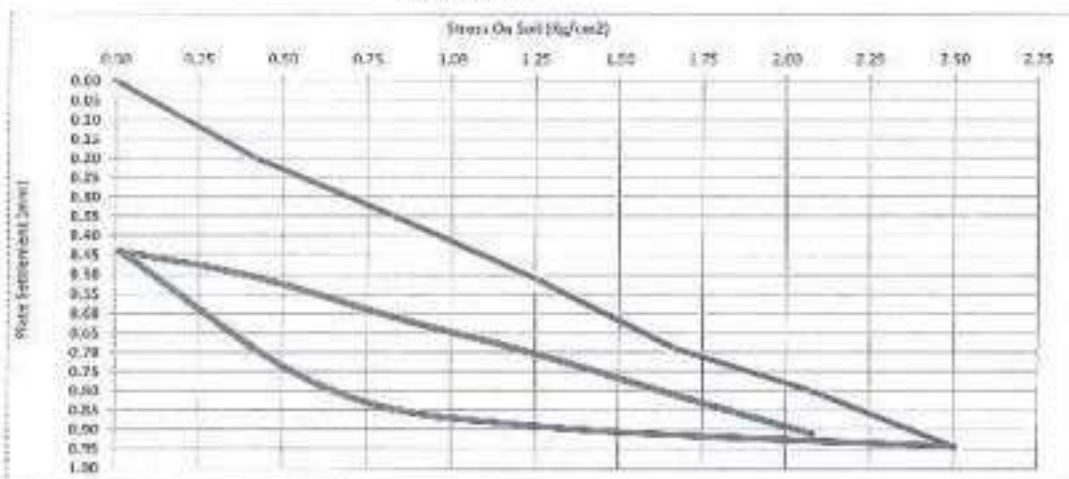
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.47	0.53	19.46	0.54	0.51
1	0.83	19.43	0.57	19.35	0.65	19.39	0.61	0.61
2	1.25	19.32	0.68	19.26	0.74	19.31	0.69	0.70
3	1.67	19.23	0.77	19.14	0.86	19.20	0.80	0.81
4	2.08	19.11	0.89	19.05	0.95	19.11	0.89	0.91



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Folx
Test Date : 18/06/2023
report date : 26/07/2023
Location : Station 450+350 to 450+375
Test No. : 06

**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	2.50
Settlement (mm)	0.00	0.20	0.35	0.51	0.69	0.80	0.94

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)	0.94	0.89	0.79	0.64

D (mm) = 600	S1 (mm) = 0.33	S2(mm) = 0.71	ΔS = 0.38
Ev1 (kg/cm2) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	1152		

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)	0.44	0.51	0.61	0.70	0.81	0.91

Ev2/Ev1 = 1.6

D (mm) = 600	S1 (mm) = 0.58	S2(mm) = 0.83	ΔS = 0.24
Ev2 (kg/cm2) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	1878		

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 (smax) (kg/cm²)

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+375 to 450+400
 Test No. : 07

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	19.73	0.27	19.80	0.20	0.23
2	0.83	19.64	0.36	19.57	0.43	19.67	0.33	0.37
3	1.25	19.51	0.49	19.43	0.57	19.52	0.48	0.51
4	1.67	19.39	0.61	19.30	0.70	19.43	0.57	0.63
5	2.08	19.27	0.73	19.21	0.79	19.30	0.70	0.74
6	2.50	19.15	0.85	19.09	0.91	19.19	0.81	0.86

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.15	0.85	19.09	0.91	19.19	0.81	0.86
2	1.25	19.24	0.76	19.18	0.82	19.27	0.73	0.77
3	0.625	19.37	0.63	19.30	0.70	19.40	0.60	0.64
4	0.01	19.65	0.35	19.60	0.40	19.69	0.31	0.35

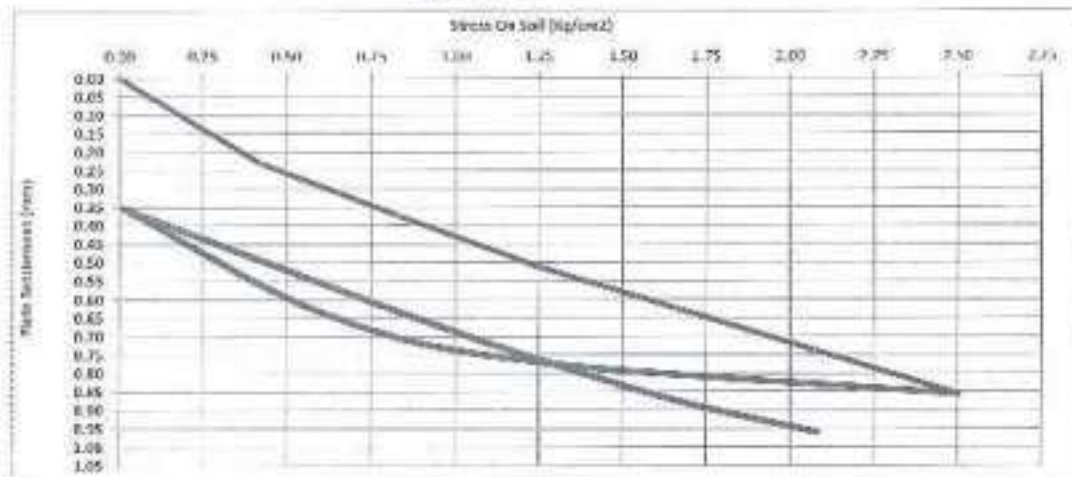
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.51	0.49	19.46	0.54	19.55	0.45	0.49
1	0.83	19.38	0.62	19.31	0.69	19.41	0.59	0.63
2	1.25	19.24	0.76	19.19	0.81	19.28	0.72	0.76
3	1.67	19.12	0.88	19.10	0.90	19.15	0.85	0.88
4	2.08	19.04	0.96	19.00	1.00	19.08	0.92	0.96



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 18/06/2023
report date : 26/07/2023
Location : Station 450+375 to 450+400
Test No. : 07

**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	2.50
Settlement (mm)	0.00	0.23	0.37	0.51	0.63	0.74	0.85

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)	0.85	0.77	0.64	0.35

D (mm) = 600	S1 (mm) = 0.33	S2(mm) = 0.65	ΔS = 0.30
Ev1 (kg/cm2) = (0.75'D³Δσ)/ΔS	1483		

Ev2/Ev1 = 1.1

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)	0.35	0.49	0.63	0.76	0.88	0.96

D (mm) = 600	S1 (mm) = 0.61	S2(mm) = 0.89	ΔS = 0.29
Ev2 (kg/cm2) = (0.75'D³Δσ)/ΔS	1568		

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (5) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+400 to 450+425
 Test No. : 08

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	19.63	0.37	19.65	0.35	19.67	0.33	0.35
2	0.83	19.41	0.59	19.46	0.54	19.53	0.47	0.53
3	1.25	19.19	0.81	19.28	0.72	19.39	0.61	0.71
4	1.67	19.06	0.94	19.14	0.86	19.26	0.74	0.85
5	2.08	18.89	1.11	18.98	1.02	19.09	0.91	1.01
6	2.50	18.74	1.26	18.85	1.15	18.94	1.06	1.16

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.74	1.26	18.85	1.15	18.94	1.06	1.16
2	1.25	18.78	1.22	18.90	1.10	19.03	0.97	1.10
3	0.625	18.86	1.14	18.98	1.02	19.17	0.83	1.00
4	0.01	19.23	0.77	19.29	0.71	19.49	0.51	0.66

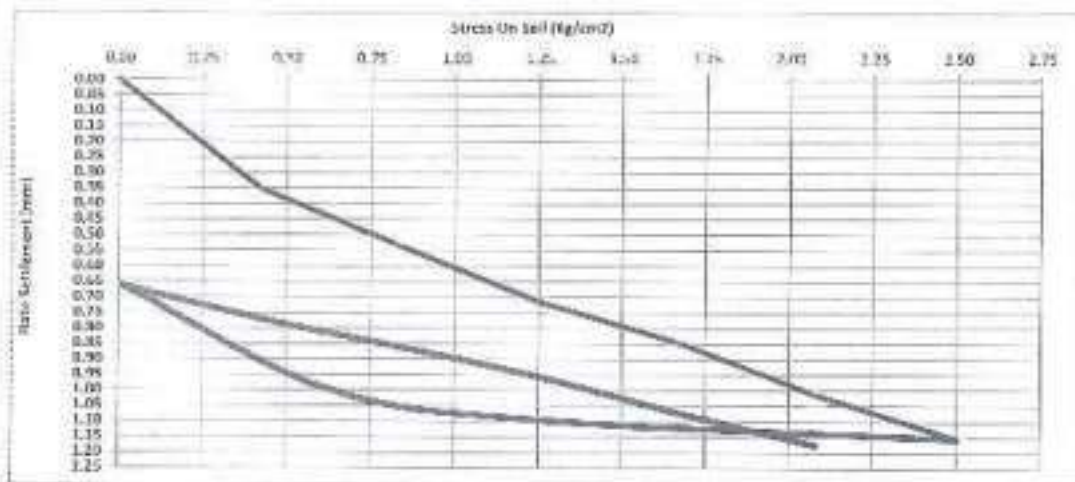
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.11	0.89	19.18	0.82	19.40	0.60	0.77
1	0.83	19.02	0.98	19.11	0.89	19.29	0.71	0.86
2	1.25	18.93	1.07	19.03	0.97	19.17	0.83	0.96
3	1.67	18.81	1.19	18.94	1.06	19.03	0.97	1.07
4	2.08	18.73	1.27	18.82	1.18	18.92	1.08	1.18



Company Name : Sam Riso Construction
 Project : Electric Express Train, from Al Ain Sokhra to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 18/06/2023
 report date : 26/07/2023
 Location : Station 450+400 to 450+425
 Test No. : 05

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	2.50
Settlement (mm)	0.00	0.35	0.53	0.71	0.85	1.01	1.16

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)	1.16	1.10	1.00	0.86

D (mm) = 600	S1 (mm) = 0.58	S2 (mm) = 0.88	ΔS = 0.30
Ev1 (kg/cm²) = (0.75'D'Δσ)/ΔS	1179		

Ev2/Ev1 =	1.5
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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)	0.66	0.77	0.88	0.98	1.07	1.18

D (mm) = 600	S1 (mm) = 0.84	S2 (mm) = 1.09	ΔS = 0.25
Ev2 (kg/cm²) = (0.75'D'Δσ)/ΔS	1792		

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 : Sun Rise Construction

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 : (450+500 to 450+600)

Test Date : 19/07/2023

Report Date : 20/07/2023

Type of soil : —

Test level : Sub ballast .

Report No. : 263:266

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

Type of soil: Sub ballast

- Job requirement: $E_{v2} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	19/07/2023
- 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	E_{v2}/E_{v1} Ratio
	From	To	E_{v1} (kg/cm ²)	E_{v2} (kg/cm ²)	
1	450+500	450+525	740	1609	2.2
2	450+525	450+550	1372	1555	1.1
3	450+550	450+575	1427	1451	1.0
4	450+575	450+600	1436	1288	0.9

Signature /



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marass Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+500 to 450+525
 Test No. : 01

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	19.90	0.10	19.81	0.19	19.65	0.35	0.21
2	0.83	19.75	0.25	19.60	0.40	19.32	0.68	0.44
3	1.25	19.59	0.41	19.37	0.63	18.90	1.10	0.71
4	1.67	19.44	0.56	19.11	0.89	18.56	1.44	0.98
5	2.08	19.30	0.70	18.97	1.13	18.27	1.73	1.19
6	2.50	19.16	0.84	18.67	1.33	18.00	2.00	1.39

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	18.67	1.33	18.00	2.00	1.39
2	1.25	19.20	0.80	18.73	1.27	18.04	1.96	1.34
3	0.625	19.27	0.73	18.86	1.14	18.15	1.85	1.24
4	0.01	19.43	0.57	19.13	0.87	18.64	1.36	0.93

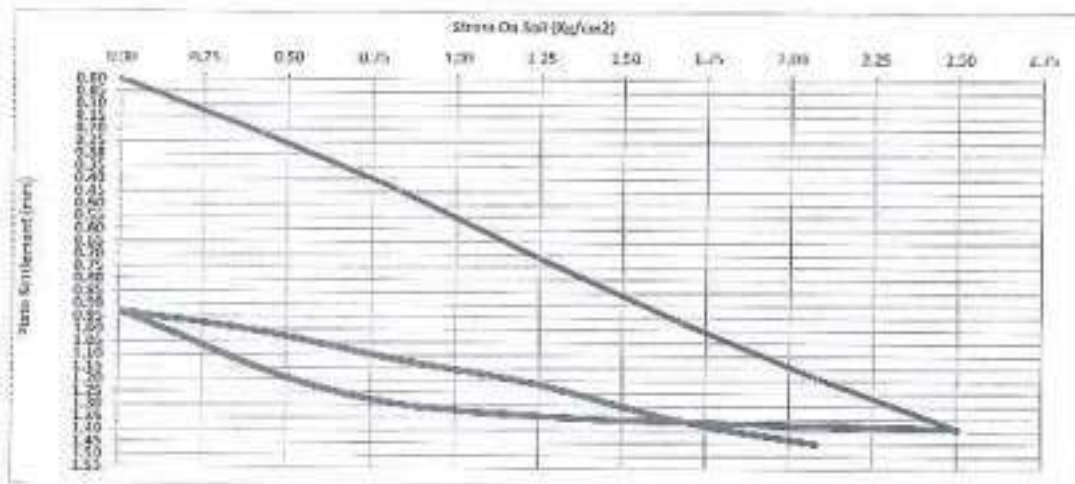
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.38	0.62	19.06	0.94	18.54	1.46	1.01
1	0.83	19.31	0.69	18.95	1.05	18.38	1.62	1.12
2	1.25	19.22	0.78	18.84	1.16	18.29	1.71	1.22
3	1.67	19.10	0.90	18.70	1.30	18.12	1.88	1.36
4	2.08	19.02	0.98	18.61	1.39	18.02	1.98	1.45



Company Name : Sen Riae Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+500 to 450+525
 Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm2)	0.00	0.42	0.83	1.25	1.87	2.08	2.50
Settlement (mm)	0.00	0.21	0.44	0.71	0.96	1.19	1.39

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)	1.39	1.34	1.24	0.93

D (mm) = 600	S1 (mm) = 0.40	S2 (mm) = 1.01	ΔS = 0.61
Ev1 (kg/cm2) = (0.75 * D * Δσ) / ΔS	740		

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	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)	0.93	1.01	1.12	1.22	1.38	1.45

Ev2/Ev1 = 2.2

D (mm) = 600	S1 (mm) = 1.18	S2 (mm) = 1.38	ΔS = 0.20
Ev2 (kg/cm2) = (0.75 * D * Δσ) / ΔS	1609		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+525 to 450+550
 Test No. : 02

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	19.87	0.13	19.88	0.12	19.79	0.21	0.15
2	0.83	19.73	0.27	19.72	0.28	19.62	0.38	0.31
3	1.25	19.60	0.40	19.58	0.42	19.48	0.52	0.45
4	1.67	19.48	0.52	19.43	0.57	19.35	0.65	0.58
5	2.08	19.34	0.66	19.29	0.71	19.21	0.79	0.72
6	2.50	19.20	0.80	19.12	0.88	19.04	0.96	0.88

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.20	0.80	19.12	0.88	19.04	0.96	0.88
2	1.25	19.26	0.74	19.15	0.85	19.07	0.93	0.84
3	0.625	19.37	0.63	19.24	0.76	19.16	0.84	0.74
4	0.01	19.54	0.46	19.43	0.57	19.36	0.64	0.56

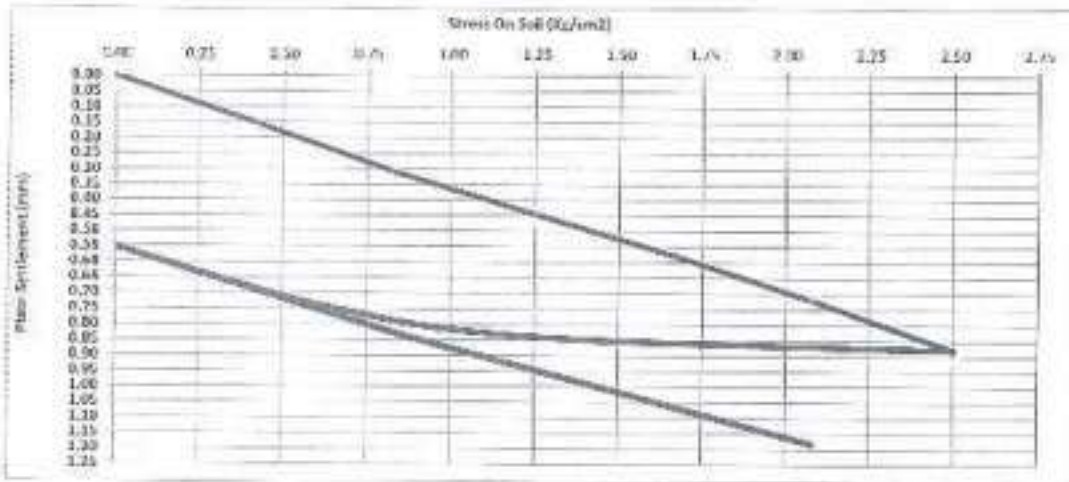
Loading Stage (2)

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	19.31	0.69	19.21	0.79	0.69
1	0.83	19.32	0.68	19.18	0.82	19.02	0.98	0.83
2	1.25	19.19	0.81	19.04	0.96	18.93	1.07	0.95
3	1.67	19.08	0.92	18.92	1.06	18.80	1.20	1.07
4	2.08	18.96	1.04	18.80	1.20	18.69	1.31	1.18



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+525 to 450+550
 Test No. : 02

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.26	1.67	2.08	2.50
Settlement (mm)	0.00	0.15	0.31	0.45	0.58	0.72	0.88

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)	0.88	0.84	0.74	0.66

D (mm) = 600	S1 (mm) = 0.28	S2 (mm) = 1.61	ΔS = 0.33
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	1372		

Ev2/Ev1 = 1.1

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.26	1.67	2.08
Settlement (mm)	0.56	0.69	0.83	0.95	1.07	1.18

D (mm) = 600	S1 (mm) = 0.60	S2 (mm) = 1.08	ΔS = 0.29
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	1555		

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 (mm) (kg/cm²)

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+550 to 450+575
 Test No. : 03

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	19.88	0.12	19.89	0.11	19.93	0.07	0.10
2	0.83	19.67	0.33	19.79	0.21	19.81	0.19	0.24
3	1.25	19.60	0.40	19.65	0.35	19.64	0.36	0.37
4	1.67	19.46	0.54	19.52	0.48	19.51	0.49	0.50
5	2.08	19.31	0.69	19.38	0.62	19.38	0.62	0.64
6	2.50	19.16	0.84	19.27	0.73	19.26	0.74	0.77

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	19.27	0.73	19.26	0.74	0.77
2	1.25	19.20	0.80	19.30	0.70	19.30	0.70	0.73
3	0.625	19.28	0.72	19.38	0.62	19.42	0.58	0.64
4	0.01	19.54	0.46	19.62	0.38	19.68	0.32	0.39

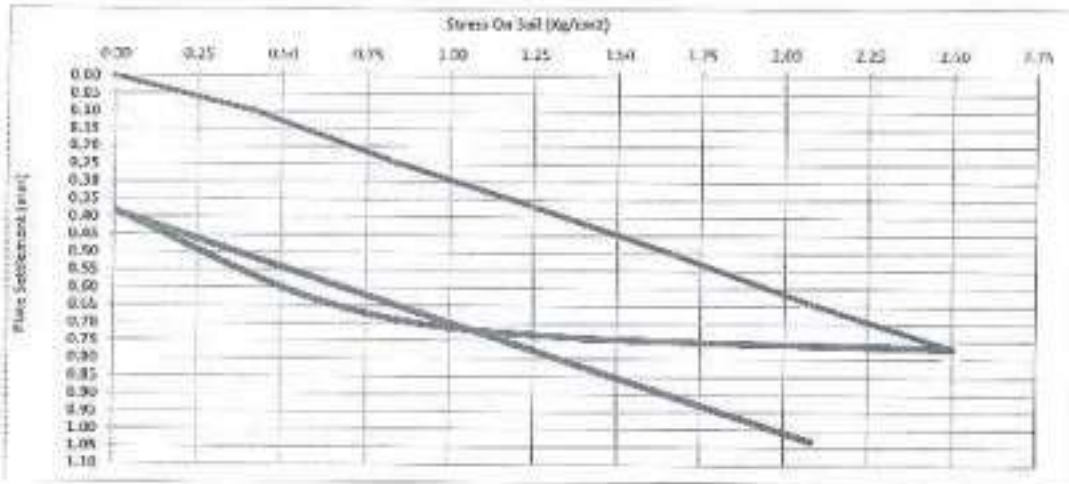
Loading Stage (2)

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	19.50	0.50	19.54	0.46	0.52
1	0.83	19.28	0.72	19.38	0.62	19.40	0.60	0.65
2	1.25	19.15	0.85	19.24	0.76	19.28	0.72	0.78
3	1.67	19.03	0.97	19.11	0.89	19.14	0.86	0.91
4	2.08	18.88	1.12	18.97	1.03	19.05	0.95	1.03



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+550 to 450+575
 Test No. : 03

Nonrepelitive 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/cm ²)	0.00	0.42	0.83	1.25	1.87	2.00	2.50
Settlement (mm)	0.00	0.10	0.24	0.37	0.50	0.64	0.77

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.77	0.73	0.64	0.39

D (mm) = 600	S1 (mm) = 4.22	S2(mm) = 0.53	ΔS = 0.32
Ev1 (kg/cm ²) = (0.75*D*Δσ)/ΔS	1427		

Ev2/Ev1 = 1.0

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.87	2.08
Settlement (mm)	0.39	0.52	0.65	0.78	0.91	1.03

D (mm) = 600	S1 (mm) = 0.62	S2(mm) = 8.95	ΔS = 0.31
Ev2 (kg/cm ²) = (0.75*D*Δσ)/ΔS	1451		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+575 to 450+600
 Test No. : 04

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	19.90	0.10	19.91	0.09	19.86	0.14	0.11
2	0.83	19.76	0.24	19.80	0.20	19.72	0.28	0.24
3	1.25	19.60	0.40	19.68	0.32	19.62	0.38	0.37
4	1.67	19.46	0.54	19.54	0.46	19.50	0.50	0.50
5	2.08	19.31	0.69	19.41	0.59	19.35	0.65	0.64
6	2.50	19.14	0.86	19.28	0.72	19.21	0.79	0.79

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.14	0.86	19.28	0.72	19.21	0.79	0.79
2	1.25	19.20	0.80	19.35	0.65	19.25	0.75	0.73
3	0.625	19.29	0.71	19.47	0.53	19.36	0.64	0.63
4	0.01	19.58	0.42	19.78	0.22	19.59	0.41	0.35

