

MATERIAL INSPECTION REQUEST



الهيئة العامة
للطرق والكباري
(GARB)



Contractor Company	Orange Company For Import & Export and General Contracting			Designer Company				(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/ Serial Number				Time			
	Eng: Abdullah Kamal	عبدالله كمال		17-09-2023 M.I.R-001-1				11:00 AM			
Received by GARB CONSULTANT	Eng. Saied Saif	Khaled Zaki	MIR	C1	C2	C3	DO	MM	YY	HH	MM
				346	EW	CS	18	09	23	11	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE-2	Work Activity		
CODE-3	Sub Element of Activity		

Description of Materials		FILTER LAYER				
Location to be Used		From St. (346+200) To St. (346+360)				
MAR Approval No		MAR (001) , MAR (002)			Date	30-08-2023
UIR Approval No		IR (FT-001)				30-08-2023
Supplier Name		AL-Salam & AL-Howayeg		31-08-2023		
Test Requirement		P.LT (DIN 18134)		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.	
Reference Photos		No		Other		
Item	Description	Unit	Quantity	Arrival Date	Note	
1	Plate load test	NUMBER	2	19-09-2023		
2						
3						
4						
Comments by : Saied Saif (K.K)			Comments by: Eng. Alaa Abd-Allatif (ER)			
1- تم إختبار القطاع Plate load test .			1-P.L.T was carried-out By (E-JUST).			
2- تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .			2-Results report attached and acceptable with project specifications.			
			3-Final approval is subject to above mentioned comments.			

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng: Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Khaled Zaki		A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	for	19-9-2023	Awc

* Designer
** Alignment / Bridges: Culvert Only



Technical Report

Plate Loading Tests

KM 346+260 and KM 346+360

Crushed Stone Filter Layer

Project

Electric Express Train (Sokhna - New capital - 6th
of October city - New Elalamein city)

Prepared for

Orange Company for General Contracting

(September 18, 2023)



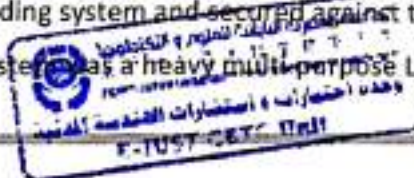


1. Introduction

The Civil Engineering Testing & Consulting Unit (CETCU) of the Egypt-Japan University of Science and Technology (EJUST) was retained by Orange Company for General Contracting to conduct two plate loading tests on the Crushed Stone Filter Layer of the Electric Express Train project at two locations (KM 346+260 and KM 346+360) in accordance with the German Standard DIN18134. The mandate was communicated by Eng. Abdullah Kamel Mohamed of Orange Company for General Contracting. Field team members (Sameh Hassan) from the working CETCU team visited the project site on September 18, 2023 and performed the required tests. This report summarizes the plate loading test procedure according to DIN18134, the test results and their interpretations, and the CETCU pertaining recommendations.

2. Test Set Up and Instrumentation

- The German standard DIN18134 was applied to define the test setup including the loading system, test conditions, and procedure for the plate loading tests.
- The tests were carried out to determine the Strain Moduli (E_{v1} and E_{v2}) and their ratio (E_{v2}/E_{v1}) from a stress – deformation relationship of two consecutive loading from Loading-Unloading-Loading regime.
- The loading plate has a diameter of 600 mm and a thickness of 25 mm and it is provided with equally spaced stiffeners. The upper plate face is parallel to the bottom face of the plate to allow a 300-mm plate to be placed on the 600-mm plate top.
- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 700 bar capacity, which can apply and release the load increments.
- The dial gauge used to measure the plate settlement has a resolution of 0.01 mm and the lever ratio was equal to 1.
- The temperature at the time of the test was $28 \pm 1^\circ\text{C}$.
- The plate was carried out on a Crushed Stone Filter Layer (according to the company) at two points (KM 346+260 and KM 346+360). The test surface area was levelled, and the plate was bedded on this surface.
- The hydraulic jack was placed on the middle of, and normal to, the loading plate beneath the reaction loading system and secured against tilting.
- The reaction loading system was a heavy multi-purpose Loader Kawasaki 70Z.





3. Test Procedure and Results

The plate load test was conducted in accordance with the DIN18134. Loading, unloading, and reloading regimes were considered to estimate the resilient modulus of the tested soil. Prior to the test, the force transducer and dial gauge were reset to zero, and then a load corresponding to a stress of 0.01 MN/m² was applied. The load was increased in the first loading cycle until a normal stress of 0.25 MN/m² was reached, and the loading increment was 0.025 MN/m². The load was gradually released in four stages. Following unloading, a second loading cycle was performed, but the load was only increased to the penultimate stage of the first cycle. Two plate loading tests on the Crushed Stone Filter Layer of the Electric Express Train project were conducted at two locations (KM 346+260 and KM 346+360) and the data collected at the two test points is included in Appendix A.

Table 1 presents the load-settlement data obtained at the first loading and unloading stages of the plate loading test performed at the location (KM 346+260), while Table 2 shows the data obtained at the second loading stage.

Table 1: Load-settlement data obtained at the first loading and unloading stages of the plate loading test performed at the location (KM 346+260)

Loading stage	Load (F)	Normal stress (σ_0)	Settlement (S)
	kN	MN/m ²	mm
0	1.414	0.005	0.00
1	7.07	0.025	0.26
2	14.14	0.050	0.32
3	21.21	0.075	0.44
4	28.28	0.100	0.59
5	35.35	0.125	0.75
6	42.42	0.150	0.89
7	49.49	0.175	1.08
8	56.56	0.200	1.25
9	63.63	0.225	1.39
10	70.7	0.250	1.46
11	56.56	0.200	1.46
12	49.49	0.175	1.29
13	35.35	0.125	1.09
14	21.21	0.075	0.90
15	1.414	0.005	0.53





Table 2: Load-settlement data obtained at the second loading and unloading stages of the plate loading test performed at the location (KM 346+260)

Loading stage	Load (F)	Normal stress (σ_c)	Settlement (S)
	kN	MN/m ²	mm
0	1.414	0.005	0.53
1	7.07	0.025	0.76
2	14.14	0.050	0.91
3	21.21	0.075	1.02
4	28.28	0.100	1.14
5	35.35	0.125	1.26
6	42.42	0.150	1.33
7	49.49	0.175	1.41
8	56.56	0.200	1.49
9	63.63	0.225	1.51

The load-settlement data obtained in all loading and unloading stages for the test performed at the first location (KM 346+260) are shown in Figure 1. Table 3 shows the calculations of the resilient modulus of the tested soil according to DIN18134. The testing data corresponding to the second testing point (KM 346+360) is provided in Tables 4-6 and Figure 2.

Table 3: Calculations of the resilient modulus of the tested soil according to DIN18134: (KM 346+260)

Parameters	1st loading cycle	2nd loading cycle
($s_{0,max}$) MN/m ²	0.25	0.25
a_0 (mm)	0.08	0.54
a_1 (mm/(MN/m ²))	5.01	7.61
a_2 (mm/(MN ² /m ⁴))	2.91	-14.65
$E_v = 1.5 r / (a_1 + a_2 \cdot s_{0,max})$	78.47	113.92
E_{v2}/E_{v1}	1.45	



