

## محضر استلام موقع

مشروع: أعمال الجسر الترابي لمشروع القطار الكهرباني السريع قطاعات غرب الذيل في المسافة من كم 000+383 الى كم 500+383 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 (2023/2023 ) بتاريخ 11/09/2023 )

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

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

وذلك للمرورعلى 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 t -2 رنيس الإدارة المركزية -E1 منطقة غرب الدلتا الاسكندرية - مرسى مطروح عميد . مهندس / 👁 "هاتي محمد محمود طه"

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Description Of	Materials	FILL Layer	r Total Qua	ntity (100	000 m3	)	11						
Location To Be	Used	From St. 3	83+000 To	o St. 383	+500						-		_
Sample Only		Yes		Mate	Materials Type			Fill Layer					
Supplier Name		Omm Al-q	ura	Data	Data Sheet Provided			Yes Attached					
Reference In Bo	σQ		26	Spec	ification	1		-	& TE	RTHWORK SPECIFICATION FESTING REPORT (CG21- 2) VERSION 2 BY CIVECON			
Prequalification	Reference	A-1-A , A-	1-B	Test	Sample	Resul	Its		ORO	UP.	0.	-	
Reference Phot	05	Yes / No		Other	3			_					45
Comments by:	and the second second second				Comm	ents b	y: Eng	g. Alaa	Abd	Allatif	(ER)		10
I-Quality test R 2- This Sample I	esult By Site I Representive (	aboratory is A 5000 m3) only			1-All te [ ( 2- Resu specific	st wer COMIE It repo ations	e carri ASSEL ort atta	ed-out ). iched :	by Th	ired Pa	rty Labo e with th ntioned i	ne pro	ject
			Ap	proval St	atus	1	6.1		19		1000		
Organisation	Name			Sign		De	signati	on		Date	A-AW	C-R	
Contractor	Eng.Mahr	noud Roshdy	5	بد رسم	-1		120//		2/	2/2023		A	-
QA/QC*	Eng. Maz	en Essamy	C	t	-		-				A		_
GARB**	Eng. Moh	ammed Fayad		+>		-				-	1.2.		
imployers lepresentative	Eng. Alaa	Abd-Allatif	for		913	-	-	10	2-2	1.00	1	u	-

File MIR-Material inspection Request Rev 0822-1

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A\* Approved ; AWC + Approved With Comments ; 8 = Rejected Page

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الجمعية التعاونية الانتاجية لأهمال الوزن والراجعة والطبر 3 الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Accredited by: EgyPtian General Authority for Petroleum Under No.: 34/29.11.2011 قطاع التغتيش الداخلى والمعاصل معتمد لدى الهينة المسرية العامة البترون تحت رقم ٢٢ ٢٠١٠/١١٠٢٩

# SOIL REPORTS FOR ELECTRIC EXPRESS TRAIN PROJECT

الشركة الاماراتية للمقاولات العامة والتوريدات العمومية :Client

Date :

02/02/2023

416

QC :

الإدارة، اللى سمية زغلول - الأسكندرية مى - ب ١٥٢ ت. ٢٨٣٠٥٦ - هـت، ٢٨٩٠٥٦ - ت. 40safia zaghloul st., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



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Carr Scamer - Lips in page

الجمعية التعاونية الانتاجية لاعمال الوزن والراجعة والخيرة الدولية (كومببصل)

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

قطاع التغتيش الداخلى والمعامل معتمد لدى الهيئة الصرية العامة لليترول تحت رقم ٢٤/ ٢٩.١١/١١٠٢٩

#### Introduction ۱.

MIBATTA

ال ال

General Consultant	: SYSTRA
Consultant	SPECTRUM
Contractor	شركة الإمار اتية للمقاولات العامة و التوريدات العمومية :
Sample	: upper embankment (ferma)
Station	ST(383+0.00): (383+500)
Date of Test	02/02/2023
OC	: 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- Reculte

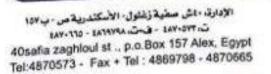
V- Results	Grain size analysis	As showed in appendix
1- Grain size analysis and classifica-	Classification	A-1-a
tion 2- Modified compaction and opti-	MDD	2.132
mum moisture content (Proctor test)	OMC	6.0%
3- Liquid limit, plastic limit and plas-	LL BOOM	26.5%
ticity index	PL	24.5%
ticity more	PI	2.0%
4- California bearing ratio (CBR)	CBR ratio	55%

LAB DIRECTOR



Geotechnical-consultant Dr. Mohamed Mostafa Badry

Eng / Eman kandil





القطاع اخلف ١٩ طريق العرية - الإسكندرية ت ١٩٩٠-١٧٩ - ١٩٦١٨٩ - في ١٩٩٠-١٧ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-Inspection@comibassal.com

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الجمعية التعاونية الإنتاجية لأعمال الوزن والراجعة والطبر ة الدولية (كوميبصل)

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

قطاع التغتيش الداخلى والمعامل معتمد لدى الهيئة المسرية العامة للبترول تحت رقم ٢٤/١١٠٢٩ تحت رقم ٢٤/١١٠٢٩

# APPENDEX

الإدارة، ١٠ ش صفية وْغلول- الأسكندرية من - ب١٥٧ ------40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،غلف ٩٩ طريق الحرية - الإسكندرية ت، ١٩٦٠،١٧٦ - ١٩٢١٤٨٢ - ف، ١٧٦،١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

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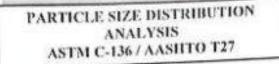


الجمعية التعاونية الانتاجية لأعمال الوزن والزاجعة والخبرة الدولية (كوميبصل)

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

# قطاع التغتيش الداخلى والمعامل

معتمد لدى الهينة المسرية المامة للبترول تحت رقم ٢٤/ ٢٩-١١/١١٠٢٩



	WEIGHT	CUMULATINE	CUMULATIVE	A REAL PROPERTY.	SPECIFICATION
	RETAINED	WEIGHT	PERCENTAGE	PERCENTAGE	LIMITS
	(gm)	RETAINED (pm)	RETAINED (%)	PASSING (%) 97.2	
2	400.00	400.00	2,84	and the second se	
11/2	295.00	695,00	4,93	95.1	
	1115.00	1\$10.00	12.85	87.2	
		3030.00	21.51	78.5	
3/4	1220.00		32.77	67.2	
1/2	1586.00	4616.00	No. Contraction	57.0	
3.8	1443.00	6059.00	43.01		
	18/05:00	7864.00	55.82	44,2	
No.4	235.00	235.00	47.00	23.4	
No.10			61.00	17.2	
No.40	305.00	305,00	and a state of the	8.8	
No.200	409.00	400.00	80.00		ine aggregates v

500 gm



الإدارة، • اش سمّية زغلول - الأسكندرية ص - ب١٥٧ ت، ٤٨٧-٥٧٦ - ف ش، ١٨٩٠٩٩ - ٢٨٧-٥٧٦ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869796 - 4870665



القطاع الفلف ١٩ طريق العرية - الإسكندرية ت، ١٩٣٦- ١٩٣٦ - ١٩٣٦ - ف، ١٧٢-١٧٦ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

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الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015

Accredited by: Egyptian General Authority for Petroleum Under No.: 34/29.11.2011 قطاع التغتيش الداخلى والمعامل

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

#### Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould = Weight of mould = G.S =

2120 cm<sup>4</sup> 6360 g 2.55 g/cm3

2

A- Density Calculations :-

	1	2	3	4	5
	10650	10990	11150	11100	11065
Weight of wet soil+mould (g)	6360	6360	6360	6360	6360
Weight.of mould (g)	4290	4630	4790	4740	4705
Weight.of wet soil (g)	and the second second	2120	2120	2120	2120
Volume of mould (cm <sup>2</sup> )	2120	Contraction of the local division of the	and the second se	2.236	2.219
Wet density (g/cm3)	2.024	2.184	2.259	and the second se	
Dry density (g/cm <sup>2</sup> )	1.958	2.094	2.132	2.078	2.048
Zero-air Void curve			2.214	2.136	2.101

#### B- Moisture Calculations :-

B- Norstart Constanting	250.0	250.0	250.0	250.0	250.0
Weight.of wet soil+container (g)	and the second second	and when the state of the state	240.5	238.0	238.0
Weight of dry soil+container (g)	244.5	243.0	and an other states of the		95.0
Weight of container (g)	80.0	81.0	81.0	80.0	
and the second	3.3	4.3	6.0	7.6	8.4
moisture content(%)					

C - Dry density-Moisture relationshipt-



الإدارة، الش سندية (غلول، الأسكندرية من - ب ١٥٧ ه د مال المعنية - ه من مالية من المالية من - به ١٥٧ ه د مالية - ه من - به ١٥٩ ه د مالية - به ١٥٩ ه د مالية - به ١٥٩ ه د مالية - به ١٥٩ م د مالية - به ٢٥٩ م د مالية - به د مالي - به د مالية - بي ماليي - بي مالي - بي مالي مالي - بي مالي - ب



القطاع الملف العريق العرية - الإسكندرية - مصر ثبر الاستان العرية العرية - الإسكندرية - مصر 49 EL Horria Ave -Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :Internal-inspection@comibassal.com

