



الهيئة العامة
للطرق والكباري

المنطقة الخامسة - (غرب الدلتا)

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة.. وبعد،،

بالإحالة إلى مشروع القطار الكهربائي السريع قطاع (وادي النطرون - برج العرب - اسكندرية)
نتشرف بأن نرفق لسيادتكم المقايمة المعدلة لبنود أعمال الجسر الترابي والأعمال الصناعية للخط
الأول لمشروع القطار الكهربائي السريع (العين السخنة - العاصمة الإدارية - العلمين - مطروح
(قطاع وادي النطرون / برج العرب / الإسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من
الكم 316+400 الى كم 316+900 بطول 0.500 كم و المسافة من كم 0+000 الى كم 0+110
بطول 0.110 كم . طبقاً للمفاوضة الخاصة بالقطاع الرابع بتاريخ 2024/6

عقد: (2024 / 2023 / 747)

تنفيذ :- شركة منصور علي حسن

مسلسل	اسم الشركة	بداية القطاع (كم)	نهاية القطاع (كم)	التكلفة (مليون)
1	منصور علي حسن	316+400 0+000	316+900 0+110	18.751

برجاء من سيادتكم التفضل بالأحاطة والتوجيه بالازم

وتفضلوا بقبول فائق الاحترام والتقدير،،

رئيس الإدارة المركزية

أحمد جلال

المنطقة الخامسة- غرب الدلتا

عميد مهندس/

"هاني محمد محمود طه"



الهيئة العامة
للتنظيم والإدارة
(GAUTS)



المقايمة المعدلة لبتود أعمال الجسر الثرابين والأعمال الصناعية للخط الأول لمشروع القطار الكهربائي السريع (العين المسخنة - العاصمة الإدارية - العينين - مطروح) (قطاع والذي النطرون / برج العرب / الاسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من الكم 316+400 الى الكم 316+900 بطول 0.500 كم و العمافة من الكم 0+000 الى 0+110 بطول 0.110 كم.

تنفيذ شركة منصور علي حسن
عقد رقم (2024/2023/747)

رقم البند	بيان الأعمال	الوحدة	الكمية	القيمة	الإجمالي
1	أعمال الردم				
1-1	بالمشرك المكعب أصل توريد ونقل اترية مطابقة للمواصفات وتشغيلها باستخدام آلات التسوية بسمك لا يزيد عن 50 سم حتى منسوب -2 متر و بسمك لا يزيد عن 25 سم لاستكمال المنسوب التصميمي لتشكيل الجسر والإكلاف (نسبة تحمل كاليفورنيا لا تقل عن 15%) و رشها بالعماء الاسوانية للوصول الى نسبة الرطوبة المطلوبة والدعم الجيد بالهراسات للوصول الى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم تنفيذ طبقا للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف. - مسافة النقل 2 كم و يتم احتساب علاوة 1.5 جنيه لكل 1 كم بالزيادة أو النقصان - السعر يشمل عمل تشوينات وتخفيف واختيارات ونقل لموقع العمل . - السعر يشمل قيمة المادة المحجيرة				
	ابتداء من سبتمبر طبقا للمفاوضة الخاصة بالقطاع الرابع 6/2024	م3	53210	121.90	6,486,299.0
	علاوة مسافة النقل الترية 145 كم	م3	42568.0	214.50	9,130,836.0
	ابتداء من سبتمبر طبقا للمفاوضة الخاصة بالقطاع الرابع 6/2024	م3	10642.0	229.50	2,442,339.0
	علاوة مسافة النقل الرمل 155 كم	م3	53210.0	13.00	691,730
	ابتداء من سبتمبر طبقا للمفاوضة الخاصة بالقطاع الرابع 6/2024	م3			
	علاوة تحصيل رسوم الكارثة والموازين طبقا للائحة الشركة الوطنية	م3			

18,751,204	الإجمالي
ثمانية عشر مليوناً وسبعمائة وواحد وخمسون ألفاً وستين وأربعة جنوبها فقط لا غير .	
يرجى العلم بان الفئات المذكورة طبقا للمفاوضة الخاصة بالقطاع الرابع بتاريخ 6/2024.	

مدير عام المشروعات
م / محمد حسني قياض

مدير المشروع (الهيئة)
م / احمد جلال

مدير المشروع (الاستشاري)
م / هشام محمد صبري

مدير المشروع الشركة
م / محمود أيوب

رئيس الإدارة المركزية
منطقة غرب الدلتا

الاسكندرية - مرسى مطروح

عميد مهندس/

هاني محمد محمود طه



قائمة الكميات الواردة بالمستخلص جاري (2)

أعمال الجسر الترابي والأعمال الصناعية للخط الأول لمشروع القطر الكهربائي السريع (العين السخنة – العاصمة الإدارية – العلمين – مطروح) (قطاع وادي النظرون / برج العرب / الإسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من الكم 316+400 إلى كم 316+900 بطول 0.500 كم و المسافة من كم 0+000 إلى كم 0+110 بطول 0.110 كم
عقد (2024/2023/747)

رقم البند وبياناته (1-1) بالمتري المكعب أعمال تحميل وتوريد ونقل التربة مطابقة للمواصفات وتشغيلها باستخدام آلات التسوية بسمك لا يزيد عن 50 سم حتى منسوب 2- متر ويسمك لا يزيد عن 25 سم لاستكمال المنسوب التصميمي لتشكيل الجسر والاكتاف (نسبه تحمل كاليفورنيا لا تقل عن 15%) ورشها بالمياه الأصولية للوصول إلى نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول إلى أقصى كثافة جافة (95% من الكثافة الجافة القصوى) ويتم التنفيذ طبقاً للمناسيب التصميمية والقطاعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتعلاته طبقاً لأصول الصناعة ومواصفات الهيئة العامة للطرق والكباري وتعليمات المهندس المشرف.

ابتداء من سبتمبر 2023 طبقاً للمفاوضه الخاصه بالقطاع الرابع بتاريخ 6/2024

تنفيذ: شركة منصور علي حسن

مقدار العمل السابق :		0.0	3م
مسلسل	الموقع الكيلومتری		الكمية (م3)
	من الكم	إلى الكم	
1	316+400	316+750	53000.00
	الكمية خلال فترة المستخلص (3م)		53000.00
	الإجمالي الكلي (3م)		53000.00

مهندس الاستشاري

مهندس الاستشاري

مهندس الشركة

مهندس الهيئة

أحمد جلال

م / أحمد جلال

مكتب د/ خالد قنديل

م / هشام محمد صبري
القطاع الرابع (الإسكندرية)
القطر الكهربائي السريع
مكتب د/ خالد قنديل
م / هشام محمد صبري

مكتب XYZ

م / محمد خليل
مكتب XYZ
م / محمد خليل

م / محمود أيوب

م / محمود أيوب
م / محمود أيوب

قائمة الكميات الواردة بالمستخلص جاري (2)

أعمال الجسر القراي والأعمال الصناعية للخط الأول لمشروع القطار الكهربائي السريع (العين السخنة – العاصمة الإدارية – العلمين – مطروح) (قطاع وادي النطرون / برج العرب / الإسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من الكم 316+400 الى كم 316+900 بطول 0.500 كم و المسافة من كم 0+000 الى كم 0+110 بطول 0.110 كم

عقد (2024/2023/747)

علاوة بند (1-1) علاوة مسافة النقل 145 كم .

ابتداء من سبتمبر 2023 طبقاً للمفاوضة الخاصة بالقطاع الرابع بتاريخ 6/2024

تنفيذ : شركة منصور علي حسن .

مقدار العمل السابق :	0.0	3م
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الكمية (م3)	الطول (متر)	الموقع الكيلومري		مسلسل
		الى الكم	من الكم	
42400.00	350	316+750	316+400	1
42400.00	الكمية خلال فترة المستخلص (3م)			
42400.00	الاجمالي الكلي (3م)			

مهندس الهيئة

م. أحمد جلال

مهندس الاستشاري

مكتب د/ خالد فتنديل

م. هشام محمد صبري



مهندس الاستشاري

مكتب XYZ

م. محمد خليل



مهندس الشركة

م. محمود أيوب



قائمة الكميات الواردة بالمستخلص جاري (2)

أعمال الجسر الثرابي والأعمال الصناعية للخط الأول لمشروع القطر الكهربائي السريع (العين السخنة – العاصمة الإدارية – العلمين – مطروح) (قطاع وادي النظرون / برج العرب / الإسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من الكم 316+400 الى كم 316+900 بطول 0.500 كم و المسافة من كم 0+000 الى كم 0+110 بطول 0.110 كم

عقد (2024/2023/747)

علاوة بند (1-1) علاوة مسافة النقل 155 كم .

ابتداء من سبتمبر 2023 طبقاً للمواضبه الخاصه بالقطاع الرابع بتاريخ 6/2024

تنفيذ : شركة منصور علي حسن .