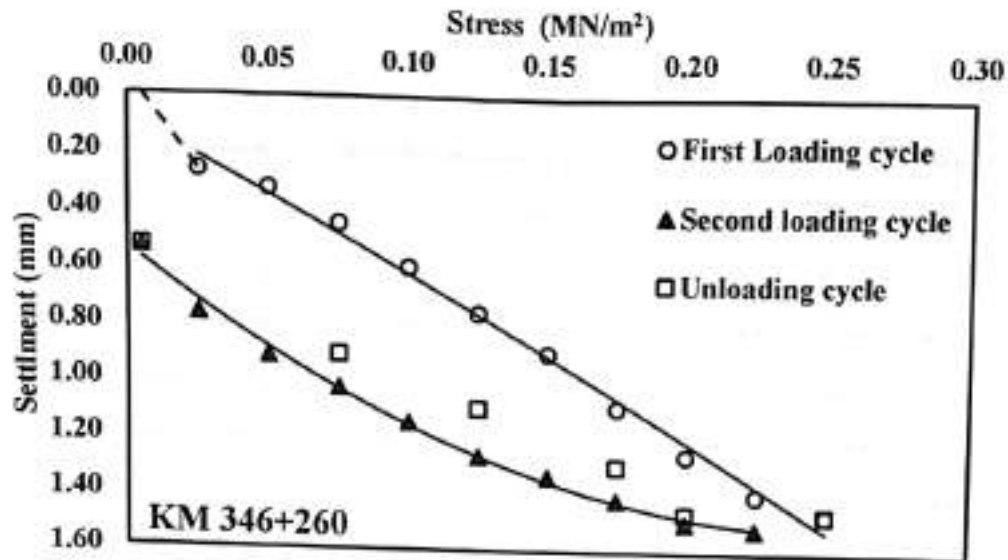


Figure 1: Load-settlement data: plate loading test performed at (KM 346+260)

Table 4: Load-settlement data obtained at the first loading and unloading stages of the plate loading test performed at the location (KM 346+360)

Loading stage	Load (F) kN	Normal stress (σ_0) MN/m ²	Settlement (S) mm
0	1.414	0.005	0.00
1	7.07	0.025	0.20
2	14.14	0.050	0.29
3	21.21	0.075	0.40
4	28.28	0.100	0.58
5	35.35	0.125	0.78
6	42.42	0.150	1.00
7	49.49	0.175	1.23
8	56.56	0.200	1.43
9	63.63	0.225	1.58
10	70.7	0.250	1.68
11	56.56	0.200	1.68
12	49.49	0.175	1.68
13	35.35	0.125	1.68
14	21.21	0.075	1.61
15	1.414	0.005	1.48
			0.82





Table 5: Load-settlement data obtained at the second loading and unloading stages of the plate loading test performed at the location (KM 346+360)

Loading stage	Load (F)	Normal stress (σ_0)	Settlement (S)
	kN	MN/m ²	mm
0	1.414	0.005	0.82
1	7.07	0.025	1.05
2	14.14	0.050	1.14
3	21.21	0.075	1.24
4	28.28	0.100	1.32
5	35.35	0.125	1.39
6	42.42	0.150	1.52
7	49.49	0.175	1.63
8	56.56	0.200	1.66
9	63.63	0.225	1.68

Table 6: Calculations of the resilient modulus of the tested soil according to DIN18134: (KM 346+360)

Parameters	1st loading cycle	2nd loading cycle
($s_{0,max}$) MN/m ²	0.25	0.25
a_0 (mm)	-0.02	0.84
a_1 (mm/(MN/m ²))	6.13	5.97
a_2 (mm/(MN ² /m ⁴))	3.88	-9.71
$Ev = 1.5 r / (a_1 + a_2 \cdot s_{0,max})$	63.41	126.99
Ev_2/Ev_1	2.00	

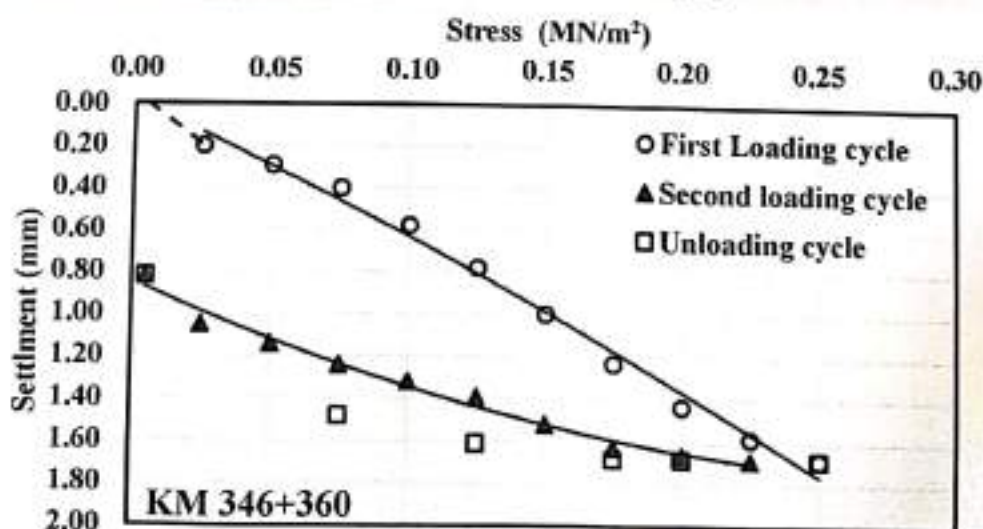


Figure 2: Load-settlement data: plate loading test performed at (KM 346+360)



4. Closure

Test results presented herein report the load-settlement data obtained from two plate loading tests conducted on the Crushed Stone Filter Layer of the Electric Express train project at two locations (KM 346+260 and KM 346+360) in accordance with German Standard, DIN18134.

Location	E_{v1} MN/m ²	E_{v2} MN/m ²	E_{v2}/E_{v1} ratio
KM 346+260	78.47	113.92	1.45
KM 346+360	63.41	126.99	2.00

- Note: Before interpreting these test results for future applications, the Crushed Stone Filter Layer in-situ variability between the testing locations should be considered.

Technical committee

Prof. Dr. Mohamed F. M. Fahmy

Lab Engineer

Eng. Mohamed A. Al-Najjar



Appendix A





Location of test site:	KM 346+260		Field team	Samch Hassan
Project title:	Electric Express Train Project - Orange Company for General Contracting		Date:	18/9/2023
Diameter of loading plate	600		Time	10:00:00 AM
Lever ratio	1			10:27:00 AM
Type of Soil	Crushed Stone Filter Layer		Note: Kawsaki 70Z	
Bedding material	---			
Temperature	28°C			
Test regime	Loading Stage No.	Load (kN)	Dial Gauge Reading (mm)	
Loading Stage	0	1.414	10.00	
	1	7.07	9.74	
	2	14.14	9.68	
	3	21.21	9.56	
	4	28.28	9.41	
	5	35.35	9.25	
	6	42.42	9.11	
	7	49.49	8.92	
	8	56.56	8.75	
	9	63.63	8.61	
	10	70.7	8.54	
Unloading Stage	11	56.56	8.54	
	12	49.49	8.71	
	13	35.35	8.91	
	14	21.21	9.10	
	15	1.414	9.47	
	Test regime	Loading Stage No.	Load (kN)	Dial Gauge Reading (mm)
Reloading Stage	0	1.414	9.47	
	1	7.07	9.24	
	2	14.14	9.09	
	3	21.21	8.98	
	4	28.28	8.86	
	5	35.35	8.74	
	6	42.42	8.67	
	7	49.49	8.59	
	8	56.56	8.51	
	9	63.63	8.49	



Location of test site:	KM 346+360		Field team	Sameh Hassan
Project title:	Electric Express Train Project - Orange Company for General Contracting		Date:	18/9/2023
Diameter of loading plate	600		Time	10:32:00 AM 10:59:00 AM
Lever ratio	1		Note: Kawsaki 70Z	
Type of Soil	Crushed Stone Filter Layer			
Bedding material	---			
Temperature	28°C			
Test regime	Loading Stage No.	Load (kN)	Dial Gauge Reading (mm)	
Loading Stage	0	1.414	10.00	
	1	7.07	9.80	
	2	14.14	9.71	
	3	21.21	9.60	
	4	28.28	9.42	
	5	35.35	9.22	
	6	42.42	9.00	
	7	49.49	8.77	
	8	56.56	8.57	
	9	63.63	8.42	
	10	70.7	8.32	
Unloading Stage	11	56.56	8.32	
	12	49.49	8.32	
	13	35.35	8.39	
	14	21.21	8.52	
	15	1.414	9.18	
Test regime	Loading Stage No.	Load (kN)	Dial Gauge Reading (mm)	
Reloading Stage	0	1.414	9.18	
	1	7.07	8.95	
	2	14.14	8.86	
	3	21.21	8.76	
	4	28.28	8.68	
	5	35.35	8.61	
	6	42.42	8.48	
	7	49.49	8.37	
	8	56.56	8.34	
	9	63.63	8.32	

