

محضر استلام موقع

مشروع: أعمال الجسر الترابي لمشروع القطار الكهربائي السريع قطاعات
غرب النيل في المسافة من كم 383+000 الى كم 383+500 بطول 0.5
كم لتنفيذ أعمال الحفر والردم و طبقات الاساس .

تنفيذ: مكتب الاماراتية للمقاولات العامة و التوريدات العمومية

إشراف : المنطقة الخامسة – منطقة غرب الدلتا

طبقاً للعقد رقم (2024/2023/352) بتاريخ 11/09/2023

إنه في يوم/ الأربعاء الموافق 2023/11/01 اجتمع كل من:-

- | | |
|-----------------------------------|--|
| 1- السيد المهندس / محمد حسنى فياض | مدير عام المشروعات - الهيئة العامة للطرق والكباري |
| 2- السيدة المهندسة / مارجريت مجدى | مهندس العملية - الهيئة العامة للطرق والكباري |
| 3- السيد المهندس / محمد سالم علي | مدير مشروع - الاماراتية للمقاولات العامة و التوريدات |

وذلك للمرور على مسار العملية المذكورة عاليه لاستلام الموقع :-
وقد تبين أن الموقع خالياً من العوائق الظاهرية ويسمح بالبدء في التنفيذ وبناء عليه يعتبر
تاريخ 2023/11/01 هو تاريخ استلام الموقع وبدء الأعمال بالعملية
واقفل المحضر على ذلك ووقع الحضور

مكتب الاماراتية
للمقاولات العامة والتوريدات العمومية
محمد سالم علي حسن
س.ت: ٢١٧٧٧ ب.ش ١٢٩ - ٠٢٤ - ٣٩١

التوقيعات

3- محمد سالم علي

2- 

1- 

رئيس الإدارة المركزية
منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عميد . مهندس /

"هاني محمد محمود طه"

MATERIAL INSPECTION REQUEST		Emirates		المطالبة للمواد والكباري (GARB)		مطابق المواصفات مطابق المواصفات (SPECTRUM)		مطابق المواصفات مطابق المواصفات (SHAKER)			
Contractor company المقاولات العامة والبنية التحتية Emirates General Contracting سجل: ٢١٧٧٧ - ب.س. ١٠٢٩ - ٢٩١		Project Electrical Express Train (Borg Alarab - Alamein) From St.325+393 To St.394+600				Designer company (SPECTRUM) Engineering Consulting Office					
Issued by Contractor	Name Eng. Mahmoud Roshdy	Sign 	Date/Serial Number 01/02/2023 M.A.R.QT (02)		Time 12:00 PM						
Received by GARB CONSULTANT	Eng. Mazen Essamy		SNA	C1 383	C2 EW	C3 CS	OD 02	MM 02	YY 2023	FF 12	MM 00
CODE-1 STG ST Station Reference	CODE-1 DIBES3 Depot Reference	CODE-1 KP xxx Note For Kilometer Point Only		CODE-2 Work Activity			CODE-3 Sub Element Of Activity				
Description Of Materials	FILL Layer Total Quantity (10000 m3)										
Location To Be Used	From St. 383+000 To St. 383+500										
Sample Only	Yes	Materials Type		Fill Layer							
Supplier Name	Omm Al-qura	Data Sheet Provided		Yes Attached							
Reference In BoQ		Specification		EARTHWORK SPECIFICATION & TESTING REPORT (CG21- 41.2) VERSION 2 BY CIVECON GROUP							
Prequalification Reference	A-1-A , A-1-B	Test Sample Results									
Reference Photos	Yes / No	Other									
Comments by: Eng. Mazen Essamy (SPECTRUM)				Comments by: Eng. Alaa Abd-Allatif (ER)							
1-Quality test Result By Site Laboratory is Approved . 2- This Sample Representative (5000 m3) only .				1-All test were carried-out by Thired Party Laboratory (COMIBASSEL) . 2- Result report attached and acceptable with the project specifications . 3-Final approval is subject to above mentioned comments.							
Approval Status											
Organisation	Name	Sign	Designation	Date	A-AWC-R						
Contractor	Eng.Mahmoud Roshdy			2/2/2023	A						
QA/QC*	Eng. Mazen Essamy				A						
GARB**	Eng. Mohammed Fayad										
Employers Representative	Eng. Alaa Abd-Allatif			12-2-2023	Awc						

* Alignment/Bridges/Culvert Only
File: MIR-Material Inspection Request Rev 0822-1

A= Approved ; AWC = Approved With Comments ; R = Rejected
Page

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الجمعية التعاونية للتحكم في الجودة لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

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Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٠١١/١١٠٢٩/٢٤

SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

الشركة الاماراتية للمقاولات العامة والتوريدات العمومية Client:

Date : 02/02/2023

QC : 416

الإدارة: ٤٠ ش سفينة زغلول - الإسكندرية ص.ب ١٥٧

ت. ٤٨٧٠٥٧٢ - ف. ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

40safia zaghloul st., p.o.Box 157 Alex, Egypt
Tel:4870573 - Fax + Tel : 4869796 - 4870665



القطاع: خلف ٢٩ طريق الحرية - الإسكندرية - مصر

ت. ٣٩٢٠١٧٦ - ٣٩٢١٤٨٢ - ف. ٣٩٠٠٤٣٦

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٤ / ٢٩ / ١١٠١١

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة الإماراتية للمقاولات العامة و التوريدات العمومية
Sample : upper embankment (ferma)
Station : ST(383+0.00) : (383+500)
Date of Test : 02/02/2023
QC : 416

II- Sample description:

Gravel and sand (80:20)

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction and optimum moisture content (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)

IV- Results

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction and optimum moisture content (Proctor test)	MDD	2.132
	OMC	6.0%
3- Liquid limit, plastic limit and plasticity index	LL	26.5%
	PL	24.5%
	PI	2.0%
4- California bearing ratio (CBR)	CBR ratio	55%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry

الإدارة: ١٥ شارع مصطفى زغلول - الإسكندرية - مصر
٢٤٧٠٦٦٥ - ٢٤٧٩٧٩٨ - فاكس: ٢٤٧٠٥٧٢
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القطاع: ٤٩ طريق الحرية - الإسكندرية - مصر
٢٤٧٠٥٧٢ - ٢٤٧٩٧٩٨ - فاكس: ٢٤٧٠٥٧٢
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قطاع التفتيش الداخلي والإعمال

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٠١١/١١٠٢٩/٣٤

APPENDIX

الإدارة، ٤٠ ش. صفية زغلول - الإسكندرية - ب. ١٥٧
٤٨٧٠٥٧٢ - ٤٨٦٩٧٩٨ - ف، ٤٨٧٠٦٦٥
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القطاع، خلف ٤٩ طريق الحرية - الإسكندرية - مصر
٢٩٢٠١٧٦ - ٣٩٢١٤٨٢ - ف، ٣٩٠٠٤٧٦
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قطاع التفتيش الداخلي والمعامل