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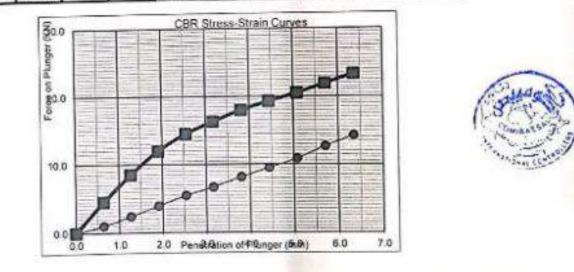


الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخيرة الدولية (كوميبعنل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Conception General Authority for Petroleum Egyptian General Authority for Petroleum قطاع التغتيش الداخلى والمعا مل معتمد لدى الهينة المرية المامة المتروق تحت رقم ٢٤/١١/١١٢٩

### Report Of CBR Test - ASTM - D 1883

0.05.01	OINE	56	- 1			Swe	11%	
NO OF BL			-			56		
MOULDN	0	1		-	Start	0.00		
NT OFMO	DULD+SOIL	11770	-		End	0.00		
NT OF M	OULD	7000	-		Swell	0.00		_
NT OF S	OIL	4770	-		-			
VOLUME	OF MOULD	2120	-		-			
WET DEN	VSITY	2.250		-bloom	Weiz	ht of Ran	nmer	4.54Kg
		MC be	fore so	aking	weig	MDD	Kg/m3	2.132
TIN NO		1			-	MIDE	regime	
WT OF V	VET SOIL+TIN	250.00			-	OMC	%	6.0
WT OF C	DRY SOIL+TIN	241		-	-	ONG	.74	4.4
WTOFY	NATER	9.00				007	VING R	ING
WTOF	TIN	78	_	-	-	Divi	VING R	0.0210
WT OF I	DRY SOIL	163		-				1822.05
MOISTU	RE CONTENT	5.5		-	-	Capacit	V (KN)	50
DRY DE	NSITY	2.132			-	Capacit	1.	1.
			De	aring (	KNI	1	CBR	12.00
Pen	Reading (	DIV)	56	saring 1	T	standar	56	
mm	56	-	0.0	-		0.0		
0.00	0	-	1.0			4.5		-
0.64	105	-	2.4			8.5		
1.27	245 400	-	3.9			12.0		-
1.91 2.54	655	-	5.4	_	-	14.5	41	-
3.17	685		6.7		-	16.3		-
3.81	835		8.2		-	19.3	-	-
4.45	970		9.5	-	-			-
5.08	1110		10.9			20.5	55	-
5.71	1295		12.7			21.9		
6.35	1455		14.3			23.3		



الإدارة، ١١٣، مشية زغلول- الأسكندرية س - ب١٥٧ ت، ٢٨٢- ٢٦٦ - ٢٨٦٩٩٩ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،خلف ٩٩ طريق الحرية - الإسكندرية ، مسر ت، ١٩٠-١٣٦ - ١٨١٢٢٢ - هـ ١٩٠-١٩ 49 EL Horria Ave .-Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

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الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخيرة الدولية (كوميبصل)

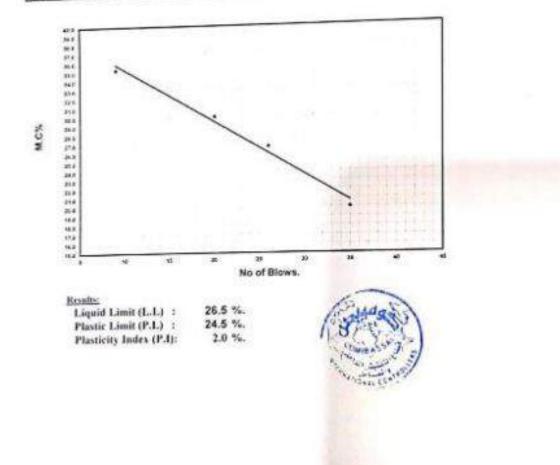
حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum

## قطاع التغتيش الداخلى والمعامل

معتمد لدى الهيئة المعروة العامة للبترول تحت رقم 11/ 11.11 (11.7

#### Liquid and Plastic Limits Test ASTM - D 4318

	11	2	3	4	5	6
Test No	-	A Land	Limit		Plastic	limit:
Type of test		Commission of the local division of the loca		9	and Designed	
NO of B.	35	26	20	-	E.	M
Container No	1.	K		-		50,01
Mass of wet soil +container	00.49	00,00	89,00	45.00	66,00	and the second second
	95.00	95.00	\$6.00	.19.00	60,00	48,0
Mass of dry soil + container	90,00	\$0,00	76.00	22.00	35,00	49,00
Mass of container			3,00	6.00	6.00	2.100
Mass of moisture	1.00	4.00	Support of the local division of the local d	17.00	25,00	8.00
Mass of dry soil	5,00	15.00	10.00	and a state of the	24.00	25,00
Maisture content	20.08	26.67	30.00	35.29	\$4.00	



الإدارة، + على سنية (غلول - الأسكندرية من من 15% ت، ٢٨٣-١٦٦ - در ٢٨٣-١٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665

القماع مغلف ١٩ طريق العريق الجرية - ٢٢-٢٢ مغرف مسر ٢٩-٢٩ هذا ٢٩-٢٩ من ٢٩-٢٩ 49 EL Homa Ave - Alex Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail internal-inspection@comibassal.com

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الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخبرة الدولية (كومبيصل)

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

## قطاع التفتيش الداخلى والمعامل

معتمد لدى الهيئة المصرية العامة للبترول تحت رقم ٢٤/ ٢٩-١١/١١٠٢

Report	1	225 - 2 - Center
Date	t	12/02/2023

#### CHEMICAL ANALYSIS

General Consultant	2	SYSTRA
Consultant	+	SPECTRUM
Contractor		الشرعة الامارانية للمقاولات العلمه والثوريدات العمومية
Project	1	Electric express train
Sample	+	FERMA - MIX ( 20 : 80 )
Station	1	ST (383+0.00) : ( 383 +500 )
Date of Test	3	2-2-2023
Temperature	18 °C	Humidity : 50%

Temperature : 18 °C

ANALYSIS	RESULTS	METHOD REFERENCE
DRGANIG MATTER	NEGATIVE	ASTM D 2974



LAB DIRECTOR CH/ Mostafa Asker Mousta

الإدارة، ١٠ ش سطية زغلول - الأسكندرية ص - ب١٥٧ 244-110 - 2415444 ....... - 244-047 .... 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ،غلق ١٩ طريق الحرية - الإسكندرية ت، ١٩٦٠ - ١٩٢٢ - ١٩٢٠ م. 49 EL Horris Ave .-Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail: Internal-Inspection@comibessal.com

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****	-134 .00			Electrical E		Train		1	10231	*	-	15
Emirate	es General (	Contracting		(Borg Alara From St.325+3			600	6	SPECT	sulting		
issued by Contra	ictor Name		Sign		Date	/Serial 19/03		er_	Time			
	Mahn	Eng. noud Roshdy	en n		M	A.R.Q		01)	evel	12:00	PM	
Received by GARB CONSULTANT		Mazen Essamy	-	SNA	61	C7	C3	00	MM	77	HH 12	MM
	CODE-1 SLip SI Station Reference Deput Raterra		0.53	Cas Witnesses Dated Minet		ODE-2 Sub Els		DDE-3	t Of			
Description Of !	Materials	SUB-BAL	LAST Total (	Quantity (500)	0 m3 )							
Location To Be	Used	From St. 3	83+000 To 5	St. 383+500			-					
Sample Only		Yes		Materials T	ype			Sub-ballast				
Supplier Name		Al-Israa an	d Al-Meraaj	Data Sheet	Provid	ed		Yes Attached				
Reference In Bo	rence In BoQ		Specification 8				EARTHWORK SPECIFICATION & TESTING REPORT (CG21- 41.2) VERSION 2 BY CIVECON GROUP					
Prequalification	Reference	A-1-A , A-	1-В	Test Sample	Test Sample Results							58
Reference Photo	s	Yes / No		Other								
Comments by: E	ing. Mazen E	ssamy (SPECT	rrum)	Comm	nents b	y: Eng	. Alaa	Abd	Allatif	(ER)		10
I-Quality test Re 2- This Sample R			ALC: NOT CALL OF CALL OF CALL	2- Res specifi	COMIB ult repo cations	ASSEL ort atta	). ched a	nd ac	ired Pa ceptabl	e with t	he pro	ojeci
	-		Appr	oval Status								
Organisation	Name			Sign	De	signati	on		Date	A-AV	VC-R	
Contractor	Eng.Mahn	noud Roshdy	si	ي و د ر.				20	/3/2023		A	
QA/QC*	Eng. Maze		C	A						F		
GARB**	Eng. Mohs	ammed Fayad		0.								
Employers	Eng. Alaa	Abd-Allatif 7	027 AL	HI	-				-	10		4

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المسوعة حوليا و Carr Scamer ،