MATERIAL INSPECTION REQUEST



Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign	Date/ Serial Number		Time		
	Eng: Abdullah Kamal	عبدالله كمال					
Received by GARB CONSULTANT	Eng. Saied Saif	MIR	C1	C2	C3	DD	MM
			347	EW	CS	02	11
						MM	YY
						HH	MM
						11	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE-2	Work Activity		
CODE-3	Sub Element of Activity		

Description of Materials		FILTER LAYER			
Location to be Used		From St. (347+260) To St. (347+460)			
MAR Approval No		MAR (002) , MAR (003) , MAR (004)		Date	30-08-2023
UIR Approval No		IR (FT-002)			30-08-2023
					13-09-2023
Supplier Name		AL-Salam & AL-Howayeg			
Test Requirement		P.L.T (DIN 18134)		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.
Reference Photos		No		Other	
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	2	02-11-2023	
2					
3					
4					
Comments by : Saied Saif (K.K)			Comments by: Eng. Alaa Abd-Allatif (ER)		
-1 . Plate load test تم اختبار القطاع			1-P.L.T was carried-out By (CEL).		
-2 تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .			2-Results report attached and acceptable with project specifications.		
			3-Final approval is subject to above mentioned comments.		

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng: Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	pharad/9ki		A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		3-11-2023	AWC

* Designer

** Alignment / Bridges: Culvert Only

Company : Orange contraction.

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

Sector (5) - Borg Al Arab to El Hamam.

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

Test Location : Station (347+260 to 347+460)

Test Date : 02/11/2023

Repot Date : 02/11/2023

Type of soil : fill filter

Test level : ----

Report No. : 008:009

Dear Gentleman,

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

Apparatus

1. Loading plates consists of plate 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 plate 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 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 : fill filter

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	300
- date of measurement	02/11/2023
- 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
		E_{v1} (MPa)	E_{v2} (MPa)	
1	347+320	61	144	2.4
2	347+420	66	194	2.9

Signature  
مكتب معامل الاستشارات الهندسية
02 الساحل الشمالي
المرمى الرئيسي - طريق القاهرة - الإسكندرية - بورسعيد

Company Name : Orange contraction.
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg El Arab to El Hamam.
 Test Date : 02/11/2023
 report date : 02/11/2023
 Location : Station 347+320
 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	0.83	19.81	0.19	19.75	0.25	19.73	0.27	0.24
2	1.67	19.73	0.27	19.59	0.41	19.48	0.52	0.40
3	2.50	19.60	0.40	19.33	0.67	19.08	0.92	0.66
4	3.33	19.42	0.58	18.92	1.08	18.65	1.35	1.00
5	4.14	19.05	0.95	18.40	1.60	18.15	1.85	1.47
6	5.00	18.72	1.28	17.83	2.17	17.62	2.38	1.94

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.72	1.28	17.83	2.17	17.62	2.38	1.94
2	2.50	18.81	1.19	17.88	2.12	17.67	2.33	1.88
3	1.250	18.96	1.04	18.00	2.00	17.85	2.15	1.73
4	0.05	19.30	0.70	18.32	1.68	18.25	1.75	1.38

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	19.18	0.82	18.19	1.81	18.15	1.85	1.49
1	1.67	19.10	0.90	18.06	1.94	17.95	2.05	1.63
2	2.50	18.95	1.05	17.94	2.06	17.78	2.22	1.78
3	3.33	18.83	1.17	17.85	2.15	17.65	2.35	1.89
4	4.17	18.74	1.26	17.75	2.25	17.53	2.47	1.99



CEL

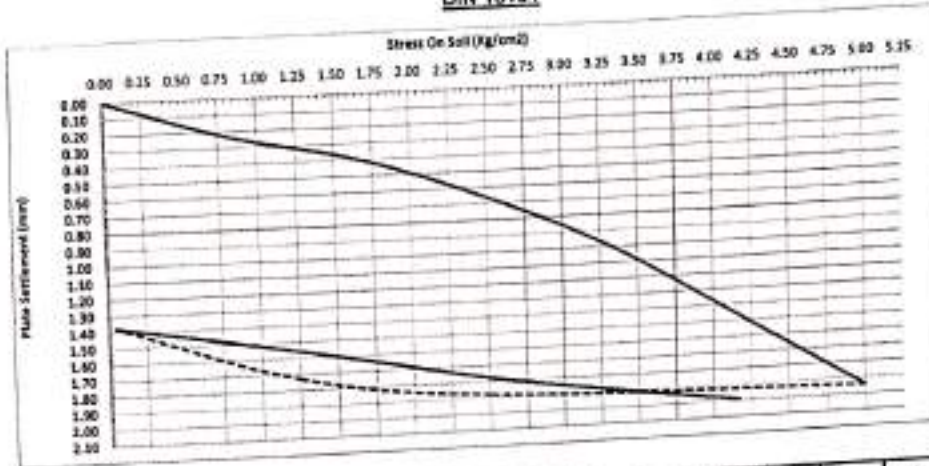
Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company Name
Project
Test Date
Report date
Location
Test No.

: Orange contraction.
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.
: 02/11/2023
: 02/11/2023
: Station 347+320
: 01

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	589	1178	1767	2357	2967	3535
Stress (Kg/cm²)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.24	0.40	0.66	1.00	1.47	1.94

UnLoading (1)	1	2	3	4
Stage(Kg)	3535	1767	883	0
Stress (Kg/cm²)	5.00	2.50	1.250	0.05
Settlement (mm)	1.94	1.88	1.73	1.38

D (mm) =	300	S1 (mm) =	0.37	S2 (mm) =	1.09	ΔS =	0.73
Ev1 (MPa) =	(0.75 * D² * ΔS) / ΔS						
	61						

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2967
Stress (Kg/cm²)	0.05	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	1.38	1.49	1.63	1.78	1.89	1.99

D (mm) =	300	S1 (mm) =	1.60	S2 (mm) =	1.91	ΔS =	0.31
Ev2 (MPa) =	(0.75 * D² * ΔS) / ΔS						
	143						

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).



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



ش ٣ الملك الأفضل
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣
www.cel-egvnt.com

Company Name : Orange contraction.
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.
Test Date : 02/11/2023
report date : 02/11/2023
Location : Station 347+420
Test No. : 02

Data sheet

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

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	0.83	19.72	0.28	19.57	0.33	19.76	0.24	0.28
2	1.67	19.32	0.68	19.36	0.64	19.29	0.71	0.68
3	2.50	19.09	0.91	19.11	0.89	18.98	1.02	0.94
4	3.33	18.85	1.15	18.89	1.11	18.65	1.35	1.20
5	4.14	18.52	1.48	18.60	1.40	18.32	1.68	1.52
6	5.00	18.23	1.77	18.29	1.71	17.97	2.03	1.84

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.23	1.77	18.29	1.71	17.97	2.03	1.84
2	2.50	18.30	1.70	18.36	1.64	18.07	1.93	1.76
3	1.250	18.42	1.58	18.46	1.54	18.13	1.87	1.66
4	0.05	18.77	1.23	18.82	1.18	18.65	1.35	1.25

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	18.68	1.32	18.73	1.27	18.55	1.45	1.35
1	1.67	18.60	1.40	18.64	1.36	18.46	1.54	1.43
2	2.50	18.47	1.53	18.57	1.43	18.37	1.63	1.53
3	3.33	18.35	1.65	18.50	1.50	18.28	1.72	1.62
4	4.17	18.24	1.76	18.41	1.59	18.17	1.83	1.73