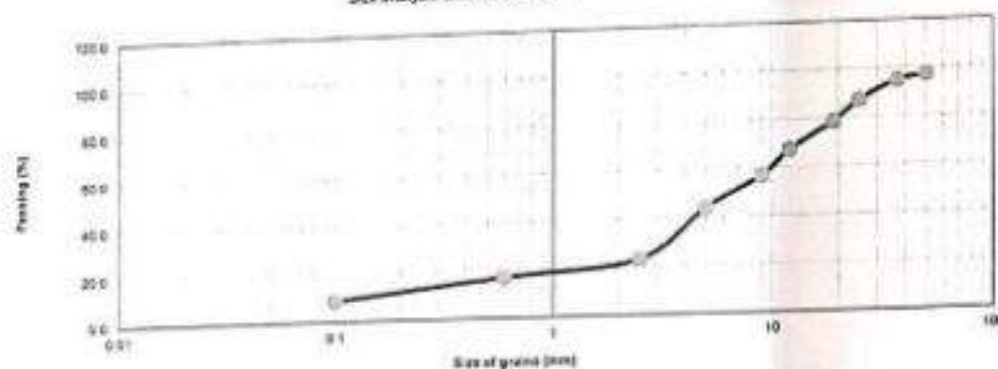
معتك لدى الهيئة المصرية العامة للقياس
تحت رقم ٢٠١١/١١٠٢٩/٢٤

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
2	400.00	400.00	2.84	97.2	
1 1/2	295.00	695.00	4.93	95.1	
1	1115.00	1810.00	12.85	87.2	
3/4	1220.00	3030.00	21.51	78.5	
1/2	1586.00	4616.00	32.77	67.2	
3/8	1443.00	6059.00	43.01	57.0	
No.4	1805.00	7864.00	55.82	44.2	
No.10	235.00	235.00	47.00	23.4	
No.40	305.00	305.00	61.00	17.2	
No.200	400.00	400.00	80.00	8.8	

Total sample weight = 14088.00 pass No.4= 6224.0 Total fine aggregates weight = 500 gm

Size analysis distribution curve



Soil classification: A - 1 - a



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القطاع: 14 طريق الحرية - الإسكندرية - مصر
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الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والظبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

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Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٠١١/١١٠٢٩/٢٤

Modified Proctor Test Report ASTM - D 1557

Mould Number :- 2
Volume of mould = 2120 cm³
Weight of mould = 6360 g
G.S = 2.55 g/cm³

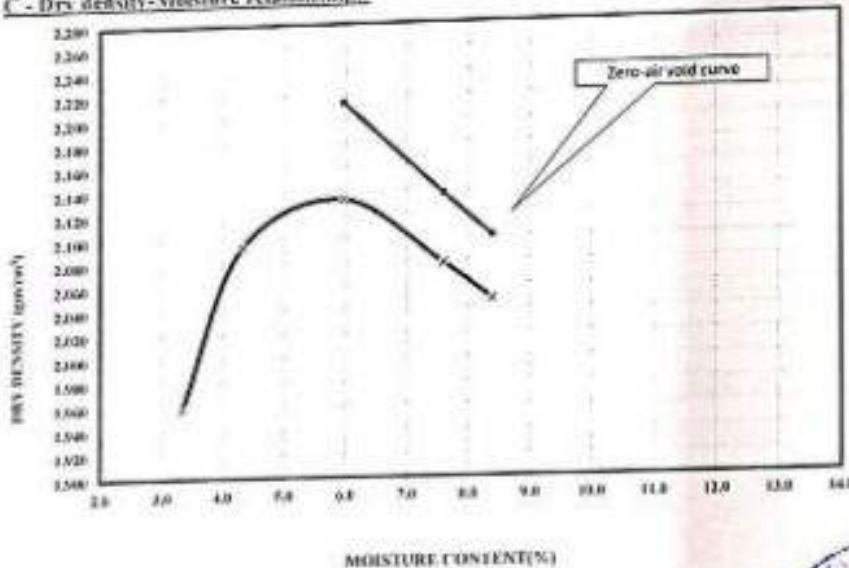
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	10650	10990	11150	11100	11065
Weight of mould (g)	6360	6360	6360	6360	6360
Weight of wet soil (g)	4290	4630	4790	4740	4705
Volume of mould (cm ³)	2120	2120	2120	2120	2120
Wet density (g/cm ³)	2.024	2.184	2.259	2.236	2.219
Dry density (g/cm ³)	1.958	2.094	2.132	2.078	2.048
Zero-air Void curve			2.214	2.136	2.101

B- Moisture Calculations :-

Weight of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight of dry soil+container (g)	244.5	243.0	240.5	238.0	238.0
Weight of container (g)	80.0	81.0	81.0	80.0	95.0
moisture content (%)	3.3	4.3	6.0	7.6	8.4

C - Dry density-Moisture relationship:-



M.D.D= 2.132 gm/cm³
O.M.C= 6 %



الإدارة: ٤٠ شارع سفينة زغلول - الإسكندرية - مصر
TAX-077 - TAX-078 - TAX-079

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القطاع: خلف ٤٩ طريق الحرية - الإسكندرية - مصر
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الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والطيرة الدولية (كوميبيسل)

حاصلة على شهادة الأيزو ISO 9001:2015

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Under No.: 34/29.11.2011

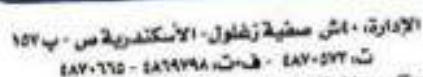
قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٠١١/١١٠٢٩/٣٤

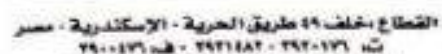
Report Of CBR Test - ASTM - D 1883

Figure 1: CBR Stress-Strain Curves

Penetration of Plunger (mm)	Force on Plunger (kN) - 10% Fines	Force on Plunger (kN) - 20% Fines
0.0	0.0	0.0
0.5	4.0	1.0
1.0	8.0	2.0
1.5	12.0	3.0
2.0	15.0	4.0
2.5	18.0	5.0
3.0	20.0	6.0
3.5	22.0	7.0
4.0	23.0	8.0
4.5	24.0	9.0
5.0	25.0	10.0
5.5	26.0	11.0
6.0	27.0	12.0
6.5	28.0	13.0



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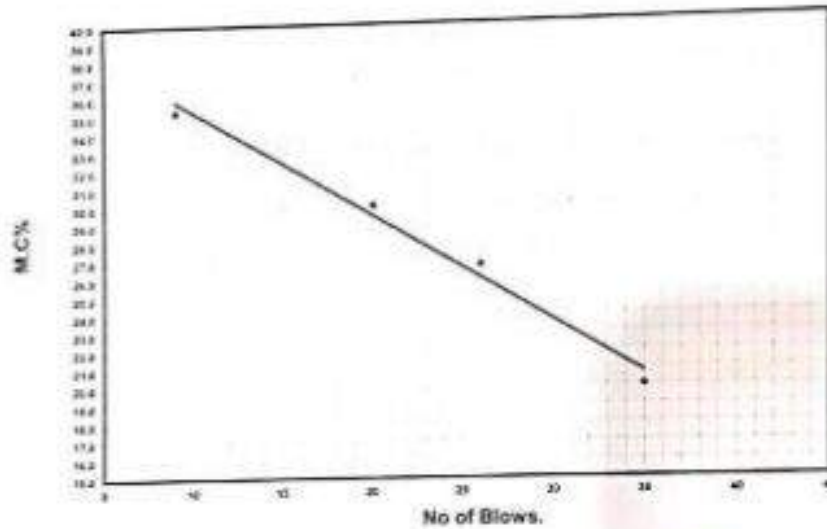
الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015
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Under No: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل
يعتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١٠١١

Liquid and Plastic Limits Test ASTM - D 4318

Test No	1	2	3	4	5	6
Type of test	Liquid Limit				Plastic Limit	
NO of B.	35	26	20	9		
Container No	L	K	W	C	F	M
Mass of wet soil + container	96.00	99.00	89.00	45.00	66.00	50.00
Mass of dry soil + container	95.00	95.00	86.00	39.00	60.00	48.00
Mass of container	90.00	80.00	76.00	22.00	35.00	40.00
Mass of moisture	1.00	4.00	3.00	6.00	6.00	2.00
Mass of dry soil	5.00	15.00	10.00	17.00	25.00	8.00
Moisture content	20.00	26.67	30.00	35.29	24.00	25.00