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#### I- Introduction

General Consulta	ant :	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	الشركة الامار اتيه للمقاولات العامة والتوريدات العمومية
Sample	:	Sub-ballast layer
Station	:	St(383+000) to st(383+500)
Date of Test	5	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 classifica-	Grain size analysis	As showed in appendix
tion	Classification	A-1-a
2- Modified compaction (Proctor	MDD	2.182
test)	OMC	6.2%
3- Liquid limit, plastic limit and plas-	L	Non plastic
ticity index	PL	Non plastic
ticity mount	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	95%
5- Specific gravity (SG), absorption	SSD	2.516
and degradation	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	26.7%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant For: Dr. H-Dr. Mohamed Mostafa Badry

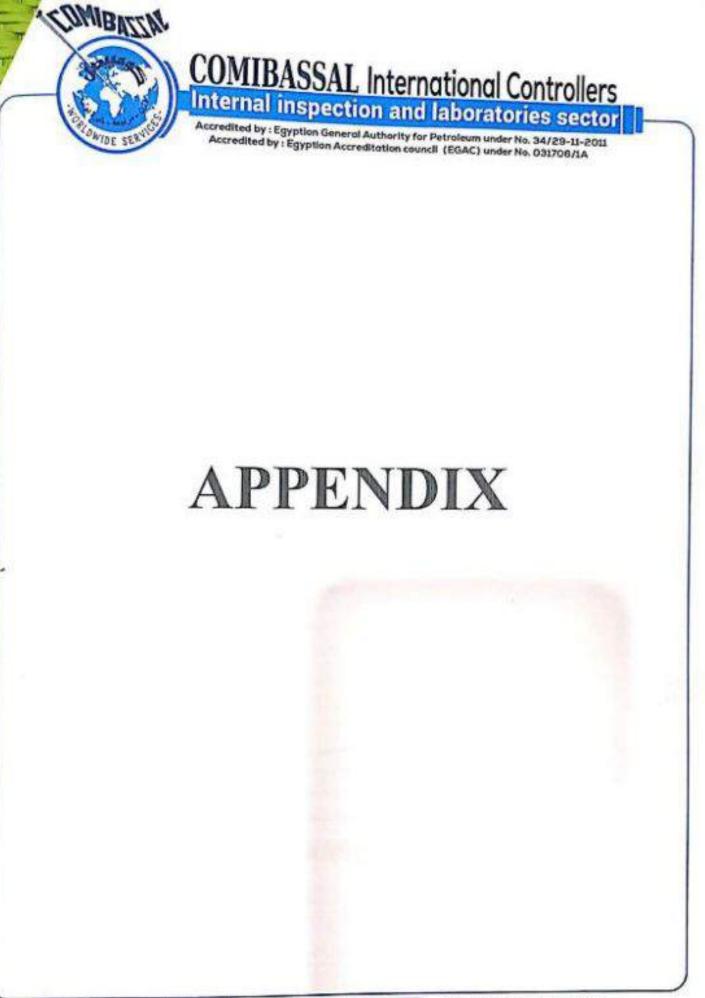
Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : ciedept@combassal.com WebSite : www.combassal.com



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Carr Scamer - Lips in page



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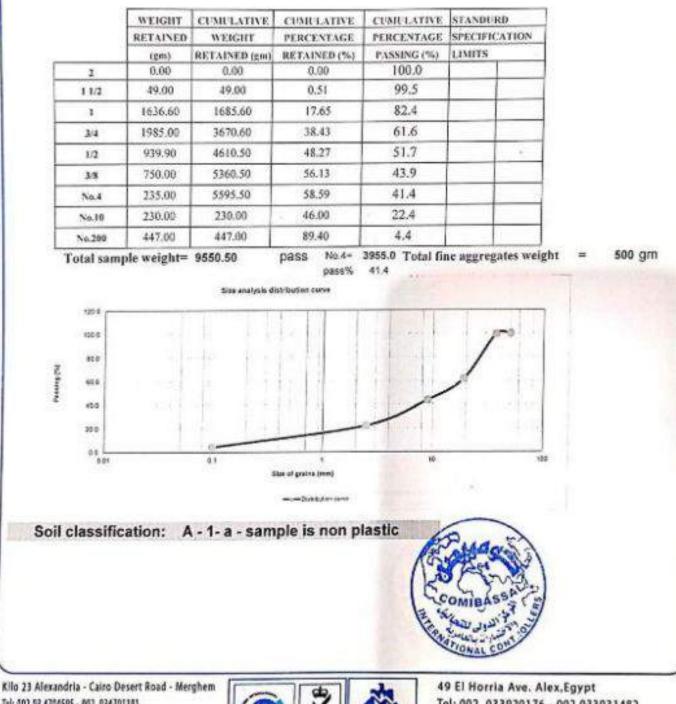
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#### PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27



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ATTABIMO3



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# COMIBASSAL International Controllers

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Modified Proctor Test Report

### ASTM - D 1557

Nould Number :-Volume of mould = Weight of mould = G.S =

2190 cm<sup>2</sup> 7047 g 2.57 g/cm3

1

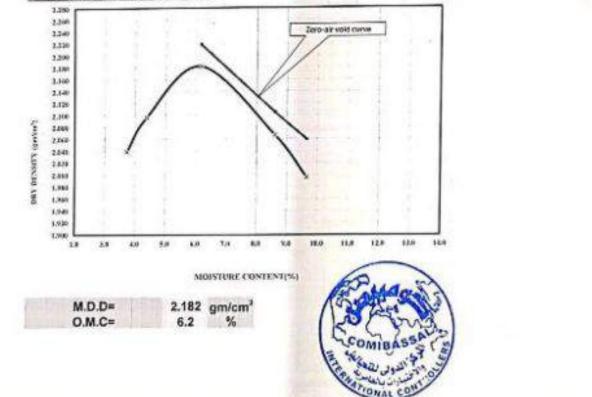
A- Density Calculations :-

	11	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 (cm3)	2190	2190	2190	2190	2190
Wet density (g/cm <sup>3</sup> )	2.116	2.189	2,316	2.244	2.189
Dev density (g/cm <sup>3</sup> )	2.039	2.097	2.182	2.067	1.996
Zero-air Void curve			2.219	2,105	2.059

#### B- Moisture Calculations :-

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:-



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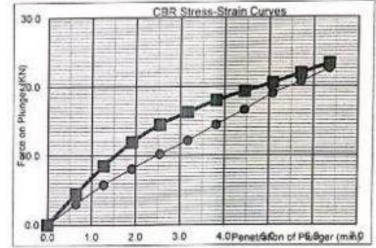
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#### Report Of CBR Test - ASTM - D 1883

O OF BL	F BLOWS 56			0.0	Swell %			
MOULD N	0	1			56	1		
NT OFMO	ULD+SOIL	12300		Starf	0.00			
NT OF M		7250		End	0.00			
NT OF SC		5050		Swell	0.00			
VOLUME (	OF MOULD	2190				1		
WET DEN	Contraction of the local data	2,305		12.1				
114-1 124011	40.0	and the second se	MC before soaking		Weight of Rammer		4.54Kg	
TIN NO		1			MOD	Kg/m3	2.182	
and the second se	ET SOIL+TIN	250.00						
	RY SOIL+TIN	241			OMC	%	6.2	
WT OF W		9.00		A TERM	116	in and		
WT OF TH		85		2		OVING RIN	10	
NT OF DE	Y SOL	156	2.125	- A	Diw/KN		-	
	E CONTENT	5.8						
DRY DEN	the second s	2.180		2	Capacit	y (KN)	50	
		15	Bearing	(ICAL)		CBR	-	
Pen mm		97	56	(INIT)	standar	56	-	
0.00	50		FALSE		0.0			
0.00	305		30		4.5			
1.27	590		5.5		8.5			
1.27	830		81		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	1895		16.6		19.3			
5.08	1935		19.0		20.5	95		
5.71	2105		20.6		21.9			
	2302		22.6		23.3			





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Carr Scamer - Lips in public



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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 aftre heating (A)	2495

#### Results:-

2.516
2,485
2.564
1.2
0.2



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Carr Scamer - User Scamer -



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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	А
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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Report	1	350 - 2 - Center
Date	1	17/04/2023

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### CHEMICAL ANALYSIS

General Consultant	;	SYSTRA
Consultant	1	SPECTRUM الشركة الأمارائية للمقاولات العامة والتوريدات العمومية
Contractor		Electric express train
Project	z	Sub Ballast Layer
Sample	2	ST ( 383 + 0.00 ) : ( 383 +500 )
Station	¥.	20-3-2023
Date of Test	2	
Temperature	: 20 *C	Humidity : 40%

		The second se
ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0028%	
SULPHATE	0.0072%	ASTM D 2974
ORGANIG MATTER	NEGATIVE	
OKGANIO		