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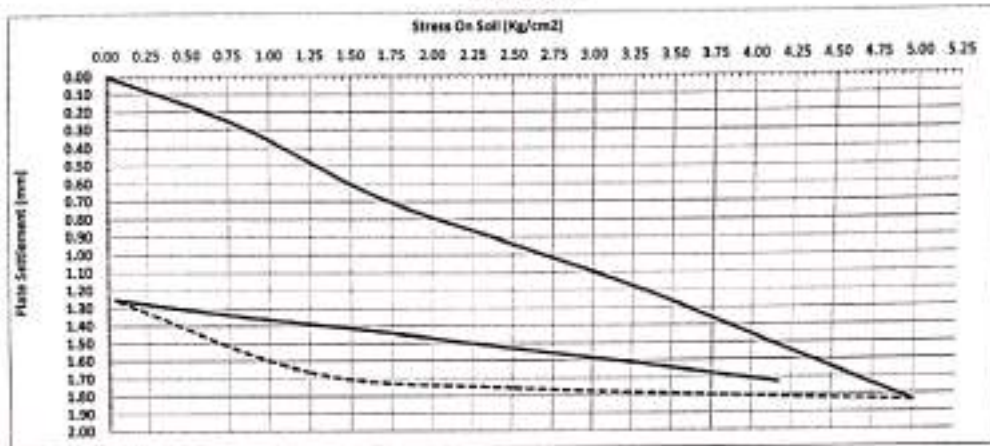
CEL

Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات الهندسية

Company Name
Project
Test Date
Report Date
Location
Test No.

: Orange contraction.
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.
: 02/11/2023
: 02/11/2023
: Station 347+420
: 02

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	589	1178	1767	2357	2967	3535
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.28	0.68	0.94	1.20	1.52	1.84

UnLoading (1)	1	2	3	4
Stage(Kg)	3535	1767	883	0
Stress (Kg/cm2)	5.00	2.50	1.250	0.05
Settlement (mm)	1.84	1.76	1.65	1.25

D (mm) = 300	S1 (mm) = 0.60	S2 (mm) = 1.27	ΔS = 0.67
Ev1 (MPa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	66		

Ev2/Ev1 = 2.9

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2967
Stress (Kg/cm2)	0.05	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	1.25	1.35	1.43	1.53	1.62	1.73

D (mm) = 300	S1 (mm) = 1.42	S2 (mm) = 1.64	ΔS = 0.23
Ev2 (MPa) = $(0.75 \cdot D^2 \cdot \Delta S) / \Delta S$	194		

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)



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٣ ش الملك الأفضل
الزمالك - القاهرة
تليفون + فاكس : ٢٧٣٦٧٢٣١ - ٢٧٣٦٣٠٩٣

الممسوحة ضوئياً بـ CamScanner

MATERIAL APPROVAL REQUEST



المكتب الاستشاري
للطرق والكباري
(GARB)



Contractor Company	Orange For Import & Export and General Contracting			Designer Company		(KK) Engineering Consulting Office					
Issued by Contractor	Name	Sign		Date/Serial Number		Time					
	Eng. Abdullah Kamal	عبدالله كمال		8/28/2023		10:00					
				(M.A.R-001-1)							
Received by GARB CONSULTANT	Eng. Saied Saif	Ichaled Zak	MAR	C1	C2	C3	DO	MM	YY	HH	MM
				345	EW	C5	30	8	23	10	0

CODE 1	S1 to S21	D1 to S3	Kp XXX Note
	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE 2	Work Activity		
CODE 3	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	From Station (345+960) to Station (347+460)		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-81.2) VERSION 2 BY CMECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saied Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party Laboratory Is Approved.		1-All tests were carried-out by Third Party Lab (Faculty of Engineering - ALEXANDRIA UNIVERSITY).	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
3-تم الاعتماد على الصلاحية الداخلية للمشروع.		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Ichaled Zak		Awc
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	for	16-11-2023	Awc

* Designer

** Alignment/Bridges: Culvert only

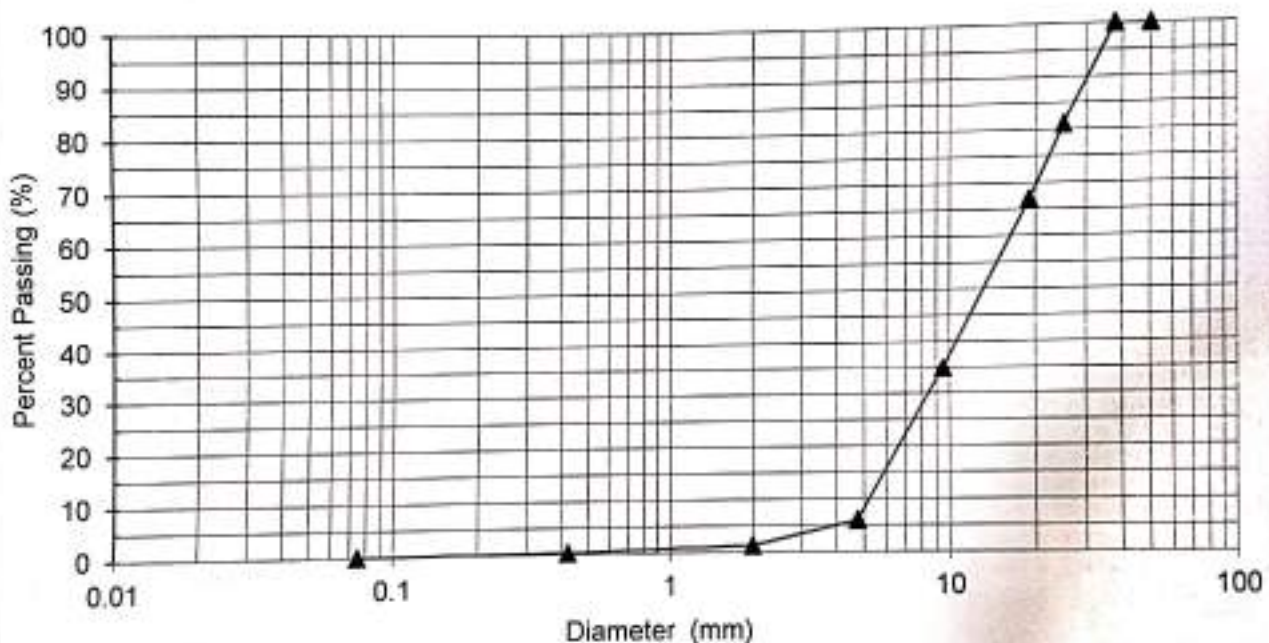


Grain Size Distribution Curve

CLIENT	شركة أورنج للاستيراد والتصدير والمقاولات العمومية
PROJECT	القطار الكهربائي السريع
LOCATION	القطاع من ٢٤٥ + ٩٦٠ الى ٣٤٧ + ٩٦٠
LAYER TYPE	عينة ٣ / ١ من قنطرة

Receiving Date	29/08/2023
Cheque Date	30/08/2023
Receipt Number	112979
Report Date	11/09/2023
Lab. Ref.	G 48/09

GRAIN SIZE DISTRIBUTION CURVE



PERCENT PASSING									
Sieve No.	No. 200	No. 40	No. 10	No. 4	3/8"	3/4"	1"	1 1/2"	2"
Test Results	0.0	0.2	1.2	5.9	34.8	66.9	81.1	100.0	100.0



Laboratory Director

Dr. Wael Bekheet

The laboratory is only responsible for the test results and its correctness. The laboratory is not responsible for the interpretation of the test results.