Results:
Liquid Limit (L.L) : 26.5 %
Plastic Limit (P.L) : 24.5 %
Plasticity Index (P.I): 2.0 %



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القطاع خلف ١٩ طريق الحرية - الإسكندرية - مصر
TANT ٢٩٠٠٤٧٦ - ٢٩٢١٤٨٢ - ٢٩٢٠٤٧٦
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قطاع التفتيش الداخلي والمعامل

معتد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٩/١١/٢٠١١

Report :	225 - 2 - Center
Date :	12/02/2023

CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	الشركة الاماراتية للمطاولات العامة والتوريدات العمومية
Project :	Electric express train
Sample :	FERMA - MIX (20 : 80)
Station :	ST (383+ 0.00) : (383 +500)
Date of Test :	2-2-2023

Temperature : 18 °C

Humidity : 50%

ANALYSIS	RESULTS	METHOD REFERENCE
ORGANIG MATTER	NEGATIVE	ASTM D 2974



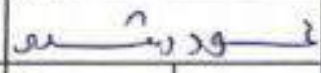
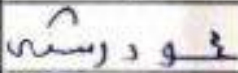

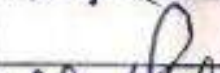
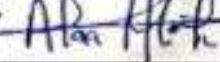
LAB DIRECTOR
CH/ Mostafa Asker

Moustafa

الإدارة: ٤٥ شارع سفينة زحلول - الإسكندرية - مصر
٤٨٧-٥٧٢ - ٤٨٧-٦٦٥ - ٤٨٦٩٧٩٨
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القطاع: خلف ٤٩ طريق الحرية - الإسكندرية - مصر
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MATERIAL INSPECTION REQUEST مكتبة الامارات للمقاولات العامة والموردين العرب ٢٩١ - ٢٢ - ١٥٩ Contractor Company		Emirates هيئة الطرق والمواصلات (GARB)		AT&T AT&T AT&T		AT&T AT&T AT&T		AT&T AT&T AT&T		
Emirates General Contracting		Project Electrical Express Train (Borg Alarab - Alamein) From St.325+393 To St.394+600				Designer company (SPECTRUM) Engineering Consulting Office				
Issued by Contractor	Name Eng. Mahmoud Roshdy	Sign 	Date/Serial Number 19/03/2023 M.A.R.QT (S.B.01)		Time 12:00 PM					
Received by GARB CONSULTANT	Eng. Mazen Essamy	SNA	C1 383	C2 EW	C3 CS	DD 20	MM 03	YY 2023	HH 12	MM 00
CODE-1 S1 to S1 Surface Reference		CODE-1 DT to S3 Depot Reference		CODE-1 KP xxx Note For Kilometer Point Only		CODE-2 Work Activity		CODE-3 Sub Element Of Activity		
Description Of Materials		SUB-BALLAST Total Quantity (5000 m3)								
Location To Be Used		From St. 383+000 To St. 383+500								
Sample Only		Yes		Materials Type			Sub-ballast			
Supplier Name		Al-Israa and Al-Meraaj		Data Sheet Provided			Yes Attached			
Reference In BoQ				Specification			EARTHWORK SPECIFICATION & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP			
Prequalification Reference		A-1-A , A-1-B		Test Sample Results						
Reference Photos		Yes / No		Other						
Comments by: Eng. Mazen Essamy (SPECTRUM)					Comments by: Eng. Alaa Abd-Allatif (ER)					
1-Quality test Result By Site Laboratory is Approved . 2- This Sample Representative (5000 m3) only .					1-All test were carried-out by Thired Party Laboratory [COMIBASSEL) . 2- Result report attached and acceptable with the project specifications . 3-Final approval is subject to above mentioned comments.					
Approval Status										
Organisation	Name	Sign	Designation	Date	A-AWC-R					
Contractor	Eng.Mahmoud Roshdy			20/3/2023	A					
QA/QC*	Eng. Mazen Essamy				A					
GARB**	Eng. Mohammed Fayad									
Employers Representative	Eng. Alaa Abd-Allatif	2023 			AWC					

* Alignment/Bridges/Culvert Only
 File :MIR-Material Inspection Request Rev 0822-1

A= Approved ; AWC = Approved With Comments ; R = Rejected
 Page



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	الشركة الاماراتية للمقاولات العامة والتوريدات العمومية
Sample :	Sub-ballast layer
Station :	St(383+000) to st(383+500)
Date of Test :	20/3/2023
QC :	780

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test

IV- Results

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.182
	OMC	6.2%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	95%
5- Specific gravity (SG), absorption and degradation	S S D	2.516
	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	26.7%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For: Dr. M.
Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191

Email: clirdept@comibassal.com

WebSite: www.comibassal.com



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Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

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APPENDIX

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COMIBASSAL International Controllers

Internal inspection and laboratories sector

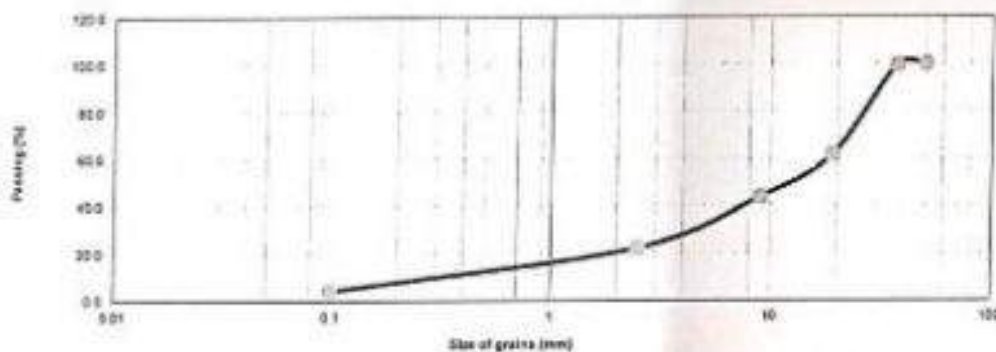
Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
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PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED	CUMULATIVE WEIGHT	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
	(gm)	RETAINED (gm)	RETAINED (%)	PASSING (%)	
2	0.00	0.00	0.00	100.0	
1 1/2	49.00	49.00	0.51	99.5	
1	1636.60	1685.60	17.65	82.4	
3/4	1985.00	3670.60	38.43	61.6	
1/2	939.90	4610.50	48.27	51.7	
3/8	750.00	5360.50	56.13	43.9	
No.4	235.00	5595.50	58.59	41.4	
No.10	230.00	5825.50	62.00	38.0	
No.200	447.00	6272.50	89.40	10.6	

Total sample weight= 9550.50 pass No.4= 3955.0 Total fine aggregates weight = 500 gm
pass% 41.4

Size analysis distribution curve



Soil classification: A - 1 - a - sample is non plastic



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Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2190 cm³
Weight of mould = 7047 g
G.S = 2.57 g/cm³