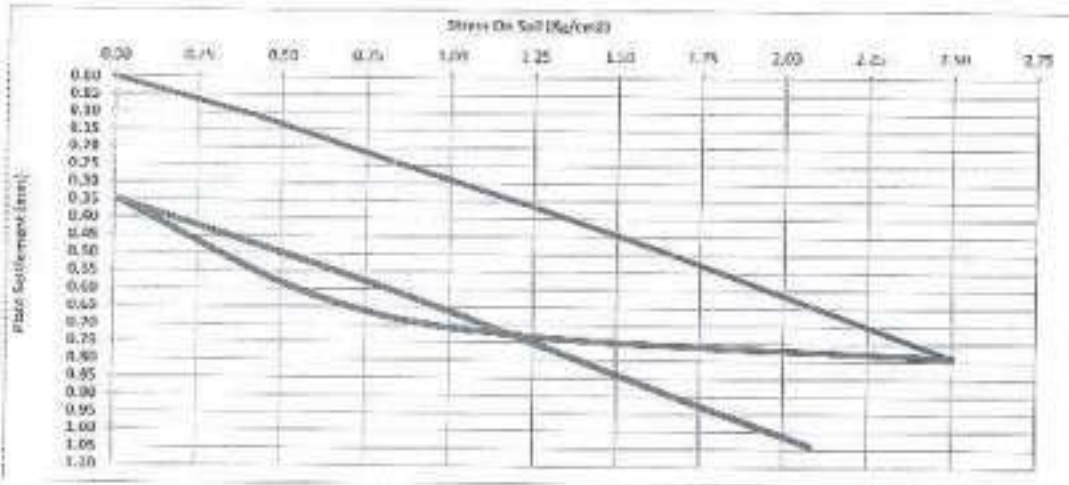
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.50	0.50	19.62	0.38	19.46	0.54	0.47
1	0.83	19.39	0.61	19.48	0.52	19.32	0.68	0.60
2	1.25	19.26	0.74	19.32	0.68	19.17	0.83	0.75
3	1.67	19.12	0.88	19.16	0.84	19.02	0.98	0.90
4	2.08	18.96	1.04	19.02	0.98	18.90	1.10	1.04



Company Name : Sam Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamiola to Foka
 Test Date : 19/07/2023
 report date : 20/07/2023
 Location : Station 450+575 to 450+600
 Test No. : 04

Nonrepetitive Static Plate Load Tests of Soils
7 IN 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	0.11	0.24	0.37	0.50	0.64	0.79

D (mm) = 600	S1 (mm) = 0.21	S2 (mm) = 0.33	ΔS = 0.31
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1436		

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)	0.35	0.47	0.60	0.75	0.90	1.04

D (mm) = 600	S1 (mm) = 0.66	S2 (mm) = 0.93	ΔS = 0.35
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1288		

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)	0.79	0.73	0.63	0.35

Ev2/Ev1 =	0.9
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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 : Sun Rise Construction

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (8)
- 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 : (450+600 to 450+650)
Test Date : 20/07/2023
Report Date : 22/07/2023
Type of soil : —
Test level : Sub ballast
Report No. : 267:268

Dear Gentleman,

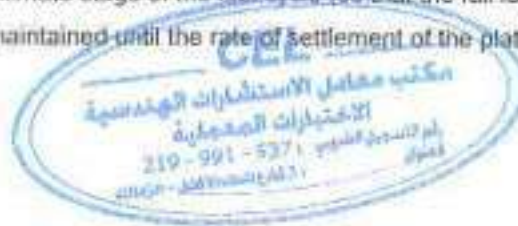
According to the above mentioned subject the test performed as follows:-

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

Type of soil: Sub ballast

- Job requirement: $E_{v2} > E_{v1} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	20/07/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	450+600	450+625	1430	1245	0.9
2	450+625	450+650	1308	1355	1.0

Signature / 
 مكتب معامل الاستشارات الهندسية
 الاستشارات المعمارية
 رقم الترخيص: 239-991-537
 القاهرة - الجيزة - الزمالة

Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 20/07/2023
 report date : 22/07/2023
 Location : Station 450+600 to 450+625
 Test No. : 01

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	19.89	0.11	19.92	0.08	19.85	0.15	0.11
2	0.83	19.77	0.23	19.76	0.24	19.70	0.30	0.26
3	1.25	19.69	0.31	19.63	0.37	19.63	0.37	0.35
4	1.67	19.55	0.45	19.45	0.55	19.45	0.55	0.52
5	2.08	19.40	0.60	19.34	0.66	19.30	0.70	0.65
6	2.50	19.29	0.71	19.12	0.88	19.16	0.84	0.81

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.29	0.71	19.12	0.88	19.16	0.84	0.81
2	1.25	19.34	0.66	19.19	0.81	19.24	0.76	0.74
3	0.625	19.45	0.55	19.31	0.69	19.38	0.62	0.62
4	0.01	19.76	0.24	19.62	0.38	19.67	0.33	0.32

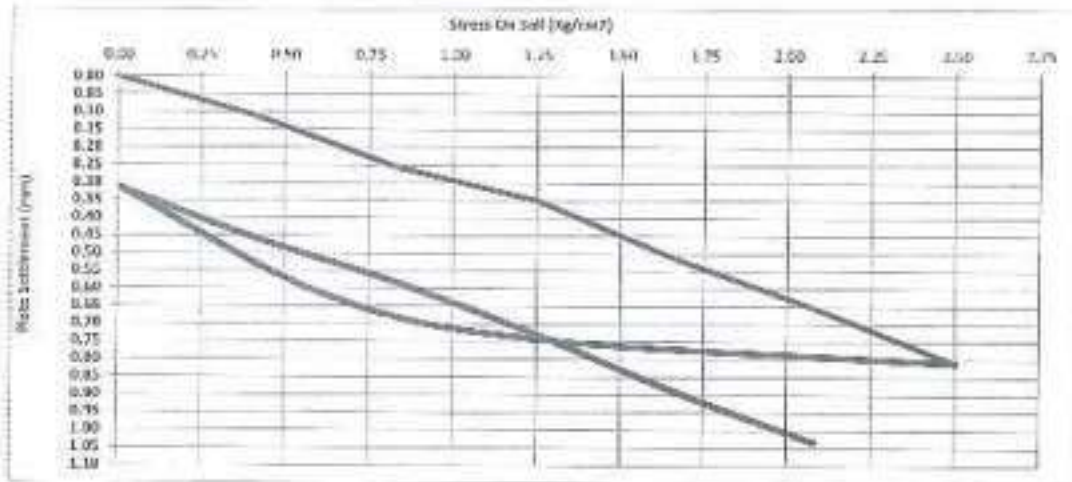
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.61	0.39	19.49	0.51	19.52	0.48	0.46
1	0.83	19.49	0.51	19.37	0.63	19.39	0.61	0.58
2	1.25	19.33	0.67	19.25	0.75	19.23	0.77	0.73
3	1.67	19.15	0.85	19.10	0.90	19.07	0.93	0.89
4	2.08	19.01	0.99	18.97	1.03	18.92	1.06	1.03



Company Name: Sun Rise Construction
 Project: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date: 20/07/2023
 report date: 22/07/2023
 Location: Station 450+000 to 450+025
 Test No.: 01

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	2.50
Settlement (mm)	0.00	0.11	0.26	0.35	0.52	0.65	0.81

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)	0.81	0.74	0.62	0.32

D (mm) = 600	S1 (mm) = 0.23	S2 (mm) = 0.54	ΔS = 0.31
Ev1 (kg/cm2) = (0.78*D*Δσ)/ΔS	1439		

Ev2/Ev1 = 0.9

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)	0.32	0.46	0.58	0.73	0.89	1.03

D (mm) = 600	S1 (mm) = 0.56	S2 (mm) = 0.92	ΔS = 0.36
Ev2 (kg/cm2) = (0.73*D*Δσ)/ΔS	1245		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 20/07/2023
 report date : 22/07/2023
 Location : Station 450+625 to 450+650
 Test No. : 02

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	19.81	0.19	19.86	0.14	0.16
2	0.83	19.70	0.30	19.66	0.34	19.74	0.26	0.30
3	1.25	19.55	0.45	19.49	0.51	19.59	0.41	0.46
4	1.67	19.42	0.58	19.37	0.63	19.43	0.57	0.59
5	2.08	19.26	0.74	19.27	0.73	19.32	0.68	0.72
6	2.50	19.14	0.86	19.09	0.91	19.16	0.84	0.87

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.14	0.86	19.09	0.91	19.16	0.84	0.87
2	1.25	19.19	0.81	19.15	0.85	19.24	0.76	0.81
3	0.625	19.32	0.68	19.28	0.72	19.30	0.70	0.70
4	0.01	19.54	0.46	19.58	0.42	19.62	0.38	0.42

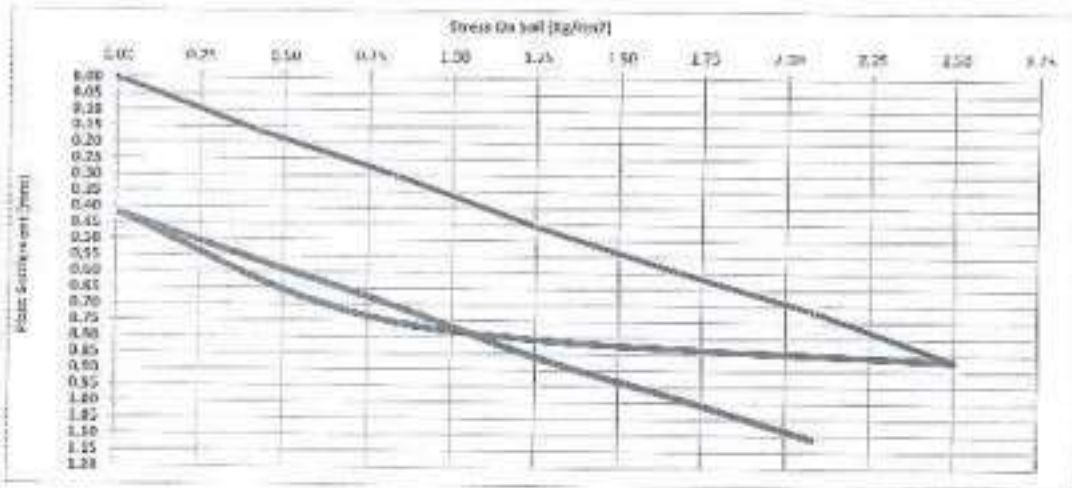
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.40	0.60	19.43	0.57	19.48	0.52	0.56
1	0.83	19.26	0.74	19.28	0.72	19.35	0.65	0.70
2	1.25	19.12	0.88	19.10	0.90	19.20	0.80	0.86
3	1.67	19.00	1.00	18.97	1.03	19.08	0.92	0.98
4	2.08	18.89	1.11	18.83	1.17	18.95	1.05	1.11



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
 Test Date : 20/07/2023
 report date : 22/07/2023
 Location : Station 450+625 to 450+650
 Test No. : 02

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	2.50
Settlement (mm)	0.00	0.16	0.30	0.46	0.59	0.72	0.87

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)	0.87	0.61	0.70	0.42

D (mm) = 600	S1 (mm) = 0.37	S2(mm) = 0.62	ΔS = 0.34
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	1388		

Ev2/Ev1 = 1.0

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)	0.42	0.56	0.70	0.86	0.98	1.11

D (mm) = 600	S1 (mm) = 0.68	S2(mm) = 1.01	ΔS = 0.33
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	1355		

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



Company : Sun Rise Construction

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 : (450+650 to 450+ 700)
Test Date : 24/07/2023
Report Date : 25/07/2023
Type of soil : ----
Test level : Sub ballast ,
Report No. : 267:268

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

Type of soil: Sub ballast

- Job requirement: $E_{v2} > 1200 \text{ Kg/cm}^2$ (120 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	24/07/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	450+650	450+675	1329	1855	1.4
2	450+675	450+700	1219	1980	1.6



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 24/07/2023
report date : 25/07/2023
Location : Station 450+650 to 450+675
Test No. : 01

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	19.75	0.25	19.84	0.16	19.82	0.18	0.20
2	0.83	19.63	0.37	19.72	0.28	19.67	0.33	0.33
3	1.25	19.50	0.50	19.59	0.41	19.53	0.47	0.46
4	1.67	19.34	0.66	19.42	0.58	19.40	0.60	0.61
5	2.08	19.21	0.79	19.26	0.74	19.28	0.72	0.75
6	2.50	19.06	0.94	19.12	0.88	19.14	0.86	0.89

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.06	0.94	19.12	0.88	19.14	0.86	0.89
2	1.25	19.12	0.88	19.19	0.81	19.21	0.79	0.83
3	0.825	19.19	0.81	19.25	0.75	19.30	0.70	0.75
4	0.01	19.45	0.55	19.52	0.48	19.65	0.35	0.46

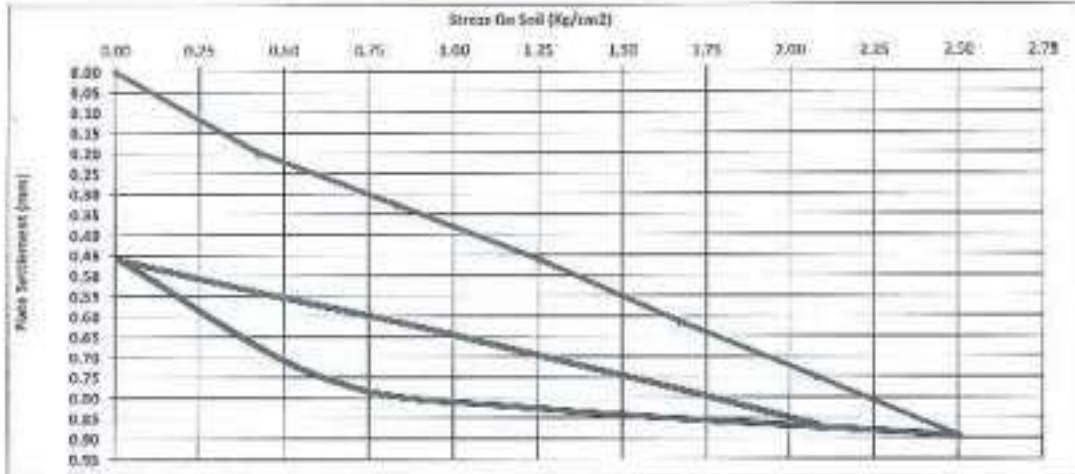
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.38	0.62	19.43	0.57	19.57	0.43	0.54
1	0.83	19.31	0.69	19.35	0.65	19.50	0.50	0.61
2	1.25	19.23	0.77	19.27	0.73	19.41	0.59	0.70
3	1.67	19.16	0.84	19.20	0.80	19.30	0.70	0.78
4	2.08	19.07	0.93	19.11	0.89	19.22	0.78	0.87



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marea Matrouh Priority Sector (8) – Almain to Foka
Test Date : 24/07/2023
report date : 25/07/2023
Location : Station 450+650 to 450+675
Test No. : 01

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	0.20	0.33	0.46	0.61	0.75	0.89

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)	0.89	0.83	0.75	0.46

D (mm) = 600	S1 (mm) = 0.39	S2(mm) = 0.64	ΔS = 0.34
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1328		

$$Ev2/Ev1 = 1.4$$

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)	0.46	0.54	0.81	0.70	0.78	0.87

D (mm) = 600	S1 (mm) = 0.55	S2(mm) = 0.80	ΔS = 0.24
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1855		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Narsin to Foka
 Test Date : 24/07/2023
 report date : 25/07/2023
 Location : Station 450+675 to 450+700
 Test No. : 02

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	19.78	0.22	19.84	0.16	0.19
2	0.83	19.65	0.35	19.63	0.37	19.71	0.29	0.34
3	1.25	19.49	0.51	19.50	0.50	19.55	0.45	0.49
4	1.67	19.31	0.69	19.33	0.67	19.42	0.58	0.65
5	2.08	19.16	0.84	19.18	0.82	19.25	0.75	0.80
6	2.50	18.98	1.02	19.00	1.00	19.13	0.87	0.96

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.98	1.02	19.00	1.00	19.13	0.87	0.96
2	1.25	19.05	0.95	19.09	0.91	19.20	0.80	0.89
3	0.625	19.14	0.86	19.17	0.83	19.28	0.72	0.80
4	0.01	19.36	0.64	19.43	0.57	19.53	0.47	0.56

Loading Stage (2)

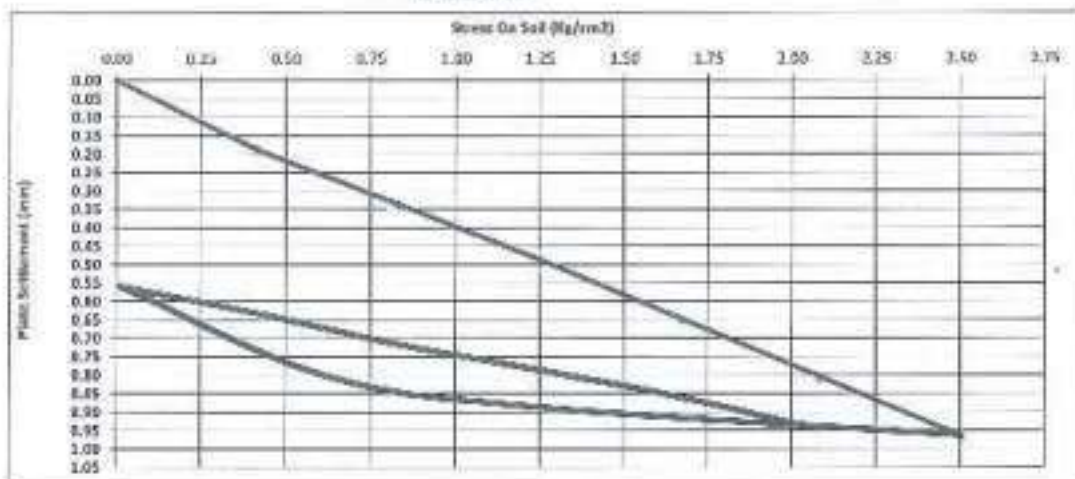
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.29	0.71	19.36	0.64	19.45	0.55	0.63
1	0.83	19.20	0.80	19.28	0.72	19.37	0.63	0.72
2	1.25	19.13	0.87	19.21	0.79	19.30	0.70	0.79
3	1.67	19.05	0.95	19.15	0.85	19.22	0.78	0.86
4	2.08	18.96	1.04	19.08	0.92	19.12	0.88	0.95



Company Name
Project
Test Date
report date
Location
Test No.

: Sun Rise Construction
: Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
: 24/07/2023
: 25/07/2023
: Station 450+675 to 450+700
: 02

Nonrepetitive Static Plate Load Tests of Soils
Z IN 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	0.19	0.34	0.49	0.65	0.80	0.96

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1788	0
Stress (Kg/cm2)	2.50	1.25	0.625	0.01
Settlement (mm)	0.96	0.89	0.80	0.50

D (mm) = 600	S1 (mm) = 0.31	S2(mm) = 0.86	ΔS = 0.37
Ev1 (kg/cm2) = $(0.75 \cdot D^2 \cdot \Delta s) / \Delta S$	1219		

Ev2/Ev1 = 1.6

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)	0.56	0.63	0.72	0.79	0.86	0.95

D (mm) = 600	S1 (mm) = 0.65	S2(mm) = 0.89	ΔS = 0.23
Ev2 (kg/cm2) = $(0.75 \cdot D^2 \cdot \Delta s) / \Delta S$	1980		

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 (smax) (kg/cm²)

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



Company : Sun Rise Construction

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 : (449+200 to 449+400)
Test Date : 14/06/2023
Report Date : 15/06/2023
Type of soil : —
Test level : Sub ballast .
Report No. : 240:247

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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	15/06/2023
- 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	$E_{v1} \text{ (kg/cm}^2\text{)}$	$E_{v2} \text{ (kg/cm}^2\text{)}$	
1	449+200	449+225	1331	1507	1.1
2	449+225	449+250	1390	1490	1.1
3	449+250	449+275	1451	1689	1.2
4	449+275	449+300	1397	2029	1.5
5	449+300	449+325	1408	1432	1.0
6	449+325	449+350	1152	1432	1.2
7	449+350	449+375	1483	1432	1.0
8	449+375	449+400	1316	1432	1.1

Signature /  مكتب معامل الاستشارات الهندسية
 ٢١٩ - ٩٩١ - ٥٣٧٠
 ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٣١
 ٢٧٣٦٣٠٩٣ - ٢٧٣٦٧٣١

Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+200 to 449+225
 Test No. : 01

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	19.82	0.18	19.89	0.11	19.84	0.16	0.15
2	0.83	19.66	0.34	19.78	0.22	19.70	0.30	0.29
3	1.25	19.52	0.48	19.63	0.37	19.55	0.45	0.43
4	1.67	19.40	0.60	19.50	0.50	19.38	0.62	0.57
5	2.08	19.31	0.69	19.37	0.63	19.22	0.78	0.70
6	2.50	19.13	0.87	19.24	0.76	19.09	0.91	0.85

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.13	0.87	19.24	0.76	19.09	0.91	0.85
2	1.25	19.20	0.80	19.31	0.69	19.16	0.84	0.78
3	0.625	19.28	0.72	19.43	0.57	19.25	0.75	0.68
4	0.01	19.60	0.40	19.72	0.28	19.57	0.43	0.37

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.44	0.56	19.54	0.46	19.42	0.58	0.53
1	0.83	19.27	0.73	19.36	0.64	19.28	0.72	0.70
2	1.25	19.12	0.88	19.21	0.79	19.15	0.85	0.84
3	1.67	19.01	0.99	19.12	0.88	19.04	0.96	0.94
4	2.08	18.89	1.11	19.04	0.96	18.93	1.07	1.05



Nonrepetitive Static Plate Load Tests of Soils

DIN 18134



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alalam to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+225 to 449+250
 Test No. : 02

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	19.78	0.22	19.85	0.15	19.83	0.17	0.18
2	0.83	19.62	0.38	19.74	0.26	19.70	0.30	0.31
3	1.25	19.50	0.50	19.59	0.41	19.57	0.43	0.45
4	1.67	19.36	0.64	19.46	0.54	19.43	0.57	0.58
5	2.08	19.23	0.77	19.31	0.69	19.30	0.70	0.72
6	2.50	19.11	0.89	19.19	0.81	19.17	0.83	0.84

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.11	0.89	19.19	0.81	19.17	0.83	0.84
2	1.25	19.18	0.82	19.29	0.71	19.25	0.75	0.76
3	0.825	19.32	0.68	19.40	0.60	19.38	0.62	0.63
4	0.01	19.65	0.35	19.73	0.27	19.71	0.29	0.30

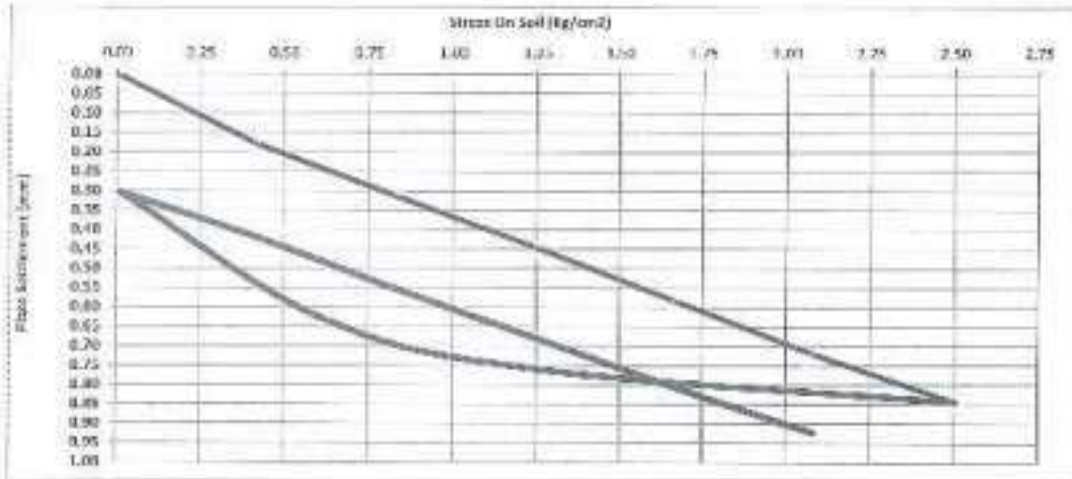
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.50	0.50	19.63	0.37	19.61	0.39	0.42
1	0.83	19.37	0.63	19.50	0.50	19.47	0.53	0.55
2	1.25	19.26	0.74	19.38	0.62	19.32	0.68	0.68
3	1.67	19.14	0.86	19.24	0.76	19.20	0.80	0.81
4	2.08	19.01	0.99	19.14	0.86	19.08	0.92	0.92