مقدار العمل السابق :		0.0	3م
مسلسل	الموقع الكيلومترى	الطول (متر)	
		من الكم	الى الكم
1		316+400	316+750
	الكمية خلال فترة المستخلص (3م)		10600.00
	الاجمالي الكلي (3م)		10600.00

مهندس الهيئة

أحمد جلال

م / أحمد جلال

مهندس الاستشاري

مكتب د/ خالد قنديل

م / هشام محمد صبري



مهندس الاستشاري

مكتب XYZ

م / محمد خليل



مهندس الشركة

م / محمود أيوب





قائمة الكميات الواردة بالمستخلص جاري (2)

أعمال الجسر الترابي والأعمال الصناعية للخط الأول لمشروع القطار الكهربائي السريع (العين السخنة – العاصمة الإدارية – العلمين – مطروح) (قطاع وادي النطرون / برج العرب / الإسكندرية) أعمال الحفر و طبقات الردم لتنفيذ المسافة من الكم 316+400 الى كم 316+900 بطول 0.500 كم و المسافة من كم 0+000 الى كم 0+110 بطول 0.110 كم
عقد (2024/2023/747)

علاوة بند (1-1) علاوة تحصيل رسوم الكارثة والموازن طبقا للائحة الشركة الوطنية.

تنفيذ : شركة منصور علي حسن .

مقدار العمل السابق :	0.0	3م
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الكمية (م3)	الطول (متر)	الموقع الكيلومتری		مسلسل
		من الكم	الى الكم	
53000.00	350	316+750	316+400	1
53000.00	الكمية خلال فترة المستخلص (3م)			
53000.00	الاجمالي الكلي (3م)			

مهندس الهيئة

أحمد جلال

م / أحمد جلال

مهندس الاستشاري

مكتب د/ خالد فنديل

م / هشام محمد صبري



مهندس الاستشاري

مكتب XYZ

م / محمد خليل



مهندس الشركة

م / محمود أيوب





مكتب الاستشارات الهندسية
(G.A.R.B.)



الهيئة العامة للإعطاء
مصر

Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

5/10/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-4.50
Description :	MNS-F.L-009&REQ F.L 046	Layer Thickness:	FDT-6
Station Represented :	(316+620) (316+720)	Sample Date :	4/10/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.157	8.2	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1	2						
Stations	316+640	316+690						
Wt. of Sand before Test, gm	9374	5785						
Wt. of Sand After Test, gm	5554	6147						
Wt. of Sand in Cone + hole, gm	3810	3618						
Wt. of Sand in Cone	1454	1428						
Wt. of Sand at hole, gm	2356	2190						
Volume of the Hole, cm ³	1581	1470						
Wt. of Soil from Hole, gm	3482	3238						
Bulk Density of Soil, gm/cm ³	2.202	2.203						
Moisture Content, %	6.2	6.5						
Dry Density, gm/cm ³	2.074	2.069						
Compaction, (%)	96.1%	95.9%						

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng. :
ب. ق. ١٢ - ١٢٥

Consultant Eng.:-

مكتب الاستشارات الهندسية
(أ.د. خالد قنديل)
مدير المشروع: م/ هشام محمد صبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

ATERIAL INSPECTION REQUEST



Contractor Company		Mansour Ali Hassan		Designer Company		(KK) Engineering Consulting Office																	
Issued by Contractor		Name		Date/ Serial Number		Time																	
		Eng. Mahmoud Ayoub		4-10-2023 MNS-M.I.008		10:00 AM																	
Received by ER		Eng. Gaber Ibrahim		MIR		<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>316</td> <td>FW</td> <td>C5</td> <td>4</td> <td>10</td> <td>2023</td> <td>10</td> <td>00</td> </tr> </table>		C1	C2	C3	DD	MM	YY	HH	MM	316	FW	C5	4	10	2023	10	00
C1	C2	C3	DD	MM	YY	HH	MM																
316	FW	C5	4	10	2023	10	00																

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

Description of Materials	Fill Layer.		
Location to be Used	From St. (316+620) to St. (316+720) (-4.50 m from ferma).		
MAR Approval No	(MNS-M.A003).	Date	3/10/2023
Supplier Name	El Sewy - EL Hahdi		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	2	4/10/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)	Comments by: Eng. Gaber Ibrahim
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة.	1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	M. Ayoub	5/10/2023	A
QA/QC *	Eng. Hesham Sabry		5/10/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer

** Alignment / Bridges: Culvert Only

05-10-2023



الهيئة العامة للتخطيط

Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

26/11/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-1.00
Description :	MNS-F.L.-049RT48&REQ F.L 086RT085	Layer Thickness:	FDT-39
Station Represented :	(316+560) (316+720)	Sample Date :	25/11/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.131	9.4	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1	2	3	4	5	6		
Stations	316+580	316+605	316+630	316+655	316+680	316+715		
Wt. of Sand before Test, gm	9906	9763	9513	9342	9100	8894		
Wt. of Sand After Test, gm	6031	5742	5584	5712	5556	5081		
Wt. of Sand in Cone + hole, gm	3875	4041	3829	3630	3542	3813		
Wt. of Sand in Cone	1428	1454	1428	1454	1428	1454		
Wt. of Sand in hole, gm	2447	2587	2401	2178	2114	2359		
Volume of the Hole, cm ³	1642	1736	1611	1460	1419	1583		
Wt. of Soil from Hole, gm	3921	3914	3563	3214	3095	3437		
Bulk Density of Soil, gm/cm ³	2.205	2.197	2.211	2.201	2.181	2.171		
Moisture Content, %	6.3	6.4	6.1	6.2	6.3	6.1		
Dry Density, gm/cm ³	2.074	2.065	2.084	2.072	2.052	2.046		
Compaction, (%)	97.3%	96.9%	97.8%	97.2%	96.3%	96.0%		

Acceptance Criteria

Comply

Not Comply

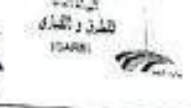
CONSULTANT COMMENTS

Lab Contractor Eng.:
21-07-2023
220-012-120

Consultant Eng.:-

المكتب الاستشاري الهندسي
(أ.د/ خالد قنديل)
مدير المشروع: م/ هشام محمد صبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

MATERIAL INSPECTION REQUEST



Contractor Company		Mansour Ali Hassan		Designer Company		(KK) Engineering Consulting Office	
Issued by Contractor		Name Eng. Mahmoud Ayoub		Sign Mohamed Shaker		Date/ Serial Number 29-11-2023 MNS-M.1.050	
Received by ER		Eng. Gaber Ibrahim		MIR		Time 10:00 AM	

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

Description of Materials		Fill Layer.	
Location to be Used		St. (316+790) (-2.50 m from forma).	
MAR Approval No		(MNS-M.A021).	
Supplier Name		El Sewy - EL Hadi	
Test Requirement		F.D.T(ASTM D 1556)	
Reference Photos		No	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	29/11/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)		Comments by: Eng. Gaber Ibrahim	
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة.		1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.	

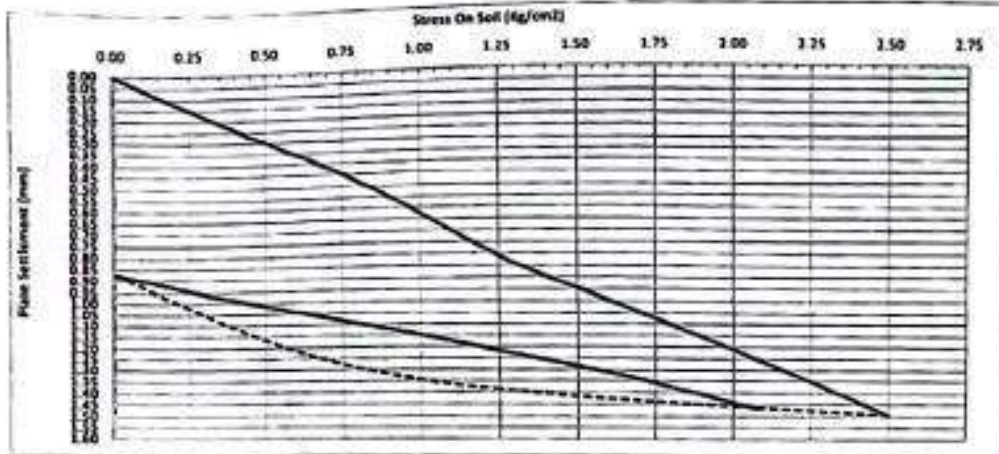
APPROVAL STATUS				Date	A-AWC-R
Organisation	Name	Sign			
Contractor	Eng. Mahmoud Ayoub	Mohamed Shaker		30/11/2023	A
QA/QC *	Eng. Hesham Sabry			30/11/2023	A
GARB**	Eng. Ahmed Galal				
Employers Representative	Eng. Gaber Ibrahim			30-11-2023	A.W.C

* Designer
** Alignment / Bridges: Culvert Only

Company Name
Project
Test Date
Report date
Location
Test No.