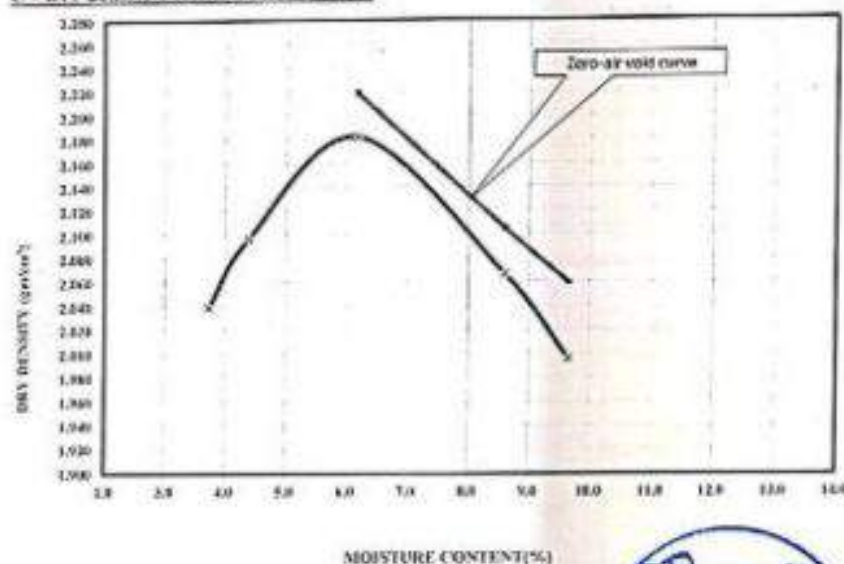
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	11680	11840	12120	11962	11840
Weight of mould (g)	7047	7047	7047	7047	7047
Weight of wet soil (g)	4633	4793	5073	4915	4793
Volume of mould (cm ³)	2190	2190	2190	2190	2190
Wet density (g/cm ³)	2.116	2.189	2.316	2.244	2.189
Dry density (g/cm ³)	2.039	2.097	2.182	2.067	1.996
Zero-air Void curve			2.219	2.105	2.059

B- Moisture Calculations :-

	250.0	250.0	250.0	250.0	250.0
Weight of wet soil (g)	250.0	250.0	250.0	250.0	250.0
Weight of dry soil (g)	241.0	239.5	235.5	230.2	228.0
moisture content%	3.7	4.4	6.2	8.6	9.6

C - Dry density-Moisture relationship:-



M.D.D= 2.182 gm/cm³
O.M.C= 6.2 %



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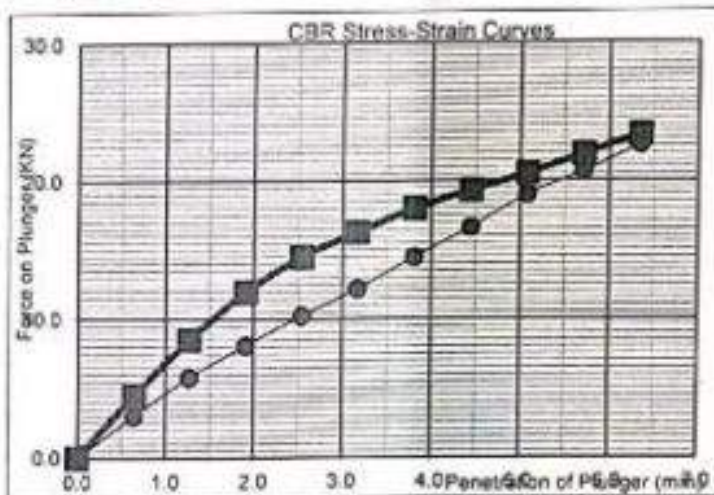
COMIBASSAL International Controllers

Internal inspection and laboratories sector

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Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56			Swell %		
MOULD NO	1			56		
WT OF MOULD+SOIL	12300			Start	0.00	
WT OF MOULD	7250			End	0.00	
WT OF SOIL	5050			Swell	0.00	
VOLUME OF MOULD	2190					
WET DENSITY	2.305					
		MC before soaking		Weight of Rammer		4.54Kg
TIN NO	1			MOD	Kg/m3	2.182
WT OF WET SOIL+TIN	250.00					
WT OF DRY SOIL+TIN	241			OMC	%	6.2
WT OF WATER	9.00					
WT OF TIN	85			PROVING RING		
WT OF DRY SOIL	156	2.125		Dw/KN		
MOISTURE CONTENT	5.8					
DRY DENSITY	2.180			Capacity (KN)		50
		97		Bearing (KN)		CBR
Pen mm	56		56	standar	56	
0.00	0		FALSE	0.0		
0.64	305		3.0	4.5		
1.27	590		5.8	8.5		
1.91	830		8.1	12.0		
2.54	1045		10.2	14.5	78	
3.17	1245		12.2	16.3		
3.81	1475		14.5	18.0		
4.45	1695		16.6	19.3		
5.08	1935		19.0	20.5	95	
5.71	2105		20.6	21.9		
6.35	2302		22.6	23.3		



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Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2526
Weight of saturated sample in water (C)	1522
Weight of dry sample after heating (A)	2495

Results:-

Saturation surface dry specific gravity = $B / (B-C)$	2.516
Bulk specific gravity = $A / (B-C)$	2.485
Apparent specific gravity = $A / (A-C)$	2.564
Absorption of water = $(B-A)/A \times 100$	1.2
Degradation of aggregate = $(2500-A) / A \times 100$	0.2



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ABRASION AND IMPACT " LOS ANGELES " TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	A
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3664
% abrasion By Weight Passing from Sieve No.12	26.7%



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COMIBASSAL International Controllers

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Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

Report	:	350 - 2 - Center
Date	:	17/04/2023

CHEMICAL ANALYSIS

General Consultant :
Consultant :
Contractor :
Project :
Sample :
Station :
Date of Test :

Temperature : 20 °C

SYSTRA

SPECTRUM

الشركة الاماراتية للمقاولات العامة والتوريدات العمومية

Electric express train

Sub Ballast Layer

ST (383 + 0.00) : (383 + 500)

20-3-2023

Humidity : 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0028%	ASTM D 2974
SULPHATE	0.0072%	
ORGANIG MATTER	NEGATIVE	



LAB DIRECTOR
CH/ Mostafa Asker

Moustafa

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MATERIAL INSPECTION REQUEST		Emirates		الهيئة العامة للغرق والكوارث (GARB)		مكتب الدراسات والبحوث والبيئة (SPECTRUM)		مكتب الدراسات والبحوث والبيئة (SPECTRUM)	
Contractor company Emirates General Contracting		Project Electrical Express Train (Borg Alarab - Alamein) From St.325+393 To St.394+600				Designer company (SPECTRUM) Engineering Consulting Office			
Issued by Contractor	Name Eng. Mahmoud Roshdy	Sign 	Date/Serial Number 09/03/2023 M.A.R.Q.T (S.G.01)	Time 12:00 PM					
Received by GARB CONSULTANT	Eng. Mazen Essamy	SNA	CI	CR	CS	CD	SN	YY	MM
			383	EW	CS	11	03	2023	12 00
CODE-1 S1 to S3 Station Reference	CODE-1 D1 to S3 Depth Reference	CODE-1 KP xxx Note For Kilometer Point Only	CODE-2 Work Activity			CODE-3 Sub Element Of Activity			
Description Of Materials	Prepared Subgrade Total Quantity (5000 m3)								
Location To Be Used	From St. 383+000 To St. 383+500								
Sample Only	Yes	Materials Type	Perpared Subgrade						
Supplier Name	Al-Israa and Al-Meraaj	Data Sheet Provided	Yes Attached						
Reference In BoQ		Specification	EARTHWORK SPECIFICATION & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP						
Prequalification Reference	A-1-A , A-1-B	Test Sample Results							
Reference Photos	Yes / No	Other							
Comments by: Eng. Mazen Essamy (SPECTRUM)			Comments by: Eng. Alaa Abd-Allatif (ER)						
1-Quality test Result By Site Laboratory is Approved . 2- This Sample Representative (5000 m3) only .			1-All test were carried-out by Thired Party Laboratory (COMIBASSEL) . 2- Result report attached and acceptable with the project specifications . 3-Final approval is subject to above mentioned comments.						
Approval Status									
Organisation	Name	Sign	Designation	Date	A-AWC-R				
Contractor	Eng.Mahmoud Roshdy			11/3/2023	A				
QA/QC*	Eng. Mazen Essamy				A				
GARB**	Eng. Mohammed Fayad								
Employers Representative	Eng. Alaa Abd-Allatif				Auk				