Company Name : Sin Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (5) - Alamein to Foka
 Test Date : 14/08/2023
 report date : 15/08/2023
 Location : Station 449+225 to 449+250
 Test No. : 02

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	2.50
Settlement (mm)	0.00	0.18	0.31	0.45	0.58	0.72	0.84

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)	0.84	0.76	0.63	0.30

D (mm) = 600	S1 (mm) = 6.29	S2 (mm) = 0.61	ΔS = 0.32
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1390		

$$Ev2/Ev1 = 1.1$$

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)	0.30	0.42	0.55	0.68	0.81	0.92

D (mm) = 600	S1 (mm) = 0.63	S2 (mm) = 0.82	ΔS = 0.30
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1498		

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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 14/06/2023
report date : 15/06/2023
Location : Station 449+250 to 449+275
Test No. : 03

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	19.88	0.12	19.80	0.20	19.82	0.18	0.17
2	0.83	19.77	0.23	19.66	0.34	19.69	0.31	0.29
3	1.25	19.62	0.38	19.54	0.46	19.57	0.43	0.42
4	1.67	19.51	0.49	19.39	0.61	19.43	0.57	0.56
5	2.08	19.36	0.64	19.31	0.69	19.32	0.68	0.67
6	2.50	19.22	0.78	19.17	0.83	19.16	0.84	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	19.22	0.78	19.17	0.83	19.16	0.84	0.82
2	1.25	19.30	0.70	19.26	0.74	19.25	0.75	0.73
3	0.625	19.45	0.55	19.39	0.61	19.37	0.63	0.60
4	0.01	19.70	0.30	19.68	0.32	19.68	0.32	0.31

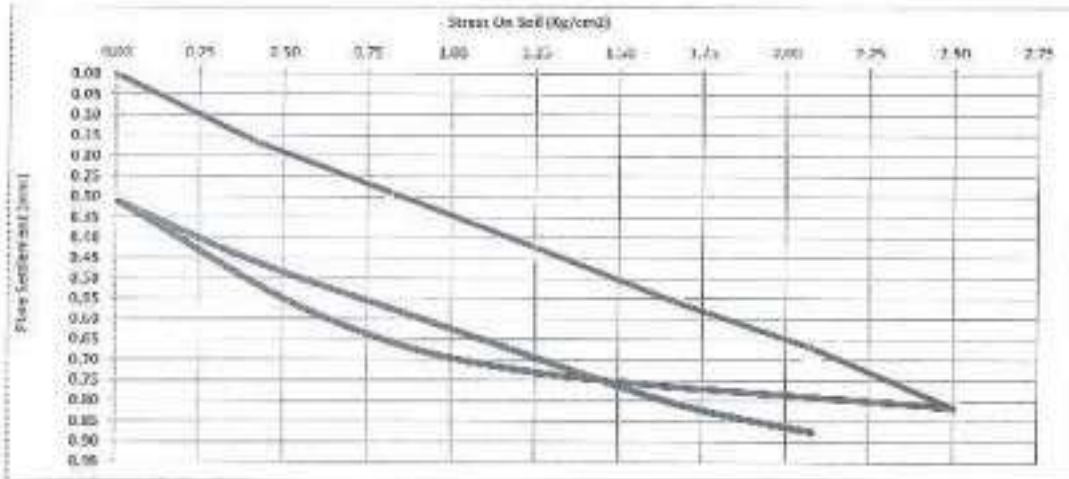
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.59	0.41	19.54	0.46	19.49	0.51	0.46
1	0.83	19.47	0.53	19.43	0.57	19.37	0.63	0.58
2	1.25	19.36	0.64	19.32	0.68	19.24	0.76	0.69
3	1.67	19.24	0.76	19.19	0.81	19.15	0.85	0.81
4	2.08	19.16	0.84	19.13	0.87	19.08	0.92	0.88



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+250 to 449+275
 Test No. : 03

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	2.50
Settlement (mm)	0.00	0.17	0.29	0.42	0.56	0.67	0.82

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)	0.82	0.73	0.60	0.31

D (mm) = 600	S1 (mm) = 0.27	S2 (mm) = 0.58	ΔS = 0.31
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1451		

Ev2/Ev1 = 1.2

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)	0.31	0.48	0.56	0.69	0.81	0.88

D (mm) = 600	S1 (mm) = 0.53	S2 (mm) = 0.82	ΔS = 0.27
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1689		

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 (smad) (kg/cm²)

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



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 14/06/2023
report date : 15/06/2023
Location : Station 449+275 to 449+300
Test No. : 04

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	19.81	0.19	19.85	0.15	0.17
2	0.83	19.71	0.29	19.70	0.30	19.73	0.27	0.29
3	1.25	19.54	0.46	19.56	0.44	19.61	0.39	0.43
4	1.67	19.46	0.54	19.40	0.60	19.46	0.54	0.56
5	2.08	19.35	0.65	19.26	0.74	19.31	0.69	0.69
6	2.50	19.24	0.76	19.14	0.86	19.19	0.81	0.81

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.24	0.76	19.14	0.86	19.19	0.81	0.81
2	1.25	19.28	0.72	19.09	0.91	19.23	0.77	0.80
3	0.625	19.34	0.66	19.16	0.84	19.28	0.72	0.74
4	0.01	19.61	0.39	19.40	0.60	19.59	0.41	0.47

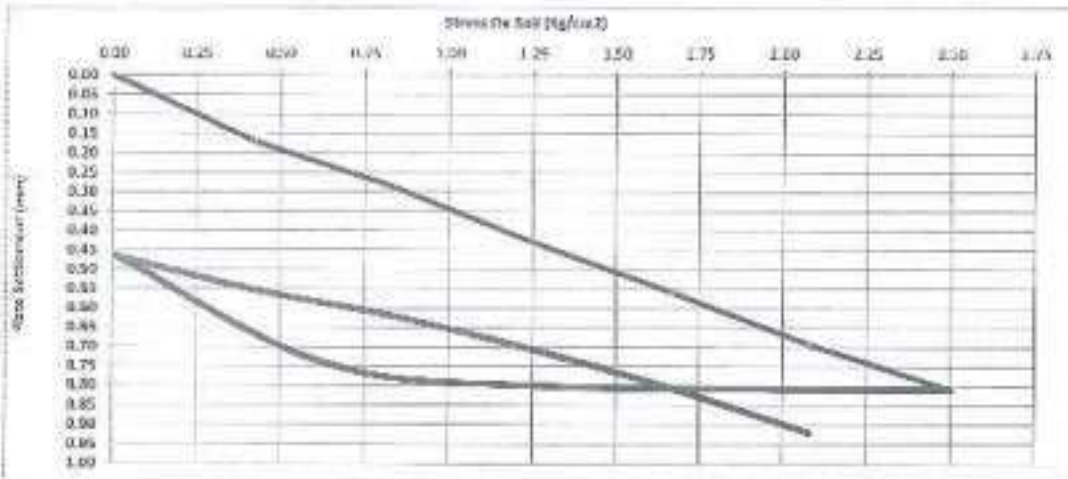
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.30	0.70	19.51	0.49	0.55
1	0.83	19.45	0.55	19.26	0.74	19.43	0.57	0.62
2	1.25	19.37	0.63	19.19	0.81	19.32	0.68	0.71
3	1.67	19.28	0.72	19.11	0.89	19.19	0.81	0.81
4	2.08	19.19	0.81	19.02	0.98	19.03	0.97	0.92



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Solihna to Marsa Matruh Priority Sector (8) - Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+275 to 449+300
 Test No. : 04

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	0.17	0.29	0.43	0.56	0.69	0.81

UnLoading (T)	1	2	3	4
Stage(Kg)	7065	3533	1760	0
Stress (Kg/cm²)	2.00	1.25	0.625	0.01
Settlement (mm)	0.81	0.60	0.74	0.47

D (mm) = 600	S1 (mm) = 0.26	S2 (mm) = 4.59	ΔS = 0.32
Ev1 (kg/cm²) = (0.75 * D² * Δσ) / ΔS	1397		

Ev2/Ev1 = 1.5

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)	0.47	0.55	0.62	0.71	0.81	0.92

D (mm) = 600	S1 (mm) = 0.81	S2 (mm) = 0.63	ΔS = 0.22
Ev2 (kg/cm²) = (0.75 * D² * Δσ) / ΔS	2029		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sakhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+300 to 449+325
 Test No. : 05

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	19.86	0.14	19.88	0.12	0.15
2	0.83	19.69	0.31	19.74	0.26	19.77	0.23	0.27
3	1.25	19.55	0.45	19.60	0.40	19.65	0.35	0.40
4	1.67	19.41	0.59	19.47	0.53	19.50	0.50	0.54
5	2.08	19.32	0.68	19.36	0.64	19.34	0.66	0.66
6	2.50	19.18	0.82	19.21	0.79	19.24	0.76	0.79

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.18	0.82	19.21	0.79	19.24	0.76	0.79
2	1.25	19.27	0.73	19.30	0.70	19.33	0.67	0.70
3	0.625	19.39	0.61	19.43	0.57	19.45	0.55	0.58
4	0.01	19.68	0.32	19.72	0.28	19.78	0.22	0.27

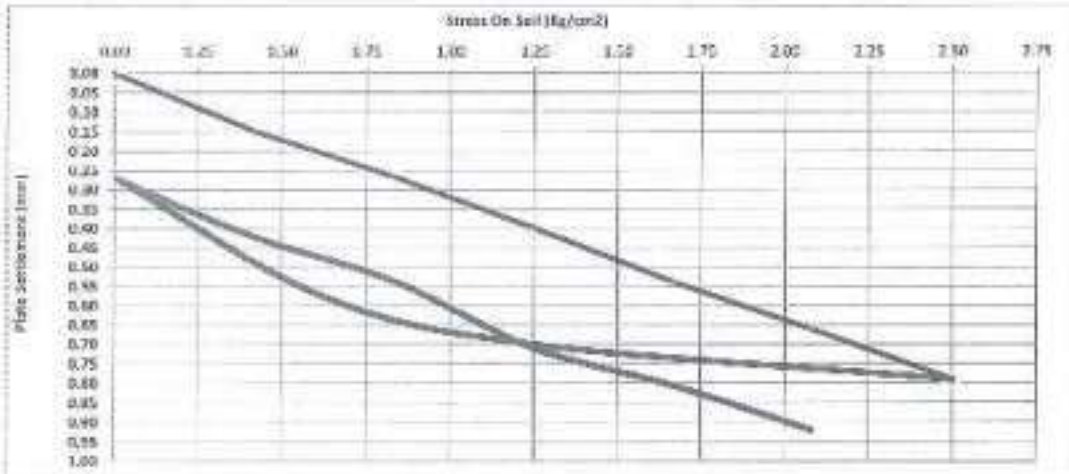
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.52	0.48	19.59	0.41	19.62	0.38	0.42
1	0.83	19.40	0.60	19.46	0.54	19.53	0.47	0.54
2	1.25	19.28	0.72	19.31	0.69	19.28	0.72	0.71
3	1.67	19.16	0.84	19.19	0.81	19.23	0.77	0.81
4	2.08	19.02	0.98	19.07	0.93	19.15	0.85	0.92



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+300 to 449+325
 Test No. : 05

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/cm ²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.15	0.27	0.40	0.54	0.66	0.79

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.79	0.70	0.58	0.27

D (mm) = 600	S1 (mm) = 0.24	S2 (mm) = 0.96	ΔS = 0.32
Ev1 (kg/cm ²) = (0.75*D*Δs)/ΔS	1408		

$$Ev2/Ev1 = 1.0$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.27	0.42	0.54	0.71	0.81	0.92

D (mm) = 600	S1 (mm) = 0.51	S2 (mm) = 0.83	ΔS = 0.31
Ev2 (kg/cm ²) = (0.75*D*Δs)/ΔS	1432		

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



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) – Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+325 to 449+350
 Test No. : 06

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	19.77	0.23	19.79	0.21	0.20
2	0.83	19.69	0.31	19.65	0.35	19.61	0.39	0.35
3	1.25	19.52	0.48	19.47	0.53	19.48	0.52	0.51
4	1.67	19.33	0.67	19.29	0.71	19.31	0.69	0.69
5	2.08	19.21	0.79	19.17	0.83	19.22	0.78	0.80
6	2.50	19.08	0.92	19.03	0.97	19.06	0.94	0.94

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.08	0.92	19.03	0.97	19.06	0.94	0.94
2	1.25	19.13	0.87	19.09	0.91	19.11	0.89	0.89
3	0.625	19.25	0.75	19.18	0.82	19.20	0.80	0.79
4	0.01	19.60	0.40	19.53	0.47	19.55	0.45	0.44

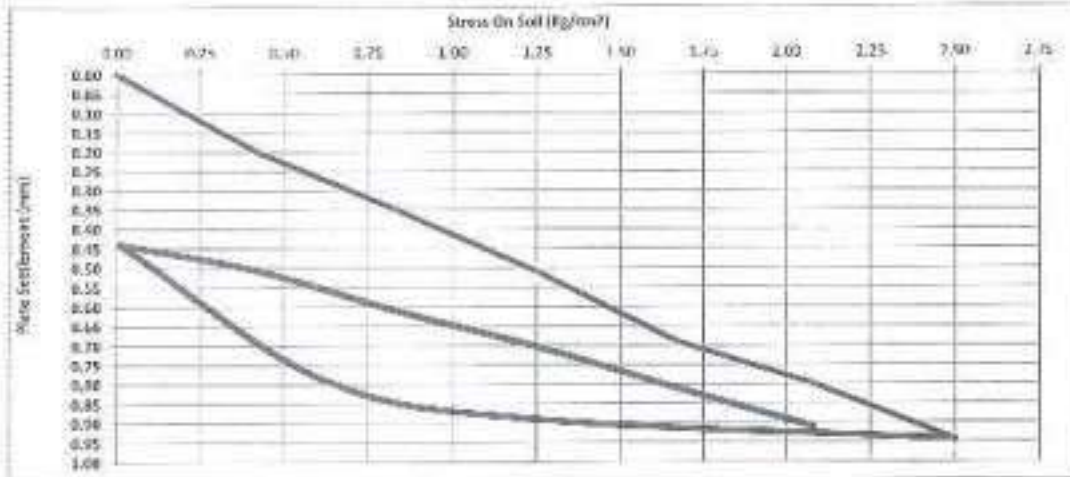
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.47	0.53	19.46	0.54	0.51
1	0.83	19.43	0.57	19.35	0.65	19.39	0.61	0.61
2	1.25	19.32	0.68	19.26	0.74	19.31	0.69	0.70
3	1.67	19.23	0.77	19.14	0.86	19.20	0.80	0.81
4	2.08	19.11	0.89	19.05	0.95	19.11	0.89	0.91



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
 Test Date : 14/06/2023
 report date : 15/06/2023
 Location : Station 449+325 to 449+350
 Test No. : 06

Nonrepelitive 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	0.20	0.36	0.51	0.69	0.80	0.94

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)	0.94	0.69	0.79	0.44

D (mm) = 600	S1 (mm) = 0.32	S2 (mm) = 0.71	ΔS = 0.39
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1152		

Ev2/Ev1 = 1.2

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)	0.44	0.51	0.61	0.70	0.81	0.91

D (mm) = 600	S1 (mm) = 0.51	S2 (mm) = 0.83	ΔS = 0.31
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1432		

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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Soudna to Marsa Matrouh Priority Sector (6) – Alamein to Folka
Test Date : 14/06/2023
report date : 15/06/2023
Location : Station 449+350 to 449+375
Test No. : 07

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	19.73	0.27	19.80	0.20	0.23
2	0.83	19.64	0.36	19.57	0.43	19.67	0.33	0.37
3	1.25	19.51	0.49	19.43	0.57	19.52	0.48	0.51
4	1.67	19.39	0.61	19.30	0.70	19.43	0.57	0.63
5	2.08	19.27	0.73	19.21	0.79	19.30	0.70	0.74
6	2.50	19.15	0.85	19.09	0.91	19.19	0.81	0.86

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.15	0.85	19.09	0.91	19.19	0.81	0.86
2	1.25	19.24	0.76	19.18	0.82	19.27	0.73	0.77
3	0.625	19.37	0.63	19.30	0.70	19.40	0.60	0.64
4	0.01	19.65	0.35	19.60	0.40	19.69	0.31	0.35

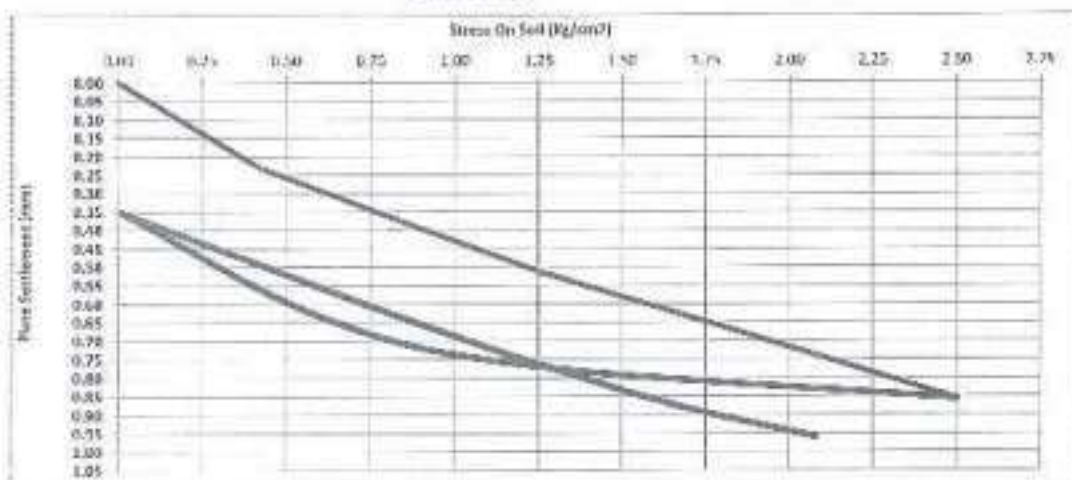
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.51	0.49	19.46	0.54	19.55	0.45	0.49
1	0.83	19.38	0.62	19.31	0.69	19.41	0.59	0.63
2	1.25	19.24	0.76	19.19	0.81	19.28	0.72	0.76
3	1.67	19.12	0.88	19.10	0.90	19.15	0.85	0.88
4	2.08	19.04	0.96	19.00	1.00	19.08	0.92	0.96



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamin to Foka
Test Date : 14/06/2023
Report Date : 15/06/2023
Location : Station 449+350 to 449+375
Test No. : 07

**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	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.23	0.37	0.51	0.63	0.74	0.86

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)	0.86	0.77	0.64	0.35

D (mm) = 600	S1 (mm) = 0.35	S2 (mm) = 0.86	ΔS = 0.30
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1483		

Ev2/Ev1 = 1.0

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	1.25	1.67	2.08
Settlement (mm)	0.35	0.49	0.63	0.76	0.88	0.96

D (mm) = 600	S1 (mm) = 0.91	S2 (mm) = 0.81	ΔS = 0.31
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1432		

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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (5) – Alamein to Foka
Test Date : 14/06/2023
report date : 15/06/2023
Location : Station 449+375 to 449+400
Test No. : 08

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	19.73	0.27	19.77	0.23	19.71	0.29	0.26
2	0.83	19.60	0.40	19.65	0.35	19.52	0.48	0.41
3	1.25	19.43	0.57	19.51	0.49	19.41	0.59	0.55
4	1.67	19.32	0.68	19.37	0.63	19.25	0.75	0.69
5	2.08	19.18	0.82	19.24	0.76	19.13	0.87	0.82
6	2.50	19.05	0.95	19.11	0.89	18.96	1.04	0.96

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.05	0.95	19.11	0.89	18.96	1.04	0.96
2	1.25	19.15	0.85	19.19	0.81	19.06	0.94	0.87
3	0.625	19.28	0.72	19.32	0.68	19.17	0.83	0.74
4	0.01	19.61	0.39	19.64	0.36	19.49	0.51	0.42

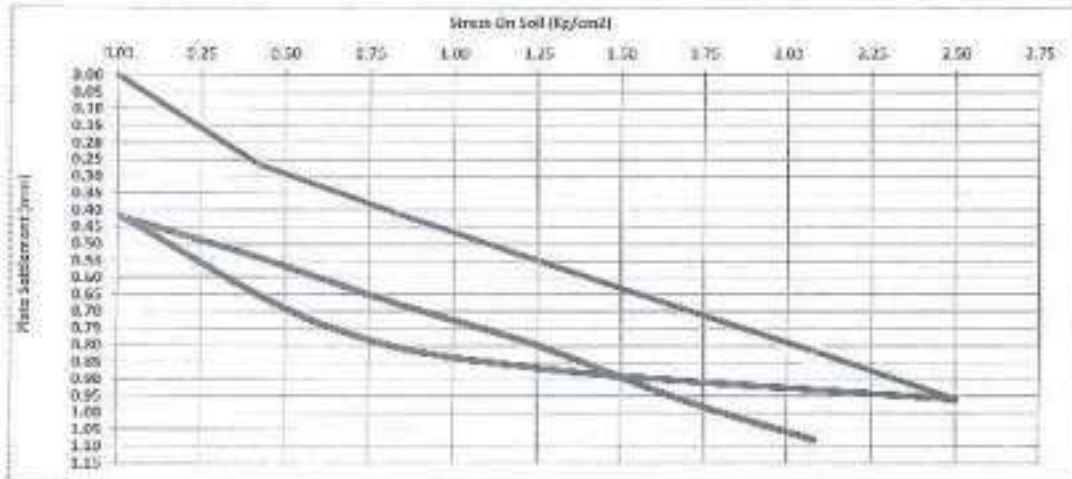
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.49	0.51	19.54	0.46	19.35	0.65	0.54
1	0.83	19.34	0.66	19.40	0.60	19.23	0.77	0.68
2	1.25	19.20	0.80	19.31	0.69	19.09	0.91	0.80
3	1.67	19.07	0.93	19.17	0.83	18.89	1.11	0.96
4	2.08	18.94	1.06	19.01	0.99	18.81	1.19	1.08



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (B) - Alamein to Foka
Test Date : 14/06/2023
report date : 15/06/2023
Location : Station 449+375 to 449+400
Test No. : 08

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	2.50
Settlement (mm)	0.00	0.26	0.41	0.55	0.69	0.82	0.96

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)	0.96	0.87	0.74	0.42

D (mm) = 600	S1 (mm) = 0.38	S2 (mm) = 0.71	ΔS = 0.33
Ev1 (kg/cm²) = (0.75 * D * Δσ) / ΔS	1361		

Ev2/Ev1 =	1.1
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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)	0.42	0.54	0.65	0.80	0.96	1.08

D (mm) = 600	S1 (mm) = 0.51	S2 (mm) = 0.83	ΔS = 0.31
Ev2 (kg/cm²) = (0.75 * D * Δσ) / ΔS	1432		

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 : Sun Rise Construction

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 : (449+500 to 449+750)
Test Date : 15/06/2023
Report Date : 17/06/2023
Type of soil : ———
Test level : Sub ballast .
Report No. : 248:257

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. Clear 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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	15/06/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	449+500	449+525	1076	1638	1.5
2	449+525	449+550	1324	1544	1.2
3	449+550	449+575	1442	1761	1.2
4	449+575	449+600	1424	1246	0.9
5	449+600	449+625	1341	1344	1.0
6	449+625	449+650	1183	2444	2.1
7	449+650	449+675	1483	1519	1.0
8	449+675	449+700	1277	1596	1.2
9	449+700	449+725	1329	1789	1.3
10	449+725	449+750	1395	1602	1.1



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+500 to 449+525
Test No. : 01