LAB DIRECTOR CH/ Mostafa Asker

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2.0 .C	ontractor cor	npany gint	Careful and South States	Pr	oject			Т	Des	igner co		ıy
T41	ب متى 134 ـ 14	States and	,	Electrical Ex (Borg Alara	b - Alar	mein)	600	(		RUM) E		
Issued by Contra	0.000	Eng. noud Roshdy	Sign	ت ود ر		/Serial 09/03/ A.R.Q	12:00 PM					
Received by GARB CONSULTANT		Nazen Essamy	X	SNA	. Cil 383	EM CS	CS	11	03	97 2023	нн 12	M1/ 00
	-1 1 to \$3 Reference	COME -F DT to Depet Rafe	Contraction of the second second	the second se			CO Work	DE-2 Activi	ty	Sub E	CODE-3 Sub Element Of Activity	
Description Of	Materials	Prepared Su	bgrade Total	Quantity (50	00 m3	)						
Location To Be	Used	From St. 38	3÷000 To S	t. 383+500		11						
Sample Only	Sample Only Yes			Materials Type				Perpared Subgrade				
Supplier Name Al-Israa and Al			l Al-Meraaj	eraaj 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								1
Reference Photo	15	Yes / No		Other								
Comments by: I	Eng. Mazen E	ssamy (SPECTI	RUM)	Comments by: Eng. Alaa Abd-Allatif (ER)								16
1-Quality test Rs 2- This Sample F	C	The second second second second		( 2- Rest specifi	COMIB Ilt repo cations	ASSEL ) rt attac	hed ar	nd acc	eptable	ty Labor 2 with th tioned c	e proj	
			Appro	oval Status	Sec.		122					
Organisation	Name			Sign	Des	signatio	n	D	)ate	A-AW	C-R	
Contractor	Eng.Mahn	noud Roshdy	شرى	Lece				11/2	3/2023		A	
QA/QC*	Eng. Maze	in Essamy	C	×					A			
GARB**	Eng. Moha	ammed Fayad		'A								
Employers Representative	Eng. Alaa	Abd-Allatif	2023AL	HA-						F	w	C

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المسوعة حوليا و Carr Scamer ،



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

#### I- Introduction

General Consultant : Consultant : Contractor : Sample : Station : Date of Test : QC : SYSTRA SPECTRUM الشركة الامار اتيه للمقاولات العامة و التوريدات العمومية Prepared Sub-grade St(383+000) to st(383+500) 11/3/2023 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 classifica-	Grain size analysis	As showed in appendix		
tion	Classification	A-1-a		
2- Modified compaction (Proctor	MDD	2.155		
test)	OMC	6.3%		
3- Liquid limit, plastic limit and plas-	LL	Non plastic		
ticity index	PL	Non plastic		
	PI	Non plastic		
4- California bearing ratio (CBR)	CBR ratio	92%		
5- Specific gravity (SG), absorption	SSD	2.569		
and degradation	Absorption	1.2%		
NY CALENCE CONTRACTOR	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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المحرمة حوليا و Carr Scamer



# COMIBASSAL International Controllers Internal inspection and laboratories sector

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# APPENDIX

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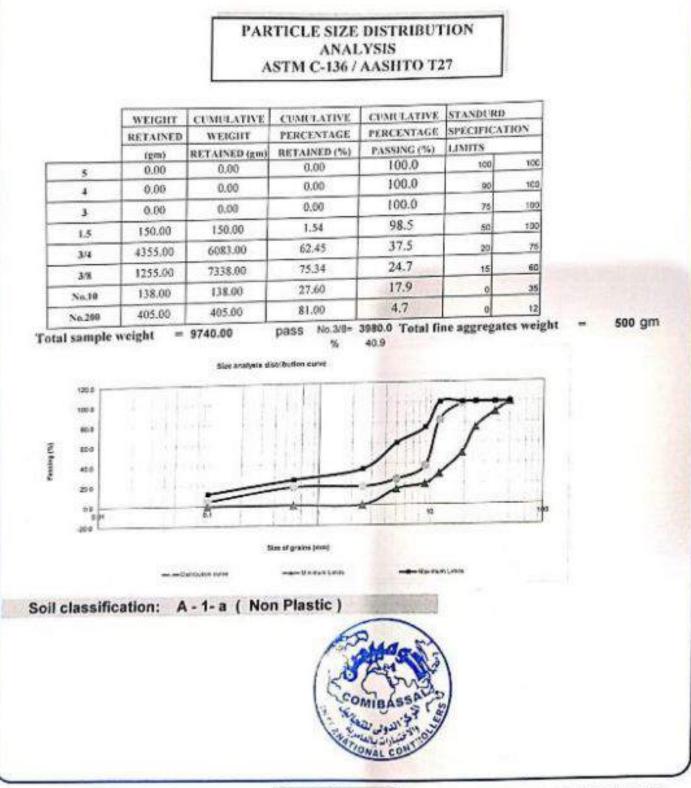
Carr Scamer - Lips in page



الجمعية التفاولية الإثناجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Accredited by: EgyPtian General Authority for Petroleum Under No.: 34/29.11.2011 قطاع التفتيش الداخلى والمعامل

معتماد لدى الهيئة المسرية العامة للبترول تحت رقم ٢٤ / ١١/١١٠٢٩



الإدارة، • اش سندية زغلول- الأسكندرية من - ب ١٥٧ ت د ٢٨٩-٥٢٦ - هـ،ت د ٢٨٩-٥٢٦ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tal:4870573 - Fax + Tel : 4869798 - 4870665



التطاع الحلف ١٩ طريق العرية - الإسكندرية - معسر ت ٢٩٠٠٢٦ - ٢٩٢١٨٦ - ٢٩٢٠٢٦ 49 EL Horria Ave - Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

Derritionner (1/1) 455-661

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الجمعية التعاونية الإلتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبعسل)

Accredited by: Accredited by: EgyPtian General Authority for Petroleum Under No.: 34/29.11.2011 قطاع التغتيش الداخلى والمعامل

معتمار لدى الهيئة المسورة العامة للبترول تحت رقم ٢٤ / ١١٠/١١/٢٤

#### Modified Proctor Test Report ASTM - D 1557

Mould Number :-Volume of mould = Weight of mould = G.S =

2190 cm<sup>2</sup> 7047 g 2.56 g/cm3

1

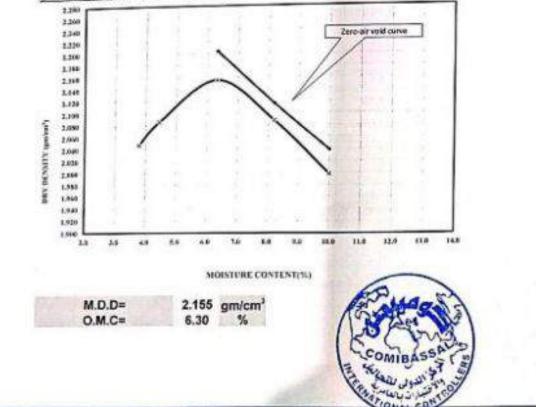
A- Density Calculations :-

	TI	2	3	4	5
Weight.of wet soil+mould (g)	11700	11818	12065	11993	11864
Weight of mould (g)	7047	7047	7047	7047	7047
Weight.of wet soil (g)	4653	4771	5018	4946	4813
Volume of mould (cm <sup>2</sup> )	2190	2190	2190	2190	2190
A CONTRACTOR OF	2.125	2,179	2.291	2.258	2.198
Wet density (g/cm <sup>°</sup> )	2.047	2.086	2.155	2.087	1.998
Dry density (g/cm <sup>2</sup> )	2.047	5.000	2.204	2.116	2.038
Zero-air Void curve			2.204	2.110	4.0

#### B- Moisture Calculations :-

11/ 1 to for the literantainer (g)	250.0	250.0	250.0	250.0	250.0
Weight.of wet soil+container (g) Weight.of dry soil+container (g)	244.0	243.0	240.2	237.5	235.0
	85.5	85.5	85.0	85.0	85.0
Weight.of container (g)	3.8	4.4	6.3	8.2	10.0
moisture content(%)	1000	10.5			

C - Dry density-Moisture relationship:-





القطاع الحلق ١٠ طريق العرية - الإسكندرية - مصر ت ١٩٠٠٢ - ١٩٠٠٢ - المارية - ١٩٠٠٢ 49 EL Horris Ave -Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

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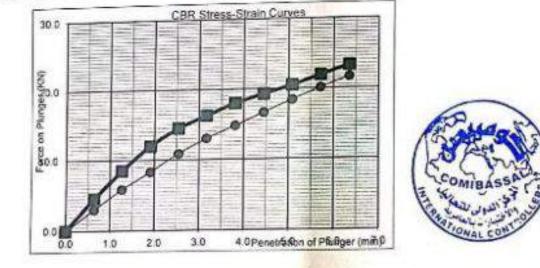
الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل

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

معتمد لدى الهيئة المسرية العامة لليترول تحت رقم ٢٤ / ١٠١٩/١٠٢٩

#### Report Of CBR Test - ASTM - D 1883

WT OF MOUL WT OF SOIL VOLUME OF N WET DENSITY TIN NO WT OF WET S WT OF DRY S WT OF WATE	SOIL+TIN	1 12120 7047 5073 2190 2.316 MC 1 250.00	before soaking	Start End Swell We	56 0.00 0.00 0.03	THEY	4.54Kg	
WT OF MOULE WT OF MOUL WT OF SOIL VOLUME OF N WET DENSIT TIN NO WT OF WET S WT OF WATS WT OF WATS WT OF TIN WT OF DRY S	SOIL+TIN	7047 5073 2190 2.316 MC 1	before soaking	End Swell	0.00	THEY	4.6492	
WT OF MOUL WT OF SOIL VOLUME OF N WET DENSITY TIN NO WT OF WET S WT OF DRY S WT OF WATE WT OF TIN WT OF DRY S	SOIL+TIN	7047 5073 2190 2.316 MC 1	before soaking	End Swell	0.00	mer	4.6492	
WT OF SOIL VOLUME OF N WET DENSITY TIN NO WT OF WET S WT OF DRY S WT OF DRY S WT OF TIN WT OF DRY S	NOULD Y SOIL+TIN	5073 2190 2.316 MC 1	before spaking	_		tier	1 6492	
VOLUME OF N WET DENSITY TIN NO WT OF WET S WT OF DRY S WT OF DRY S WT OF TIN WT OF DRY S	Y SOIL+TIN SOIL+TIN	2190 2.316 MC 1	before soaking	We	of Ram	tier	4.6492	
WET DENSITY	Y SOIL+TIN SOIL+TIN	MC 1	before soaking	We	ght of Ram	vier	4.6492	
TIN NO WT OF WET S WT OF DRY S WT OF WATE WT OF TIN WT OF DRY S	SOIL+TIN	MC 1	before soaking	We	of Ram	ther	4 5 4 4 4	
WT OF WET S WT OF DRY S WT OF WATE WT OF TIN	SOIL+TIN	1				and the second se		
WT OF WET S WT OF DRY S WT OF WATE WT OF TIN	SOIL+TIN		1		MDD	Kg/m3	2.171	
WT OF DRY S WT OF WATE	SOIL+TIN	200.00						
WT OF WATE	SOIL+TIN	744		-	OMC	%	6.3	
WT OF TIN	R	240		-				
WT OF DRY S	VVI LPP VERTICAL				PROVING RI		NG	
MOISTURE C	WT OF TIN		2.125		Divit	KN		
MOISTURE C	WT OF DRY SOL		- Automation		1.	-		
		6.8			Capacit	y (KN)	50	
DRY DENSITY	Y	2110		-				
97			Bearing (KIN)			CBR		
Penmm	the second se	1	55		standar	56		
	56	-	FALSE		0.0	-		
0.00	302		3.0		4.5			
M-SCT	and the second se		5.8		8.5			
1.0	595 850		8.3		12.0	62		
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1110	-	10.9	-	14.5	06		
	330		13.0	-	15.3	-		
	1510		14.8	-	18.0	-	-	
W-W-	1700		16.7	_	19.3			
	1880	1	18.4	-	20.5	92		
0.00	2050		20.1		21.9			
	2210		21.7		23.3			



الإدارة، - عش سفية زغلول- الأسكندرية مى - ب ٢٥٢ ت. ٢٨٣-٢٦٦ - ٢٠٦ من مالالاله - ٢٨٢-٢٦ 40safia zaghloul st ., p.o. Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



القطاع معلم ١٠ طريق الحرية ١٠ ٢ سكندرية ٠ مسر ت ٢٩٠٠٢ - ٢٩٦١ مل ١٩٠٠٢ 49 EL Horria Ave - Alex;Egypl Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

Dembiourner (1/p.0.45.5.44)

Carr Scamer - Lizz in June

الجمعية التماونية الانتاجية لأعمال ألوزن والزاجعة والخيرة الدولية (كومييصل

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum Under No.: 34/29,11.2011

قطاع التغتيش الداخلى والمعا سل معتمد بدى الهيئة المسرية المامة للبترون تحت رقم ٢٢/ ٢٢٠١١/١١٠٢٩

## 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 aftre heating (A)	2495

#### Results:-

2.569
2.538
2.618
1.2
0.2



الإدارة، +قن معقولة غلول - الأسكندرية من - ب ١٥٧ ت. ١٩٧-١٦٦ - ف ت الم١٩٢٩ من 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



القطاع ، غلق ١٩ طريق الحرية - الإسكندرية - مسر تبر ١٩٠٠ ٢٩٠٠ - ١٩٠٢ - في ٢٩٠٠ ٩ 49 EL Horria Ave .-Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

Dembioance: (1/ph #sp.cov)

Carr Scamera Lipa in June

Superior Superior State

**COMIBASSAL** International Controllers

الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبسن)

حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: General Authority for Petroleum Egyptian General Authority for Petroleum قطاع التغتيش الداخلى والمعاصل معتمد لدى الهينة المسرية المامة للمترون تحت رقم ۲۱/۱۱۰۲۹/۲4

# 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	А
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، - اش سفية (غلول- الأسكندرية من - ب ٢٥٢ ت- ٢٨٣٠٥٦ - هـت مالكندرية من - ٢٨٩ ش- ٢٨٢٠٥٢ - هـت مالكندرية من - ٤٨٢ 40safia zaghloul st ., p.o. Box 157 Alex, Egypt Tal: 4870573 - Fax + Tel : 4889798 - 4870665



القطاع خلف ١٩ طريق الحرية - الإسكندرية - معر ت ١٩٠٠ - مارينية - ١٩٦٠ - مارينية 49 EL Horria Ave - Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :Internal-Inspection@comibassal.com

Detectionnee (1/ph 455.44)

Carr Scamer - Line in June

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

Report	4	350 - 1 - Center
Date	:	26/03/2023

TIBATIAL

#### CHEMICAL ANALYSIS

General Consultant	ε.	SYSTRA
Consultant		SPECTRUM
Contractor	:	التنزكة الامارانية للعقاولات 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% SULPHATE 0.0065% ASTM D 2974 ORGANIG MATTER NEGATIVE



LAB DIRECTOR CH/ Mostafa Asker

Mousta

Kilo 23 Alexandria - Cairo Desert Road - Merghem Tel: 002 03 4704595 - 002 034701191 Email : civdept@comibassal.com WebSite : www.comibassal.com



49 El Horria Ave. Alex.Egypt Tel: 002 033920176 - 002 033931482 Fax :002 033900476 Email : internal-inspection@comibassal.com

Dentionner (12) in essand

Carr Scamer - Lips in public

INSPE	ERIAL CTION UEST		1000	計 Han	25 <sup>(A</sup>	المبتدلة الم والكيا (2488)	10	44 115	9.112	Lal)	SVSTCA		SHAKE
1 3	Contract	or company			Proj	oct				Desi	gner co	mpan	y.
Emirates General Contracting				Electrical Express Train (Borg Alarab - Alamein) From St.325+393 To St.394+600				600	(3		RUM) E isulting		
Issued by Co	ed by Constactor Name Sign			Date/Serial Nur 08/03/202				Number Time 2023 12:00 PM				v	
Description of Data of	400	Mahmoud Roshdy	05	223	_			CJ	00	MM	YY	HH	MM
Received by G CONSULTAN		Eng. Mazen Essamy	De	=	SNA	383	EW	CS	09	03	2023	12	00
CODE -1 Different Colorest Difference Depot Raference			1 m	CODE-1 KP xxx Note For Kilometer Point Only			CO Work	DE-2 Activi	ty	CODE-3 Sub Element Of Activity			
Description	Of Materia	ds Fill Layer	( T.O.E.) Fe	rma Lev	vel								
Location To	Be Used	F	rom St.		383	+000		T	o St.		383+	200	
and the concernent of the local sector	Approval No IR (F15) R Approval No M.A.R.QT(04)				Da					ate 8/3/2023 20/2/2023 20/2/2023			
		M.A.R.Q1	and the second se		-			-		20/2/2	023		
Supplier Name Omm Al-qura Fest Requirement PLT ( DIN 18134)				<ol> <li>Specification</li> </ol>				TES	EARTHWORK SPECIFICATION & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP				
Reference P	Reference Photos Yes / No			Oth	er			Pre	vious	FDT(	14)		
Item		Description		Unit Quantity			Arri	Arrival Date			Note		
1	Plate Loading	g Test		No 4		9/3	9/3/2023		n inter				
2						185	11					1	
3						901							
4													
Comments	by: Eng. M	azen Essamy (SPEC	TRUM)		Comme	ents b	y: Eng	z. Alaa	Abd-	Allatif	(ER)		1
I-The Plate	Load Test I	Result P.L.T.(DIN I	8134) is Appr	roved .	1-Plate 2- Resul specific 3-Final a	it repo ations	ort atta	iched a	nd ac	ceptabl	le with t	he pro	ject
	12.00		Ap	proval S	Status			1 . · ·	3.5	-	-	182	
Organisation	N	ame		Sign	1	De	signati	ion	n Date		A-A	NC-R	
Contractor	Er	ng-Mahmoud Roshdy	2	درس	<u>1</u>				9/.	3/2023		A	
QA/QC*	Er	ng, Mazen Essamy	C	A	1						F	+	
GARB**	En	ng.Mohamed Fayed		24									
Employers		ış. Alaa Abd-Allatif	1	C	315	1000		100	-	2023		100	-