مشور على حسن :
Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
: 27/09/2023
: 27/09/2023
: Station 316+670
: 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.25	0.50	0.81	1.03	1.25	1.50

UnLoading (t)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.50	1.39	1.23	0.87

D (mm) =	600	S1 (mm) =	0.45	S2 (mm) =	1.08	ΔS =	0.62
Ev1 (MPa) =	(0.75 * D * Δσ) / ΔS		71				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.87	0.99	1.10	1.22	1.33	1.47

Ev2/Ev1 = 2.2

D (mm) =	600	S1 (mm) =	1.08	S2 (mm) =	1.36	ΔS =	0.28
Ev2 (MPa) =	(0.75 * D * Δσ) / ΔS		159				

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

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

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

مختبر محامل

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

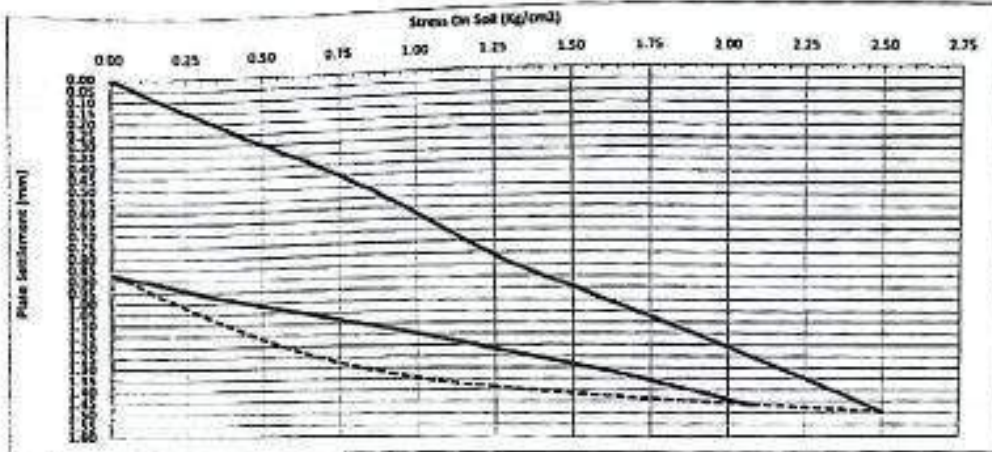
IAS
ACCREDITED
Testing Laboratory

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

Company Name
Project
Test Date
report date
Location
Test No.

منصور علي حسن
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
: 27/09/2023
: 27/09/2023
: Station 316+670
: 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.25	0.50	0.81	1.03	1.25	1.50

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.50	1.39	1.23	0.87

D (mm) =	600	S1 (mm)=	0.45	S2(mm)=	1.06	ΔS =	0.62
Ev1 (MPa) =	$(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$		71				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.87	0.99	1.10	1.22	1.33	1.47

Ev2/Ev1 = 2.2

D (mm) =	600	S1 (mm)=	1.06	S2(mm)=	1.36	ΔS =	0.28
Ev2 (MPa) =	$(0.75 \cdot D \cdot \Delta \sigma) / \Delta S$		159				

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



مختبر محامل

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



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



هيئة الطرق
والتنوير
(ICARD)



الهيئة القومية للإسكان



Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work Lab Testing Results Date 4/12/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-0.25
Description :	MNS-F.L.-0598&REQ F.L 096	Layer Thickness:	FDT-48
Station Represented :	(316+560) (316+720)	Sample Date :	3/12/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.101	8.3	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1	2	3	4	5	6		
Stations	316+580	316+605	316+630	316+655	316+680	316+715		
Wt. of Sand before Test, gm	9854	9572	9608	9192	8812	8572		
Wt. of Sand After Test, gm	5926	5857	5604	5504	4819	4815		
Wt. of Sand in Conc + hole, gm	3938	3715	3914	3688	3993	3824		
Wt. of Sand in Conc	1454	1428	1454	1428	1454	1428		
Wt. of Sand at hole, gm	2484	2287	2460	2260	2539	2396		
Volume of the Hole, cm ³	1667	1535	1651	1517	1704	1608		
Wt. of Soil from Hole, gm	3721	3392	3581	3405	3903	3563		
Bulk Density of Soil, gm/cm ³	2.232	2.210	2.219	2.247	2.232	2.216		
Moisture Content, %	6.1	6.1	6	6.2	6.4	6.3		
Dry Density, gm/cm ³	2.104	2.079	2.094	2.116	2.098	2.084		
Compaction, (%)	97.4%	96.2%	96.9%	97.9%	97.1%	96.5%		

Acceptance Criteria Comply ☐ Not Comply ☐

CONSULTANT COMMENTS

Lab Contractor Eng.:-
012 - 123

Consultant Eng.:-

KK
(أ.د/ خالد قنديل)
مدير المشروع: م/ هشام محمد مبري
مشروع: القطار الكهربائي السريع
القطعة الرابعة (الإسكندرية)

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	MANSOUR ALI HASSAN		Designer Company*	(KK) Engineering Consulting Office																	
Issued by Contractor	Name Eng: Mahmoud Ayoub	Sign <i>M. Ayoub</i>	Date 23-10-2023	Time 09:00 AM																	
Received by Employers Representative	Eng. Gaber Ibrahim	UIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>318</td> <td>EW</td> <td>CS</td> <td>23</td> <td>10</td> <td>23</td> <td>9</td> <td>00</td> </tr> </table>			C1	C2	C3	DD	MM	YY	HH	MM	318	EW	CS	23	10	23	9	00
C1	C2	C3	DD	MM	YY	HH	MM														
318	EW	CS	23	10	23	9	00														
CODE-1	S1 to S21 Station Reference		D1 to S3 Depot Reference		Kp XXX Note For Kilometer point only Start Km is used																
CODE-2	Work Activity																				
CODE-3	Sub Element of Activity																				

EXPLANATION OF WORK TO BE INSPECTED

Description	Element	Item
MNS-F.L-027 & REQ F.L 064 ST 316+620 TO 316+720	Fill Layer (-2.50m) From Ferma	Fill For Embankment

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time

Planned Inspection Date 23/10/2023	Planned Inspection Time 3:00
---------------------------------------	---------------------------------

COMPLIANCE EVIDENCE Must be Included as appropriate

Checklist Attached ☒	Test Results Attached ☐	Calibration Attached ☐	Other as indicated ☐
Drawing Reference	ITP Reference	MS Reference	
TECHNICAL REPORT (CG21-181.1) VERSION1 BY CIVECON GROUP	MNS-M.A012 MNS-M.I.022	- MASTER SHEET & Grid Levelling - Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION2 BY CIVECON GROUP.	

Comments by: Eng. Hesham Sabry (KK)

1. تم استلام القطاع فحص بصري
2. تم مراجعة شيت المناسوب
3. تم استلام القطاع عروض ومناسوب من استشاري XYZ
4. تم تحقيق نسب الدمك المطلوبة

Comments by: Eng. Gaber Ibrahim (ER)

1. Contractor must take into account safety of received work until all work completed.
2. Surveying & Soil Material Works Inspected and approved by GARB Consultant (XYZ&KK) respectively.
3. Final approval is subject to above mentioned comments.

INSPECTION RESULT

Organisation	Name	Sign	Date	Time	Approval Status	Please Tick if Not Attend
Contractor	Eng: Mahmoud Ayoub	<i>M. Ayoub</i>			A	
XYZ Survey	Eng. Ahmed Awwad	<i>A. Awwad</i>				
QA/QC*	Eng. Hesham Sabry	<i>H. Sabry</i>	24/10/2023	2:00	A	
GARB**	Eng. Ahmed Galal	<i>A. Galal</i>				
Employers Representative	Eng. Gaber Ibrahim	<i>G. Ibrahim</i>			AWS	

* Designer

** Alignment: Bridges: Culvert Only

MNS-F.L-027 & REQ F.L 064 ST 316+620 TO 316+720 (-2.50)

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	MANSOUR ALI HASSAN		Designer Company*	(KK) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date	Time																
	Eng: Mahmoud Ayoub	M. Ayoub	18-10-2023	09:00 AM																
Received by Employers Representative	Eng. Gaber Ibrahim	UIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>316</td> <td>EIV</td> <td>CS</td> <td>18</td> <td>10</td> <td>23</td> <td>9</td> <td>00</td> </tr> </table>		C1	C2	C3	DD	MM	YY	HH	MM	316	EIV	CS	18	10	23	9	00
	C1	C2	C3	DD	MM	YY	HH	MM												
316	EIV	CS	18	10	23	9	00													

CODE-1	S1 to S21 Station Reference	D1 to S3 Dipol Reference	Kp XXX Note For Kilometer 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
MNS-F.L-020 RT 019 & REQ F.L 057 RT 056 ST 316+620 TO 316+720	Fill Layer (-3.00m) From Ferma	Fill For Embankment

INSPECTION DETAILS The Following will be ready at the Planned Inspection Time	
Planned Inspection Date	Planned Inspection Time
18/10/2023	11.00

COMPLIANCE EVIDENCE Must be included as appropriate			
Checklist Attached ☒	Test Results Attached ☐	Calibration Attached ☐	Other as indicated ☐
Drawing Reference	ITP Reference	MS Reference	
TECHNICAL REPORT (CG21-181.1) VERSION1 BY CIVECON GROUP	MNS-M.A010 MNS-M.I.017	- MASTER SHEET & Grid Levelling - Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2)/VERSION2 BY CIVECON GROUP.	

Comments by: Eng. Hesham Sabry (KK)	Comments by: Eng. Gaber Ibrahim (ER)
1. تم استلام القطاع فحص بصري 2. تم مراجعة شيت المتناسب 3. تم استلام القطاع عروض ومتاميب من استشاري XYZ 4. تم تحديد نسب الدمك المطلوبة	1. Contractor must take into account safety of received work until all work completed. 2. Surveying & Soil Material Works inspected and approved by GARB Consultant (XYZ&KK) respectively. 3. Final approval is subject to above mentioned comments.