* Alignment/Bridges/Culvert Only
File: MIR Material Inspection Request Rev 0822-1

A= Approved ; AWC = Approved With Comments ; R = Rejected
Page

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COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : الشركة الاماراتية للمقاولات العامة والتوريدات العمومية
Sample : Prepared Sub-grade
Station : St(383+000) to st(383+500)
Date of Test : 11/3/2023
QC : 779

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test

IV- Results

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.155
	OMC	6.3%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	92%
5- Specific gravity (SG), absorption and degradation	S S D	2.569
	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	27.2%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For. Dr. H.
Dr. Mohamed Mostafa Badry

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APPENDIX

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COMIBASSAL International Controllers

الجمعية التعاونية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by:

Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

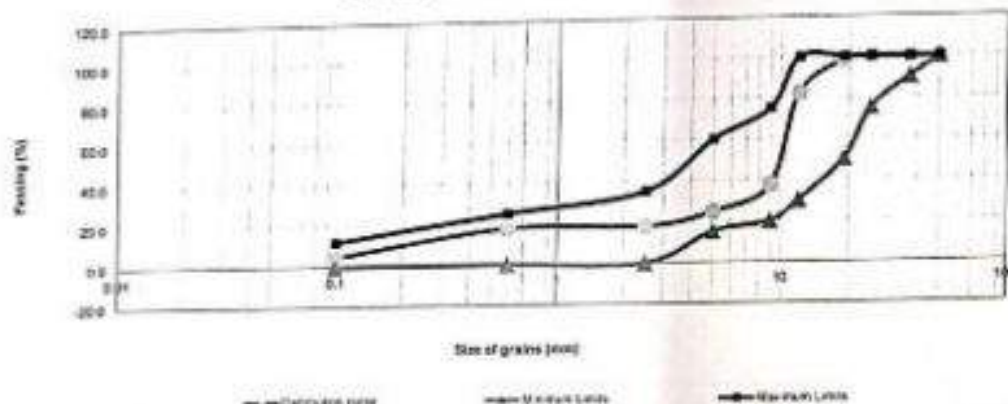
PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS	
5	0.00	0.00	0.00	100.0	100	100
4	0.00	0.00	0.00	100.0	90	100
3	0.00	0.00	0.00	100.0	75	100
1.5	150.00	150.00	1.54	98.5	50	100
3/4	4355.00	6083.00	62.45	37.5	20	75
3/8	1255.00	7338.00	75.34	24.7	15	60
No.10	138.00	138.00	27.60	17.9	0	35
No.200	405.00	405.00	81.00	4.7	0	12

Total sample weight = 9740.00

pass No. 3/8 = 3980.0 Total fine aggregates weight = 500 gm
% 40.9

Size analysis distribution curve



Soil classification: A - 1 - a (Non Plastic)



الإدارة: ١٥٧ شارع صفية زغلول - الإسكندرية - مصر
ت: ٤٨٧٠٥٧٢ - ف: ٤٨٧٩٧٩٨ - ٤٨٧٠٦٦٥
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Tel: 4870573 - Fax + Tel : 4869798 - 4870665



المطابق خلف ٤٩ طريق الحرية - الإسكندرية - مصر
ت: ٣٩٢٠١٧٦ - ٣٩٢١٤٨٢ - ف: ٣٩٠٠٤٧٦
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COMIBASSAL International Controllers

الجمعية التعاونية للإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by:

Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٠١١/١١٠٢٩/٢٤

Modified Proctor Test Report ASTM - D 1557

Mould Number :- 1
Volume of mould = 2190 cm³
Weight of mould = 7047 g
G.S = 2.56 g/cm³

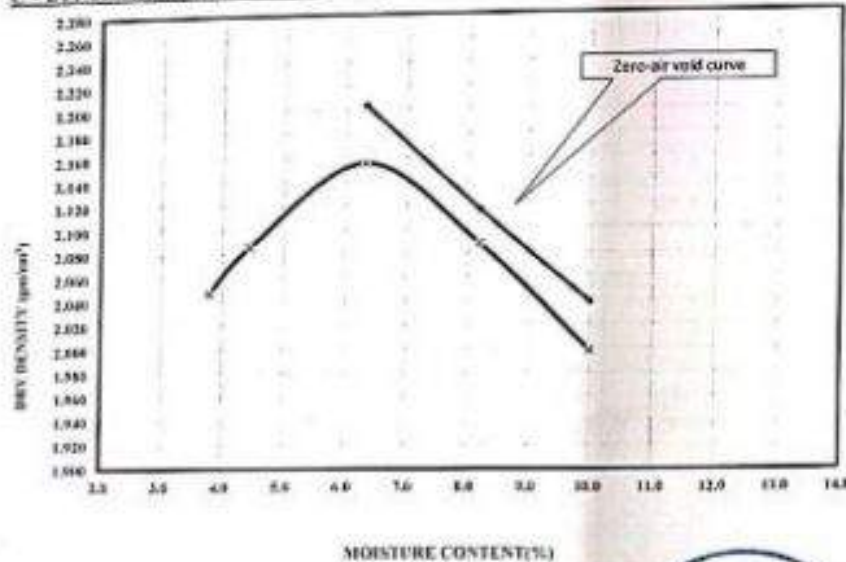
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	11700	11818	12065	11993	11860
Weight of mould (g)	7047	7047	7047	7047	7047
Weight of wet soil (g)	4653	4771	5018	4946	4813
Volume of mould (cm ³)	2190	2190	2190	2190	2190
Wet density (g/cm ³)	2.125	2.179	2.291	2.258	2.198
Dry density (g/cm ³)	2.047	2.086	2.155	2.087	1.998
Zero-air Void curve			2.204	2.116	2.038

B- Moisture Calculations :-

Weight of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight of dry soil+container (g)	244.0	243.0	240.2	237.5	235.0
Weight of container (g)	85.5	85.5	85.0	85.0	85.0
moisture content (%)	3.8	4.4	6.3	8.2	10.0

C - Dry density-Moisture relationship:-



M.D.D= 2.155 gm/cm³
O.M.C= 6.30 %



الإدارة: ١٥٧ شارع سفينة زغلول - الإسكندرية - مصر

تلفون: ٤٨٦٩٧٩٨ - ٤٨٦٩٧٩٩ - ٤٨٦٩٧٩٨

40safia zaghloul st., p.o.Box 157 Alex, Egypt
Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع: خلف ١٩ طريق الحرية - الإسكندرية - مصر
تلفون: ٣٩٣١٤٨٢ - ٣٩٣١٤٨٢ - ٣٩٣١٤٨٢

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COMIBASSAL International Controllers

الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015
Accredited by:
Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والإعمال

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١٠٢٠١١

Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2525
Weight of saturated sample in water (C)	1542
Weight of dry sample after heating (A)	2495