File :MIR-Material inspection Request Rev 0822-1

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

Demberation (1/1) 455,000

المسوعة حوليا و Carr Scamer ،



الجمعية التعاونية الإنتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

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

قطاع التغتيش الداخلى والمعا مل متمد بدى الهيئة المرية العامة للبترون تحت رقم ٢٢/١١٠٢٩ (١٠٠٠

# <u>Technical report</u> of Plate Loading Test DIN 18134

	SYSTRA
:	SPECTRUM
:	الشركة الاماراتية للمقاولات
:	Electric express train
:	Upper embankment layer ( ferma )
:	St (383+020) to St (383+200)
:	9/3/2023
:	609

الإدارة، ١٥٠ سنية (غلول- الأسكندرية س - ب١٥٧ ت. ٤٨٧-٥٣٦ - ٤٢٠-١٥ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



الاحقاع - خلف ۱۱ طریق الحریق - الإسکند ریگ - مصر ۲۹ - ۱۷ - ۲۹ - ۲۹۲۱ - ۲۹۲۱ - ۲۹۲۱ 49 EL Horria Ave - Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

Detectionnee (1/ph 455.44)

Carr Scamer - User Scamer



## COMIBATIAN

# COMIBASSAL International Controllers



حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Accredited by: General Authority for Petroleum Egyptian General Authority for Petroleum قطاع التفتيش الداخلى والمعاصل متعدلدى المينة المرية المامة للبترون تحت رقم ٢٢/١١٠٢٩/٢٤

#### 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.

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

#### Test methods :

 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 diamter of 600 mm have a thickness of 25mm and are provided with equally spaced stiffners 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 hydrulic pump connected to a hydrulic 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.

The temperature at the time of the test was 25<sup>\*</sup>.

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 hyrulic jack was placed on the middle of, and at normal to, the loading plate beneth the reaction loading system and secured against tiliting.

8- The reaction loading system was a heavey multi-purpose excavator (more than 20 ton).

#### Description of exprement:

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 transeducer and dial guage were set to zero, after which a load was applied corressponding 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 increasement 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.



الإدارة، • التي صدّية (غلول - الأسكندرية من - ١٥٧ ت، ٢٥٢- ٥٢ - ٢٥٢- ٢٥٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



التملاح الحلف ١٩ حلريق الحرية - ١٢ سكندرية - معر ت، ١٢٠٠١٨٦ - ٤، ١٢٩ 49 EL Horria Ave .-Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@combassal.com

Detellionner (1/ph 45.5.44)



الجمعية التعاونية الإقتاجية لأعمال الوزن والداجعة والطبرة الدولية (كوميبمنل

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

# قطاع التفتيش الداخلى والمعامل معتمد لدى الهيئة المسرية العامة للبترول تجت رقم 14/ ١٩٠٩/١١، ٢٩

#### 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 soll 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 diamter of 600 mm have a thickness of 25mm and are provided with equally spaced stiffners 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 hydrulic pump connected to a hydrulic 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 soll (sand-gravel). The test surface area was levelled and the plate was bedded on this surface.

7- The hyrulic jack was placed on the middle of, and at normal to, the loading plate beneth the reaction loading system and secured against tiliting.

The reaction loading system was a heavey multi-purpose excavator (more than 20 ton).

#### Description of exprement:

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 transeducer and dial guage were set to zero, after which a load was applied corressponding 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 increaement 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.



الإدارة، • اش سفية زغاول- الأسكندرية س - ب١٥٢ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel : 4869798 - 4870665



القطاع الحلف ١٩ علريق الحرية - الإسكندرية -49 EL Homia Ave .- Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

Datefricanter ( 1/5/1 455-647

Carr Scamer - Lise insure li



## ATTABIMO, COMIBASSAL International Controllers الجمعية التعاودية الانتاجية لأعمال الوزن والراجعة والغير داندولية (كوميبسل)



حاصلة على شهادة الأيزو ISO 9001:2015 Accredited by: Egyptian General Authority for Petroleum Under No.: 34/29.11.2011 Under No.: 34/29.11.2011 383+020

600

Diameter of loading plate:

Londing singe no, Lond (F)		Normal stress (s <sub>0</sub> ) MN/m <sup>2</sup>	Settlement of heading plate S (mm)	
9	6.414	8.005	0,00	
1	7,07	0.025	0.12	
2	14.14	8.850	0.29	
3	21.21	8.075	0.44	
4	28.25	9,100	0.57	
5	15.15	0,125	0,70	
6	42.42	0,150 0.78		
7	49.49	0,175	0.87	
5	56.56	8,200	0.98	
.9	63.63	0.225	1.10	
80	79.7	0,250	1.19	
11	56.56	0.200	1,16	
12	49,49	0,175	1,10	
13	35.35	9,125	1.05	
14	21.21	0.075	1.01	
15	1,414	0.005	0.55	
	fable 2: Measured valu	es for second loading cycle		
Leading stage no.	Load (F) kN	Normal stress (sli) MN/m2	Settlement of loading plate S (mm)	
15	1.414	0,005	8.55	
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	
	63.63	0.225	1.24	
24			2187	
24	Table 3: Com	pilation of results		
	Table 3: Com neters	pilation of results	Zeel Mending rand	
Para	neters	1st loading cycle	and the second se	
Paras ( $\sigma_{v,vas}$ )	neters MN2m <sup>2</sup>	1st loading cycle 0.250	0.250	
Paran (G <sub>breac</sub> ) R <sub>0</sub> ()	neters MN/m <sup>1</sup> mm)	1st loading cycle 0,250 0,016	0.250	
Para (G <sub>uran</sub> ) A <sub>f</sub> (1 A <sub>f</sub> (1000)	neters MN/m <sup>2</sup> mm) MN/m <sup>2</sup> ))	1st loading cycle 0,250 0,016 6,342	0.250 0.515 4.000	
Para (G <sub>0,000</sub> ) 8 <sub>0</sub> (mm) 8 <sub>1</sub> (mm) 8 <sub>2</sub> (mm)	neters MN/m <sup>1</sup> mm)	1st loading cycle 0,250 0,016	0.515	

الإدارة، • اش سفية رُغلول- الأسكندرية ص - ب ١٥٧ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



القطاع ، خلف ٢٩ طريق الحرية - الإسكندرية -ت. ١٩٦٠-١٩٦ - ١٩٢٠١٩٦ - ش. ١٩٦٠٩٢ 49 EL Homa Ave --Alex;Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

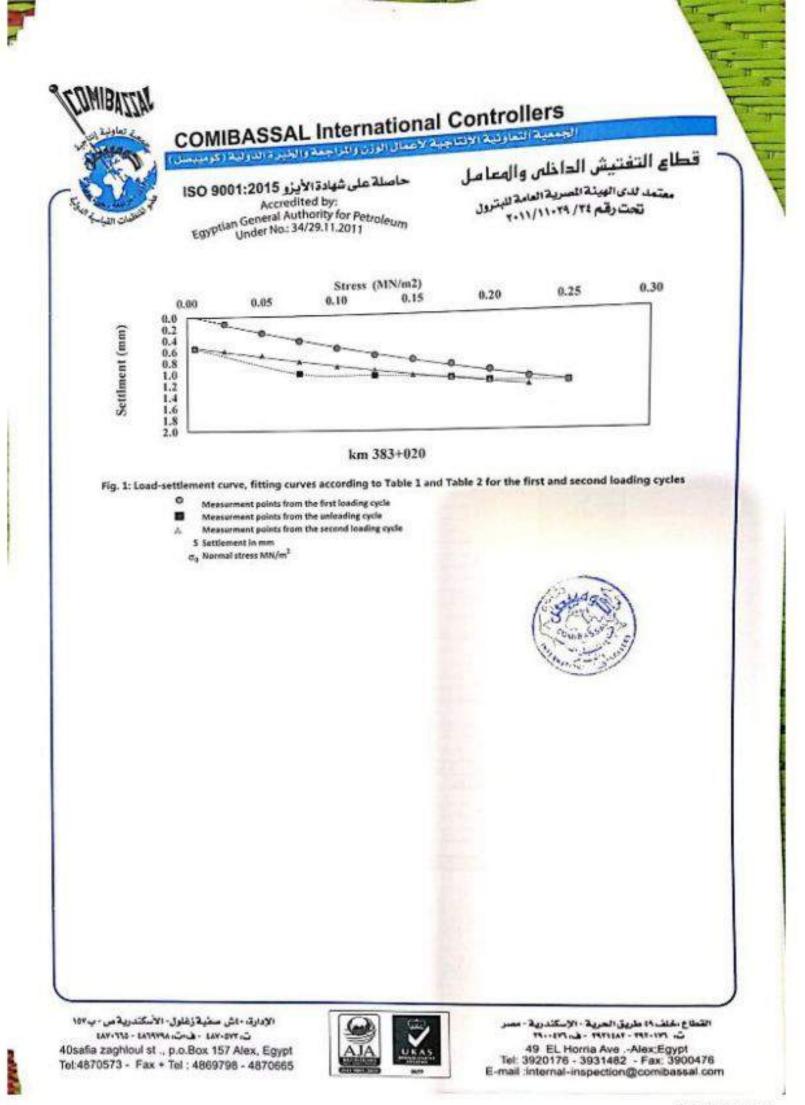
قطاع التفتيش الداخلى والمعامل

معتماء للدى الهيئة المسرية العامة للبترول

تحترقم ٢١/١١٠٢٩ /٢١ م

DateBlancae (12) in espirate

Carr Scamer - Lizz in part



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Carr Scamer - Lizza Hannel

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الجمعية التعاونية الإنتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