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organisation	Name	Sign	Date	Time	A-AWC-R	
Contractor	Eng: Mahmoud Ayoub	M. Ayoub			A	
XYZ Survey	Eng. Ahmed Anwarad					
QA/QC*	Eng. Hesham Sabry		18/10/2023	3:00	A	
GARB**	Eng. Ahmed Galal					
Employers Representative	Eng. Gaber Ibrahim				AWC	

* Designer

** Alignment: Bridges: Culvert Only

MNS-F.L-020 RT 019 & REQ F.L 057 RT 056 ST 316+620 TO 316+720 (-3.00)

Page 1 of 1

INSPECTION REQUEST



Contractor Company	Mansour Ali Hassan			Designer Company	(KK) Engineering Consulting Office		
Issued by Contractor	Name	Eng. Mahmoud Ayoub	Sign	Mohamed Shehry	Date/ Serial Number	7-12-2023 MNS-M.I.060	
	Received by ER	Eng. Gaber Ibrahim	MIR		Time	10:00 AM	
					C1	C2	C3
					316	EW	CS
					DD	MM	YY
					7	12	2023
					HH	MM	
					10	00	

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

Description of Materials	Fill Layer.		
Location to be Used	From St. (0+000) to St. (0+020) [- 1.75 m from FERMA]-		
MAR Approval No	(MNS-M.A022).	Date	28/11/2023
Supplier Name	El Sewy – EL Hadi		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	7/12/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)	Comments by: Eng. Gaber Ibrahim
1. تم استلام القطاع .SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة .	1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed Shehry	9/12/2023	A
QA/QC *	Eng. Hesham Sabry		9/12/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer
** Alignment / Bridges: Culvert Only

09-12-2023



وزارة
النقل و
البنية التحتية
(GARD)



الهيئة القومية للإسكان



Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

8/12/2023

Density and Unit Weight of Soil In Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-1.75
Description :	MNS-F.L-065&REQ F.L 102	Layer Thickness:	FDT-54
Station Represented :	(0+000) (0+020)	Sample Date :	7/12/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.16	6.8	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1							
Stations	0+010							
Wt. of Sand before Test, gm	9327							
Wt. of Sand After Test, gm	5418							
Wt. of Sand in Cone + hole, gm	3909							
Wt. of Sand in Cone	1454							
Wt. of Sand at hole, gm	2455							
Volume of the Hole, cm ³	1648							
Wt. of Soil from Hole, gm	3526							
Bulk Density of Soil, gm/cm ³	2.201							
Moisture Content, %	6.0							
Dry Density, gm/cm ³	2.076							
Compaction, (%)	96.1%							

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng.

Consultant Eng.:-

المكتب الاستشاري الهندسي
(أ.د/ خالد قنديل)
مدير المشروع: م/ هشام محمد مبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

INSPECTION
REQUEST

Contractor Company	Mensour Ali Hassan			Designer Company	(KK) Engineering Consulting Office																		
Issued by Contractor	Name	Sign		Date/ Serial Number	Time																		
	Eng. Mahmoud Ayoub	Mohamed Shaker		7-12-2023 MNS-M.I.059	10:00 AM																		
Received by ER	Eng. Gaber Ibrahim	MIR		<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>335</td> <td>EW</td> <td>C5</td> <td>7</td> <td>12</td> <td>2023</td> <td>10</td> <td>00</td> </tr> </table>				C1	C2	C3	DD	MM	YY	HH	MM	335	EW	C5	7	12	2023	10	00
	C1	C2	C3	DD	MM	YY	HH	MM															
335	EW	C5	7	12	2023	10	00																

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (316+790) to St. (316+820) (- 1.75 m from FERMA).				
MAR Approval No	(MNS-M.A022).	Date	28/11/2023		
Supplier Name	El Sewy – EL Hadi				
Test Requirement	F.D.T (ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	2	7/12/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)			Comments by: Eng. Gaber Ibrahim		
1. تم استلام القطاع SAND CONE . 2. تم تحقيق نسبة الدمك المطلوبة .			1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.		

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed Shaker	9/12/2023	A
QA/QC *	Eng. Hesham Sabry		9/12/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer

** Alignment / Bridges: Culvert Only



شركة
الطرق و
المواصلات
(EGAR)



الهيئة القومية للإسكان
القاهرة - مصر



Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

8/12/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1558

Company:	MANSOUR ALI HASSAN	Layer NO:	M-1.75
Description :	MNS-F.L-064&REQ F.L 101	Layer Thickness:	FDT-53
Station Represented :	(316+790) (316+820)	Sample Date :	7/12/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.16	6.8	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1	2						
Stations	316+800	316+820						
Wt. of Sand before Test, gm	9814	9261						
Wt. of Sand After Test, gm	5975	5782						
Wt. of Sand in Cone + hole, gm	3939	3479						
Wt. of Sand in Cone	1454	1428						
Wt. of Sand at hole, gm	2485	2051						
Volume of the Hole, cm ³	1668	1377						
Wt. of Soil from Hole, gm	3683	3057						
Bulk Density of Soil, gm/cm ³	2.208	2.221						
Moisture Content, %	6.2	6						
Dry Density, gm/cm ³	2.079	2.085						
Compaction, (%)	96.3%	97.0%						

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

ب. د. محمد عبد الله
مهندس
ب. د. محمد عبد الله
مهندس

Lab Contractor, Eng.

Consultant Eng.:-

المكتب الاستشاري الهندسي
ك.ك. (أ.د. خالد قنديل)
مدير المشروع: م. هشام محمد صبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

MATERIAL INSPECTION REQUEST



Contractor Company	Mansour Ali Hassan		Designer Company	(KK) Engineering Consulting Office																	
Issued by Contractor	Name	Sign	Date/ Serial Number	Time																	
	Eng. Mahmoud Ayoub	Mohamed Shehn	3-12-2023 MNS-M.I.056	10:00 AM																	
Received by ER	Eng. Gaber Ibrahim	MIR	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DO</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>316</td> <td>EW</td> <td>CS</td> <td>3</td> <td>12</td> <td>2023</td> <td>10</td> <td>00</td> </tr> </table>			C1	C2	C3	DO	MM	YY	HH	MM	316	EW	CS	3	12	2023	10	00
C1	C2	C3	DO	MM	YY	HH	MM														
316	EW	CS	3	12	2023	10	00														

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

Description of Materials	Fill Layer.		
Location to be Used	From St. (316+790) to St. (316+800) (-2.00 m from forma).		
MAR Approval No	(MNS-M.A022).	Date	28/11/2023
Supplier Name	El Sewy - EL Hadi		
Test Requirement	F.D.T (ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	3/12/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)

1. SAND CONE تم استلام القطاع
2. تم تحقيق نسبة الدمك المطلوبة.

Comments by: Eng. Gaber Ibrahim

1- F.D.T was carried-out by material engineer for both contractor and GARB Consultant.
2- Results report attached and acceptable with project specifications.
3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS				Date	A-AWC-R
Organisation	Name	Sign		4/12/2023	A
Contractor	Eng. Mahmoud Ayoub	Mohamed Shehn		4/12/2023	A
QA/QC *	Eng. Hesham Sabry				
GARB**	Eng. Ahmed Galal				
Employers Representative	Eng. Gaber Ibrahim				A.W.C

* Designer
** Alignment / Bridges: Culvert Only



الهيئة القومية للإنفاق



Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

4/12/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method - ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-2.00
Description :	MNS-F.L-061&REQ F.L 098	Layer Thickness:	FDT-50
Station Represented :	(316+790) (316+800)	Sample Date :	3/12/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.16	6.8	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1								
Stations	316+795								
Wt. of Sand before Test, gm	9757								
Wt. of Sand After Test, gm	6046								
Wt. of Sand in Cone + hole, gm	3711								
Wt. of Sand in Cone	1464								
Wt. of Sand at hole, gm	2257								
Volume of the Hole, cm ³	1515								
Wt. of Soil from Hole, gm	3352								
Bulk Density of Soil, gm/cm ³	2.213								
Moisture Content, %	6.3								
Dry Density, gm/cm ³	2.082								
Compaction, (%)	96.4%								

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng.:
V.R. 012 120

Consultant Eng.:-

المكتب الاستشاري الهندسي
(أ.د/ خالد قنديل)
مدير المشروع: م/ هشام محمد مبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

MATERIAL INSPECTION REQUEST



Contractor Company	Mansour Ali Hassan		Designer Company	(KK) Engineering Consulting Office						
Issued by Contractor	Name	Sign	Date/ Serial Number	Time						
	Eng. Mahmoud Ayoub	Mohamed Shehe	3-12-2023 MNS-M.I.055	10:00 AM						
Received by ER	Eng. Gaber Ibrahim	MIR	C1	C2	C3	DD	MM	YY	HH	MM
			310	2V	CS	3	12	2023	10	00

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (0+000) to St. (0+020) (-2.00 m from ferma).				
MAR Approval No	(MNS-M.A022).	Date	28/11/2023		
Supplier Name	El Sewy – El Hadi				
Test Requirement	F.D.T (ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	3/12/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)		Comments by: Eng. Gaber Ibrahim			
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة.		1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.			