Results:-

Saturation surface dry specific gravity = $B / (B - C)$	2.569
Bulk specific gravity = $A / (B - C)$	2.538
Apparent specific gravity = $A / (A - C)$	2.618
Absorption of water = $(B - A) / A * 100$	1.2
Degradation of aggregate = $(2500 - A) / A * 100$	0.2



الإدارة، ٤٠ ش. صفية زغلول - الإسكندرية - ب. ١٥٧
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القطاع ٤٩ طريق الحرية - الإسكندرية - مصر
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COMIBASSAL International Controllers

الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

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Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٠١١/١١٠٢٩/٢٤

ABRASION AND IMPACT " LOS ANGELES " TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	A
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3640
% abrasion By Weight Passing from Sieve No.12	27.2%



الإدارة: ٤٠ ش. سفية زغلول - الإسكندرية - مصر
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القطاع: ٤٩ طريق الحرية - الإسكندرية - مصر
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المسودة: ١٠١ / ٢٠١١

المسودة: ١٠١ / ٢٠١١

المسودة: ١٠١ / ٢٠١١



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Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

Report :	350 - 1 - Center
Date :	26/03/2023

CHEMICAL ANALYSIS

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : الشركة الاماراتية للمقاولات العامة والتوريدات العمومية
Project : Electric express train
Sample : Prepared Sub Grade
Station : ST (383 + 0.00) : (383 + 500)
Date of Test : 10-3-2023 11-3
Temperature : 18 °C Humidity : 50%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0021%	ASTM D 2974
SULPHATE	0.0065%	
ORGANIG MATTER	NEGATIVE	








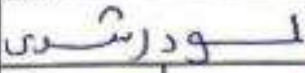

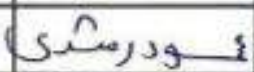


LAB DIRECTOR
CH/ Mostafa Asker

Moustafa

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
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Fax : 002 033900476
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MATERIAL INSPECTION REQUEST		    			
Contractor company Emirates General Contracting		Project Electrical Express Train (Borg Alarab - Alamein) From St.325+393 To St.394+600		Designer company (SPECTRUM) Engineering Consulting Office	
Issued by Contractor Name Eng. Mahmoud Roshdy		Sign 		Date/Serial Number 08/03/2023 M.I.R.PLT (02)	
Received by GARB CONSULTANT Eng. Mazen Essamy		SNA 		Time 12:00 PM	
CODE-1 BT 10 S3 Depot Reference		CODE-1 KP xxx Note For Kilometer Point Only		CODE-2 Work Activity	
CODE-3 Sub Element Of Activity					
Description Of Materials		Fill Layer (T.O.E.) Perma Level			
Location To Be Used		From St.		To St.	
UIR Approval No		IR (F15)		Date	
MAR Approval No		M.A.R.QT(04) M.A.R.QT(Rev 04)		8/3/2023 20/2/2023 20/2/2023	
Supplier Name		Omm Al-qura			
Test Requirement		PLT (DIN 18134)		Specification EARTHWORK SPECIFICATION & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP	
Reference Photos		Yes / No		Other Previous FDT(14)	
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate Loading Test	No	4	9/3/2023	
2					
3					
4					
Comments by: Eng. Mazen Essamy (SPECTRUM)			Comments by: Eng. Alaa Abd-Allatif (ER)		
1-The Plate Load Test Result P.L.T.(DIN 18134) is Approved .			1-Plate Load Test was carried - out By (COMIBASSEL Lab) . 2- Result report attached and acceptable with the project specifications . 3-Final approval is subject to above mentioned comments.		
Approval Status					
Organisation	Name	Sign	Designation	Date	A-AWC-R
Contractor	Eng.Mahmoud Roshdy			9/3/2023	A
QA/QC*	Eng. Mazen Essamy				A
GARB**	Eng.Mohamed Fayed				
Employers Representative	Eng. Alaa Abd-Allatif			10-3-2023	Awc

* Alignment/Bridges/Culvert Only

File :MIR-Material Inspection Request Rev 0022-1

A= Approved ; AWC = Approved With Comments ; R = Rejected

Page



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الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والظيرة الدولية (كوميباسال)

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤/١١٠٢٩/٢٠١١

Technical report of Plate Loading Test DIN 18134

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	الشركة الاماراتية للمقاولات
Project	:	Electric express train
Sample	:	Upper embankment layer (ferma)
Station	:	St (383+020) to St (383+200)
Date of Test	:	9/3/2023
QC	:	609

الإدارة، ٤٠ اش صفيحة زغلول - الاسكندرية - ب ١٥٧

ت ٤٨٧٠٥٧٢ - ف ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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القماح - خلف ١٩ طريق الحرية - الاسكندرية - مصر

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٤ / ٢٩ / ١١٠١١ / ٢٠١١

Introduction:

The Plate Load test is designed to determine the vertical deformation and strength characteristics of soil by assessing the force and amount of penetration with time when a rigid plate is made to penetrate the soil.

The test to be carried out on the native soil according to German specifications DIN 18134.

Test methods :

- 1- The German standard DIN 18134 was applied to define the apparatus used, the loading system, test conditions, and procedure for plate load test.
- 2- Loading plates with a diameter of 600 mm have a thickness of 25mm and are provided with equally spaced stiffeners with even upper faces parallel to the plate bottom face to allow 300 mm plate to be placed on top of it.
- 3- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 700 bar capacity, which is capable of applying and releasing the load stages.
- 4- The dial gauge used to measure the plate settlement has a resolution of 0.01mm and the lever ratio was equal to 1.
- 5- The temperature at the time of the test was 25°.
- 6- The plate was carried out on a native soil (sand-gravel). The test surface area was levelled and the plate was bedded on this surface.
- 7- The hydraulic jack was placed on the middle of, and at normal to, the loading plate beneath the reaction loading system and secured against tilting.
- 8- The reaction loading system was a heavy multi-purpose excavator (more than 20 ton).

Description of experiment:

- 1- Loading, unloading and reloading regims were applied according to DIN 18134 for the plate load test to estimate the resilient modulus
- 2- Prior to the test, the force transducer and dial gauge were set to zero, after which a load was applied corresponding to a stress of 0.01 MN/m².
- 3- In the first loading cycle, the load was increased until a normal stress of 0.25 MN/m² was reached, and the loading increment was 0.025 MN/m². The load was released in four stages.
- 4- Following unloading, a further second loading cycle was carried out, in which, the load was increased only to the penultimate stage of the first cycle.



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الجمعية التعاونية الانتاجية لأعمال الوزن والمراجعة والميزان الدولية (كوميباسال)

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Under No.: 34/29.11.2011

قطاع التفتيش الداخلى والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٠١١/١١٠٢٩/٢٤

Introduction:

The Plate Load test is designed to determine the vertical deformation and strength characteristics of soil by assessing the force and amount of penetration with time when a rigid plate is made to penetrate the soil.

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- 5- The temperature at the time of the test was 25°.
- 6- The plate was carried out on a native soil (sand-gravel). The test surface area was levelled and the plate was bedded on this surface.
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- 3- In the first loading cycle, the load was increased until a normal stress of 0.25 MN/m² was reached, and the loading increment was 0.025 MN/m². The load was released in four stages.
- 4- Following unloading, a further second loading cycle was carried out, in which, the load was increased only to the penultimate stage of the first cycle.