المعمل مسئول فقط عن نتائج الاختبارات و صحتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنية على ذلك

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P.O. Box 21544, Alexandria, Egypt. Tele-Fax +(203) 5917203



نتائج تجارب لوس أنجلوس و الامتصاص

٢٠٢٣/٠٨/٢٩	تاريخ توريد العينة	٠٩/٣١/٢٠٢٣	تقرير رقم
٢٠٢٣/٠٨/٣٠	أمر دفع	لوس أنجلوس و الامتصاص	الاختبارات
١١٢٩٧٩	أمر دفع	شركة اورنج للاستيراد والتصدير والمقاولات العمومية	المقاول
٢٠٢٣/٠٩/١١	تاريخ التقرير	انقطاع الكهرباء السريع	المشروع
من قنتر (١)	العينة	٣٤٧+٩٦٠ الى ٣٤٥ + ٩٦٠	الموقع

نتائج اختبار لوس أنجلوس و الامتصاص

٥٠٠	لوس أنجلوس
١٢ كورة	عدد كرات الاختبار
٥٠٠٠ جم	وزن العينة قبل التجربة
٤٠٠٩ جم	وزن العينة بعد التجربة
١٩,٨٢ %	نسبة التآكل
١,٠٤ %	نسبة الامتصاص بعد ٢٤ ساعة غمر
٠,٢٧ %	نسبة التفتت في الماء
٢,٦٠ جم/سم ٣	الوزن النوعي

تم توريد العينة بمعرفة مندوب الاستشاري د.أ / خالد قنديل



فنى المعمل
أ/ أحمد عادل

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رقم بريدى ٢١٥٤٤ الإسكندرية - شيفاكس ٥٩١٧٢٠٣ (٢٠٣)

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CEL

Consulting Engineering Bureau & Laboratories

مكتب معامل الاستشارات الهندسية

Company : Orange company.
Project : Electric express train.
Delivery Date : 08/11/2023
Report Date : 16/11/2023
Sample Id : Mixed Aggregate
Report No. : 01

ORGANIC OF SOIL ASTM D 2974
METHOD TYPE D

Test	Results
Amount of organic Content %	Nil

Signature



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Zamalek, Cairo.
Tel.& Fax : 27367231 - 27363093



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MATERIAL APPROVAL REQUEST



الهيئة العامة
للمرور والكباري
(GARB)



Contractor Company	Orange For Import & Export and General Contracting		Designer Company				(KK) Engineering Consulting Office				
Issued by Contractor	Name	Sign	Date/Serial Number				Time				
	Eng. Abdullah Kamal	عبدالله كمال	8/29/2023				10:00				
			(M.A.R-002-1)								
Received by GARB CONSULTANT	Eng. Saied Saif	كhaled Saif	MAR	C1	C2	C3	DD	MM	YY	HH	MM
				345	EW	C5	30	8	23	10	0

CODE-1	S1 to S21	D1 to S3	Kp XXX Note
CODE-2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE-3	Work Activity		
CODE-4	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	From Station (345+960) to Station (347+460)		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	Al-Salam & Al-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG23-41.2) VERSION 2 BY CNECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saied Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party Laboratory is Approved.		1-All tests were carried-out by Third Party Lab (Faculty of Engineering - ALEXANDRIA UNIVERSITY).	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
3-تم الاعتماد على الصلاحية الداخلية للمشور.		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Eng. Saied Saif		AWC
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	Eng. Alaa Abd-Allatif	16-11-2023	AWC

* Designer

** Alignment/Bridges/ Culvert only

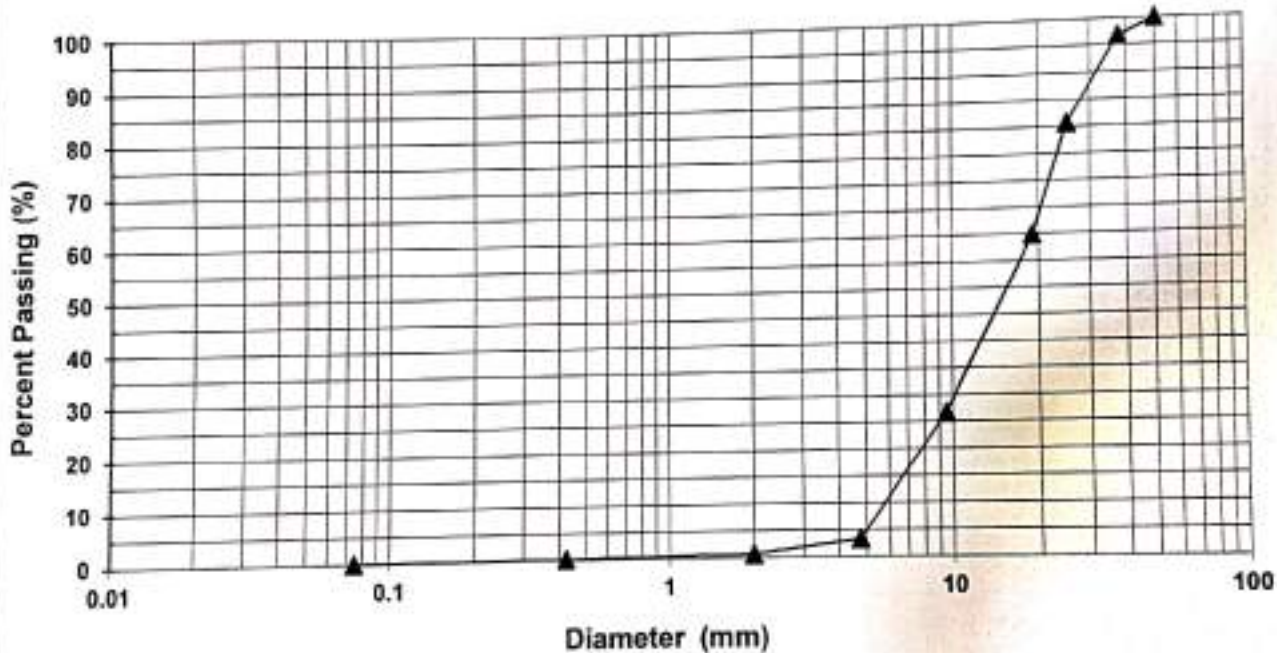


Grain Size Distribution Curve

CLIENT	شركة أورنج للاستيراد والتصدير والمقاولات العمومية
PROJECT	القطار الكهربائي السريع
LOCATION	القطاع من ٣٤٥ + ٩٦٠ إلى ٣٤٧ + ٩٦٠
LAYER TYPE	من قنطرة عينة ٣ / ٢

Receiving Date	29/08/2023
Cheque Date	30/08/2023
Receipt Number	112979
Report Date	11/09/2023
Lab. Ref.	G 49/09

GRAIN SIZE DISTRIBUTION CURVE



PERCENT PASSING

Sieve No.	No. 200	No. 40	No. 10	No. 4	3/8"	3/4"	1"	1 1/2"	2"
Test Results	0.0	0.2	0.6	3.3	26.6	59.8	80.6	96.8	100.0



Laboratory Director

Dr. Wael Bakheet

The laboratory is only responsible for the test results and its correctness. The laboratory is not responsible for the interpretation of the test results.

المعمل مسئول فقط عن نتائج الاختبارات و صحتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنية على ذلك

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نتائج تجارب لوس أنجلوس و الامتصاص

٢٠٢٣/٠٨/٢٩	تاريخ توريد العينة	ل.أ. ٣٢.١/٠٩	تقرير رقم
٢٠٢٣/٠٨/٣٠	أمر دفع	لوس أنجلوس و الامتصاص	الاختبارات
١١٢٩٧٩	أمر دفع	شركة اورنج للاستيراد والتصدير والمقاولات العمومية	المقاول
٢٠٢٣/٠٩/١١	تاريخ التقرير	القطار الكهربائي السريع	المشروع
من فلتر (٢)	العينة	القطاع من ٣٤٥ + ٩٦٠ إلى ٣٤٧ + ٩٦٠	الموقع
نتائج اختبار لوس أنجلوس و الامتصاص			

لوس أنجلوس	
عدد كرات الاختبار	٥٠٠ لفة
وزن العينة قبل التجربة	١٢ كورة
وزن العينة بعد التجربة	٥٠٠٠ جم
نسبة التآكل	٣٩٩٧ جم
نسبة الامتصاص بعد ٢٤ ساعة غمر	%٢٠,٠٦
نسبة التفتت في الماء	%١,٠٦
الوزن النوعي	%٠,٤٢
	٢,٦٣ جم/سم ٣

تم توريد العينة بمعرفة مندوب الاستشاري د.أ / خالد فنديل



فني المعمل
 أحمد عادل

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المعمل مسئول فقط عن نتائج الاختبارات وصحتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنية على ذلك.