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed Shehe	4/12/2023	A
QA/QC *	Eng. Hesham Sabry		4/12/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer
 ** Alignment / Bridges: Culvert Only

04/12/2023

MATERIAL INSPECTION REQUEST



2023/11/22

Contractor Company	Mansour Ali Hassan		Designer Company	(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign	Date/ Serial Number	Time	
	Eng. Mahmoud Ayoub	Mohamed shehry	3-12-2023 MNS-M.1.054	10:00 AM	
Received by ER	Eng. Gaber Ibrahim	MIR	C1	C2	C3
			316	EW	CS
			3	12	2023
			10	00	

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

Description of Materials	Fill Layer.		
Location to be Used	From St. (316+560) to St. (316+720) (-0.25 m from ferma).		
MAR Approval No	(MNS-M.A021).	Date	22/11/2023
Supplier Name	El Sewy – EL Hadi		
Test Requirement	F.D.T (ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	7	3/12/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)	Comments by: Eng. Gaber Ibrahim
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة.	1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed shehry	4/12/2023	A
QA/QC *	Eng. Hesham Sabry		4/12/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer

** Alignment / Bridges: Culvert Only

04/12/2023

MATERIAL INSPECTION REQUEST



Contractor Company	Mansour Al Hassan		Designer Company	(KK) Engineering Consulting Office											
Issued by Contractor	Name	Sign	Date/ Serial Number	Time											
	Eng. Mahmoud Ayoub	M. Hamed Shehry	30-11-2023 MNS-M.I.052	10:00 AM											
Received by ER	Eng. Gaber Ibrahim	MIR	<table border="1"> <tr> <td>YY</td> <td>MM</td> <td>DD</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>11</td> <td>12</td> <td>30</td> <td>10</td> <td>00</td> </tr> </table>			YY	MM	DD	HH	MM	11	12	30	10	00
YY	MM	DD	HH	MM											
11	12	30	10	00											

CODE - 1	ST to ST2 Station Reference	DI to S3 Depot Reference	Kg XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	Fill Layer.				
Location to be Used	From St. (316+560) to St. (316+720) (-0.50 m from fermal).				
MAR Approval No	(MNS-M.A021).	Date	22/11/2023		
Supplier Name	El Sewy - EL Hadl				
Test Requirement	F.D.T (ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	7	30/11/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)			Comments by: Eng. Gaber Ibrahim		
1. تم استلام القطع SAND CONE 2. تم تحقيق نسبة السمك المطلوبة.			1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed Shehry	2/12/2023	A
QA/QC *	Eng. Hesham Sabry		2/12/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim		02/12/2023	AWC

* Designer
** Alignment / Bridges: Culvert Only

MATERIAL INSPECTION REQUEST



2023/11/29

Contractor Company	Mansour All Hassan		Designer Company	(KIC) Engineering Consulting Office																
Issued by Contractor	Name	Sign	Date/ Serial Number	Time																
	Eng. Mahmoud Ayoub	Mohamed shehry	29-11-2023 MNS-M.I.051	10:00 AM																
Received by ER	Eng. Gaber Ibrahim	MIR	<table border="1"> <tr> <th>CL</th> <th>C2</th> <th>C3</th> <th>DO</th> <th>MM</th> <th>YY</th> <th>HH</th> <th>MM</th> </tr> <tr> <td>315</td> <td>EW</td> <td>CS</td> <td>28</td> <td>11</td> <td>2023</td> <td>10</td> <td>00</td> </tr> </table>	CL	C2	C3	DO	MM	YY	HH	MM	315	EW	CS	28	11	2023	10	00	
CL	C2	C3	DO	MM	YY	HH	MM													
315	EW	CS	28	11	2023	10	00													

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

Description of Materials	Fill Layer.		
Location to be Used	From St. (0+000) to St. (0+010) (-2.50 m from ferma).		
MAR Approval No	(MNS-M.A021).	Date	22/11/2023
Supplier Name	El Sewy – EL Hadl		
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Reference Photos	No	Other	

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	29/11/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)	Comments by: Eng. Gaber Ibrahim
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة.	1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed shehry	30/11/2023	A
QA/QC *	Eng. Hesham Sabry		30/11/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim		30-11-2023	A.W.C

* Designer
** Alignment / Bridges: Culvert Only

Contractor Company	Mansour All Hassan		Designer Company	(KK) Engineering Consulting Office																			
Issued by Contractor	Name	Sign	Date/ Serial Number	Time																			
	Eng. Mahmoud Ayoub	Mahmed sheha	29-11-2023 MNS-M.I.051	10:00 AM																			
Received by ER	Eng. Gaber Ibrahim	MIR	<table border="1"> <tr> <th>CC</th> <th>C2</th> <th>C3</th> <th>DD</th> <th>MM</th> <th>YY</th> <th>HH</th> <th>MM</th> </tr> <tr> <td>316</td> <td>EW</td> <td>C5</td> <td>29</td> <td>11</td> <td>2023</td> <td>10</td> <td>00</td> </tr> </table>					CC	C2	C3	DD	MM	YY	HH	MM	316	EW	C5	29	11	2023	10	00
	CC	C2	C3	DD	MM	YY	HH	MM															
316	EW	C5	29	11	2023	10	00																

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (0+000) to St. (0+010) (-2.50 m from ferma)-				
MAR Approval No	(MNS-M.A021).	Date	22/11/2023		
Supplier Name	El Sewy – EL Hadi				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	1	29/11/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)		Comments by: Eng. Gaber Ibrahim			
1. تم استلام القطاع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة .		1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.			

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mahmed sheha	30/11/2023	A
QA/QC *	Eng. Hesham Sabry		30/11/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim		30-11-2023	A.W.C

* Designer

** Alignment / Bridges: Culvert Only



وزارة النقل

Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

1/12/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-2.50
Description :	MNS-F.L-055&REQ F.L 093	Layer Thickness:	FOT-45
Station Represented :	(0+000) (0+010)	Sample Date :	29/11/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.101	8.3	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1							
Stations	0+010							
Wt. of Sand before Test, gm	9692							
Wt. of Sand After Test, gm	6097							
Wt. of Sand in Cone - hole, gm	3685							
Wt. of Sand in Cone	1454							
Wt. of Sand at hole, gm	2231							
Volume of the Hole, cm ³	1497							
Wt. of Soil from Hole, gm	3211							
Bulk Density of Soil, gm/cm ³	2.145							
Moisture Content, %	8.0							
Dry Density, gm/cm ³	2.023							
Compaction, (%)	96.3%							

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng.:-

Consultant Eng.:-

المكتب الاستشاري الهندسي
(أ.د/ شهاب قنديل)
مدير المشروع: م/ هشام محمد صبري
مشروع: القطار الكهربائي المربع
القطاع الرابع (الإسكندرية)

MATERIAL INSPECTION REQUEST



Contractor Company	Mansour Ali Hassan		Designer Company	(KK) Engineering Consulting Office	
Issued by Contractor	Name	Sign	Date/ Serial Number	Time	
	Eng. Mahmoud Ayoub	M. Ayoub	27-09-2023 MNS-M.I.003	12:30 PM	
Received by ER	Eng. Gaber Ibrahim	MIR	CL	CS	DD
			216	1W	CS
			MM	YY	MM
			27	09	2023
			12	30	

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (316+620) to St. (316+720) Fill Layer (-5.50) m from ferma.				
MAR Approval No	(MNS-M.A001).	Date	26/09/2023		
Supplier Name	El Sewy - EL Hahdi				
Test Requirement	PLT DIN 18134	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY GVECON GROUP		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	1	27/09/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)			Comments by: Eng. Gaber Ibrahim		
1- تم اجراء اختبار P.L.T بواسطة معمل ميلد. 2- تم تحقيق النتائج المطلوبة طبقا لمواصفات المشروع.			1-P.L.T was carried- out by CEL Lab. Attendances of material engineer for both contractor and GARB Consultant. 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above-mentioned comments.		

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	M. Ayoub	27-09-2023	A
QA/QC *	Eng. Hesham Sabry		27/9/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C

* Designer
** Alignment / Bridges: Culvert Only

27/09/2023

Transmittal cover sheet

Project : EET.

Date : 27/09/2023

Gentlemen,

Attached the following PLT test result:

Company : منصور علي حسن

Date of test: 27/09/2023

Location of test: Station (316+620 to 316+720)

No. of PLT reports : (1 Tests)

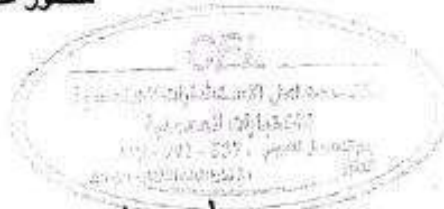
No. pages of reports: (2 pages)

Copy to main Contractor: G.A.R.B.L.T

Copy to main consultant: SYSTRA.

Copy to Contractor consultant: Khaled Kandel.

Copy to Sub contractor: منصور علي حسن



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



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

Company : منصور علي حسن

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4)
- Alexandria to Borg El Arab.