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الجمعية التعاونية للتحكم في أعمال الوزن والمراجعة والمختبر الدولية (كوميباسال)

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Under No.: 34/29.11.2011

383+020

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للمقاييس
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

Location :

Diameter of loading plate:

600

Table 1: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_n) MN/m ²	Settlement of loading plate S (mm)
0	1.414	0.005	0.00
1	7.07	0.025	0.12
2	14.14	0.050	0.29
3	21.21	0.075	0.44
4	28.28	0.100	0.57
5	35.35	0.125	0.70
6	42.42	0.150	0.78
7	49.49	0.175	0.87
8	56.56	0.200	0.98
9	63.63	0.225	1.10
10	70.7	0.250	1.19
11	77.77	0.275	1.24
12	84.84	0.300	1.28
13	91.91	0.325	1.31
14	98.98	0.350	1.34
15	106.05	0.375	1.37

Table 2: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_n) MN/m ²	Settlement of loading plate S (mm)
15	1.414	0.005	0.55
16	7.07	0.025	0.60
17	14.14	0.050	0.65
18	21.21	0.075	0.80
19	28.28	0.100	0.89
20	35.35	0.125	0.96
21	42.42	0.150	1.05
22	49.49	0.175	1.11
23	56.56	0.200	1.18
24	63.63	0.225	1.24

Table 3: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
($\sigma_{0.005}$) MN/m ²	0.250	0.250
u_2 (mm)	0.016	0.515
a_1 (mm/(MN/m ²))	6.342	4.000
a_2 (mm/(MN ² /m ²))	-4.306	-3.389
$E = 1.5 \times 10^4 (\frac{a_1}{a_2})$	94.41	142.72
E_{y20y1}	1.51	



الإدارة: ١٥٢، ش. صفية زغلول - الإسكندرية - ب. ١٥٢

ت. ٤٨٧-٥٧٢ - فاكس: ٤٨٦٩٧٩٨ - ٤٨٧-٧٦٥

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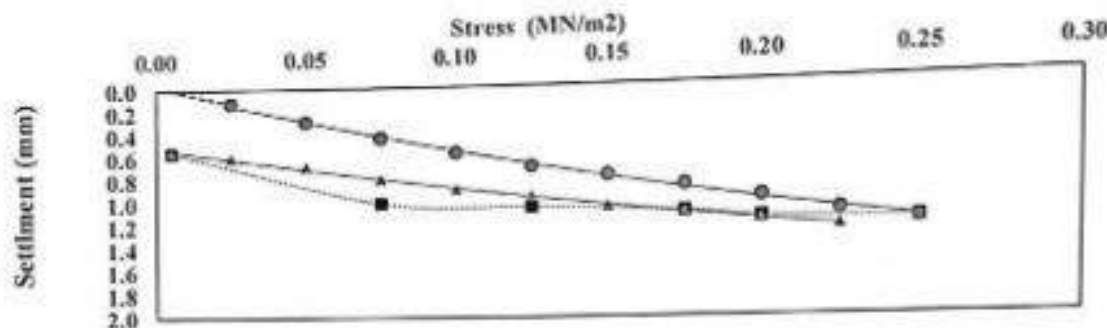
الجمعية التعاونية الانتاجية لاعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

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قطاع التفتيش الداخلى والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٤ / ٢٩ / ١١٠٢٩



km 383+020

Fig. 1: Load-settlement curve, fitting curves according to Table 1 and Table 2 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_1 Normal stress MN/m²



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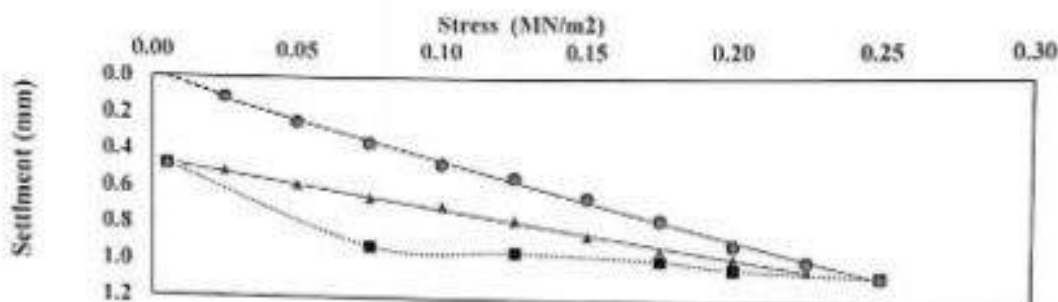
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الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبيرة الدولية (كوميباسال)

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٩/١١٠٢٩/٢٤



km 383+070

Fig. 2: Load-settlement curve, fitting curves according to Table 4 and Table 5 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_0 Normal stress MN/m²



الإدارة، ١٥٧ شارع سفينة زغلول - الإسكندرية - مصر

ت. ٤٨٧٠٢٧٢ - ف. ٤٨٦٩٧٩٨ - ٤٨٧٠٦٦٥

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الجمعية التعاونية لامتاجية الأعمال والمراجعة والخبرة الدولية (كوميبسال)

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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ / ١١ / ٢٠١١

Location :

383+120

Diameter of loading plate:

600

Table 7: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_n) MN/m ²	Settlement of loading plate S (mm)
0	1.414	0.005	0.00
1	7.07	0.025	0.13
2	14.14	0.050	0.29
3	21.21	0.075	0.48
4	28.28	0.100	0.61
5	35.35	0.125	0.70
6	42.42	0.150	0.87
7	49.49	0.175	0.98
8	56.56	0.200	1.05
9	63.63	0.225	1.12
10	70.7	0.250	1.21
11	77.77	0.275	1.28
12	84.84	0.300	1.35
13	91.91	0.325	1.42
14	98.98	0.350	1.49
15	1.414	0.005	0.60

Table 8: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_n) MN/m ²	Settlement of loading plate S (mm)
15	1.414	0.005	0.60
16	7.07	0.025	0.67
17	14.14	0.050	0.79
18	21.21	0.075	0.94
19	28.28	0.100	1.03
20	35.35	0.125	1.10
21	42.42	0.150	1.17
22	49.49	0.175	1.24
23	56.56	0.200	1.28
24	63.63	0.225	1.31

Table 9: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
$(\sigma_{n,100})$ MN/m ²	0.250	0.250
a_p (mm)	0.052	0.551
a_1 (mm (MN/m ²))	7.560	5.776
a_2 (mm (MN/m ²))	-10.065	-10.608
$E_{\sigma} = 1.5 \sigma_{n,100} / (a_p - a_2)$	89.21	144.03
$E_{\sigma} E_{\sigma 1}$	1.61	



الإدارة: ٤٠ شارع مصطفى زغلول - الإسكندرية - مصر

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القطاع: خلف ١٩ طريق الحرية - الإسكندرية - مصر

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COMIBASSAL International Controllers

الجمعية التعاونية الانتاجية لاعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015
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قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترول
تحت رقم ٢٤ / ٢٩ - ١١ / ٢٠١١

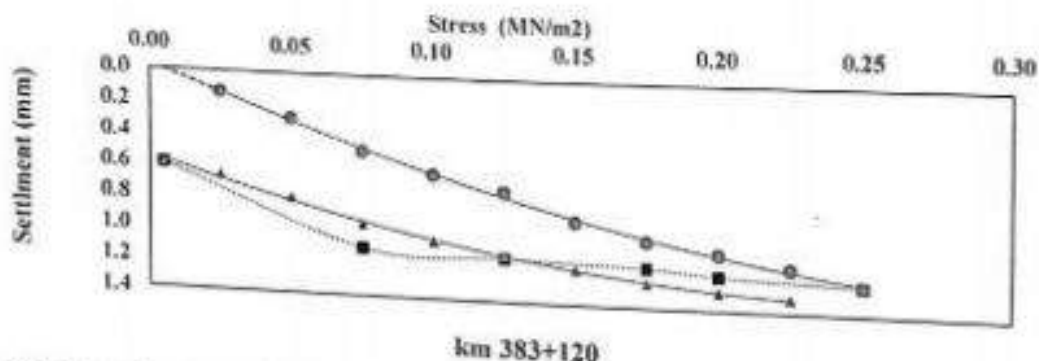


Fig. 3: Load-settlement curve, fitting curves according to Table 7 and Table 8 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_x Nominal stress MN/m²