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	19.88	0.12	19.86	0.14	0.14
2	0.83	19.62	0.38	19.75	0.25	19.69	0.31	0.31
3	1.25	19.36	0.64	19.63	0.37	19.57	0.43	0.48
4	1.67	19.22	0.78	19.42	0.58	19.38	0.62	0.66
5	2.08	19.05	0.95	19.20	0.80	19.18	0.82	0.86
6	2.50	18.88	1.12	19.12	0.88	19.10	0.90	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	18.88	1.12	19.12	0.88	19.10	0.90	0.97
2	1.25	18.96	1.04	19.20	0.80	19.19	0.81	0.88
3	0.625	19.14	0.86	19.31	0.69	19.27	0.73	0.78
4	0.01	19.40	0.60	19.61	0.39	19.59	0.41	0.47

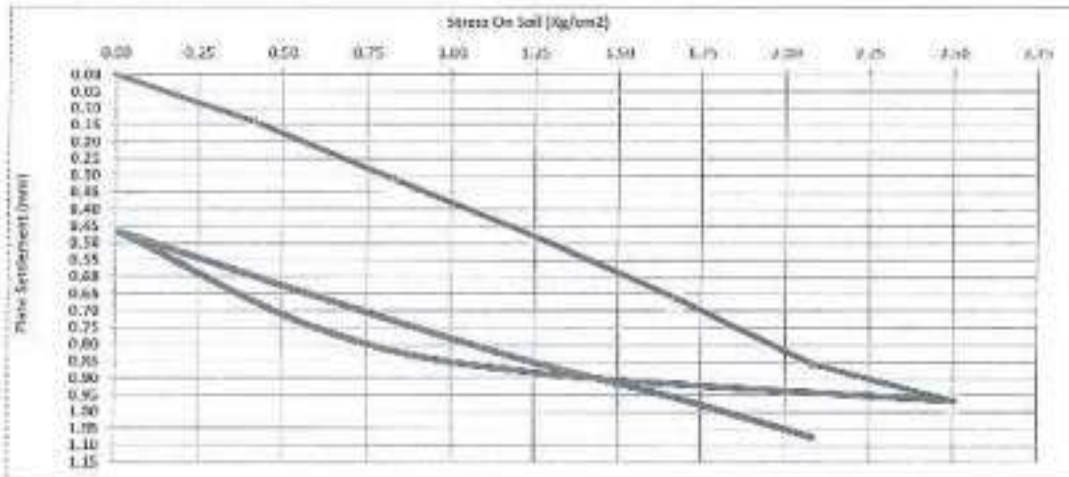
Loading Stage (2)

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	19.48	0.52	19.45	0.55	0.60
1	0.83	19.19	0.81	19.33	0.67	19.29	0.71	0.73
2	1.25	19.07	0.93	19.22	0.78	19.15	0.85	0.85
3	1.67	19.00	1.00	19.10	0.90	19.03	0.97	0.96
4	2.08	18.89	1.11	18.98	1.02	18.91	1.09	1.07



Company Name : Sun Ede Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+500 to 449+525
 Test No. : 01

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	2.50
Settlement (mm)	0.00	0.14	0.31	0.48	0.66	0.86	0.97

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)	0.97	0.88	0.76	0.47

D (mm) = 600	S1 (mm) = 0.26	S2 (mm) = 0.70	ΔS = 0.42
Ev1 (kg/cm2) = (0.75'D*Δσ)/ΔS	1076		

$$Ev2/Ev1 = 1.5$$

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)	0.47	0.60	0.73	0.85	0.96	1.07

D (mm) = 600	S1 (mm) = 0.70	S2 (mm) = 0.98	ΔS = 0.27
Ev2 (kg/cm2) = (0.75'D*Δσ)/ΔS	1638		



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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+525 to 449+550
Test No. : 02

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	19.82	0.18	19.86	0.14	19.91	0.09	0.14
2	0.83	19.69	0.31	19.74	0.26	19.76	0.24	0.27
3	1.25	19.50	0.50	19.56	0.44	19.63	0.37	0.44
4	1.67	19.45	0.55	19.43	0.57	19.46	0.54	0.55
5	2.08	19.25	0.75	19.29	0.71	19.33	0.67	0.71
6	2.50	19.08	0.92	19.10	0.90	19.17	0.83	0.88

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.08	0.92	19.10	0.90	19.17	0.83	0.88
2	1.25	19.02	0.98	19.19	0.81	19.26	0.74	0.84
3	0.825	19.25	0.75	19.30	0.70	19.36	0.64	0.70
4	0.01	19.61	0.39	19.62	0.38	19.68	0.32	0.38

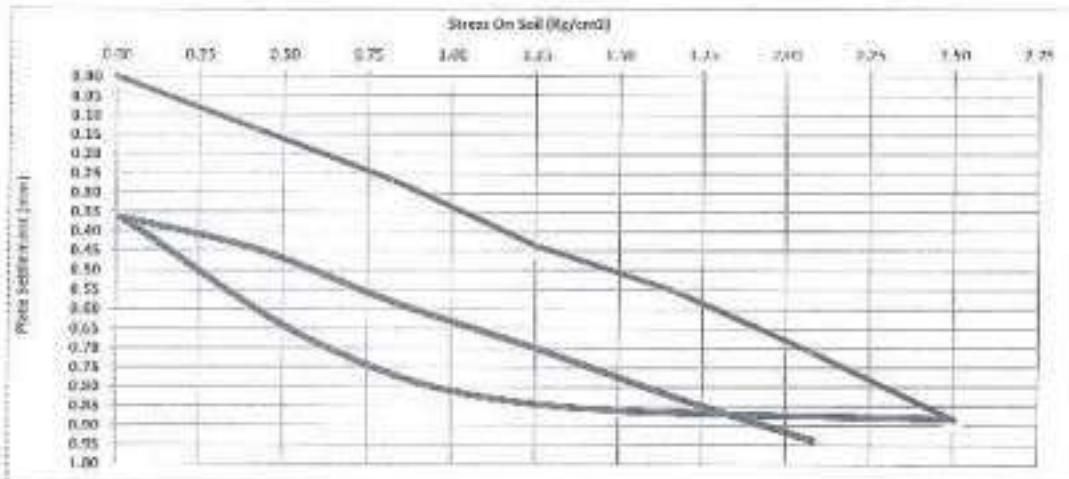
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.49	0.51	19.58	0.42	19.59	0.41	0.45
1	0.83	19.36	0.64	19.45	0.55	19.44	0.56	0.58
2	1.25	19.23	0.77	19.32	0.68	19.35	0.65	0.70
3	1.67	19.14	0.86	19.17	0.83	19.21	0.79	0.83
4	2.08	19.02	0.98	19.06	0.94	19.11	0.89	0.94



Company Name : Sen Rjao Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+525 to 449+550
 Test No. : 02

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	2.50
Settlement (mm)	0.00	0.14	0.27	0.44	0.55	0.71	0.68

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)	0.68	0.84	0.70	0.36

D (mm) = 600	S1 (mm) = 0.24	S2 (mm) = 0.80	ΔS = 0.34
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1324		

Ev2/Ev1 = 1.2

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)	0.36	0.45	0.55	0.70	0.83	0.94

D (mm) = 600	S1 (mm) = 0.56	S2 (mm) = 0.85	ΔS = 0.29
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1544		

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



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Solhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+550 to 449+575
Test No. : 03

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	19.74	0.26	19.81	0.19	19.68	0.32	0.26
2	0.83	19.60	0.40	19.68	0.32	19.52	0.48	0.40
3	1.25	19.48	0.52	19.52	0.48	19.40	0.60	0.53
4	1.67	19.32	0.68	19.40	0.60	19.30	0.70	0.66
5	2.08	19.21	0.79	19.27	0.73	19.17	0.83	0.78
6	2.50	19.06	0.94	19.14	0.86	19.03	0.97	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	19.06	0.94	19.14	0.86	19.03	0.97	0.92
2	1.25	19.15	0.85	19.22	0.78	19.10	0.90	0.84
3	0.625	19.35	0.65	19.44	0.56	19.26	0.74	0.66
4	0.01	19.64	0.36	19.76	0.24	19.58	0.42	0.34

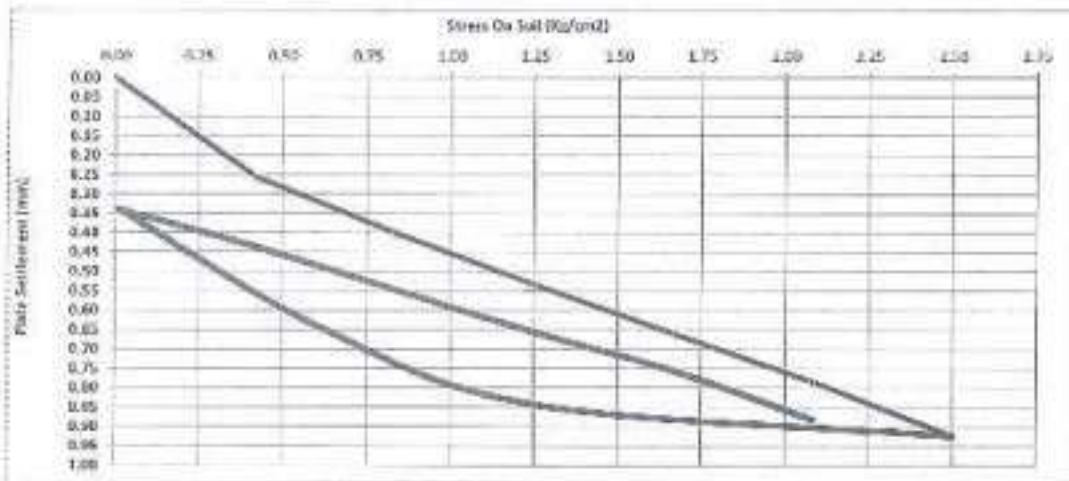
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.67	0.33	19.49	0.51	0.44
1	0.83	19.42	0.58	19.56	0.44	19.38	0.62	0.55
2	1.25	19.30	0.70	19.46	0.54	19.27	0.73	0.66
3	1.67	19.19	0.81	19.37	0.63	19.17	0.83	0.76
4	2.08	19.10	0.90	19.20	0.80	19.06	0.94	0.88



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) - Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+550 to 449+575
Test No. : 03

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	1.26	1.67	2.08	2.50
Settlement (mm)	0.00	0.26	0.40	0.53	0.66	0.78	0.92

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3633	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.92	0.84	0.65	0.34

D (mm) = 500	S1 (mm) = 0.37	S2 (mm) = 0.68	ΔS = 0.31
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	1442		

Ev2/Ev1 =	1.2
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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	1.26	1.67	2.08
Settlement (mm)	0.34	0.44	0.55	0.66	0.76	0.88

D (mm) = 500	S1 (mm) = 0.53	S2 (mm) = 0.76	ΔS = 0.26
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	1761		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)
Δσ = The difference between 0.2 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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (8) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 16/06/2023
 Location : Station 449+575 to 449+600
 Test No. : 04

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	19.77	0.23	19.82	0.18	19.76	0.24	0.22
2	0.83	19.64	0.36	19.67	0.33	19.62	0.38	0.36
3	1.25	19.49	0.51	19.53	0.47	19.45	0.55	0.51
4	1.67	19.36	0.64	19.40	0.60	19.37	0.63	0.62
5	2.08	19.25	0.75	19.28	0.72	19.26	0.74	0.74
6	2.50	19.10	0.90	19.13	0.87	19.08	0.92	0.90

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	19.13	0.87	19.08	0.92	0.90
2	1.25	19.18	0.82	19.21	0.79	19.17	0.83	0.81
3	0.625	19.30	0.70	19.34	0.66	19.28	0.72	0.69
4	0.01	19.61	0.39	19.66	0.34	19.60	0.40	0.38

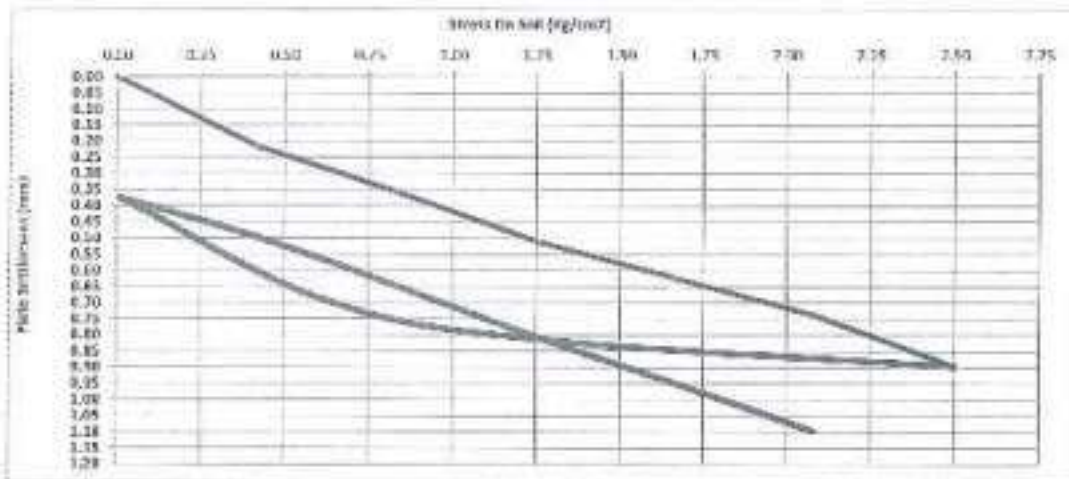
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.48	0.52	19.54	0.46	19.49	0.51	0.50
1	0.83	19.34	0.66	19.39	0.61	19.33	0.67	0.65
2	1.25	19.19	0.81	19.24	0.76	19.15	0.85	0.81
3	1.67	19.04	0.96	19.10	0.90	19.01	0.99	0.95
4	2.08	18.89	1.11	18.97	1.03	18.85	1.15	1.10



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sakhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 16/06/2023
 Location : Station 449+575 to 449+600
 Test No : 84

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	7068
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.22	0.38	0.51	0.62	0.74	0.90

UnLoading (1)	1	2	3	4
Stage(Kg)	7068	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.90	0.81	0.69	0.38

D (mm) = 600	S1 (mm) = 0.38	S2 (mm) = 0.62	ΔS = 0.32
Ev1 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1424		

$$Ev2/Ev1 = 0.9$$

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)	0.38	0.60	0.65	0.81	0.90	1.10

D (mm) = 600	S1 (mm) = 0.62	S2 (mm) = 0.96	ΔS = 0.36
Ev2 (kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	1248		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the unloading 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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (5) – Namsin to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+600 to 449+625
Test No. : 05

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	19.80	0.20	19.71	0.29	19.75	0.25	0.25
2	0.83	19.66	0.34	19.58	0.42	19.64	0.36	0.37
3	1.25	19.54	0.46	19.43	0.57	19.50	0.50	0.51
4	1.67	19.39	0.61	19.27	0.73	19.35	0.65	0.66
5	2.08	19.28	0.72	19.17	0.83	19.24	0.76	0.77
6	2.50	19.16	0.84	19.03	0.97	19.11	0.89	0.90

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.16	0.84	19.03	0.97	19.11	0.89	0.90
2	1.25	19.25	0.75	19.13	0.87	19.21	0.79	0.80
3	0.625	19.39	0.61	19.26	0.74	19.36	0.64	0.66
4	0.01	19.70	0.30	19.61	0.39	19.67	0.33	0.34

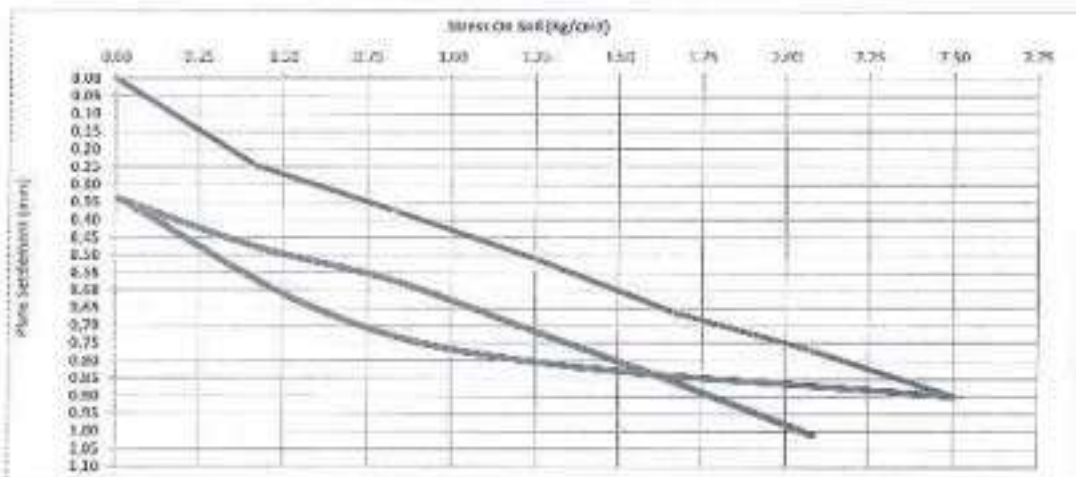
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.50	0.50	19.52	0.48	0.48
1	0.83	19.46	0.54	19.40	0.60	19.42	0.58	0.57
2	1.25	19.33	0.67	19.23	0.77	19.29	0.71	0.72
3	1.67	19.18	0.82	19.09	0.91	19.15	0.85	0.86
4	2.08	19.00	1.00	18.95	1.05	19.02	0.98	1.01



Company Name	: Sun Rise Construction
Project	: Electric Express Train, from Al Ain Saldna to Marsa. Matrouh Priority Sector (6) - Alamein to Foka
Test Date	: 15/06/2023
report date	: 17/06/2023
Location	: Station 449+600 to 449+625
Test No	: 05

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1185.92	2345.6	3532.6	4719.4	5878.1	7065
Stress (Kg/cm ²)	0.00	0.42	0.83	1.25	1.87	2.08	2.50
Settlement (mm)	0.00	0.25	0.37	0.51	0.66	0.77	0.90

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)	0.00	0.80	0.68	0.34

$D \text{ (mm)} = 0.00$	$S_1 \text{ (mm)} = 0.35$	$S_2 \text{ (mm)} = 0.68$	$\Delta S = 0.34$
$E_{v1} \text{ (kg/cm}^2) = (0.75 \cdot D' \cdot \Delta \sigma) / \Delta S$		1341	

Loading (Z)	0	1	2	3	4	5
Stage(Kg)	0	1166.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.34	3.46	6.57	9.72	12.86	16.01

$E_{v2}/E_{v1} =$	1.0
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D (mm) = 600	S1 (mm) = 0.56	S2 (mm) = 0.80	$\Delta S = 0.33$
Ev2 (kg/cm ²) = (0.75 * D * $\Delta\sigma$) / ΔS		1344	

Evt = Modulus of deformation during the landing stage.

Ev2 = Modulus of deformation during the Relaxing stage.

 ϕ = Plate diameter (mm) $\Delta\sigma =$ the difference between 0.5 and 0.7 from the maximum loading (swept) (kg/cm^2)

DS - Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading level



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) - Alamain to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+625 to 449+650
Test No. : 06

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	19.75	0.25	19.84	0.16	19.72	0.28	0.23
2	0.83	19.43	0.57	19.70	0.30	19.45	0.55	0.47
3	1.25	19.27	0.73	19.55	0.45	19.24	0.76	0.65
4	1.67	19.15	0.85	19.36	0.64	19.13	0.87	0.79
5	2.08	19.04	0.96	19.28	0.72	19.02	0.98	0.89
6	2.50	18.93	1.07	19.18	0.82	18.95	1.05	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	18.93	1.07	19.18	0.82	18.95	1.05	0.98
2	1.25	18.98	1.02	19.25	0.75	19.04	0.96	0.91
3	0.825	19.09	0.91	19.36	0.64	19.17	0.83	0.79
4	0.01	19.43	0.57	19.65	0.35	19.41	0.59	0.50

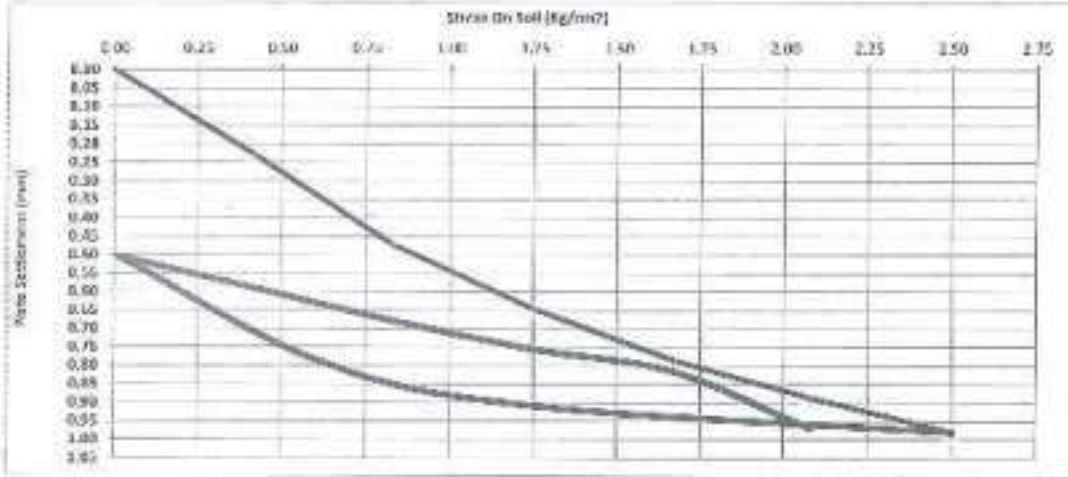
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.37	0.63	19.54	0.46	19.32	0.68	0.59
1	0.83	19.31	0.69	19.42	0.58	19.23	0.77	0.68
2	1.25	19.25	0.75	19.34	0.66	19.14	0.86	0.76
3	1.67	19.18	0.82	19.29	0.71	19.08	0.92	0.82
4	2.08	18.90	1.10	19.18	0.82	19.01	0.99	0.97



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+625 to 449+630
 Test No. : 06

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	2.50
Settlement (mm)	0.00	0.23	0.47	0.65	0.79	0.89	0.98

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)	0.38	0.01	0.70	0.50

D (mm) = 600	S1 (mm) = 0.43	S2 (mm) = 0.41	ΔS = 0.38
Ev1 (Kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	1183		

$$Ev2/Ev1 = 2.1$$

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)	0.50	0.59	0.68	0.76	0.82	0.97

D (mm) = 600	S1 (mm) = 0.59	S2 (mm) = 0.35	ΔS = 0.18
Ev2 (Kg/cm²) = $(0.75 \cdot D^2 \cdot \Delta\sigma) / \Delta S$	2444		

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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (8) – Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+650 to 449+675
Test No. : 07

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	19.79	0.21	19.74	0.26	0.22
2	0.83	19.68	0.32	19.65	0.35	19.58	0.42	0.36
3	1.25	19.53	0.47	19.52	0.48	19.44	0.56	0.50
4	1.67	19.44	0.56	19.40	0.60	19.31	0.69	0.62
5	2.08	19.31	0.69	19.28	0.72	19.22	0.78	0.73
6	2.50	19.20	0.80	19.16	0.84	19.10	0.90	0.85

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.20	0.80	19.16	0.84	19.10	0.90	0.85
2	1.25	19.27	0.73	19.25	0.75	19.19	0.81	0.76
3	0.825	19.42	0.58	19.38	0.62	19.30	0.70	0.63
4	0.01	19.70	0.30	19.66	0.34	19.60	0.40	0.35