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

Test Location : Station (316+620 to 316+720)

Test Date : 27/09/2023

Report Date : 27/09/2023

Type of soil : Lower Embankment

Test level : A-1-a

Report No. : 001

Dear Gentleman,

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

Apparatus

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

Test Procedure

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



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



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www.cel-egypt.com

Report

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

Report

- Type of Soil : Lower Embankment
- Job Requirement : $E_{v2} > (30 \text{ MPa})$

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	600
- date of measurement	27/09/2023
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	E_{v2} / E_{v1} Ratio
		E_{v1} (MPa)	E_{v2} (MPa)	
1	316+670	71	159	2.2

Signature / 
مهندس محمد طارق
27/9/2023

Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 27/09/2023
report date : 27/09/2023
Location : Station 316+670
Test No. : 01

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.79	0.21	19.70	0.30	19.75	0.25	0.25
2	0.83	19.61	0.39	19.45	0.55	19.44	0.56	0.50
3	1.25	19.40	0.60	19.11	0.89	19.06	0.94	0.81
4	1.67	19.24	0.76	18.85	1.14	18.80	1.20	1.03
5	2.08	19.10	0.90	18.63	1.37	18.51	1.49	1.25
6	2.50	18.94	1.06	18.38	1.62	18.19	1.81	1.50

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	18.94	1.06	18.38	1.62	18.19	1.81	1.50
2	1.25	19.01	0.99	18.52	1.48	18.31	1.69	1.39
3	0.625	19.12	0.88	18.70	1.30	18.50	1.50	1.23
4	0.01	19.38	0.62	19.13	0.87	18.87	1.13	0.87

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.28	0.72	18.97	1.03	18.77	1.23	0.99
1	0.83	19.20	0.80	18.84	1.16	18.65	1.35	1.10
2	1.25	19.13	0.87	18.72	1.28	18.50	1.50	1.22
3	1.67	19.04	0.96	18.60	1.40	18.36	1.64	1.33
4	2.08	18.95	1.05	18.46	1.54	18.18	1.82	1.47

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



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ATERIAL INSPECTION REQUEST



شركة
مهندسين
مصريين



شركة
مهندسين
مصريين

Contractor Company	Mansour Ali Hassan			Designer Company				(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/ Serial Number				Time			
	Eng. Mahmoud Ayoub	M.Ayoub		9-10-2023 MNS-M.1.010				10:00 AM			
Received by ER	Eng. Gaber Ibrahim		MIR	C1	C2	C3	DO	MM	YY	HH	MM
				316	EW	C5	9	10	2023	10	00

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (316+620) to St. (316+720) (-4.00 m from ferma).				
MAR Approval No	(MNS-M.A003).			Date	3/10/2023
Supplier Name	El Sewy – EL Hahdi				
Test Requirement	F.D.T(ASTM D 1556)		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP	
Reference Photos	NO		Other		
Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER	2	9/10/2023	
2					
3					
4					
Comments by: Eng. Hesham Sabry (kk)			Comments by: Eng. Gaber Ibrahim		
1. تم استلام القطع SAND CONE 2. تم تحقيق نسبة الدمك المطلوبة .			1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	M.Ayoub	10/10/2023	A
QA/QC *	Eng. Hesham Sabry		10/10/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			AWC

* Designer

** Alignment / Bridges: Culvert Only

MNS-M.1.010MNS-M.1.010

Page 1 of 1



الهيئة العامة للنقل
Ministry of Transport and Public Works

Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

1/12/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-2 50
Description :	MINS-F.L.-055&REQ F.L 092	Layer Thickness:	FDT-44
Station Represented :	(316+790) (316+790)	Sample Date :	29/11/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm^3	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm^3
2.101	8.3	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1							
Stations	316+790							
Wt. of Sand before Test, gm	9604							
Wt. of Sand After Test, gm	5942							
Wt. of Sand in Cone – hole, gm	3862							
Wt. of Sand in Cone	1428							
Wt. of Sand at hole, gm	2434							
Volume of the Hole, cm^3	1634							
Wt. of Soil from Hole, gm	3522							
Bulk Density of Soil, gm/cm^3	2.159							
Moisture Content, %	6.3							
Dry Density, gm/cm^3	2.031							
Compaction, (%)	96.7%							

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng.:-

Consultant Eng.:-

KK
(أ.د. خالد قنديل)
مدير المشروع: م/ هشام محمد صبري
مشروع: القطار الكهربائي السريع
القضايح الرابع (الإمكندرية)



الهيئة العامة
للتخطيط والاقتصاد
(G.A.P.D.)



الهيئة العامة للتخطيط والاقتصاد

Electrical Express train from Wadi El Natroun To Borg Elarab

Activity : Earth Work

Lab Testing Results

Date

29/11/2023

Density and Unit Weight of Soil in Place by the Sand-Cone Method – ASTM D 1556

Company:	MANSOUR ALI HASSAN	Layer NO:	M-0.75
Description :	MNS-F.L-053&REQ F.L 090	Layer Thickness:	FDT-42
Station Represented :	(316+560) (316+720)	Sample Date :	28/11/2023

Modified Proctor Testing Results

Max. Dry Density, gm/cm ³	Optimum Moisture Content, %	Degree of Compaction Required, %	Bulk Density of Specified Sand, gm/cm ³
2.131	9.5	95%	1.490

Compaction Testing Results & Calculations

Hole No.	1	2	3	4	5	6	7	
Stations	316+570	316+595	316+620	316+645	316+670	316+695	316+720	
Wt. of Sand before Test, gm	9937	9659	9375	9159	9064	8974	8714	
Wt. of Sand After Test, gm	8084	5991	5879	5243	5436	5368	4867	
Wt. of Sand in Cone + hole, gm	3783	3767	3496	3916	3628	3606	3847	
Wt. of Sand in Cone	1428	1454	1428	1454	1428	1454	1428	
Wt. of Sand at hole, gm	2355	2313	2068	2462	2200	2152	2419	
Volume of the Hole, cm ³	1581	1552	1388	1652	1477	1444	1623	
Wt. of Soil from Hole, gm	3468	3394	3037	3646	3268	3169	3548	
Bulk Density of Soil, gm/cm ³	2.194	2.186	2.188	2.207	2.207	2.194	2.185	
Moisture Content, %	6.0	6.3	6.1	3	6.5	6.3	6.2	
Dry Density, gm/cm ³	2.070	2.057	2.062	2.082	2.072	2.064	2.059	
Compaction, (%)	97.1%	96.5%	96.8%	97.7%	97.2%	96.9%	96.6%	

Acceptance Criteria

Comply

Not Comply

CONSULTANT COMMENTS

Lab Contractor Eng.:

Consultant Eng.:-

المكتب الاستشاري الهندسي
(أ.د/ خالد قنديل)
مدير المشروع: م/ هشام محمد صبري
مشروع: القطار الكهربائي السريع
القطاع الرابع (الإسكندرية)

Journal of Management Education 32(1)

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed shehry ^{ins}	29/11/2023	A
QA/QC *	Eng. Hesham Sabry		29/11/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim			A.W.C



MATERIAL INSPECTION REQUEST



الهيئة العامة
لشؤون النقل
EGATE

الهيئة العامة
لشؤون النقل

Contractor Company	Mamour Ali Hassan		Designer Company	(KK) Engineering Consulting Office
Issued by Contractor	Name	Sign	Date/ Serial Number	Time
	Eng. Mahmoud Ayoub	Mu hamed shahin	25-11-2023 MNS-M.I.045	10:00 AM
Received by ER	Eng. Gaber Ibrahim		MIR	

Q1	C2	C3	D0	MRA	YF	HR	MRA
316	E1W	C5	25	11	2023	10	50

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

Description of Materials	Fill Layer.				
Location to be Used	From St. (316+560) to St. (316+720) (-1.00 m from ferma)-				
MAR Approval No	(MNS-M.A020).	Date	5/11/2023		
Supplier Name	El Sewy - EL Hadi				
Test Requirement	F.D.T(ASTM D 1556)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No	Other			

Item	Description	Unit	Quantity	Arrival Date	Note
1	Sand Cone Test.	NUMBER		25/11/2023	
2					
3					
4					

Comments by: Eng. Hesham Sabry (kk)	Comments by: Eng. Gaber Ibrahim
1. تم استلام القطاع 2. تم تحقيق نسبة الدمك المطلوبة .	1- F.D.T was carried- out by material engineer for both contractor and GARB Consultant. 2- Results report attached and acceptable with project specifications. 3- Final approval is subject to above-mentioned comments.

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mahmoud Ayoub	Mohamed shahin	26/11/2023	A
QA/QC *	Eng. Hesham Sabry		26/11/2023	A
GARB**	Eng. Ahmed Galal			
Employers Representative	Eng. Gaber Ibrahim		26/11/2023	A.W.C

* Designer
** Alignment / Bridges: Culvert Only

Company : منصور علي حسن

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4)
- Alexandria to Borg El Arab.

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

Test Location : Station (000+000 to 000+110)

Test Date : 12/02/2024

Report Date : 13/02/2024

Type of soil : ---

Test level : sub ballast (+0.9).

Report No. : 83-87

Dear Gentleman,

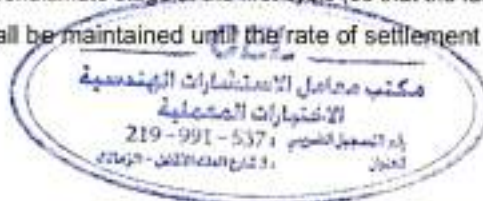
According to the above mentioned subject the test performed as follows:-

Apparatus

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

Test Procedure

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



Report

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

Report

- Job Requirement : $E_{v2} \geq 120 \text{ Mpa}$, $E_{v2} \leq 300 \text{ Mpa}$ and $E_{v2}/E_{v1} \leq 2.2$ Mpa

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	600
- date of measurement	12/02/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
		E_{v1} (MPa)	E_{v2} (MPa)	
1	000+020	147	163	1.1
2	000+045	137	190	1.4
3	000+070	151	191	1.3
4	000+090	147	198	1.4
5	000+110	161	183	1.1

Signature / 
مكتب معامل الاستشارات الهندسية
الاستشارات الهندسية
رقم التسجيل المميز : 537 - 991 - 219
3 شارع النهضة الألفية - الزمالك

Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
Test Date : 12/02/2024
report date : 13/02/2024
Location : Station 000+020
Test No. : 001

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.91	0.09	19.82	0.18	19.79	0.21	0.16
2	0.83	19.87	0.13	19.70	0.30	19.62	0.38	0.27
3	1.25	19.75	0.25	19.59	0.41	19.50	0.50	0.39
4	1.67	19.61	0.39	19.45	0.55	19.37	0.63	0.52
5	2.08	19.48	0.52	19.31	0.69	19.25	0.75	0.65
6	2.50	19.35	0.65	19.20	0.80	19.13	0.87	0.77