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الجمعية التعاونية الإنتاجية لأعمال الوزن والمراجعة والخبرة الدولية (كوميباسال)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by:
Egyptian General Authority for Petroleum
Under No.: 34/29.11.2011

قطاع التفتيش الداخلي والمعامل

معتمد لدى الهيئة المصرية العامة للبترو
تحت رقم ٢٠١١/١١٠٢٩/٢٤

Location :

383+200

Diameter of loading plate:

600

Table 10: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_0) MN/m ²	Settlement of loading plate S (mm)
0	1.414	0.005	0.00
1	7.07	0.025	0.18
2	14.14	0.050	0.36
3	21.21	0.075	0.47
4	28.28	0.100	0.60
5	35.35	0.125	0.79
6	42.42	0.150	0.92
7	49.49	0.175	1.05
8	56.56	0.200	1.12
9	63.63	0.225	1.17
10	70.7	0.250	1.21
11	76.56	0.260	1.18
12	49.49	0.175	1.15
13	35.35	0.125	1.12
14	21.21	0.075	1.05
15	1.414	0.005	0.65

Table 11: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ_0) MN/m ²	Settlement of loading plate S (mm)
15	1.414	0.005	0.65
16	7.07	0.025	0.67
17	14.14	0.050	0.75
18	21.21	0.075	0.82
19	28.28	0.100	0.88
20	35.35	0.125	0.94
21	42.42	0.150	1.01
22	49.49	0.175	1.06
23	56.56	0.200	1.10
24	63.63	0.225	1.12

Table 12: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
$(\sigma_{0,max})$ MN/m ²	0.250	0.250
a_s (mm)	-0.835	0.615
n_1 (mm/(MN/m ²))	8.099	2.967
n_2 (mm/(MN ² /m ²))	-12.126	-2.887
$E_{av} = 1.5 \cdot (a_1 + a_2 \cdot \sigma_{0,max})$	88.95	200.42
E_{av}/E_{SI}	2.25	



الإدارة: ٤٠ شعبة زغلول - الإسكندرية - ب ١٥٧

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تحت رقم ٢٠١١/١١٠٢٩/٣٤

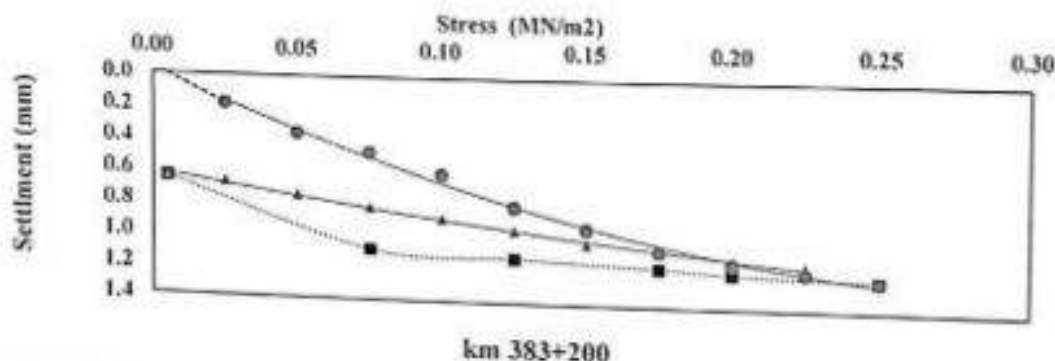


Fig. 4: Load-settlement curve, fitting curves according to Table 10 and Table 11 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_s Normal stress MN/m²



الإدارة: ٤٠ ش صفية زغلول - الإسكندرية ص. ب ١٥٧
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معتد لدى الهيئة المصرية العامة للبتروول
تحت رقم ٢٤ / ١١٠٢٩ / ٢٠١١

Conclusions:

The present test results which obtained from the plate loading tests of the native soil on Upper embankment layer (ferma) of the electric express train project at location (from km 383+020 to km 383+200) in accordance to the German standard, DIN 18134 are illustrated in table 13.

Table 13 :Test results

Location	Ev1(MN/m ²)	Ev2(MN/m ²)	Ev2/Ev1 ratio
383+020	94.41	142.72	1.51
383+070	106.10	177.31	1.67
383+120	89.21	144.03	1.61
383+200	88.95	200.42	2.25

Lab Director

Eng / Eman Kandil

Eman



Geotechnical Consultant

Dr / Mohamed Mostafa Badry

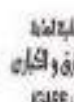
For. DR. M -

الإدارة: ٤٠ شارع صفية زغلول - الإسكندرية - مصر
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UNIVERSAL INSPECTION REQUEST



RECEIPT of NOTIFICATION-Minimum Notice Period not less than 24 Hours

The Work described below will be complete and ready for inspection at planned time shown

Contractor Company	Emirates General Contracting		Designer Company*	(SPECTRUM) Engineering Consulting Office
Issued by Contractor	Name	Sign	Date/Serial Number	Time
	Eng. Mahmoud Roshdy	Sign	07/03/2023 IR (F15)	1:00 PM
Received by GARB CONSULTANT	Eng. Sayed Saif	UIR	383	EW CS 08 03 2023 01 00
CODE - 1	S1 to S21 Station Reference	D1 to D3 Depot Reference	Kp XXX Note For Kilo meter point only Start Km is used	
CODE - 2	Work Activity			
CODE - 3	Sub Element of Activity			

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
From St. 383+000 To St. 383+200	FILL LAYER (T.O.E.) FERMA LEVEL	EMBANKMENT

INSPECTION DETAILS The following will be ready at the Planned Inspection Time	Planned Inspection Date	Planned Inspection Time
---	-------------------------	-------------------------

COMPLIANCE EVIDENCE Must be included as appropriate	Checklist Attached	Test Results Attached	Calibration Attached	Other as indicated
Drawing Reference	Plan and Profile REV. 31	References	MAR M.A.R. QT (04) - (09 Rev 01)	MS Reference
			MIR M.I.R. FDT (14)	-Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP. -TECHNICAL REPORT (CG21-122.1) VERSION 1 BY CIVECON GROUP.

Comments by: Eng. Mohamed Mansour (XYZ)	Comments by: Eng. Alaa Abd-Allatif (ER)
1- Attached Master Sheet approved by SPECTRUM.	1-coordinates & levels and width checked by GARB consultant

Comments by: Eng. Sayed Saif (SPECTRUM)	Comments by: Eng. Alaa Abd-Allatif (ER)
1- تم استلام القطاع فحص بصري	2- (REV. 30 & X-sec./20m) Should Approved from SYSTRA.
2- تم مراجعة ثبت المناسيب	3-Final approval is subject to above mentioned comments.

INSPECTION RESULT		Approval Status		Please Tick if Not Attend	
Organisation	Name	Sign	Date	Time	
Contractor	Eng. Mohamed Refaat	Sign			A-AWC-R
XYZ Survey	Eng. Mohamed Khalil	Sign			A
QA/QC*	Eng. Sayed Saif	Sign			AWC
GARB**	Eng. Mohamed Fayed	Sign			A
Employers Representative	Eng. Alaa Abd-Allatif	Sign	8-3-2023		Awc

* Designer
File Name : MS-F.1.032