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

## قطاع التغتيش الداخلى والمعامل

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

Location :

Diameter of loading plate:

383+070 600

Londing stage no.	Lood (F) kN	Normal sleess (s <sub>0</sub> ) MN/m <sup>2</sup>	Settlement of loading plate S (mm		
0	1.414	0.005	0,00		
1	7.07	8.025	0.11		
2	14.14	0.050	0.24		
)	21.21	0.075	and the second se		
4	25.28	0.100	0.35		
5	35.35	0.125	0.46		
6	42.42	0.150	0.64		
7	49,49	0.175	0.76		
8	56.56	0.200	0.89		
9	63.63	0.225	0,05		
10	78.7	0.250	1.05		
0	56.56	0.200	1.02		
12	41.45	0.175	0,98		
13	35,35	9,125	0.94		
14	21,21	0.075	0.92		
15	1,414	9.005	0.48		
1	able 5: Abravored valu	to for second loading cycle	i kan		
Loading stage no.	Leaf (F) kN	Normal stress (sll) MN/m2	Settlement of leading plate 3 (mm)		
15	1.414	0.005	0,45		
16	7,87	0.025	0.65		
37	14.14	0.050	6.59		
18	21.21	8.055	0.89		

Table 4: Measured values for first landing sycle and unloading sycle

	erter.	0.075	0.65
15	28.28	0.100	0,69
20	38,35	11.125	9,77
21	42.42	0.150	The second se
22	49,49	0.175	6.85
23	56.56	No. of Concession, Name	0.92
24		0.200	0,95
.64	63,63	0.225	1.02
	Table 6: Comp	ilation of results	
Pa	ramelers	1st huding cycle	2nd loading cycle
(64.	and MN/m <sup>2</sup>	0.250	0.250
	a (masa)	0.007	6.457
	m/(MN/m <sup>2</sup> ))	4.519	2.547
	n-(348 /m j)	+1.112	-8.036
	16(31N*/m*1) 16(λ/10): σ <sub>4 Max</sub> 1	+1.112	-0.036

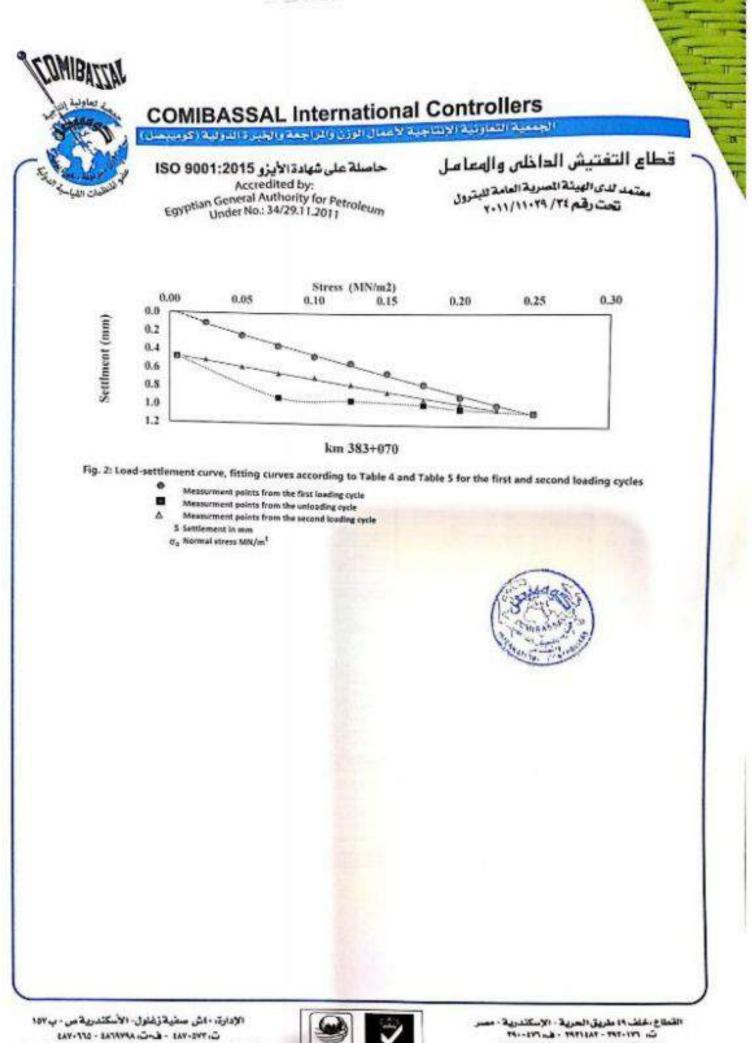




التماع ، المند ١٠ طريق الحرية - الإسكندرية ، مسر ت. ٢١٠-١٢٠ - ٢٠٠٠ ت. 49 EL Horria Ave - Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :Internal-inspection@comibassal.com

Detectionnee (1/p.h #squee)

المسوعة حوليا و Carr Scamer



الإدارة، ١٠٢ سفية زغارل، الأسكندرية س - ب١٥٠ ت، ٢٨٠-١٢٦ - فـت، ٢٨٩٠٢٨ 40safia zaghloul st ., p.o.Box 157 Alex, Egypt Tul:4870573 - Fax + Tel : 4869798 - 4870665



القطاع ، غلف ١٩ طريق الحرية ، الإسكندرية ، مسر ت، ٢٩٠٠٢ ٢٩٠ - ٢٩٢١٢ ٢ - ف، ٢٩٠٠٢ 49 EL Horris Ave .-Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail internal-inspection@comibassal.com

Dembicannee ( 1/p.h.es.p.ics)

Carr Scamer - Lips in public



الجمعية التماونية الانتاجية لأعمال الوزن والراجعة والخبر د الدولية (كوميبصل)

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

## قطاع التغتيش الداخلى والمعامل

معتمد لدى الهيئة المسرية العامة للبترول تحت رقم ٢٢/ ٢٩٠١١/١١٠٢٩

Location :

383+120 600

Table 9. March 19. August 19 August 19. Augu

Diameter of loading plate:

Table 7: Measured values for first loading .coding stage no. Load (F) kN		Normal stress (s <sub>0</sub> ) MN/m <sup>2</sup>	Settlement of loading plate S (orm)		
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	31.15	0.125	9,70		
6	42.43	0.150	0,87		
1	49.49	0.175	0,98		
	56.56	0,200	1.05		
9	\$3.63	0.125	1.12		
10	76,7	0.250	1.22		
11	56.56	0,260	1.18		
12	-29,39	0,175	1.15		
13	35.35	0.125	1.12		
14	21,21	0.075	1.09		
15	1.414	0.005	0.60		
	able N: Measured sub	are for second loading cocke			
Loading stage no.	Load (F) kN	Normal stress (s0) MN/m2	Settlement of loading plate S (mm)		
15	5,454	0.08%	0,69		
16	7,87	0.625	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	0.159	1,17		
33	49.49	0.175	1,24		
23	56.56	19,200	1.25		
24	63.63	0.225	1.31		
		apilation of results	10 million - 10 mi		
to the second	Belerv	Int fording cycle	2nd loading evel		
(a,,,,)	MNm <sup>4</sup>	0.259	0.250		
	(man)	0.052	0.551		
a, tauna	MN/m/jj	7,550	5.776		
A: (10:00 )	MN/m/B	-10.065	-10,608		
Ex+ 1.5 m to	a ray Os west	89.25	144.03		
	DENI	1.61	and the second se		
			3		