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.35	0.65	19.20	0.80	19.13	0.87	0.77
2	1.25	19.50	0.50	19.35	0.65	19.26	0.74	0.63
3	0.625	19.63	0.37	19.47	0.53	19.34	0.66	0.52
4	0.01	19.76	0.24	19.59	0.41	19.45	0.55	0.40

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.64	0.36	19.47	0.53	19.31	0.69	0.53
1	0.83	19.51	0.49	19.35	0.65	19.20	0.80	0.65
2	1.25	19.37	0.63	19.24	0.76	19.09	0.91	0.77
3	1.67	19.24	0.76	19.12	0.88	19.01	0.99	0.88
4	2.08	19.13	0.87	19.02	0.98	18.96	1.04	0.96



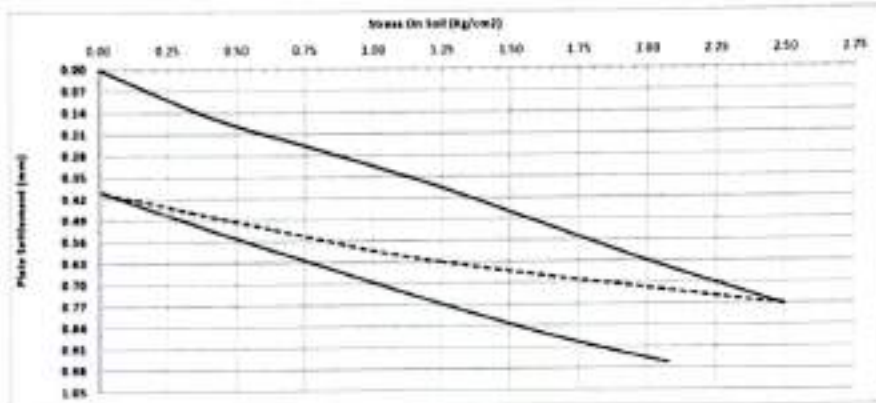
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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sekhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 12/02/2024
Report Date : 13/02/2024
Location : Station 003+020
Test No. : 001

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.16	0.27	0.39	0.52	0.65	0.77

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.77	0.63	0.52	0.40

D (mm) =	600	S1 (mm) =	0.25	S2 (mm) =	0.55	ΔS =	0.30
E _{v1} (MPa) =	(0.75 * D³) / (ΔS * 65)						147

$$E_{v2}/E_{v1} = 1.1$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.40	0.53	0.65	0.77	0.88	0.96

D (mm) =	600	S1 (mm) =	0.62	S2 (mm) =	0.88	ΔS =	0.27
E _{v2} (MPa) =	(0.75 * D³) / (ΔS * 65)						163

E_{v1} = Modulus of deformation during the loading stage
E_{v2} = Modulus of deformation during the Reloading stage
D = Plate diameter (mm)
ΔS = The difference between 0.3 and 0.7 from the maximum loading (kg/cm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Mersa Matruh Priority Sector (4) - Alexandria to Borg El Arab
Test Date : 12/02/2024
report date : 13/02/2024
Location : Station 000+045
Test No. : 002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.78	0.22	19.65	0.35	19.60	0.40	0.32
2	0.83	19.65	0.35	19.54	0.46	19.48	0.52	0.44
3	1.25	19.49	0.51	19.41	0.59	19.34	0.66	0.59
4	1.67	19.34	0.66	19.30	0.70	19.21	0.79	0.72
5	2.08	19.21	0.79	19.15	0.85	19.10	0.90	0.85
6	2.50	19.09	0.91	19.01	0.99	18.95	1.05	0.98

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.09	0.91	19.01	0.99	18.95	1.05	0.98
2	1.25	19.19	0.81	19.10	0.90	19.04	0.96	0.89
3	0.625	19.36	0.64	19.24	0.76	19.15	0.85	0.75
4	0.01	19.48	0.52	19.37	0.63	19.29	0.71	0.62

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.34	0.66	19.25	0.75	19.18	0.82	0.74
1	0.83	19.28	0.77	19.14	0.86	19.07	0.93	0.85
2	1.25	19.12	0.88	19.03	0.97	18.96	1.04	0.96
3	1.67	19.01	0.99	18.95	1.05	18.88	1.12	1.05
4	2.08	18.96	1.04	18.90	1.10	18.82	1.18	1.11



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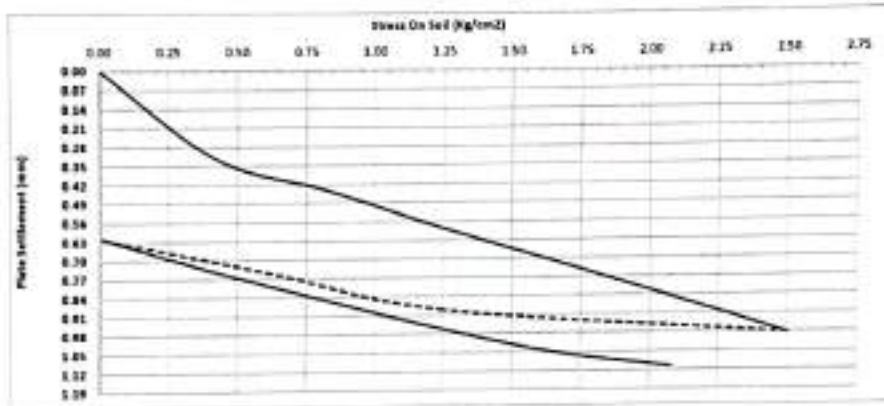


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Company Name
Project
Test Date
report date
Location
Test No.

ملصور طي حمن :
Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
12/02/2024
13/02/2024
Station 000+045
002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.32	0.44	0.59	0.72	0.85	0.98

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.98	0.89	0.75	0.62

D (mm) =	600	S1 (mm) =	0.42	S2 (mm) =	0.74	ΔS =	0.32
Ev1 (MPa) =	(0.75"D³Δσ)/ΔS						
	137						

Ev2/Ev1 = 1.4

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.62	0.74	0.85	0.96	1.05	1.11

D (mm) =	600	S1 (mm) =	0.85	S2 (mm) =	1.06	ΔS =	0.23
Ev2 (MPa) =	(0.75"D³Δσ)/ΔS						
	190						

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



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 12/02/2024
report date : 13/02/2024
Location : Station 000+070
Test No. : 003

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.63	0.37	19.58	0.42	19.51	0.49	0.43
2	0.83	19.51	0.49	19.44	0.56	19.36	0.64	0.56
3	1.25	19.40	0.60	19.31	0.69	19.24	0.76	0.68
4	1.67	19.29	0.71	19.18	0.82	19.11	0.89	0.81
5	2.08	19.18	0.82	19.07	0.93	19.00	1.00	0.92
6	2.50	19.07	0.93	19.00	1.00	18.94	1.06	1.00

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.07	0.93	19.00	1.00	18.94	1.06	1.00
2	1.25	19.19	0.81	19.10	0.90	19.02	0.98	0.90
3	0.625	19.32	0.68	19.24	0.76	19.13	0.87	0.77
4	0.01	19.45	0.55	19.36	0.64	19.24	0.76	0.65

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.32	0.68	19.24	0.76	19.13	0.87	0.77
1	0.83	19.21	0.79	19.12	0.88	19.03	0.97	0.88
2	1.25	19.09	0.91	19.00	1.00	18.95	1.05	0.99
3	1.67	19.02	0.98	18.93	1.07	18.81	1.19	1.08
4	2.08	18.97	1.03	18.90	1.10	18.74	1.26	1.13



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Company Name

معمور علي حسن

Project

Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.

Test Date

12/02/2024

report date

13/02/2024

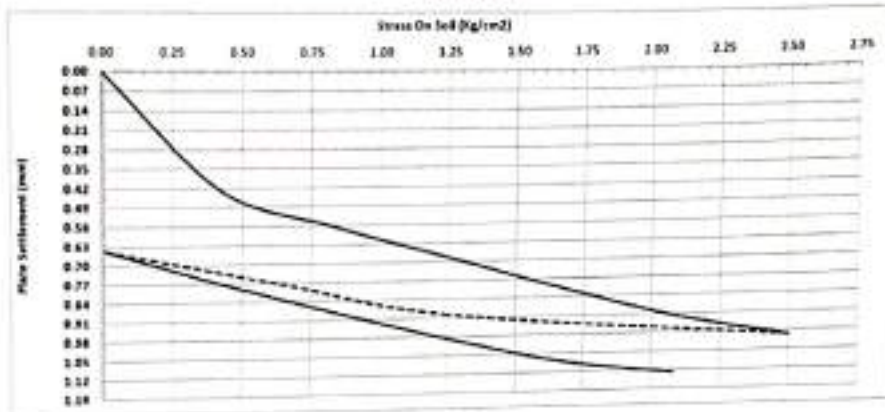
Location

Station 000+070

Test No.