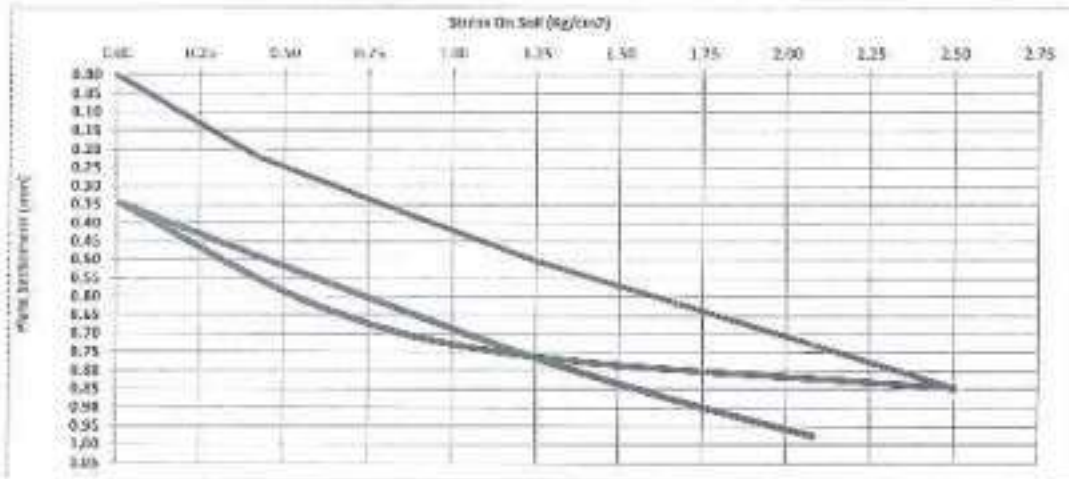
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.56	0.44	19.52	0.48	19.45	0.55	0.49
1	0.83	19.42	0.58	19.39	0.61	19.30	0.70	0.63
2	1.25	19.29	0.71	19.24	0.76	19.17	0.83	0.77
3	1.67	19.16	0.84	19.12	0.88	19.08	0.92	0.88
4	2.08	19.09	0.91	19.01	0.99	18.97	1.03	0.98



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Soudina to Marsa Matrouh Priority Sector (6) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+650 to 449+675
 Test No. : 07

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	2.50
Settlement (mm)	0.00	0.22	0.36	0.50	0.62	0.73	0.85

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)	0.85	0.76	0.63	0.35

D (mm) = 600	S1 (mm) = 0.34	S2 (mm) = 0.64	ΔS = 0.30
Ev1 (kg/cm²) = (0.75 · D² · Δσ) / ΔS	1483		

Ev2/Ev1 = 1.0

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)	0.35	0.49	0.63	0.77	0.88	0.98

D (mm) = 600	S1 (mm) = 0.60	S2 (mm) = 0.90	ΔS = 0.30
Ev2 (kg/cm²) = (0.75 · D² · Δσ) / ΔS	1519		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alsmen to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+675 to 449+700
 Test No. : 08

Nonrepelitive 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	19.86	0.14	19.78	0.22	0.18
2	0.83	19.67	0.33	19.71	0.29	19.63	0.37	0.33
3	1.25	19.51	0.49	19.56	0.44	19.47	0.53	0.49
4	1.67	19.36	0.64	19.44	0.56	19.33	0.67	0.62
5	2.08	19.21	0.79	19.28	0.72	19.17	0.83	0.78
6	2.50	19.09	0.91	19.15	0.85	19.04	0.96	0.91

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.09	0.91	19.15	0.85	19.04	0.96	0.91
2	1.25	19.17	0.83	19.23	0.77	19.13	0.87	0.82
3	0.625	19.30	0.70	19.36	0.64	19.27	0.73	0.69
4	0.01	19.58	0.42	19.61	0.39	19.54	0.46	0.42

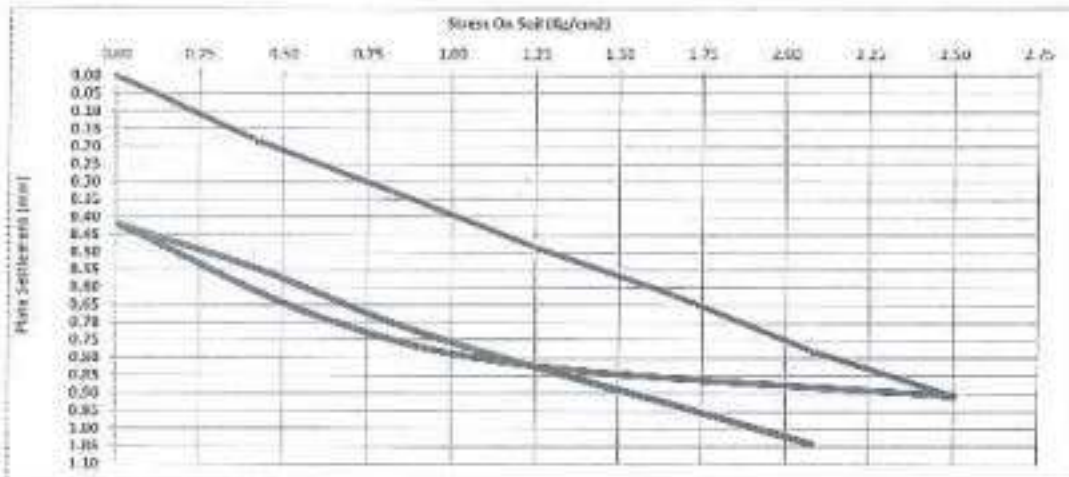
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.44	0.56	19.47	0.53	19.45	0.55	0.55
1	0.83	19.29	0.71	19.38	0.62	19.22	0.78	0.70
2	1.25	19.19	0.81	19.20	0.80	19.13	0.87	0.83
3	1.67	19.07	0.93	19.11	0.89	19.02	0.98	0.93
4	2.08	18.96	1.04	19.00	1.00	18.91	1.09	1.04



Company Name : San Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+675 to 449+700
 Test No. : 08

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	2.50
Settlement (mm)	0.00	0.16	0.33	0.49	0.62	0.75	0.91

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)	0.91	0.82	0.89	0.42

D (mm) = 600	S1 (mm) = 0.30	S2 (mm) = 0.69	ΔS = 0.35
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1277		

$$Ev2/Ev1 = 1.2$$

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)	0.42	0.55	0.70	0.83	0.93	1.04

D (mm) = 600	S1 (mm) = 0.67	S2 (mm) = 0.95	ΔS = 0.28
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1596		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Refueling stage.

D = Plate diameter (mm)

Δσ = The difference between 8.3 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 : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (5) – Alamein to Foka
Test Date : 15/06/2023
report date : 17/06/2023
Location : Station 449+700 to 449+725
Test No. : 09

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	19.79	0.21	19.84	0.16	19.58	0.42	0.26
2	0.83	19.64	0.36	19.69	0.31	19.43	0.57	0.41
3	1.25	19.50	0.50	19.55	0.45	19.29	0.71	0.55
4	1.67	19.36	0.64	19.41	0.59	19.15	0.85	0.69
5	2.08	19.21	0.79	19.26	0.74	19.00	1.00	0.84
6	2.50	19.08	0.92	19.14	0.86	18.84	1.16	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	19.08	0.92	19.14	0.86	18.84	1.16	0.98
2	1.25	19.18	0.82	19.24	0.76	19.00	1.00	0.86
3	0.625	19.33	0.67	19.38	0.62	19.16	0.84	0.71
4	0.01	19.66	0.34	19.70	0.30	19.52	0.48	0.37

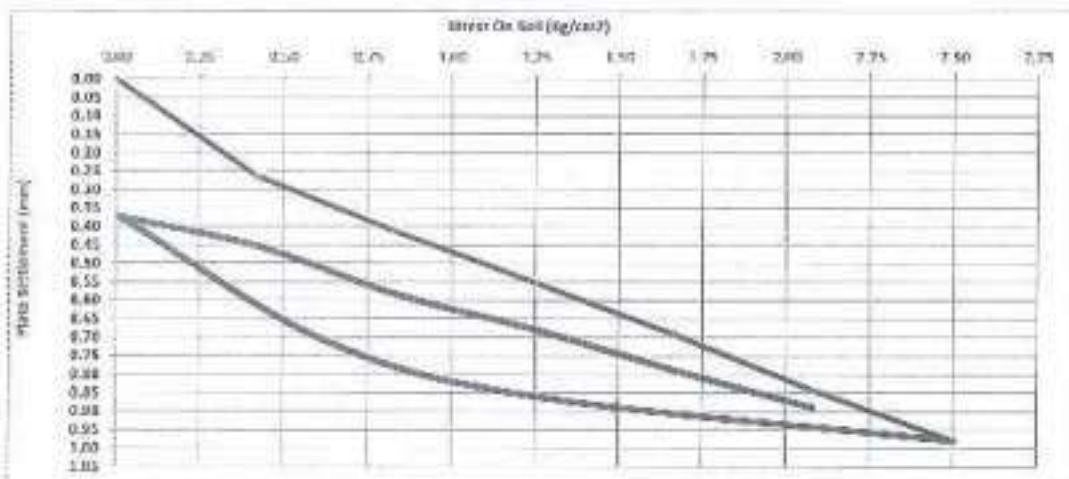
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.57	0.43	19.65	0.35	19.42	0.58	0.45
1	0.83	19.43	0.57	19.51	0.49	19.31	0.69	0.58
2	1.25	19.32	0.68	19.42	0.58	19.22	0.78	0.68
3	1.67	19.22	0.78	19.34	0.66	19.07	0.93	0.79
4	2.08	19.13	0.87	19.24	0.76	18.96	1.04	0.89



Company Name	: Sun Rise Construction
Project	: Electric Express Train, from Al Ain Soltans to Mares Matrouh Priority Sector (6) – Alamein to Foka
Test Date	: 15/06/2023
report date	: 17/06/2023
Location	: Station 449+700 to 449+725
Test No.	: 09

Nonrepetitive Static Plate Load Tests of Soils



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/cm ²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.26	0.41	0.55	0.69	0.84	0.98

UnLoading (t)	1	2	3	4
Slage(Kg)	7065	3533	1768	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.98	0.26	0.71	0.37

$D \text{ (mm)} = 000$	$S1 \text{ (mm)} = 6.98$	$S2 \text{ (mm)} = 0.72$	$\Delta S = 0.34$
$E_{v1} \text{ (kg/cm}^2\text{)} = (0.75 \cdot D^3 \Delta S) / AS$		1320	

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1196.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.37	0.45	0.58	0.68	0.79	0.88

$E_{V2}/E_{V1} =$	1.3
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$D \text{ (mm)} =$	606	$G_1 \text{ (mm)} =$	0.56	$G_2 \text{ (mm)} =$	0.81	$\Delta S =$	0.25
$E_{v2} \text{ (kg/cm}^2\text{)} =$	$(0.76 \cdot D^2 \cdot \Delta \sigma) / \Delta S$	1789					

 $\Delta \epsilon_1$ = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage

 D = Plate diameter (mm)

D_{0.3} = The difference between 0.3 and 0.7 from the maximum loading (smax) (kN/cm²)

D8 = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading limit



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (II) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+725 to 449+750
 Test No. : 10

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	19.70	0.30	19.76	0.24	19.74	0.26	0.27
2	0.83	19.61	0.39	19.61	0.39	19.61	0.39	0.39
3	1.25	19.44	0.56	19.44	0.56	19.49	0.51	0.54
4	1.67	19.32	0.68	19.35	0.65	19.35	0.65	0.66
5	2.08	19.17	0.83	19.22	0.78	19.19	0.81	0.81
6	2.50	19.05	0.95	19.10	0.90	19.09	0.91	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	19.05	0.95	19.10	0.90	19.09	0.91	0.92
2	1.25	19.18	0.82	19.20	0.80	19.18	0.82	0.81
3	0.825	19.30	0.70	19.34	0.66	19.34	0.66	0.67
4	0.01	19.66	0.34	19.65	0.35	19.69	0.31	0.33

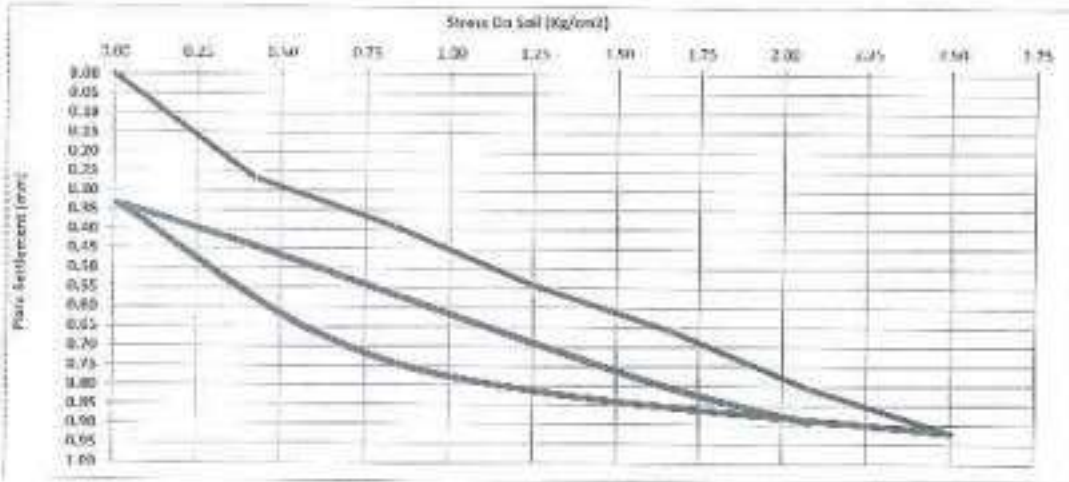
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.59	0.41	19.55	0.45	0.44
1	0.83	19.41	0.59	19.47	0.53	19.42	0.58	0.57
2	1.25	19.29	0.71	19.32	0.68	19.32	0.68	0.69
3	1.67	19.19	0.81	19.20	0.80	19.19	0.81	0.81
4	2.08	19.10	0.90	19.08	0.92	19.14	0.86	0.89



Company Name : Son Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Alamein to Foka
 Test Date : 15/06/2023
 report date : 17/06/2023
 Location : Station 449+725 to 445+750
 Test No. : 10

Nonrepetitive Static Plate Load Tests of Soils
QIN 10134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1180.92	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	0.27	0.39	0.54	0.66	0.81	0.92

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)	0.92	0.81	0.67	0.33

D (mm) = 600	S1 (mm) = 0.37	S2(mm) = 0.89	ΔS = 0.52
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1395		

Ev2/Ev1 =	1.1
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1180.92	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)	0.33	0.44	0.57	0.69	0.81	0.89

D (mm) = 600	S1 (mm) = 0.54	S2(mm) = 0.82	ΔS = 0.28
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1802		

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 : Sun Rise Construction

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 : (449+100 to 449+200)
Test Date : 13/06/2023
Report Date : 14/06/2023
Type of soil : -----
Test level : Sub ballast .
Report No. : 236:239

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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > 1200 \text{ Kg/cm}^2$ (120 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	13/06/2023
- 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	$E_{v1} \text{ (kg/cm}^2\text{)}$	$E_{v2} \text{ (kg/cm}^2\text{)}$	
1	449+100	449+125	1406	1565	1.1
2	449+125	449+150	1183	2003	1.7
3	449+150	449+175	1442	1395	1.0
4	449+175	449+200	1182	1845	1.5

Signature /
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 الاختبارات المعملية
 رقم الترخيص: 537 - 991 - 219
 5 شارع مصطفى النحاس - القاهرة

Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Folca
Test Date : 13/06/2023
report date : 14/06/2023
Location : Station 449+100 to 449+125
Test No. : 01

**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	19.88	0.12	19.80	0.20	19.79	0.21	0.18
2	0.83	19.77	0.23	19.62	0.38	19.66	0.34	0.32
3	1.25	19.65	0.35	19.39	0.61	19.53	0.47	0.48
4	1.67	19.56	0.44	19.25	0.75	19.42	0.58	0.59
5	2.08	19.45	0.55	19.13	0.87	19.35	0.65	0.69
6	2.50	19.29	0.71	18.96	1.04	19.28	0.72	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	19.29	0.71	18.96	1.04	19.28	0.72	0.82
2	1.25	19.32	0.68	19.17	0.83	19.31	0.69	0.73
3	0.825	19.43	0.57	19.32	0.68	19.39	0.61	0.62
4	0.01	19.65	0.35	19.63	0.37	19.71	0.29	0.34

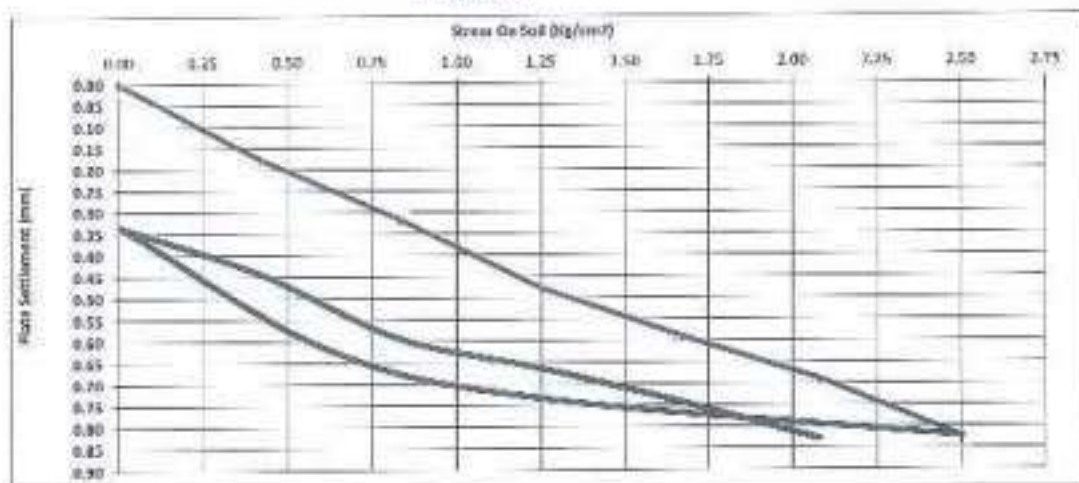
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.60	0.40	19.45	0.55	19.62	0.38	0.44
1	0.83	19.44	0.56	19.32	0.68	19.46	0.54	0.59
2	1.25	19.36	0.64	19.26	0.74	19.39	0.61	0.66
3	1.67	19.27	0.73	19.20	0.80	19.30	0.70	0.74
4	2.08	19.20	0.80	19.12	0.88	19.19	0.81	0.83



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 13/06/2023
report date : 14/06/2023
Location : Station 449+100 to 449+125
Test No. : 01

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	5879.1	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	0.48	0.59	0.69	0.82

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)	0.82	0.73	0.62	0.34

D (mm) = 600	S1 (mm) = 0.29	S2 (mm) = 0.61	ΔS = 0.32
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1406		

Ev2/Ev1 =	1.1
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5879.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.34	0.44	0.59	0.68	0.74	0.83

D (mm) = 600	S1 (mm) = 0.47	S2 (mm) = 0.76	ΔS = 0.29
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1555		

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)



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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sakhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 13/06/2023
 report date : 14/06/2023
 Location : Station 449+125 to 449+150
 Test No. : 02

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	19.75	0.25	19.84	0.16	19.72	0.28	0.23
2	0.83	19.43	0.57	19.70	0.30	19.45	0.55	0.47
3	1.25	19.27	0.73	19.55	0.45	19.24	0.76	0.65
4	1.67	19.15	0.85	19.36	0.64	19.13	0.87	0.79
5	2.08	19.04	0.96	19.28	0.72	19.02	0.98	0.89
6	2.50	18.93	1.07	19.18	0.82	18.95	1.05	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	18.93	1.07	19.18	0.82	18.95	1.05	0.98
2	1.25	18.98	1.02	19.25	0.75	19.04	0.96	0.91
3	0.625	19.09	0.91	19.36	0.64	19.17	0.83	0.79
4	0.01	19.43	0.57	19.65	0.35	19.41	0.59	0.50

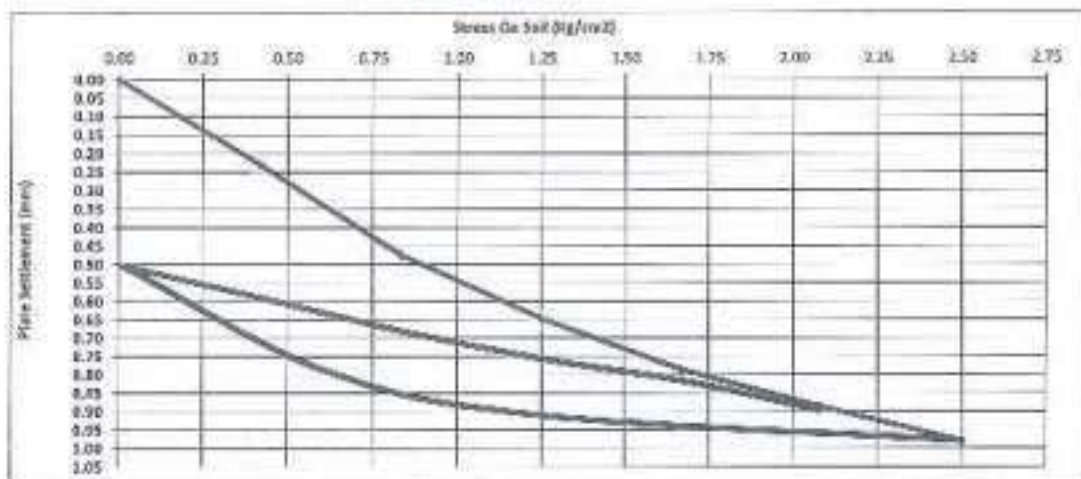
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.37	0.63	19.54	0.46	19.32	0.68	0.59
1	0.83	19.31	0.69	19.42	0.58	19.23	0.77	0.68
2	1.25	19.25	0.75	19.34	0.66	19.14	0.86	0.76
3	1.67	19.18	0.82	19.29	0.71	19.08	0.92	0.82
4	2.08	19.10	0.90	19.21	0.79	19.00	1.00	0.90



Company Name : Sun Rise Construction
Project : Eldebrio Express Train, from Al Ain Sekhna to Marsa Matrouh Priority Sector (8) – Alamein to Foka
Test Date : 13/06/2023
report date : 14/06/2023
Location : Station 449+125 to 449+150
Test No. : 02

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	2.50
Settlement (mm)	0.00	0.23	0.47	0.65	0.79	0.89	0.98

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)	0.98	0.91	0.70	0.00

D (mm) =	600	S1 (mm) =	0.43	S2 (mm) =	0.81	ΔS =	0.38
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS			1183				

Ev2/Ev1 =	1.7
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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)	0.50	0.59	0.88	0.78	0.82	0.90

D (mm) =	600	S1 (mm) =	0.81	S2 (mm) =	0.83	ΔS =	0.22
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS			2003				

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)



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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 13/06/2023
 report date : 14/06/2023
 Location : Station 449+150 to 449+175
 Test No. : 03

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	19.74	0.26	19.81	0.19	19.68	0.32	0.26
2	0.83	19.60	0.40	19.68	0.32	19.52	0.48	0.40
3	1.25	19.48	0.52	19.52	0.48	19.40	0.60	0.53
4	1.67	19.32	0.68	19.40	0.60	19.30	0.70	0.66
5	2.08	19.21	0.79	19.27	0.73	19.17	0.83	0.78
6	2.50	19.06	0.94	19.14	0.86	19.03	0.97	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	19.06	0.94	19.14	0.86	19.03	0.97	0.92
2	1.25	19.15	0.85	19.22	0.78	19.10	0.90	0.84
3	0.625	19.35	0.65	19.44	0.56	19.26	0.74	0.65
4	0.01	19.64	0.36	19.76	0.24	19.58	0.42	0.34