رقم بريد ٢١٥٤٤ الإسكندرية - شبراخيت ٥٩١٧٢٠٣ (٢٠٣)
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CEL

Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company : Orange company.
Project : Electric express train.
Delivery Date : 08/11/2023
Report Date : 16/11/2023
Sample Id : Mixed Aggregate
Report No. : 02

**ORGANIC OF SOIL ASTM D 2974
METHOD TYPE D**

Test	Results
Amount of organic Content %	Nil



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Tel. & Fax : 27367231 - 27363093



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MATERIAL APPROVAL REQUEST



المشاورين
المصريين
(GARB)



Contractor Company	Orange For Import & Export and General Contracting			Designer Company			(KK) Engineering Consulting Office				
Issued by Contractor	Name	Sign		Date/Serial Number			Time				
	Eng. Abdullah Kamal	عبد الله كمال		8/29/2023			10:00				
				(M.A.R-003-1)							
Received by GARB CONSULTANT	Eng. Saied Saif	Chaled Saif	MAR	C1	C2	C3	DD	MM	YY	HH	MM
				345	EW	C5	30	8	23	10	0

CODE: 1	S1 to S21	D1 to S3	Kp XXX Note
CODE: 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE: 3	Work Activity		
CODE: 4	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	From Station (345+960) to Station (347+460)		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CMECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saied Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party Laboratory is Approved.		1-All tests were carried-out by Third Party Lab (Faculty of Engineering - ALEXANDRIA UNIVERSITY).	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
3-تم الاعتماد على الصلاحية الداخلية للمشور.		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبد الله كمال		A
QA/QC *	Eng. Saied Saif	Chaled Saif		Awc
GARB**	Eng. Margret Megdy			
Employers Representative	Eng. Alaa Abd-Allatif	For	16-11-2023	Awc

* Designer

** Alignment/Bridges: Culvert only

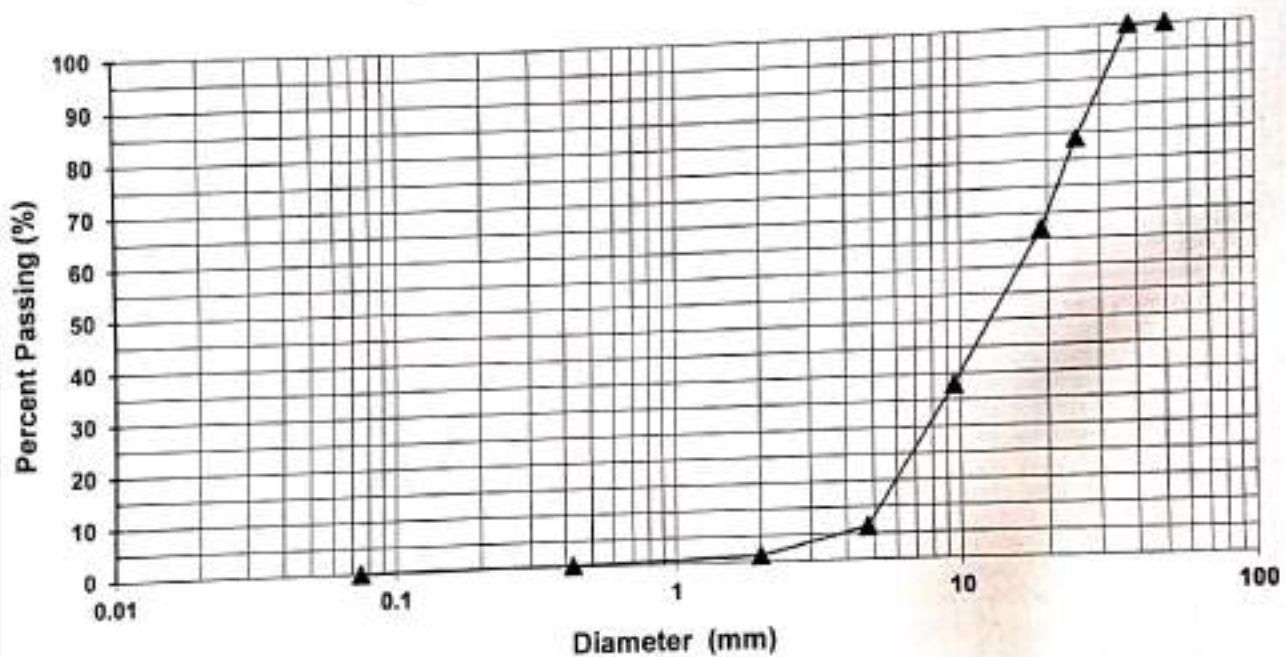


Grain Size Distribution Curve

CLIENT	شركة أورنج للاستيراد والتصدير والمقاولات العمومية
PROJECT	القطار الكهربائي السريع
LOCATION	القطاع من ٣٤٥ + ٩٦٠ إلى ٣٤٧ + ٩٦٠
LAYER TYPE	سن فلتر عينة ٣ / ٣

Receiving Date	29/08/2023
Cheque Date	30/08/2023
Reciept Number	112979
Report Date	11/09/2023
Lab. Ref.	G 50/09

GRAIN SIZE DISTRIBUTION CURVE



Sieve No.	PERCENT PASSING							
	No. 200	No. 40	No. 10	No. 4	3/8"	3/4"	1"	1 1/2"
Test Results	0.0	0.3	1.1	6.2	32.9	62.0	78.9	100.0



وردت العينة التي اجري عليها الاختبار الى المعمل بمعرفة مندوب الاستشاري ا.د / خالد قنديل

Laboratory Director

Dr. Wael Bekheet

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المعمل مسئول فقط عن نتائج الاختبارات و صحتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنية على ذلك

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P.O. Box 21544, Alexandria, Egypt. Tele-Fax +(203) 5917203



نتائج تجارب لوس أنجلوس و الامتصاص

تقرير رقم	ل.أ. ٣٣/ ٠٩	تاريخ توريد العينة	٢٠٢٣/٠٨/٢٩
الاختبارات	لوس أنجلوس و الامتصاص	أمر دفع	٢٠٢٣/٠٨/٣٠
المقاول	شركة اورنج للاستيراد والتصدير والمقاولات العمومية	أمر دفع	١١٢٩٧٩
المشروع	القطار الكهربائي السريع	تاريخ التقرير	٢٠٢٣/٠٩/١١
الموقع	القطاع من ٩٦٠ + ٣٤٥ إلى ٩٦٠ + ٣٤٧	العينة	من فلتر (٣)
نتائج اختبار لوس أنجلوس و الامتصاص			

لوس أنجلوس	٥٠٠ لفة
عدد كرات الاختبار	١٢ كورة
وزن العينة قبل التجربة	٥٠٠٠ جم
وزن العينة بعد التجربة	٤٠١٢ جم
نسبة التآكل	١٩,٧٦ %
نسبة الامتصاص بعد ٢٤ ساعة غير	١,٢٦ %
نسبة التفتت في الماء	٠,٢٣ %
الوزن النوعي	٢,٦٥ جم/سم ^٣

تم توريد العينة بمعرفة مندوب الاستشاري د.أ / خالد قنديل



فني المعمل
أحمد عادل

The laboratory is only responsible for the test results and its correctness. The laboratory is not responsible for the interpretation of the test results.