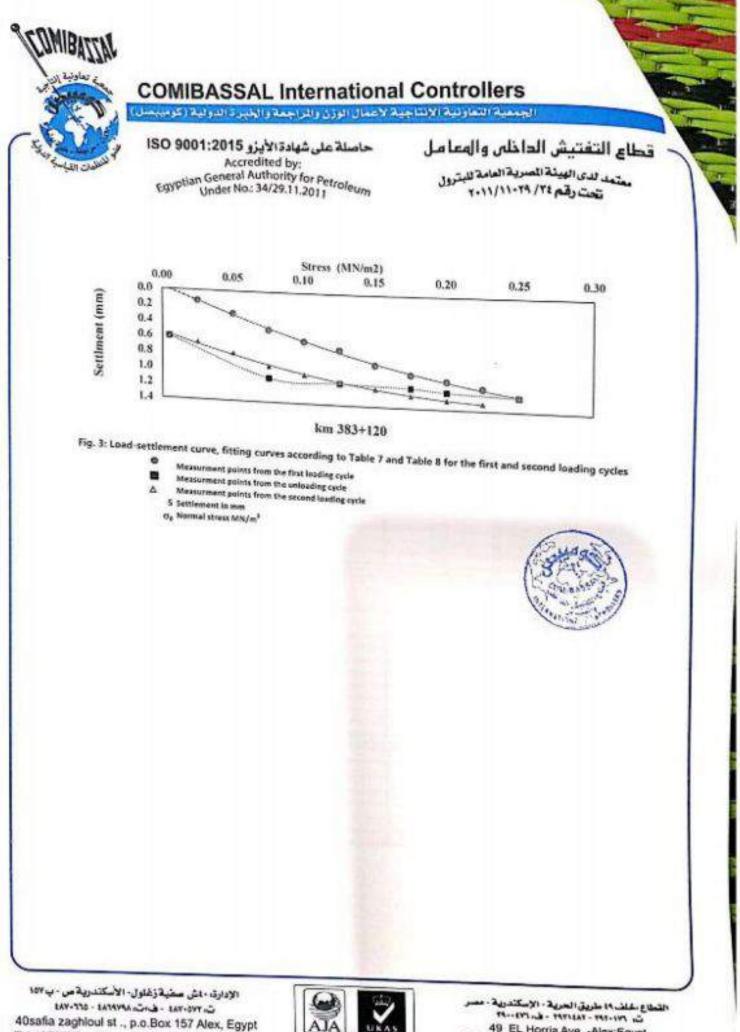
الإدارة، ١٠ اش صحية وْغَلول- الأسكندرية من - ب١٥٧ -------4Dsafia zaghloul st ., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax • Tel: 4869798 - 4870665



القطاع ، خلف ١٩ ملزيق الحرية - الأسكندرية تم ١٩٣٠،١٧٦ - ١٩٣١،٤٨ - فر، ١٩٣٠، 49 EL Horria Ave .-Alex:Egypt Tel: 3920176 - 3931482 - Fax: 3900476 E-mail :internal-inspection@comibassal.com

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Carr Scamer - Lizz in part



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Carr Scamer - Lise insure li



الجمعية التعاونية الانتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

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

## قطاع التغتيش الداخلى والمعامل

معتماد لدى الهيئة المعرية العامة للبترول تحت رقم ٢٤/ ٢١١/١١٠٢

Location :

383+200

600

Diameter of loading plate:

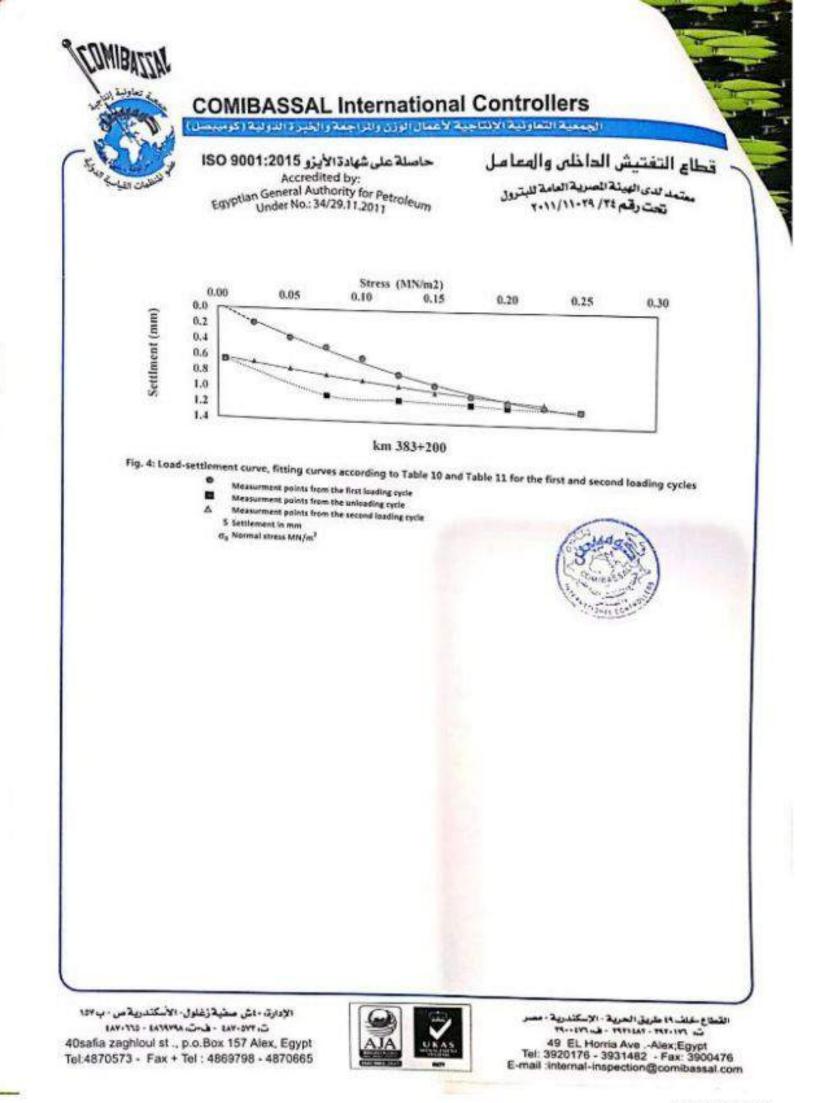
Londing stage no.	Land (F) kN	Normal stress (s <sub>a</sub> ): MN/m <sup>3</sup>	Settlement of loading plate S (mm)		
9	1.414	0.0105	0.60		
1	7.07	0.025	0.38		
1	14.14	0.058	0.35		
)	21.21				
4	28.28	0.100	0.47		
5	36.35	0.125	0.79		
6	42.42	0.150	0.92		
1	49.49	0.175	1.05		
5	\$6.56	0.209	1.12		
9	63.63	0.225	1.17		
10	70,7	0,250	1.21		
12	56.56	0,200	1.18		
13	49,49	0.175	1.15		
14	35.35	0.125	1.12		
15	21.21	0.075	1.65		
	1.414	6,005	0.65		
	une int steasured val	ues for second loading cycle			
Loading stage au,	Load (F) kN	Normal stress (s0) MN/m2	Settlement of Ioading plate S (tom)		
15	1.414	0.005			
16	7,87	0.025	0.65		
17	14.14	0.050	9.67		
18	21.21	0.075	0.75		
19	28,28	0,100	0.82		
20	36.35	0.125	0.58		
21	42,42	0.150	0,94		
22	49,49	0.175	1.01		
73	56,56	0.200	1,10		
24	43,63	0.225	1.12		
	Table 12: Ca	mpilation of results	1.1.4		
Para	meters	Est loading cycle	Ind londing cyc		
10,000	MN/m <sup>2</sup>	0.250	8.250		
	(mm)	-61.03.5			
	(MN/m <sup>2</sup> ))	8.090	0.615		
		-52,126	2.967		
a <sub>2</sub> (mm/(MN <sup>2</sup> /m <sup>2</sup> ))		-52.126 #X.95	-2.887		
	Exe 1.5 et (4, 16, 6, 84)				
Ex+ 1.5 (*)	31463-64 6443 2/Evi	2.2	260.42		

الإدارة، ٢٠٤ مشيلة (غلول - الأسكندرية من - ب ١٥٧ ت. ٤٨٣-٥٦ - ٢٠٢٠ من من ٢٠٢٠ 40safia zaghloul st., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



الالبلاغ علاق ۱۹ ملریق المرید - الاسکندرید - مسر ت ۲۹۰۰ الله - ۱۹۹۹ ملریق المرید - ۱۹۰۰ 49 EL Horria Ave - Alex,Egypt Tel: 3920176 - 3931482 - Fax: 3900478 E-mail :internal-inspection@comibassal.com

Dembiourner (1/sh #spore)



Denticement (1/ph #space)

Carr Scamer - Lips in June



الجمعية التعاونية الإنتاجية لأعمال الوزن والراجعة والخبرة الدولية (كوميبصل)

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

قطاع التغتيش الداخلى والمعا مل متمد لدى الهيئة المرية المامة للبترون تحت رقم ٢٢/١١٠٢٩

### 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 accourdance to the German standard , DIN 18134 are illustrated in table 13 .

Ev1(MN/m <sup>2</sup> )	the second s	Eu2/Eu1
94.41		Ev2/Ev1 ratio
	142.72	1.51
106.10	177.31	1.67
89.21	144.03	
88.95	200.42	1.61
	Ev1(MN/m <sup>2</sup> ) 94.41 106.10 89.21	94.41 142.72 106.10 177.31 89.21 144.03

Lab Director

Eng / Eman Kandil

eman.



Geotechnical Consulant

Dr / Mohamed Mostafa Badry

For Dr. M-

الإدارة • الله مشيلة (غلول • الأسكندرية من • ١٥٧ ه درمة • الله مشيلة (غلول • الأسكندرية من • ١٥٩ ه درمة • ١٥٩ - ٢٠٠ 40safia zaghioul st., p.o.Box 157 Alex, Egypt Tel:4870573 - Fax + Tel: 4869798 - 4870665



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Carr Scamer - Lips in page

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