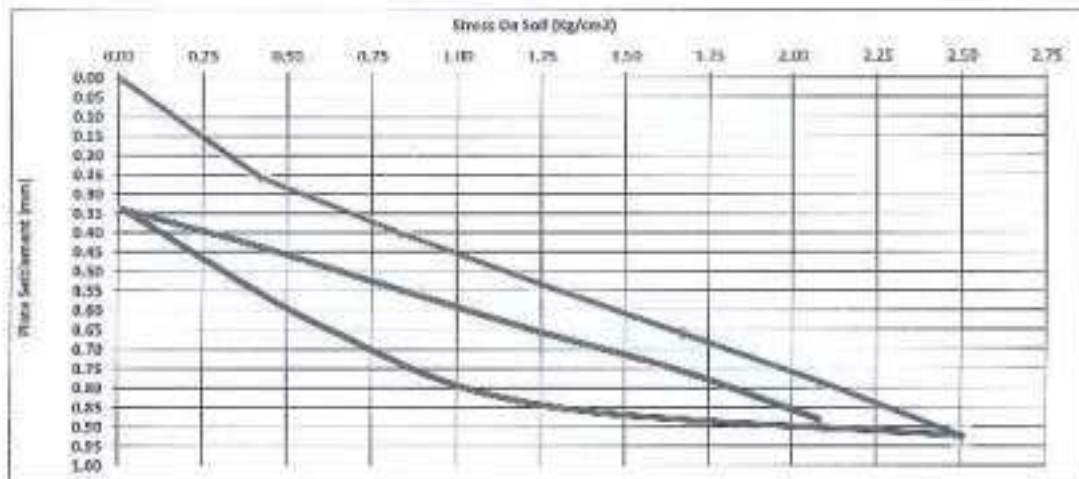
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.67	0.33	19.49	0.51	0.44
1	0.83	19.42	0.58	19.56	0.44	19.38	0.62	0.55
2	1.25	19.30	0.70	19.46	0.54	19.27	0.73	0.66
3	1.67	19.19	0.81	19.37	0.63	19.17	0.83	0.76
4	2.08	19.10	0.90	19.20	0.80	19.06	0.94	0.88



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (B) – Atamein to Foka
Test Date : 13/06/2023
report date : 14/06/2023
Location : Station 449+150 to 449+175
Test No. : 03

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



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1188.92	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	0.40	0.53	0.66	0.78	0.92

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)	0.92	0.84	0.05	0.34

D (mm) = 600	S1 (mm) = 0.37	S2 (mm) = 0.66	ΔS = 0.31
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1442		

Ev2/Ev1 = 1.0

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1188.92	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	0.44	0.55	0.60	0.70	0.85

D (mm) = 600	S1 (mm) = 0.40	S2 (mm) = 0.78	ΔS = 0.32
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1395		

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



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Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sakhna to Marsa Matrouh Priority Sector (5) – Alamein to Foka
 Test Date : 13/06/2023
 report date : 14/06/2023
 Location : Station 449+175 to 449+200
 Test No. : 04

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	19.88	0.12	19.78	0.22	19.85	0.15	0.16
2	0.83	19.72	0.28	19.53	0.47	19.51	0.49	0.41
3	1.25	19.58	0.42	19.44	0.56	19.35	0.65	0.54
4	1.67	19.49	0.51	19.19	0.81	19.15	0.85	0.72
5	2.08	19.38	0.62	19.10	0.90	19.06	0.94	0.82
6	2.50	19.24	0.76	19.00	1.00	18.97	1.03	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	19.24	0.76	19.00	1.00	18.97	1.03	0.93
2	1.25	19.28	0.72	19.06	0.94	19.02	0.98	0.88
3	0.825	19.34	0.66	19.11	0.89	19.09	0.91	0.82
4	0.01	19.61	0.39	19.43	0.57	19.48	0.52	0.49

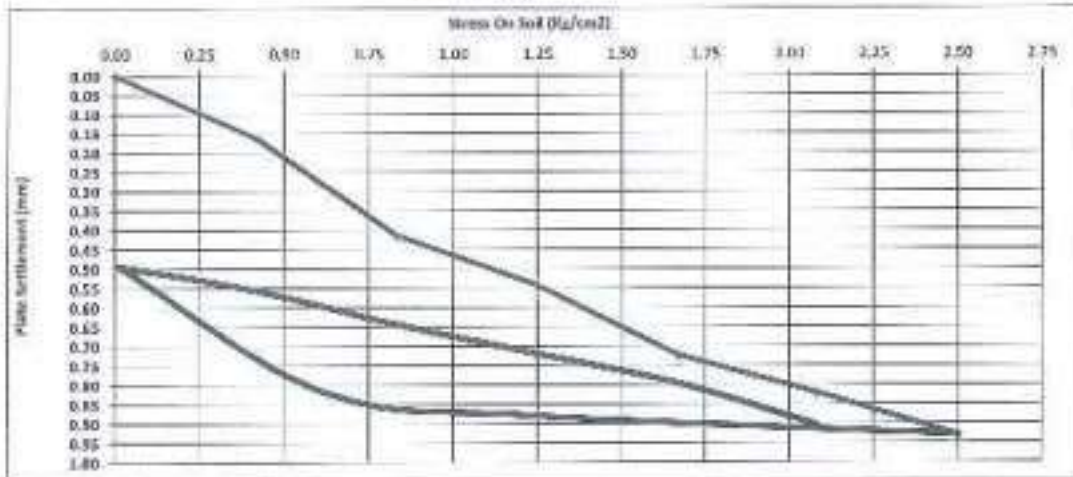
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.37	0.63	19.43	0.57	0.56
1	0.83	19.45	0.55	19.28	0.72	19.34	0.66	0.64
2	1.25	19.37	0.63	19.21	0.79	19.26	0.74	0.72
3	1.67	19.28	0.72	19.14	0.86	19.19	0.81	0.80
4	2.08	19.19	0.81	19.02	0.98	19.08	0.92	0.90



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 13/06/2023
 report date : 14/06/2023
 Location : Station 449+175 to 449+200
 Test No. : 04

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	2.50
Settlement (mm)	0.00	0.16	0.41	0.54	0.72	0.82	0.93

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)	0.93	0.88	0.82	0.49

D (mm) = 600	S1 (mm) = 0.36	S2(mm) = 0.74	ΔS = 0.38
Ev1 (kg/cm2) = (0.75*D*Δσ)/ΔS	1182		

$$Ev2/Ev1 = 1.5$$

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)	0.49	0.58	0.64	0.72	0.80	0.90

D (mm) = 600	S1 (mm) = 0.57	S2(mm) = 4.82	ΔS = 0.24
Ev2 (kg/cm2) = (0.75*D*Δσ)/ΔS	1845		

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)

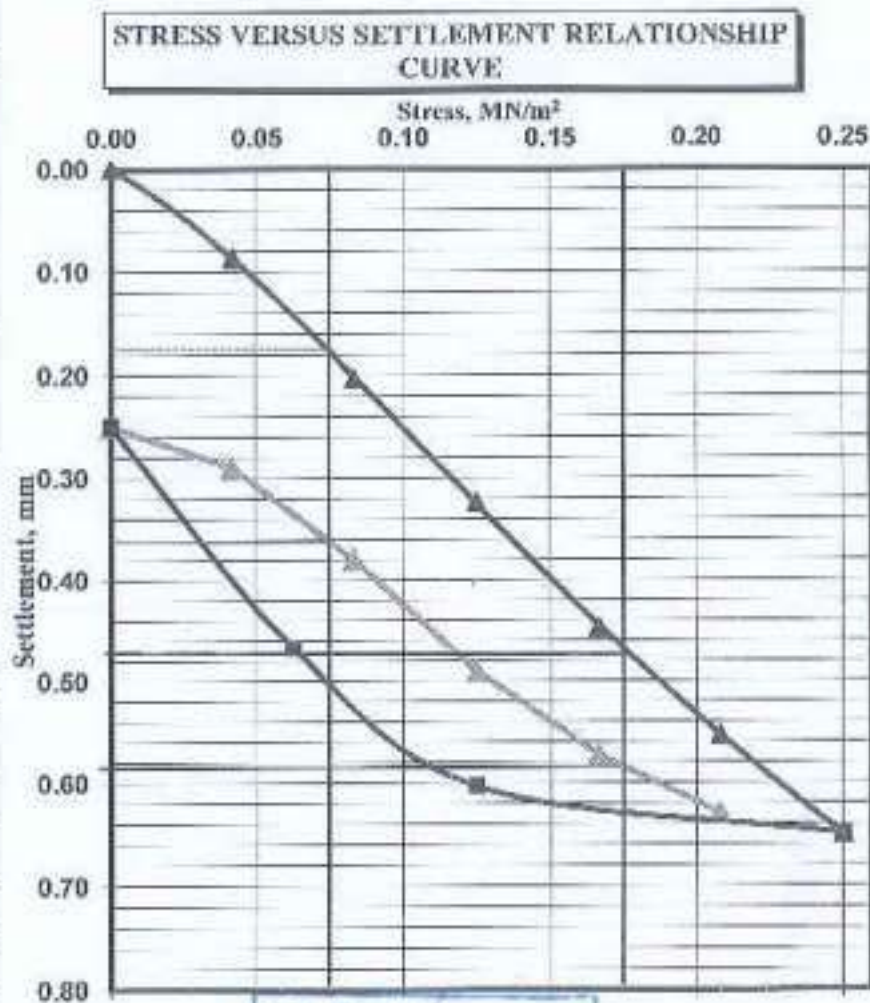


Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	6:00 AM
LOCATION	Al-Daba (450+825) to (450+850) (level +0.90m)	TIME FINISH:	7:30 AM
PLATE LOAD NO.	PLT- 57	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.09
0.08	0.20
0.13	0.32
0.17	0.45
0.21	0.55
0.25	0.65
0.13	0.60
0.06	0.47
0.00	0.25
0.04	0.29
0.08	0.38
0.13	0.49
0.17	0.57
0.21	0.63
0.25	0.69

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.175
S2 at 0.3* σ_{0max}	0.360
S1 at 0.7* σ_{0max}	0.470
S2 at 0.7* σ_{0max}	0.580



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	152.54
E_{v2} [MN/m ²]	204.55
E_{v2}/E_{v1}	1.34

Apparatus

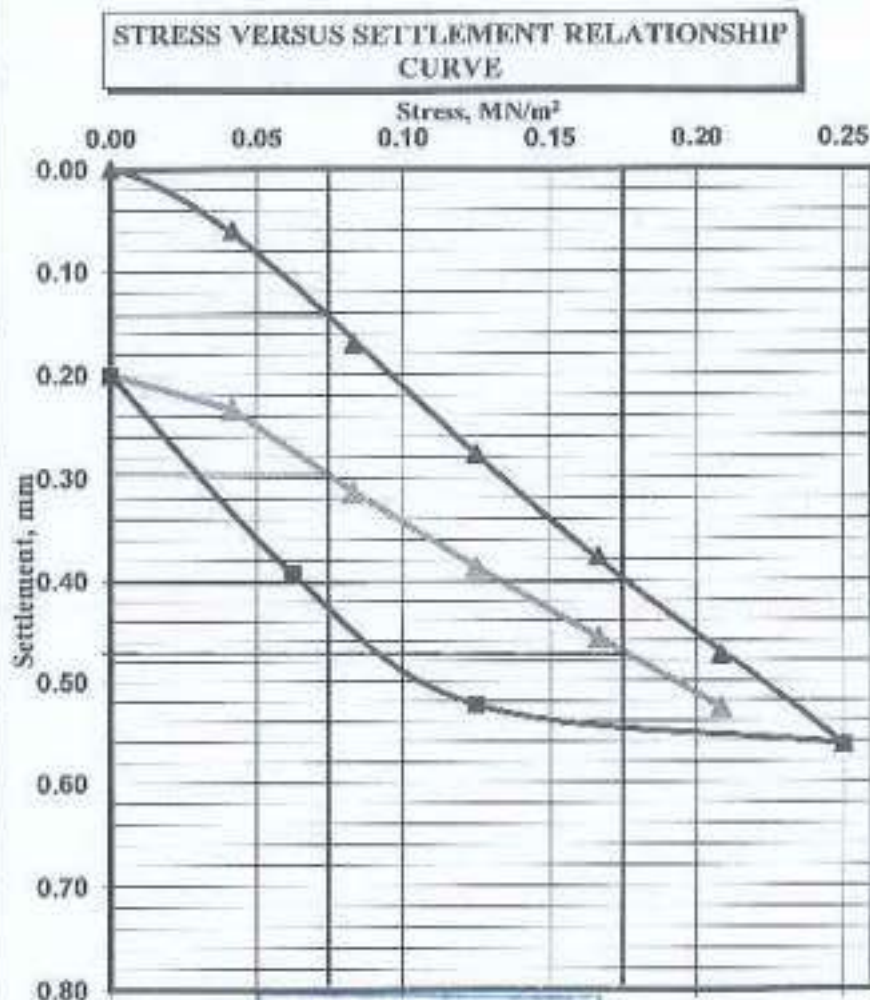
1. Loading plates consists of 600 mm, The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	7:30 AM
LOCATION	Al-Dahan (450+850) to (450+875) (level +0.90m)	TIME FINISH:	9:00 AM
PLATE LOAD NO.	PL1- 58	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.06
0.08	0.17
0.13	0.28
0.17	0.38
0.21	0.47
0.25	0.58
0.13	0.52
0.06	0.39
0.00	0.20
0.04	0.23
0.08	0.31
0.13	0.39
0.17	0.46
0.21	0.53
0.25	0.60

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.140
S2 at 0.3* σ_{0max}	0.295
S1 at 0.7* σ_{0max}	0.400
S2 at 0.7* σ_{0max}	0.470



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	173.08
E_{v2} [MN/m ²]	257.14
E_{v2}/E_{v1}	1.49

Apparatus

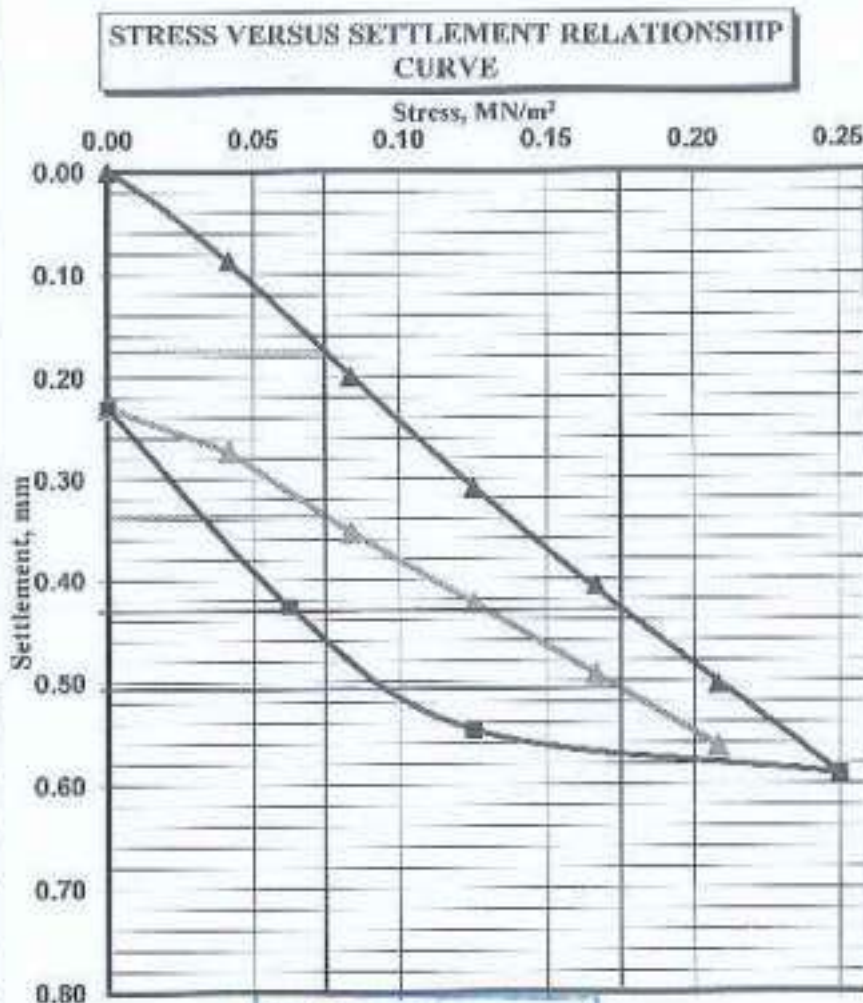
1. Loading plates consists of 600 mm. The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	9:00 AM
LOCATION	Al-Daba (450+875) to (450+900) (level +0.90m)	TIME FINISH:	10:30 AM
PLATE LOAD NO.	PLT- 59	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.09
0.08	0.20
0.13	0.31
0.17	0.41
0.21	0.50
0.25	0.59
0.13	0.55
0.08	0.43
0.00	0.23
0.04	0.27
0.08	0.35
0.13	0.42
0.17	0.49
0.21	0.56
0.25	0.63

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.175
S2 at 0.3* σ_{0max}	0.335
S1 at 0.7* σ_{0max}	0.410
S2 at 0.7* σ_{0max}	0.505



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	191.49
E_{v2} [MN/m ²]	264.71
E_{v2}/E_{v1}	1.38

Apparatus

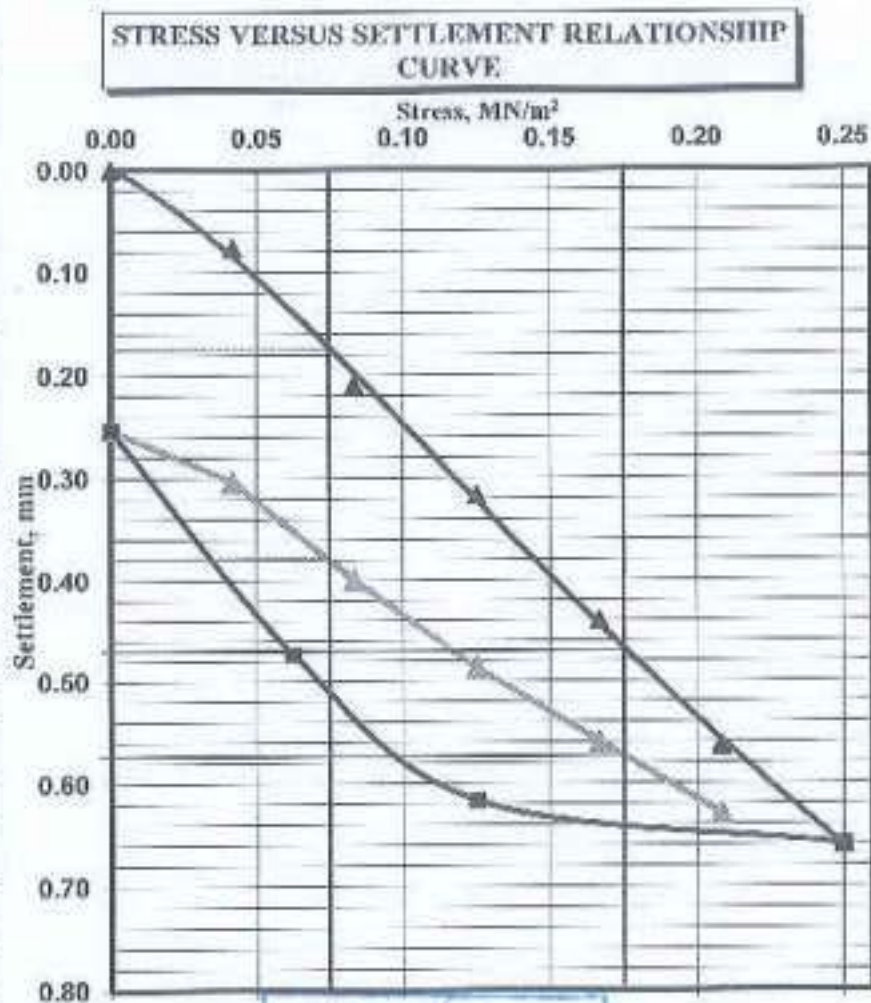
1. Loading plates consists of 600 mm, The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	10:30 AM
LOCATION	Al-Dabas (450+900) to (450+925) (level +0.90m)	TIME FINISH:	12:00 AM
PLATE LOAD NO.	PLT- 60	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.08
0.08	0.21
0.13	0.32
0.17	0.44
0.21	0.56
0.25	0.66
0.13	0.62
0.06	0.47
0.00	0.25
0.04	0.30
0.08	0.40
0.13	0.49
0.17	0.56
0.21	0.63
0.25	0.70

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.175
S2 at 0.3* σ_{0max}	0.380
S1 at 0.7* σ_{0max}	0.465
S2 at 0.7* σ_{0max}	0.570



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	155.17
E_{v2} [MN/m ²]	236.84
E_{v2}/E_{v1}	1.53

Apparatus

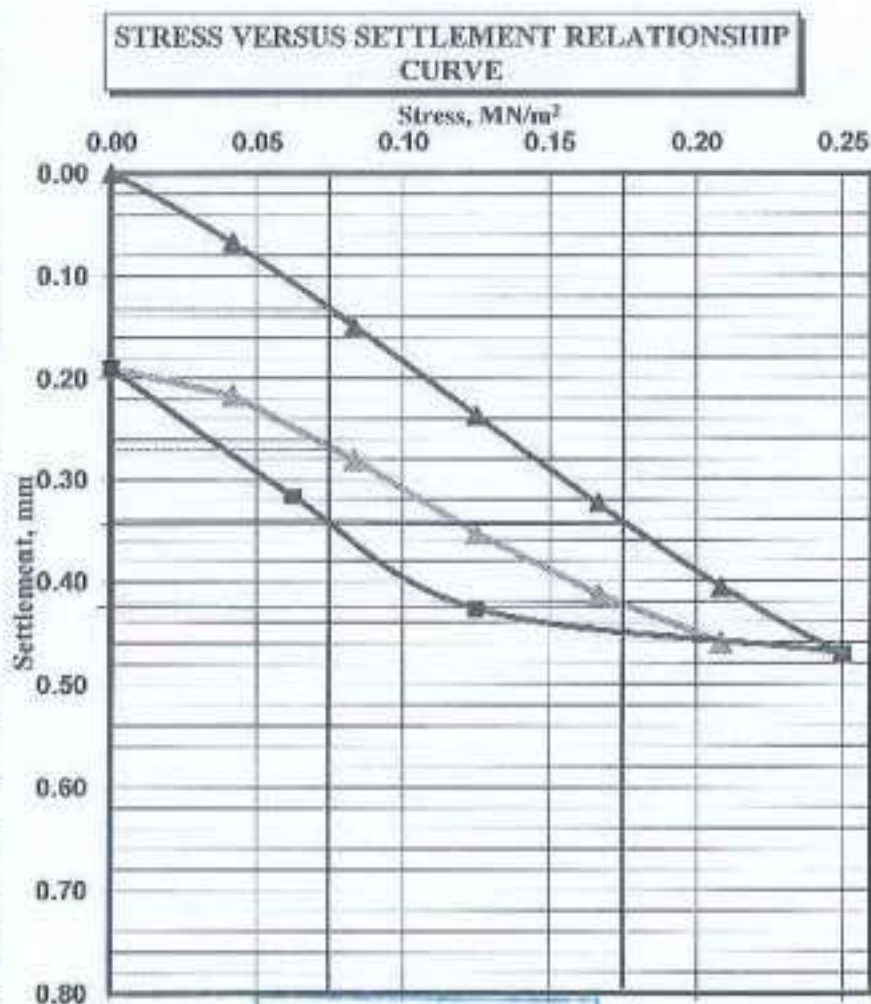
1. Loading plates consists of 600 mm. The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250-KN

Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	12:00 PM
LOCATION	Al-Dabaa (450+925) to (450+950) (level +0.90m)	TIME FINISH:	1:30 PM
PLATE LOAD NO.	PLT- 61	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.07
0.08	0.15
0.13	0.24
0.17	0.32
0.21	0.41
0.25	0.47
0.13	0.43
0.06	0.32
0.00	0.19
0.04	0.22
0.08	0.28
0.13	0.35
0.17	0.41
0.21	0.46
0.25	0.49