المعمل مسئول فقط عن نتائج الاختبارات و صحتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنيه على تلك

رقم بريد ٢١٥٤٤ الإسكندرية - تليفاكس ٥٩١٧٢٠٣ (٢٠٣)
P.O. Box 21544, Alexandria, Egypt. Tele-Fax +(203) 5917203

CEL

Consulting Engineering Bureau & Laboratories
مكتب معامل الاستشارات الهندسية

Company : Orange company.
Project : Electric express train.
Delivery Date : 08/11/2023
Report Date : 16/11/2023
Sample Id : Mixed Aggregate
Report No. : 03

**ORGANIC OF SOIL ASTM D 2974
METHOD TYPE D**

Test	Results
Amount of organic Content %	Nil

Signature



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



٣ ش الملك الأفضل
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MATERIAL APPROVAL REQUEST



المكتب العامة
للطرق والكباري
(GARB)



Contractor Company	Orange For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office				
Issued by Contractor	Name	Sign	Date/Serial Number		Time			
	Eng. Abdullah Kamal	عبد الله كمال	9/12/2023 (M.A.R-004-1)		10:00			
Received by GARB CONSULTANT	Eng. Saled Salf	Khaled Elaki	MAR	C1	C2	C3	D0	MM
				345	EW	CS	13	9
								23
								10
								0

CODE-1	S1 to S21	D1 to S3	Kp XXX Note
CODE-2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE-3	Work Activity		
	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	From Station (345+960) to Station (347+460)		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY OVECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saled Salf (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party Laboratory is Approved.		1-All tests were carried-out by Third Party Lab (Faculty of Engineering - ALEXANDRIA UNIVERSITY).	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
3-تم الاعتماد على الصلاحية الداخلية للمشور.		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبد الله كمال		A
QA/QC *	Eng. Saled Salf	Khaled Elaki		Awc
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	For	16-11-2023	Awc

* Designer
** Alignment/Bridges: Culvert only

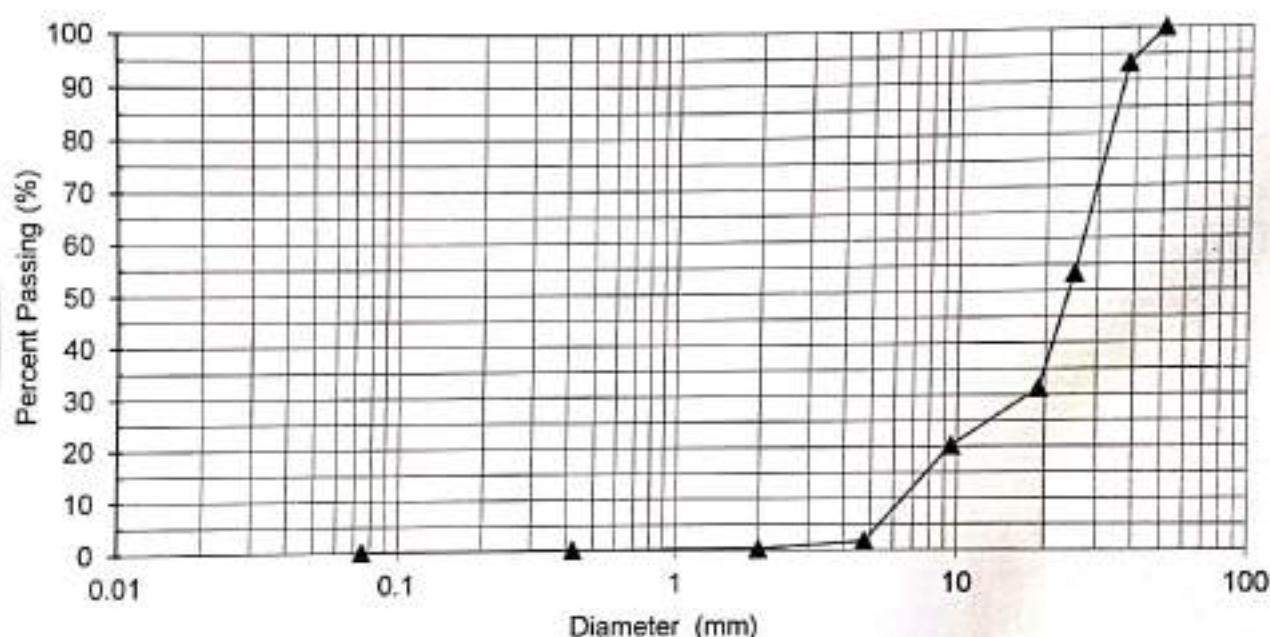


Grain Size Distribution Curve

CLIENT	شركة اورنج للاستيراد والتصدير والمقاولات العمومية
PROJECT	القطار الكهربائي السريع
LOCATION	قطاع من ٣٤٥+٩٦٠ الى ٣٤٧+٩٦٠
LAYER TYPE	من فلتر عينة ٢ / ١

Receiving Date	12/09/2023
Cheque Date	12/09/2023
Receipt Number	116441
Report Date	30/09/2023
Lab. Ref.	G 124/09

GRAIN SIZE DISTRIBUTION CURVE



Sieve No.	PERCENT PASSING							
	No. 200	No. 40	No. 10	No. 4	3/8"	3/4"	1"	1 1/2"
Test Results	0.0	0.2	0.2	1.7	20.1	31.2	53.3	93.2

وردت العينة التي اجري عليها الاختبار الى المعمل بمعرفة مندوب الاستشارى ا.د / خالد قنديل



Laboratory Director

Dr. Wael Bekheet

The laboratory is only responsible for the test results and its correctness. المعمل مسئول فقط عن نتائج الاختبارات و صحتها. المعمل غير مسئول عن تفسير نتائج الاختبارات. laboratory is not responsible for the interpretation of the test results. استخدام نتائج الاختبارات او ان نتائج يهمل على ذلك.

رقم بریدی ٢١٥٤٤ الإسكندرية - تليفاكس ٥٩١٧٢٠٣ (٢٠٣)

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نتائج تجارب لوس أنجلوس و الامتصاص

٢٠٢٣/٠٩/١٢	تاريخ توريد العينة	٠٩/ ٥٦.١	تقرير رقم
٢٠٢٣/٠٩/١٢	أمر دفع	لوس أنجلوس و الامتصاص	الاختبارات
١١٦٤٤١	أمر دفع	شركة اورنج للاستيراد والتصدير والمقاولات العمومية	المقاول
٢٠٢٣/٠٩/٣٠	تاريخ التقرير	القطار الكهربائي السريع	المشروع
سن فتر (١)	العينة	قطاع من ٣٤٥+٩٦٠ الى ٣٤٧+٩٦٠	الموقع

نتائج اختبار لوس أنجلوس و الامتصاص

لوس أنجلوس	٥٠٠ لفة
عدد كرات الاختبار	١٢ كورة
وزن العينة قبل التجربة	٥٠٠٠ جم
وزن العينة بعد التجربة	٤٠١٧ جم
نسبة التآكل	%١٩,٦٦
نسبة الامتصاص بعد ٢٤ ساعة غمر	%١,٠٨
نسبة التفتت في الماء	%٠,١٧
الوزن النوعي	٢,٥٨ جم/سم ^٣

تم توريد العينة بمعرفة مندوب الاستشاري د.أ / خالد قنديل

مدير المعمل
د. / وائل بخيت



فني المعمل
م. / احمد عادل

The laboratory is only responsible for the test results and its correctness. The laboratory is not responsible for the interpretation of the test results.

المعمل مسئول فقط عن نتائج الاختبارات و سجلتها. المعمل غير مسئول عن كيفية استخدام نتائج الاختبارات أو أي نتائج مبنيه على ذلك.