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.130
S2 at 0.3* σ_{0max}	0.270
S1 at 0.7* σ_{0max}	0.340
S2 at 0.7* σ_{0max}	0.420



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STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	214.29
E_{v2} [MN/m ²]	300.00
E_{v2}/E_{v1}	1.40

Apparatus

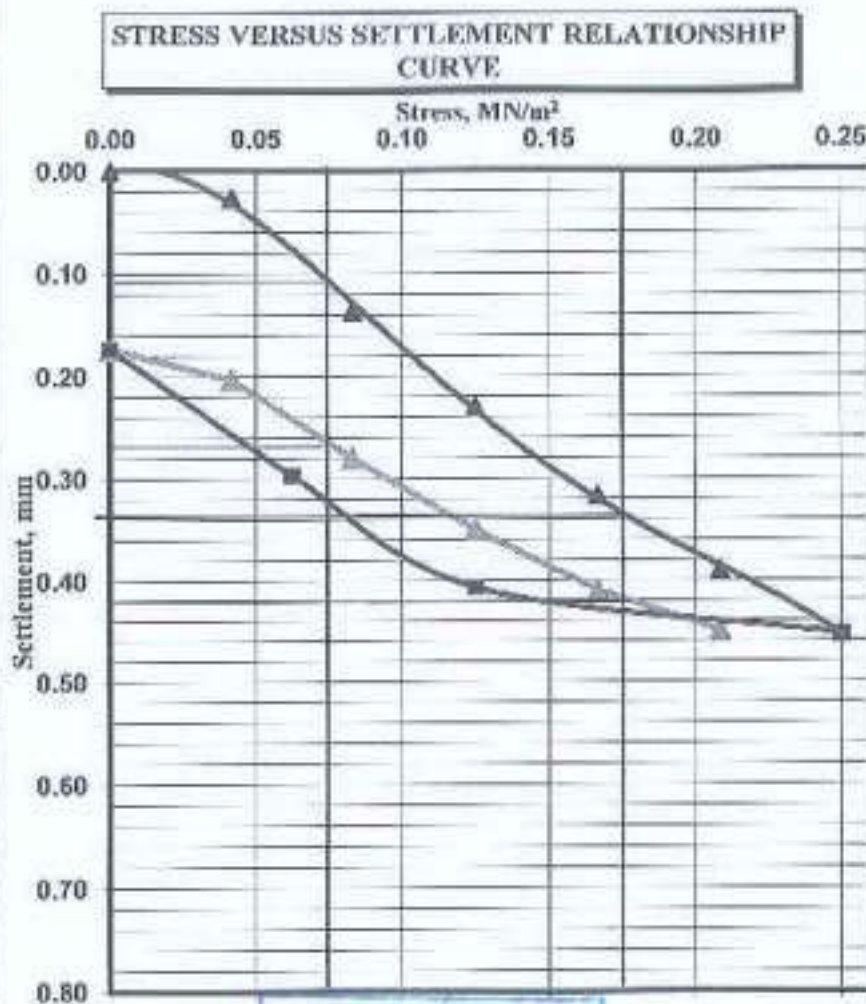
1. Loading plates consists of 600 mm, The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils
DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	1:30 PM
LOCATION	Al-Dabaia (450+950) to (450+975) (level +0.90m)	TIME FINISH:	3:00 PM
PLATE LOAD NO.	PLT- 62	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.03
0.08	0.14
0.13	0.23
0.17	0.32
0.21	0.39
0.25	0.45
0.13	0.41
0.06	0.30
0.00	0.17
0.04	0.20
0.08	0.28
0.13	0.35
0.17	0.41
0.21	0.45
0.25	0.47

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.105
S2 at 0.3* σ_{0max}	0.265
S1 at 0.7* σ_{0max}	0.335
S2 at 0.7* σ_{0max}	0.420



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	195.65
E_{v2} [MN/m ²]	290.32
E_{v2}/E_{v1}	1.48

Apparatus

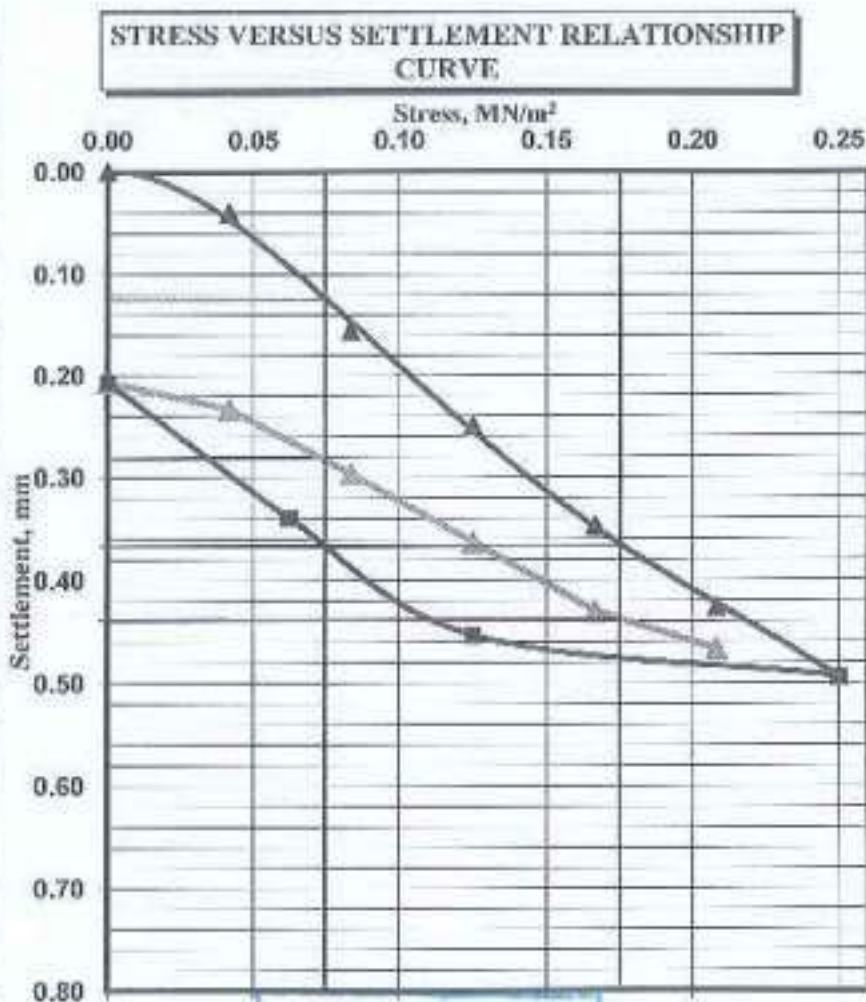
1. Loading plates consists of 600 mm ,The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	3:00 PM
LOCATION	Al-Dabaia (450+975) to (451+000) (level +0.90m)	TIME FINISH:	4:30 PM
PLATE LOAD NO.	PL.T- 63	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.04
0.08	0.16
0.13	0.25
0.17	0.35
0.21	0.43
0.25	0.49
0.13	0.45
0.08	0.34
0.00	0.21
0.04	0.23
0.08	0.30
0.13	0.36
0.17	0.43
0.21	0.47
0.25	0.50

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.120
S2 at 0.3* σ_{0max}	0.280
S1 at 0.7* σ_{0max}	0.365
S2 at 0.7* σ_{0max}	0.435



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	183.67
E_{v2} [MN/m ²]	290.32
E_{v2}/E_{v1}	1.58

Apparatus

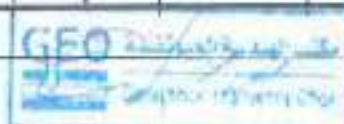
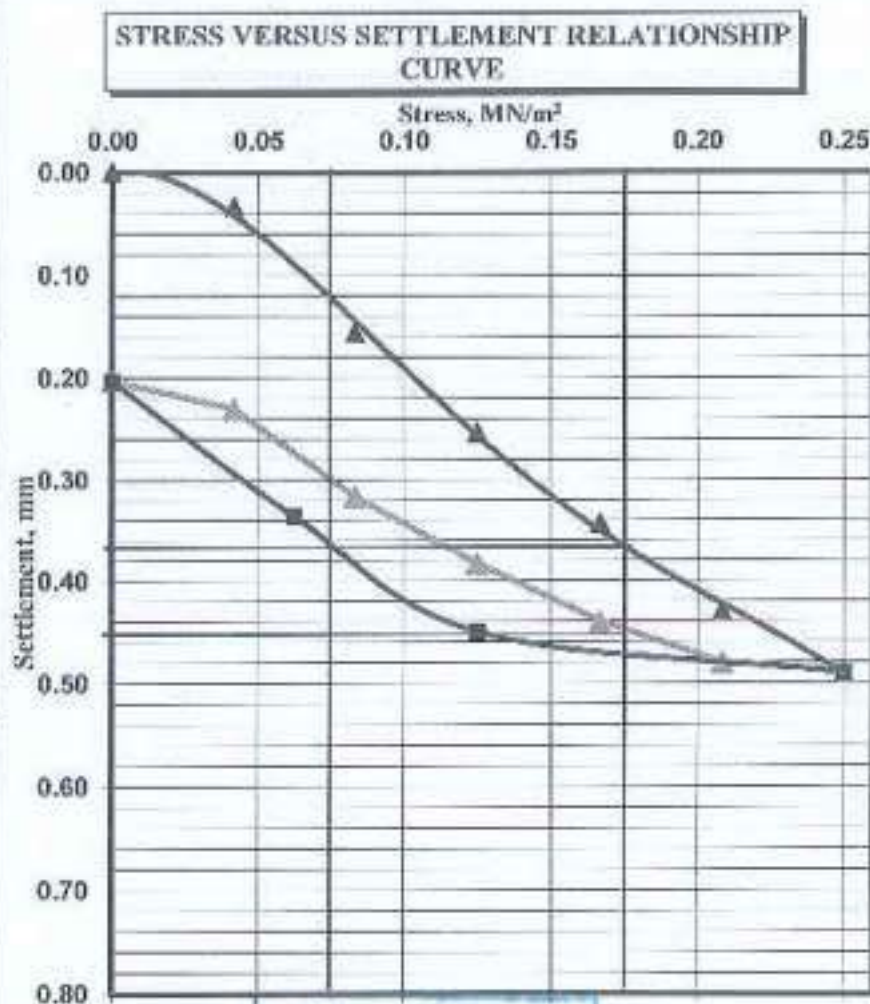
1. Loading plates consists of 600 mm .The thickness of plates 25 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Plate Load Tests of Soils
DIN 18134

CLIENT	SunRise	TYPE OF SOIL	Sub-ballast
PROJECT	Electric Express Train	TIME START:	4:30 PM
LOCATION	Al-Dabaa (451+000) to (451+025) (level +0.90m)	TIME FINISH:	6:00 PM
PLATE LOAD NO.	PLT- 6/1	DATE	5-Aug-23
PLATE DIAMETER (cm)	60.00	LAB. REF.	11031

Stress MN/m ²	Settlement mm
0.00	0.00
0.04	0.03
0.08	0.16
0.13	0.25
0.17	0.34
0.21	0.43
0.25	0.49
0.13	0.45
0.06	0.34
0.00	0.20
0.04	0.23
0.08	0.32
0.13	0.38
0.17	0.44
0.21	0.48
0.25	0.51

0.3* σ_{0max}	0.075
0.7* σ_{0max}	0.175
S1 at 0.3* σ_{0max}	0.120
S2 at 0.3* σ_{0max}	0.300
S1 at 0.7* σ_{0max}	0.365
S2 at 0.7* σ_{0max}	0.450



STRAIN MODULUS, E_v

E_{v1} [MN/m ²]	183.67
E_{v2} [MN/m ²]	300.00
E_{v2}/E_{v1}	1.63

Apparatus

1. Loading plates consists of 600 mm. The thickness of plates 26 mm
2. Dial gauges with accuracy 0.01 mm to measuring the settlement
3. Steel straightedges with magnetic supports to fixed the dial gauges
4. Hydraulic jack with pump to transfer reactive loads to the loading plates
5. Proving Ring for plate load 250 KN

Company : Sun Rise Construction

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 : (449+775 to 449+900)
Test Date : 17/06/2023
Report Date : 26/07/2023
Type of soil : —
Test level : Sub ballast .
Report No. : 271:276

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

Type of soil: Sub ballast.

- Job requirement: $E_{v2} > (120 \text{ MPa})$, $E_{v2} \leq (300 \text{ Mpa})$ and $(E_{v2}/E_{v1} \leq 2.2)$.

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Sunny
- Plate Diameter (mm)	600
- date of measurement	17/06/2023
- 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	$E_{v1} (\text{kg/cm}^2)$	$E_{v2} (\text{kg/cm}^2)$	
1	449+775	449+800	1375	2059	1.5
2	449+750	449+775	1367	1698	1.2
3	449+800	449+825	1327	1761	1.3
4	449+825	449+850	1568	1770	1.1
5	449+850	449+875	1341	1344	1.0
6	449+875	449+900	1183	2444	2.1



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+775 to 449+800
 Test No. : 01

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	19.82	0.18	19.80	0.20	19.74	0.26	0.21
2	0.83	19.67	0.33	19.58	0.42	19.49	0.51	0.42
3	1.25	19.55	0.45	19.40	0.60	19.30	0.70	0.58
4	1.67	19.41	0.59	19.22	0.78	19.10	0.90	0.76
5	2.08	19.32	0.68	19.10	0.90	18.98	1.02	0.87
6	2.50	19.19	0.81	18.93	1.07	18.84	1.16	1.01

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.19	0.81	18.93	1.07	18.84	1.16	1.01
2	1.25	19.24	0.76	18.96	1.04	18.91	1.09	0.96
3	0.625	19.33	0.67	19.04	0.96	19.00	1.00	0.88
4	0.01	19.53	0.47	19.32	0.68	19.29	0.71	0.62

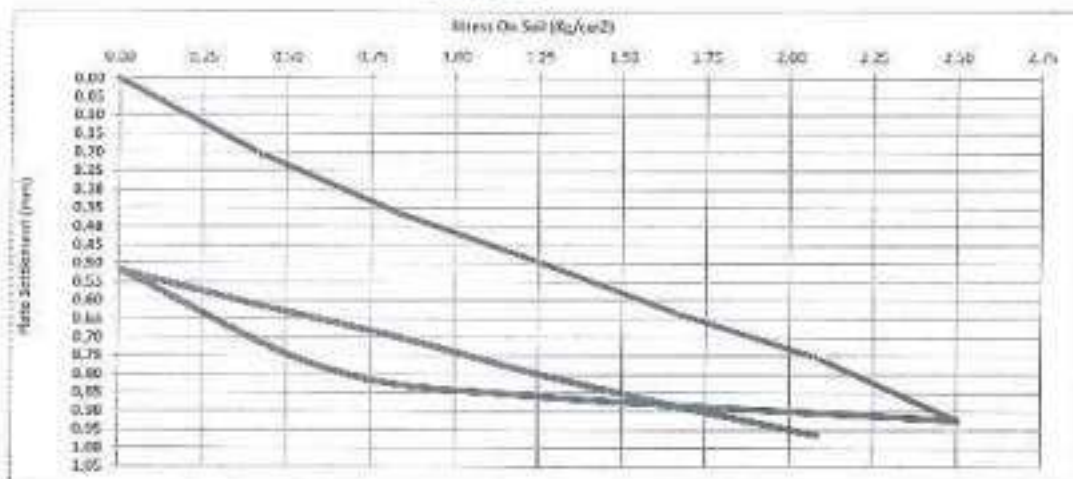
Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.46	0.54	19.24	0.76	19.22	0.78	0.69
1	0.83	19.38	0.62	19.18	0.82	19.16	0.84	0.76
2	1.25	19.31	0.69	19.11	0.89	19.08	0.92	0.83
3	1.67	19.23	0.77	19.05	0.95	19.00	1.00	0.91
4	2.08	19.16	0.84	18.94	1.06	18.92	1.08	0.99



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (S) - Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+775 to 449+800
 Test No. : 01

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/cm ²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.20	0.36	0.50	0.64	0.75	0.92

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1766	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.92	0.86	0.79	0.52

D (mm) = 600	S1 (mm) = 0.39	S2 (mm) = 0.86	ΔS = 0.33
Ev1 (kg/cm ²) = (0.75*D ² Δσ/ΔS)	1375		

$$Ev2/Ev1 = 1.5$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.52	0.61	0.70	0.80	0.89	0.96

D (mm) = 600	S1 (mm) = 0.06	S2 (mm) = 0.90	ΔS = 0.22
Ev2 (kg/cm ²) = (0.75*D ² Δσ/ΔS)	2099		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Seldina to Marsa Mabrouh Priority Sector (6) – Alamaia to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+750 to 449+775
 Test No. : 02

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	19.79	0.21	19.87	0.13	0.16
2	0.83	19.71	0.29	19.66	0.34	19.69	0.31	0.31
3	1.25	19.57	0.43	19.52	0.48	19.62	0.38	0.43
4	1.67	19.41	0.59	19.37	0.63	19.46	0.54	0.59
5	2.08	19.23	0.77	19.26	0.74	19.34	0.66	0.72
6	2.50	19.09	0.91	19.11	0.89	19.22	0.78	0.86

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.09	0.91	19.11	0.89	19.22	0.78	0.86
2	1.25	19.14	0.86	19.19	0.81	19.29	0.71	0.79
3	0.625	19.21	0.79	19.30	0.70	19.36	0.64	0.71
4	0.01	19.54	0.46	19.62	0.38	19.68	0.32	0.39

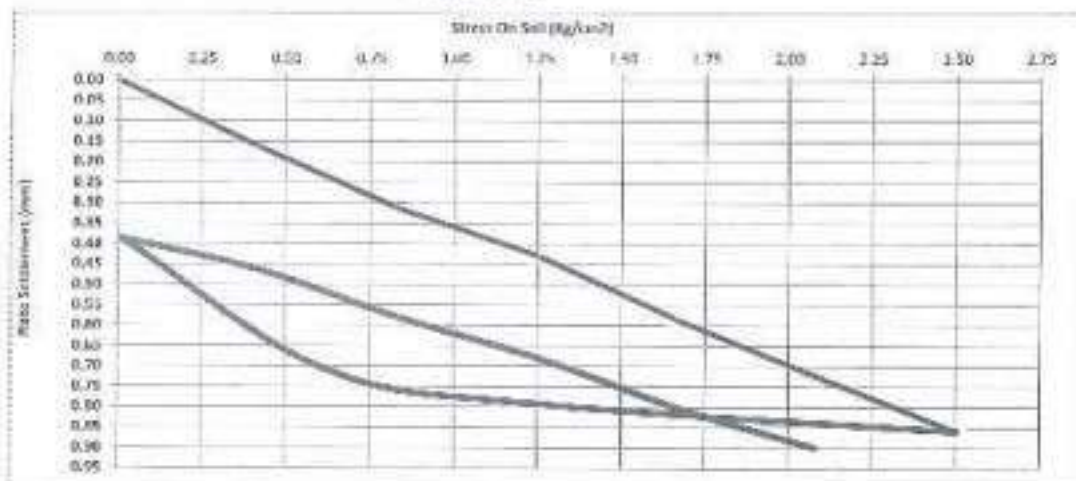
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.44	0.56	19.58	0.42	19.59	0.41	0.46
1	0.83	19.37	0.63	19.45	0.55	19.44	0.56	0.58
2	1.25	19.29	0.71	19.32	0.68	19.35	0.65	0.68
3	1.67	19.21	0.79	19.17	0.83	19.21	0.79	0.80
4	2.08	19.13	0.87	19.06	0.94	19.11	0.89	0.90



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alamein to Foka
Test Date : 17/06/2023
report date : 26/07/2023
Location : Station 449+750 to 449+775
Test No. : 02

**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	2.50
Settlement (mm)	0.00	0.16	0.31	0.43	0.59	0.72	0.86

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)	0.86	0.79	0.71	0.39

D (mm) = 600	S1 (mm) = 0.26	S2 (mm) = 0.07	ΔS = 0.33
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1367		

Ev2/Ev1 = 1.2

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)	0.39	0.46	0.58	0.68	0.80	0.90

D (mm) = 600	S1 (mm) = 0.58	S2 (mm) = 0.82	ΔS = 0.26
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1608		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+800 to 449+825
 Test No. : 03

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	19.89	0.11	19.87	0.13	0.15
2	0.83	19.60	0.40	19.68	0.32	19.76	0.24	0.32
3	1.25	19.48	0.52	19.52	0.48	19.62	0.38	0.48
4	1.67	19.32	0.68	19.40	0.60	19.49	0.51	0.60
5	2.08	19.21	0.79	19.27	0.73	19.27	0.73	0.75
6	2.50	19.06	0.94	19.14	0.86	19.18	0.82	0.87

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.06	0.94	19.14	0.86	19.18	0.82	0.87
2	1.25	19.15	0.85	19.22	0.78	19.20	0.80	0.81
3	0.625	19.35	0.65	19.44	0.56	19.30	0.70	0.64
4	0.01	19.64	0.36	19.76	0.24	19.58	0.42	0.34

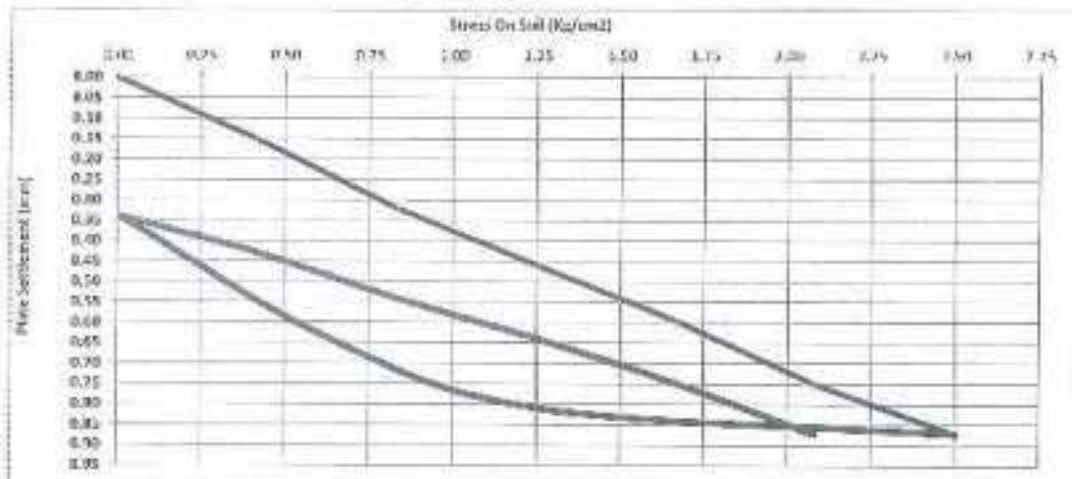
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.53	0.47	19.67	0.33	19.51	0.49	0.43
1	0.83	19.42	0.58	19.56	0.44	19.40	0.60	0.54
2	1.25	19.30	0.70	19.46	0.54	19.32	0.68	0.64
3	1.67	19.19	0.81	19.37	0.63	19.19	0.81	0.75
4	2.08	19.10	0.90	19.20	0.80	19.08	0.92	0.87



Company Name : San Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
Test Date : 17/06/2023
report date : 26/07/2023
Location : Station 449+800 to 449+825
Test No. : 03

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/cm ²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.15	0.32	0.46	0.60	0.75	0.87

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.87	0.81	0.64	0.34

D (mm) = 600	S1 (mm) = 0.28	S2 (mm) = 0.63	ΔS = 0.34
Ev1 (kg/cm ²) = (0.75*D*Δσ)/ΔS	1327		

Ev2/Ev1 = 1.3

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.34	0.43	0.54	0.64	0.75	0.87