رقم بريد ٢١٥٤٤ الإسكندرية - تليفاكس ٥٩١٧٢٠٣ (٢٠٣)

P.O. Box 21544, Alexandria, Egypt. Tele-Fax +(203) 5917203

CEL

Consulting Engineering Bureau & Laboratories
مكتب معامل الإستشارات الهندسية

Company : Orange company.
Project : Electric express train.
Delivery Date : 08/11/2023
Report Date : 16/11/2023
Sample Id : Mixed Aggregate
Report No. : 04

**ORGANIC OF SOIL ASTM D 2974
METHOD TYPE D**

Test	Results
Amount of organic Content %	Nil



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



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MATERIAL APPROVAL REQUEST			المشروع والمقاول (GARB)			
	ORANGE COMPANY	ENGINEERING CONSULTING OFFICE المكتب الهندسي الاستشاري والبناء				

Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office							
Issued by Contractor	Name	Sign	Date/Serial Number	Time							
	Eng. Abdullah Kamal	عبدالله كمال	23/08/2023 (M.A.R-003)	12:00							
Received by GARB CONSULTANT	Eng. Saied Saif	Khaled Zaki	MAR	C1	C2	C3	00	MM	YY	HH	MM
				345	EW	CS	29	8	23	12	0

CODE-1	S1 to S21	D1 to S3	Kp XIX Note
	Station Reference	Depot Reference	For Kilometer point only Start Km is used
	Work Activity		
	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	المشون		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CS23 41.2) VERSION 2 BY ONECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saied Saif (IC.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Site Laboratory is Approved.		1-All tests were carried-out by material engineer for both contractor and GARB Consultant.	
2-This Sample Representative (5000 m3) Only.		2-Results report attached and acceptable with the project specifications.	
		3-Final approval is subject to above mentioned comments.	
		4- For Information only and another samples should be checked in	
Third Party Lab			

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Khaled Zaki		A
GARB **	Eng. Margret Magdy	2023		
Employers Representative	Eng. Alaa Abd-Allatif	Alaa	30/8	Awc

* Designer

** (signatures/initials): Consultant only



Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein
Section - 5 From Borg Elarab To El Alamein "
From Station 345+960 To Station 347+460

Selve Analysis of Fine and Coarse Aggregats (T-27)

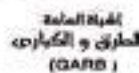
Date :	29/08/2023	Station:	عينة من المشون
From / To :	345+960/347+460	Sample type :	خليط من سن ١# & ٢# & ٣#

Sieve size (mm)	Retained	Passing	Passing %	MIN MAX	
				MIN	MAX
75	0	17592	100.0	100	100
50	0	17592	100.0	75	90
10	14607	2985	17.0	15	25
4.75	2374	611	3.47	0	10
0.075	558	53	0.3	0	5
Passing	53				
Total	17592				

مهندس الجودة الاستشاري
Khaled Zaki

مهندس الشركة
عبدالله كمال

MATERIAL APPROVAL REQUEST



Contractor Company	Orange Company For Import & Export and General Contracting			Designer Company				(XX) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/Serial Number				Time			
	Eng. Abdullah Kamal	عبدالله كمال		28/08/2023				12:00			
	(M.A.R-002)										
Received by GARBI CONSULTANT	Eng. Saied Saif	Khalid Saif		CL	C2	C3	CG	MM	YY	HH	MM
				345	EW	C5	29	8	23	12	0

CODE-1	S1 to S21	D1 to S3	Kp XXX Note
	Station Reference	Depot Reference	For Kilometer point only Start Km is used
	Work Activity		
	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	المشور		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (EG21-41.2) VERSION 2 BY OVECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saied Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Site Laboratory is Approved.		1-All tests were carried-out by material engineer for both contractor and GARB Consultant.	
2-This Sample Representative (5000 m3) Only.		2-Results report attached and acceptable with the project specifications.	
4- for Information only and Contractor'll work on his Responsibility		3-Final approval is subject to above mentioned comment	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	كhalid Saif		A
GARB**	Eng. Margot Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	2023 Alaa	30/8	AWC

* Designer

** Alignment/Design: correct only



Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein
Section - 5 From Borg Elarab To El Alamein
From Station 345+960 To Station 347+460

Sieve Analysis of Fine and Coarse Aggregats (T-27)

Date : 29/08/2023

From / To : 345+960/347+460

Station:

عينة من المشون

Sample type :

خليط من سن ١# & ٢# & ٣#

Sieve size (mm)	Retained	Passing	Passing %		
				MIN	MAX
75	0	13925	100	100	100
50	0	13925	100	75	90
10	11560	2365	16.98	15	25
4.75	1835	530	3.81	0	10
0.075	420	110	0.8	0	5
Passing	110				
Total	13925				

مهندس الجودة الاستشاري
Chaleed Kaki

مهندس الشركة
عبد الله كمال

MATERIAL APPROVAL REQUEST



إدارة المصالح
المطرق والكباريت
(GARB)



Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign	Date/Serial Number		Time		
	Eng. Abdullah Kamal	عبد الله كمال	26/08/2023 (M.A.R-003)		12:00		
Received by GARB CONSULTANT	Eng. Saled Saif	Khaled Saif	CL	C2	C1	DD	MM
			345	EW	CS	29	8

CODE-1	S1 to S21	D1 to S3	Kp XXX Note
CODE-2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE-3	Work Activity		
CODE-4	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	المشون		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	AL-Salam & AL-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG23-41.2) VERSION 2 BY OMCDN GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saled Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Site Laboratory is Approved.		1-All tests were carried-out by material engineer for both contractor and GARB Consultant.	
2- This Sample Representative (5000 m3) Only.		2-Results report attached and acceptable with the project specifications.	
4- For Information only on his Responsibility		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبد الله كمال		A
QA/QC +	Eng. Saled Saif	Khaled Saif		AS
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	Alaa Abd-Allatif	29/8	AWK

* Designer

** Agreement/Signature: Client only



Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein
Section - 5 From Borg Elarab To El Alamein "
From Station 345+960 To Station 347+460

Sieve Analysis of Fine and Coarse Aggregats (T-27)

Date :	29/08/2023	Station:	عينة من المشون	
From / To :	345+960/347+460	Sample type :	خليط من سن ١# & ٢# & ٣#	

Sieve size (mm)	Retained	Passing	Passing %		
				MIN	MAX
75	0	16594	100	100	100
50	0	16594	100	75	90
10	13703	2891	17,42	15	25
4.75	2171	720	4,34	0	10
0.075	574	146	0,9	0	5
Passing	146				
Total	16594				

مهندس الجودة الاستشاري
Chalealaki

مهندس الشركة

MATERIAL APPROVAL REQUEST



المكتب الاستشاري
للطرق والكباري
(GARB)



Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office				
Issued By Contractor	Name	Sign	Date/Serial Number		Time			
	Eng. Abdullah Kamal	عبدالله كامال	13/05/2023 (M.A.R-004)		22:00			
Received by GARB CONSULTANT	Eng. Saled Saif	Mohammed AL	MAR	C1	C2	C3	CO	MM
				345	EW	CS	14	9
								23
								10
								0

CODE 1	S1 to S21	D1 to S3	Kp XXX Note
CODE 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE 3	Work Activity		
	Sub Element of Activity		

Description of Materials	Crushed Dolomitic Aggregates For Filter Layer		
Location to be Used	المشون		
Sample only	Yes	Materials Type	Crushed Dolomitic Aggregates For Filter Layer
Supplier Name	Al-Salam & Al-Howayeg	Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Pregualification reference		Test Samples Results	
Reference Photos	No	Other	
Comments by: Eng. Saled Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Site Laboratory is Approved.		1-All tests were carried-out by material engineer for both contractor and GARB Consultant.	
2- This Sample Representative (5000 m3) Only.		2-Results report attached and acceptable with the project specifications.	
3-Final approval is subject to above mentioned comments.		3-Final approval is subject to above mentioned comments.	
4- For Information only and Contractor is working on his Responsibility			

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Abdullah Kamal	عبدالله كامال		A
QA/QC *	Eng. Saled Saif	Mohammed AL		A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	2023 ALA AWC	15/9	AWC

* Designer

** Approved/ Bridged/ Culvert Only



Electric Express Train - HSR
From El Ain El Sokhna City To El Alamein
Section - 5 From Borg Elarab To El Alamein
From Station 345+960 To Station 347+460

Sieve Analysis of Fine and Coarse Aggregats (T-27)

Date :	14/09/2023	Station:	عينة من المشون		
From / To :	345+960/347+460	Sample type :	خليط من سن 1# & 2# & 3#		
Sieve size (mm)	Retained	Passing	Passing %		
				MIN	MAX
75	0	13743	100.0	100	100
50	0	13743	100.0	75	90
10	11295	2448	17.8	15	25
4.75	1336	1112	8.09	0	10
0.075	977	135	1.0	0	5
Passing	135				
Total	13743				

مهندس الجودة الاستشاري

Mohammed Al

32

مهندس الشركة

عبدالله كمال