D (mm) = 600	S1 (mm) = 0.62	S2 (mm) = 0.77	ΔS = 0.20
Ev2 (kg/cm ²) = (0.75*D*Δσ)/ΔS	1761		

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 : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhea to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+825 to 449+850
 Test No. : 04

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	19.90	0.10	19.84	0.16	19.81	0.19	0.15
2	0.83	19.79	0.21	19.73	0.27	19.70	0.30	0.26
3	1.25	19.67	0.33	19.62	0.38	19.58	0.42	0.38
4	1.67	19.53	0.47	19.49	0.51	19.47	0.53	0.50
5	2.08	19.45	0.55	19.36	0.64	19.34	0.66	0.62
6	2.50	19.29	0.71	19.21	0.79	19.19	0.81	0.77

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.29	0.71	19.21	0.79	19.19	0.81	0.77
2	1.25	19.29	0.71	19.25	0.75	19.22	0.78	0.75
3	0.625	19.36	0.64	19.37	0.63	19.36	0.64	0.64
4	0.01	19.72	0.28	19.74	0.26	19.71	0.29	0.28

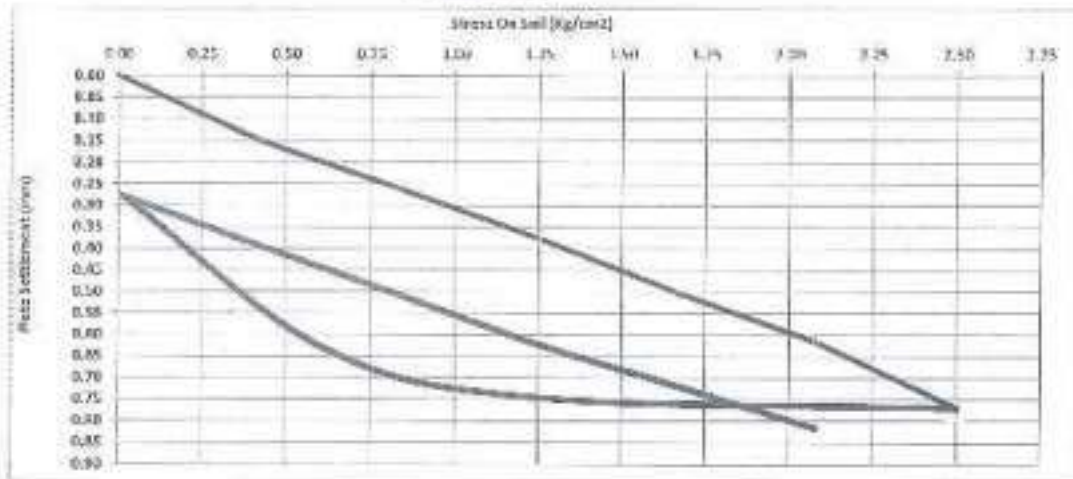
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.61	0.39	19.62	0.38	19.59	0.41	0.39
1	0.83	19.50	0.50	19.50	0.50	19.48	0.52	0.51
2	1.25	19.39	0.61	19.38	0.62	19.36	0.64	0.62
3	1.67	19.28	0.72	19.29	0.71	19.27	0.73	0.72
4	2.08	19.20	0.80	19.18	0.82	19.17	0.83	0.82



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) – Alamein to Foka
Test Date : 17/06/2023
report date : 26/07/2023
Location : Station 449+825 to 449+850
Test No. : 04

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	2.50
Settlement (mm)	0.00	0.15	0.28	0.35	0.50	0.62	0.77

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)	0.77	0.75	0.64	0.28

D (mm) = 600	S1 (mm) = 0.24	S2 (mm) = 0.53	ΔS = 0.29
Ev1 (kg/cm²) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	1568		

Ev2/Ev1 = 1.1

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)	0.28	0.39	0.61	0.62	0.72	0.82

D (mm) = 600	S1 (mm) = 0.48	S2 (mm) = 0.74	ΔS = 0.25
Ev2 (kg/cm²) = $(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$	1770		

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
Ds = The difference between S3 and S7 from the maximum loading (smax) (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Solhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+850 to 449+875
 Test No. : 05

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	19.80	0.20	19.71	0.29	19.75	0.25	0.25
2	0.83	19.66	0.34	19.58	0.42	19.64	0.36	0.37
3	1.25	19.54	0.46	19.43	0.57	19.50	0.50	0.51
4	1.67	19.39	0.61	19.27	0.73	19.35	0.65	0.66
5	2.08	19.28	0.72	19.17	0.83	19.24	0.76	0.77
6	2.50	19.16	0.84	19.03	0.97	19.11	0.89	0.90

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.16	0.84	19.03	0.97	19.11	0.89	0.90
2	1.25	19.25	0.75	19.13	0.67	19.21	0.79	0.80
3	0.625	19.39	0.61	19.26	0.74	19.36	0.64	0.66
4	0.01	19.70	0.30	19.61	0.39	19.67	0.33	0.34

Loading Stage (2)

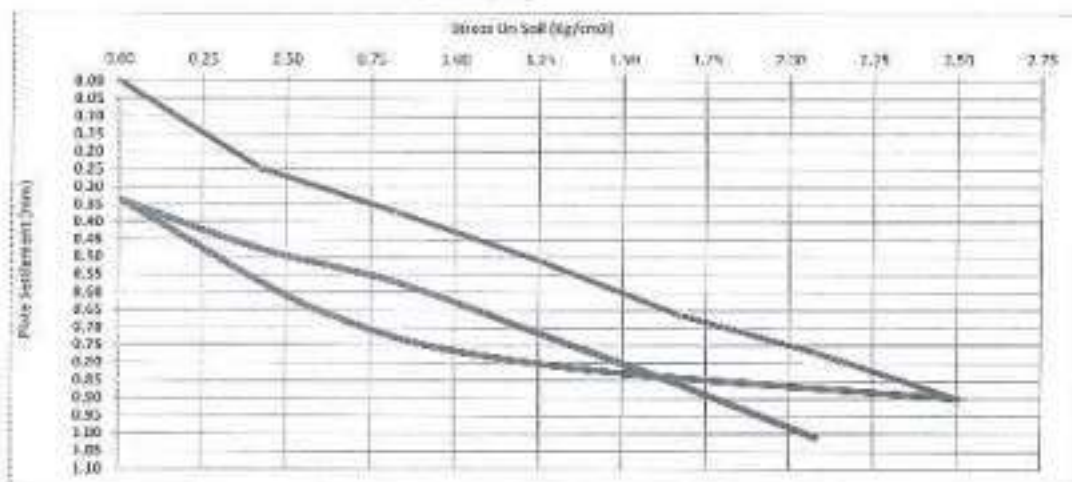
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.45	19.50	0.50	19.52	0.48	0.48
1	0.83	19.46	0.54	19.40	0.60	19.42	0.58	0.57
2	1.25	19.33	0.67	19.23	0.77	19.29	0.71	0.72
3	1.67	19.18	0.82	19.09	0.91	19.15	0.86	0.86
4	2.08	19.00	1.00	18.95	1.05	19.02	0.98	1.01



Company Name : Sun Rise Construction
Project : Electric Express Train, from Al Ain Sokhna to Marsa Matrouh Priority Sector (6) – Alamein to Foka
Test Date : 17/06/2023
report date : 26/07/2023
Location : Station 449+850 to 449+875
Test No. : 05

Nonrepetitive Static Plate Load Tests of Soils

DIN 16134



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	0.25	0.37	0.61	0.66	0.77	0.90

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)	0.80	0.80	0.60	0.34

D (mm) = 600	S1 (mm) = 0.35	S2 (mm) = 0.68	ΔS = 0.34
Ev1 (kg/cm²) = (0.75*D*Δσ)/ΔS	1341		

Ev2/Ev1 =	1.0
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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)	0.34	0.48	0.57	0.72	0.86	1.01

D (mm) = 600	S1 (mm) = 0.53	S2 (mm) = 0.88	ΔS = 0.33
Ev2 (kg/cm²) = (0.75*D*Δσ)/ΔS	1344		

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 (kmax) (kg/cm²)

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

Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Solhna to Marsa Matrouh Priority Sector (6) - Alamein to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+875 to 449+900
 Test No. : 06

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	19.75	0.25	19.84	0.16	19.72	0.28	0.23
2	0.83	19.43	0.57	19.70	0.30	19.45	0.55	0.47
3	1.25	19.27	0.73	19.55	0.45	19.24	0.76	0.66
4	1.67	19.15	0.85	19.36	0.64	19.13	0.87	0.79
5	2.08	19.04	0.96	19.28	0.72	19.02	0.98	0.89
6	2.50	18.93	1.07	19.18	0.82	18.95	1.05	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	18.93	1.07	19.18	0.82	18.95	1.05	0.98
2	1.25	18.98	1.02	19.25	0.75	19.04	0.96	0.91
3	0.625	19.09	0.91	19.36	0.64	19.17	0.83	0.79
4	0.01	19.43	0.57	19.65	0.35	19.41	0.59	0.50

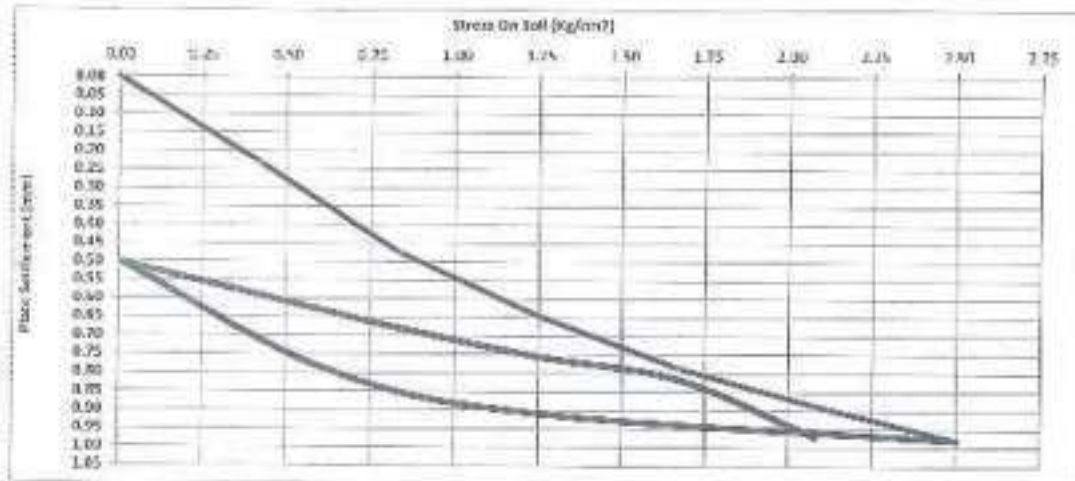
Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.37	0.63	19.54	0.46	19.32	0.68	0.59
1	0.83	19.31	0.69	19.42	0.58	19.23	0.77	0.68
2	1.25	19.25	0.75	19.34	0.66	19.14	0.86	0.76
3	1.67	19.18	0.82	19.29	0.71	19.08	0.92	0.82
4	2.08	18.90	1.10	19.18	0.82	19.01	0.99	0.97



Company Name : Sun Rise Construction
 Project : Electric Express Train, from Al Ain Sokhna to Marsa Matruh Priority Sector (6) - Alameda to Foka
 Test Date : 17/06/2023
 report date : 26/07/2023
 Location : Station 449+875 to 449+900
 Test No. : 06

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	2.50
Settlement (mm)	0.00	0.23	0.47	0.65	0.79	0.89	0.98

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)	0.98	0.81	0.78	0.50

D (mm) = 600	S1 (mm) = 0.43	S2 (mm) = 0.81	ΔS = 0.38
Ev1 (kg/cm²) = (0.75*D*ΔS)/ΔS	1183		

Ev2/Ev1 =	2.1
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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)	0.50	0.59	0.68	0.76	0.82	0.97

D (mm) = 600	S1 (mm) = 0.66	S2 (mm) = 0.85	ΔS = 0.18
Ev2 (kg/cm²) = (0.75*D*ΔS)/ΔS	2444		

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



التحليل الكيميائي لعينات SUBBALLAST

تاريخ ورود العينة: ٢٠٢٣/٩/١٢

الجهة الواردة منها العينات : شركة من رايز للمقاولات العمومية

مشروع القطار الكهربائي السريع (العلمين - فوكة) من كم 446+600 الى 451+100

نوع العينات : عينة ٣

SUBBALLAST (448+600 الى 449+600)

نتائج التحليل الكيميائي :

م	التحليل	%
١	فقد الحرق عند ٩٥٠ م°	٣١,١٥
٢	السيليكا الكلية	٢٥,٢٠
٣	الأملاح القابلة للذوبان	٠,٠٤٦
٤	الكلوريدات	٠,٠٢٨
٥	الكبريتات الذائبة	٠,٠٠٤
٦	الكبريتات الكلية	٠,١٩
٧	الأكاسيد الثلاثية	١,٩١
٨	أكسيد كالسيوم	٣٨,٦٧
٩	أكسيد ماغنسيوم	٢,٠٠

• وذلك دون أدنى مسئولية على المعمل من حيث الطريقة التي أخذت بها العينة او الكلية التي ارسلت بها

المشرف على التحليل



أ.د. / أحمد أمين رجاوط

القائم بالتحليل

د. / دينا عيد المنعم كامل

مدير معمل التحاليل الكيميائية

أ.د. / يحيى محمد صبرى الشاذلى



التحليل الكيميائي لعينات SUBBALLAST

تاريخ ورود العينة: ٢٠٢٣/٩/١٢

الجهة الواردة منها العينات : شركة صن رايز للمقاولات العمومية

مشروع القطار الكهربائي السريع (العلمين - فوكة) من كم 446+600 الى 451+100

نوع العينات : عينة ٧

SUBBALLAST (449+600 الى 450+600)

نتائج التحليل الكيميائي :

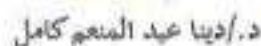
م	التحليل	%
١	فاقد الحرق عند ٩٥٠ م°	٣٣,٨٠
٢	السيليكا الكلية	٢٢,٧٤
٣	الأملاح القابلة للذوبان	٠,٠٥
٤	الكلووريدات	٠,٠٢٥
٥	الكبريتات الذاتية	٠,٠٠٧
٦	الكبريتات الكلية	٠,٢٩
٧	الأكاسيد الثلاثية	٢,١٠
٨	أكسيد كالسيوم	٣٨,٣٣
٩	أكسيد ماغنسيوم	٢,٥٠

• وذلك دون أدنى مسئولية على المعمل من حيث الطريقة التي أخذت بها العينة او الكيفية التي ارسلت بها

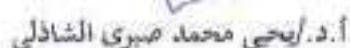
المشرف على التحليل

القائم بالتحليل

أ.د. أحمد أمين زعزوع


د. دينا عيد المنعم كامل


مدير معمل التحاليل الكيميائية

أ.د. يحيى محمد صبرى الشاذلي




التحليل الكيميائي لعينات SUBBALLAST

تاريخ ورود العينة: ٢٠٢٣/٩/١٢

الجهة الواردة منها العينات : شركة صن رايز للمقاولات العمومية

مشروع القطار الكهربائي السريع (العلمين - فوكة) من كم 446+600 الى 451+100

نوع العينات : عينة ١

SUBBALLAST (451+100 الى 450+600)

نتائج التحليل الكيميائي :

م	التحليل	%
١	فقد المحرق عند ٩٥٠ م°	٣٤,٣٥
٢	السيليكا الكلية	٢١,٢٧
٣	الأملاح القابلة للذوبان	٠,٠٤
٤	الكلوريدات	٠,٠٢٥
٥	الكبريتات الذائبة	٠,٠٠٤
٦	الكبريتات الكلية	٠,١٤
٧	الأكاسيد الثلاثية	١,٦٥
٨	أكسيد كالسيوم	٤٠,٦٠
٩	أكسيد مغنسيوم	١,٠٠

• وذلك دون أدنى مسئولية على المعمل من حيث الطريقة التي أخذت بها العينة او الكيفية التي ارسلت بها

المشرف على التحليل

د.أ. أحمد أمين زعوط



القائم بالتحليل

د.أ. دينا عبد المنعم كامل

مدير معمل التحاليل الكيميائية

د.أ. يحيى محمد صبرى الشاذلى

التحليل الكيميائي لعينات من

تاريخ ورود العينة: ٢٠٢٣/٦/١٣

اسم المشروع: مشروع القطار الكهربائي السريع - موقع (٤٤٧+٦٠٠ الى ٤٥١+٦٠٠)

الشركة المتفلة: شركة صن رايز للمقاولات العمومية

نوع العينات : سن - عينة ١ - من كم ٤٤٩+٠٠٠ الى ٤٥١+٠٠٠

نتائج التحليل الكيميائي :

م	التحليل	%
١	فقد الحرق عند ٩٥٠ م°	٣٣,٧٠
٢	السيليكا الكلية	٢٦,٣٢
٣	الأملاح القابلة للفلوئيد	٠,٠٣٥
٤	الكلوريدات	٠,٠١٦
٥	الكبريتات الذاتية	٠,٠٠٤
٦	الكبريتات الكلية	٠,٢٠
٧	الأكاسيد الثلاثة	١,٤٠
٨	أكسيد كالسيوم	٣٥,٧٠
٩	أكسيد ماغنسيوم	١,٦٧

• وذلك دون أدنى مسئولية على المعمل من حيث الطريقة التي أخذت بها العينة او الكيفية التي أرسلت بها

المشرف على التحليل



د.د. أحمد أمين زعزوط

القائم بالتحليل



د.د. عید المنعم كامل

مدير معمل التحاليل الكيميائية



د.د. ايحيى محمد صبرى الشاذلى





التحليل الكيميائي لعينات من

تاريخ ورود العينة: ٢٠٢٣/٦/١٣

اسم المشروع: مشروع القطار الكهربائي السريع - موقع (٤٤٧+٦٠٠ الى ٤٥١+١٠٠)

الشركة المنفذة: شركة صن رايز للمقاولات العمومية

نوع العينات : سن - عينة ١ - من كم ٤٤٩+٠٠٠ الى ٤٥١+٠٠٠

نتائج التحليل الكيميائي :

م	التحليل	%
١	فقد الحرق عند ٩٥٠ م°	٣٣,٧٠
٢	السيليكا الكلية	٢٦,٣٢
٣	الأملاح القابلة للذوبان	٠,٠٣٥
٤	الكلوريدات	٠,٠١٦
٥	الكبريتات الذائبة	٠,٠٠٤
٦	الكبريتات الكلية	٠,٢٠
٧	الأكاسيد الثلاثية	١,٤٠
٨	أكسيد كالسيوم	٣٥,٧٠
٩	أكسيد مغنسيوم	١,٦٧

• وذلك دون أدنى مسئولية على المعمل من حيث العارضة التي أخذت بها العينة او الكيفية التي ارسلت بها

المشرف على التحليل

(د.أ. أحمد أمين زعطوط)

القائم بالتحليل

(د.أ. دينا عبد المنعم كامل)

د.أ. أحمد أمين زعطوط

د.أ. دينا عبد المنعم كامل

مدير معمل التحاليل الكيميائية

(د.أ. محمد صبرى الشاذلى)

د.أ. محمد صبرى الشاذلى





التحليل الكيميائي لعينات من

تاريخ ورود العينة: ٢٠٢٣/٦/١٣

اسم المشروع: مشروع القطار الكهربائي السريع - موقع (٤٤٧٠٦٠٠ الى ٤٥١٠١٠٠)

الشركة المنفذة: شركة من رايز للمقاولات العمومية

نوع العينات : سن - عينة ١ - من كم ٤٤٩٠٠٠ الى ٤٥١٠٠٠

نتائج التحليل الكيميائي :

م	التحليل	%
١	فقد الحرق عند ٩٥٠ م°	٣٣,٧٠
٢	السيليكا الكلية	٢٦,٣٢
٣	الأملاح القابلة للذوبان	٠,٠٣٥
٤	الكلوريدات	٠,٠١٦
٥	الكبريتات الذائبة	٠,٠٠٤
٦	الكبريتات الكلية	٠,٢٠
٧	الإكاسيد الثلاثية	١,٤٠
٨	أكسيد كالسيوم	٣٥,٧٠
٩	أكسيد ماغنسيوم	١,٦٧

• وذلك دون أدلى مسئولية على المعمل من حيث الطريقة التي أخذت بها العينة او الكيفية التي أرسلت بها

المشرف على التحليل

أ.د. أحمد أمين زعزوع

القائم بالتحليل

د. / دينا عبد المنعم كامل

مدير معمل التحاليل الكيميائية

أ.د. / يحيى محمد صبرى الشاذلى



مشروع القطار السريع (العلمين - فوكة)

شركة صن رايز للمقاولات العامة - من المحطة ٦٠٠+٤٤٨ الى المحطة ١٠٠+٤٥١

محضر تحديد مسافة نقل

(نقل السن SUB BALLAST)

انه في يوم الاحد الموافق :- ٢٠٢٢/١٢/١٨

- بناء على طلب المقاول شركة صن رايز للمقاولات العامة لتحديد مسافة نقل السن SUB BALLAST من كساره (الماسه ياسين) على طريق وادي النطرون العلمين للمشروع المذكور اعلاه

تم زيارة الموقع من قبل:-

- | | |
|------------------------------------|------------------------------------|
| ١- السيد المهندس / ابراهيم الحناوي | ممثل الهيئة العامة للطرق والكباري |
| ٢- السيد المهندس / مصطفى نجم | ممثل الاستشاري مكتب د. سعد الجيوشي |
| ٣- السيد المهندس / محمد خليل | ممثل استشاري المساحة مكتب (XYZ) |
| ٤- السيد المهندس / مصطفى نبيل | استشاري مكتب د. سعد الجيوشي |
| ٥- السيد المهندس / سعيد رجب | ممثل شركة صن رايز للمقاولات العامة |

وتبين ان الكساره على مسافة ١٨٢ كم من منتصف القطاع الشركة صن رايز للمقاولات العامة

احداثي كساره (الماسه ياسين) $N 30^{\circ} 31' 44.778''$ $E 29^{\circ} 58' 30.158''$

احداثي منتصف القطاع $N 30^{\circ} 59' 46.05''$ $E 28^{\circ} 28' 15.052''$

وعلى ذلك تم توقيع،،

٥- 

٤- 

٣- 

٢- 

١- 

محضر استلام موقع

مشروع: اعمال الجسر الترابي لمشروع القطار الكهربائي السريع
(العين السخنة - العاصمة الإدارية - العلمين - مطروح)
قطاع العلمين / فوكة

في المسافة من كم ٨٥٠+٤٤٩ الي كم ١٠٠+٤٥١ بطول ١,٢٥ كم
(المنطقة الخامسة - غرب الدلتا)

تنفيذ: شركة صن رايز للمقاولات العمومية

إشراف : المنطقة الخامسة - منطقة غرب الدلتا

طبقاً للعقد رقم (٢٠٢٤/٢٠٢٣/٤٢٠) بتاريخ ٢٠٢٣/٩/٢٠

إنه في يوم الاربعاء الموافق ٢٠٢٣/٩/٢٠ حضر كل من:

- ١- السيد المهندس /محمد حسني فياض مدير عام مشروعات - الهيئة العامة للطرق والكباري
- ٢- السيد المهندس /إبراهيم عبد الله الحناوي مهندس العملية - الهيئة العامة للطرق والكباري
- ٣- السيد المهندس / سعيد رجب سعيد مدير مشروع - شركة صن رايز للمقاولات العمومية

وذلك للمرور على مسار العملية المذكورة عالية لاستلام الموقع :-
وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر
تاريخ ٢٠٢٣/٩/٢٠ هو تاريخ استلام الموقع وبدء الأعمال بالعملية
واقفل المحضر على ذلك ووقع الحضور

التوقيعات

٣- السيد فياض

٢- السيد الحناوي

١- السيد سعيد

رئيس الإدارة المركزية

منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عبد . مهندس /

"هاني محمد محمود طه"