003

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.43	0.56	0.68	0.81	0.92	1.00

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.00	0.90	0.77	0.65

D (mm) =	600	S1 (mm) =	0.64	S2 (mm) =	0.83	ΔS =	0.29
Ev1 (MPa) =	(0.75 * D³ * ΔS) / ΔS						
	151						

$$Ev2/Ev1 = 1.3$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.65	0.77	0.88	0.99	1.08	1.13

D (mm) =	600	S1 (mm) =	0.86	S2 (mm) =	1.09	ΔS =	0.23
Ev2 (MPa) =	(0.75 * D³ * ΔS) / ΔS						
	191						

Ev1 = Modulus of deformation during the loading stage

Ev2 = Modulus of deformation during the Reloading stage

D = Plate diameter (mm)

ΔS = The difference between S3 and S7 from the maximum loading (kmax) (kg/cm²)

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



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 12/02/2024
report date : 13/02/2024
Location : Station 000+090
Test No. : 004

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.70	0.30	19.61	0.39	19.48	0.52	0.40
2	0.83	19.58	0.42	19.50	0.50	19.35	0.64	0.52
3	1.25	19.45	0.55	19.39	0.61	19.23	0.77	0.64
4	1.67	19.33	0.69	19.24	0.76	19.12	0.88	0.78
5	2.08	19.20	0.80	19.11	0.89	19.03	0.97	0.89
6	2.50	19.08	0.92	19.01	0.99	18.96	1.04	0.98

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.08	0.92	19.01	0.99	18.96	1.04	0.98
2	1.25	19.18	0.82	19.09	0.91	19.02	0.98	0.90
3	0.625	19.29	0.71	19.19	0.81	19.10	0.90	0.81
4	0.01	19.37	0.63	19.25	0.74	19.18	0.82	0.73

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.25	0.75	19.15	0.85	19.07	0.93	0.84
1	0.83	19.13	0.87	19.05	0.95	19.00	1.00	0.94
2	1.25	19.04	0.96	18.94	1.06	18.89	1.11	1.04
3	1.67	18.95	1.04	18.85	1.15	18.80	1.20	1.13
4	2.08	18.89	1.11	18.80	1.20	18.71	1.29	1.20



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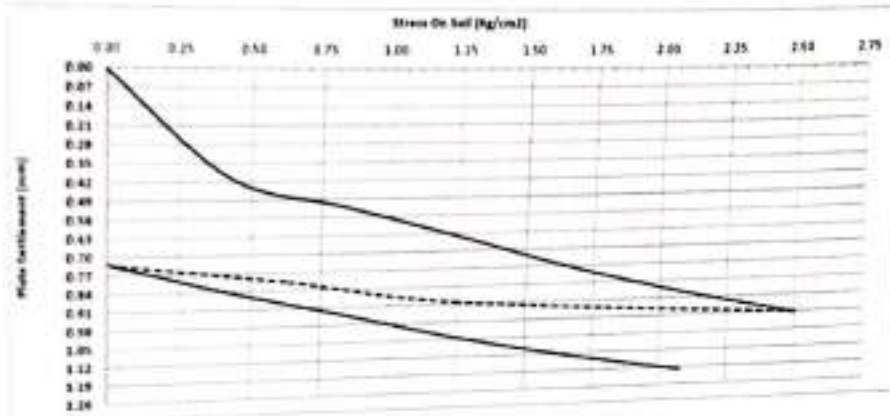


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Company Name
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Test Date
report date
Location
Test No.

ملبور علي حسن
: Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
: 12/02/2024
: 13/02/2024
: Station 000+090
: 004

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1166.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm ²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.40	0.52	0.64	0.75	0.88	0.98

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm ²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.98	0.90	0.81	0.73

D (mm) =	600	S1 (mm) =	0.50	S2 (mm) =	0.80	ΔS =	0.30
E _{v1} (MPa) =	(0.75 * D * ΔS) / ΔS						147

$$E_{v2}/E_{v1} = 1.4$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1166.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm ²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.73	0.84	0.94	1.04	1.13	1.20

D (mm) =	600	S1 (mm) =	0.50	S2 (mm) =	1.18	ΔS =	0.22
E _{v2} (MPa) =	(0.75 * D * ΔS) / ΔS						158

E_{v1} = Modulus of deformation during the loading stage.
E_{v2} = Modulus of deformation during the unloading stage.
D = Plate diameter (mm)
ΔS = The difference between S2 and S1 from the maximum loading (mm)
ΔS = Difference in settlements corresponding to S2 and S1 from the maximum loading (mm)



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 12/02/2024
report date : 13/02/2024
Location : Station 000+110
Test No. : 005

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.75	0.25	19.63	0.37	19.40	0.60	0.41
2	0.83	19.61	0.39	19.50	0.50	19.28	0.72	0.54
3	1.25	19.49	0.51	19.39	0.62	19.18	0.82	0.65
4	1.67	19.37	0.63	19.26	0.74	19.07	0.93	0.77
5	2.08	19.25	0.75	19.17	0.83	19.00	1.00	0.86
6	2.50	19.14	0.86	19.08	0.92	18.95	1.05	0.94

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.14	0.86	19.08	0.92	18.95	1.05	0.94
2	1.25	19.32	0.68	19.15	0.85	19.02	0.98	0.84
3	0.625	19.43	0.57	19.31	0.69	19.14	0.86	0.71
4	0.01	19.56	0.44	19.42	0.58	19.31	0.69	0.57

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.43	0.57	19.31	0.69	19.20	0.80	0.69
1	0.83	19.32	0.68	19.19	0.81	19.11	0.89	0.79
2	1.25	19.20	0.80	19.07	0.93	19.01	0.99	0.91
3	1.67	19.08	0.92	19.00	1.00	18.92	1.08	1.00
4	2.08	19.01	0.99	18.95	1.05	18.84	1.16	1.07



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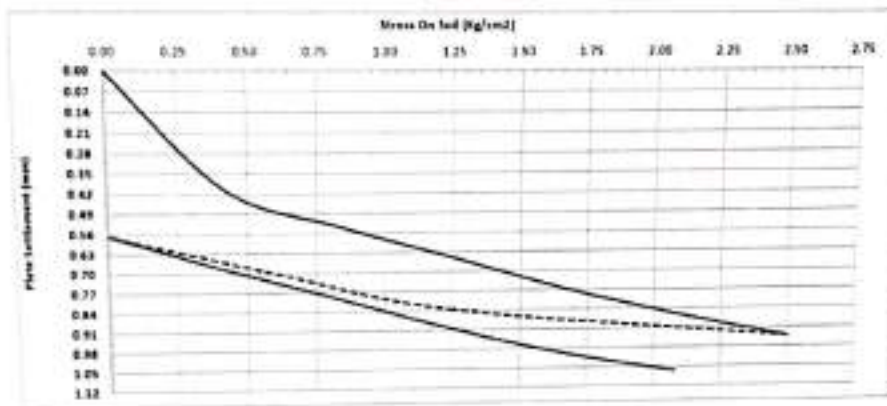


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Project
Test Date
Report Date
Location
Test No.

معمور علي حسن
Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
12/02/2024
13/02/2024
Station 009+110
005

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage (Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.41	0.54	0.65	0.77	0.86	0.94

Unloading (1)	1	2	3	4
Stage (Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.94	0.84	0.71	0.57

D (mm) =	600	S1 (mm) =	0.51	S2 (mm) =	0.76	ΔS =	0.27
Ev1 (MPa) =	(0.75 * D² * ΔS) / (ΔS)						

Ev2/Ev1 =	1.1
-----------	-----

Loading (2)	0	1	2	3	4	5
Stage (Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.57	0.69	0.79	0.91	1.00	1.07

D (mm) =	600	S1 (mm) =	0.77	S2 (mm) =	1.01	ΔS =	0.24
Ev2 (MPa) =	(0.75 * D² * ΔS) / (ΔS)						

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)
ΔS = The difference between S2 and S1 from the maximum loading (mm)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



Company : منصور علي حسن

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4)
- Alexandria to Borg El Arab.

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

Test Location : Station (000+000 to 000+110)

Test Date : 18/01/2024

Report Date : 21/01/2024

Type of soil : ---

Test level : subgrade (+0.5)

Report No. : 59-63

Dear Gentleman,

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

Apparatus

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

Test Procedure

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

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Report

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

Report

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

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	600
- date of measurement	18/01/2024
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
		E_{v1} (MPa)	E_{v2} (MPa)	
1	000+025	178	158	0.9
2	000+050	150	164	1.1
3	000+075	152	191	1.3
4	000+100	147	176	1.2
5	000+110	159	208	1.3

Signature / *Khaled*



Company Name : منصور علي حسن
 Project : Electric Express Train, Al Ain Sakhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
 Test Date : 18/1/2024
 report date : 21/1/2024
 Location : Station 000+025
 Test No. : 001

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.87	0.13	19.82	0.18	19.80	0.20	0.17
2	0.83	19.80	0.20	19.75	0.25	19.70	0.30	0.25
3	1.25	19.71	0.29	19.63	0.38	19.58	0.42	0.36
4	1.67	19.62	0.38	19.51	0.49	19.47	0.53	0.47
5	2.08	19.50	0.50	19.45	0.55	19.40	0.60	0.55
6	2.50	19.42	0.58	19.36	0.64	19.31	0.69	0.64

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.42	0.58	19.36	0.64	19.31	0.69	0.64
2	1.25	19.57	0.43	19.45	0.55	19.37	0.63	0.54
3	0.825	19.66	0.34	19.57	0.43	19.45	0.55	0.44
4	0.01	19.78	0.22	19.65	0.35	19.59	0.41	0.33

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.65	0.35	19.51	0.49	19.50	0.50	0.45
1	0.83	19.51	0.49	19.39	0.61	19.33	0.67	0.59
2	1.25	19.40	0.60	19.28	0.72	19.12	0.88	0.73
3	1.67	19.31	0.69	19.17	0.83	19.05	0.95	0.82
4	2.08	19.18	0.82	19.08	0.92	19.00	1.00	0.91



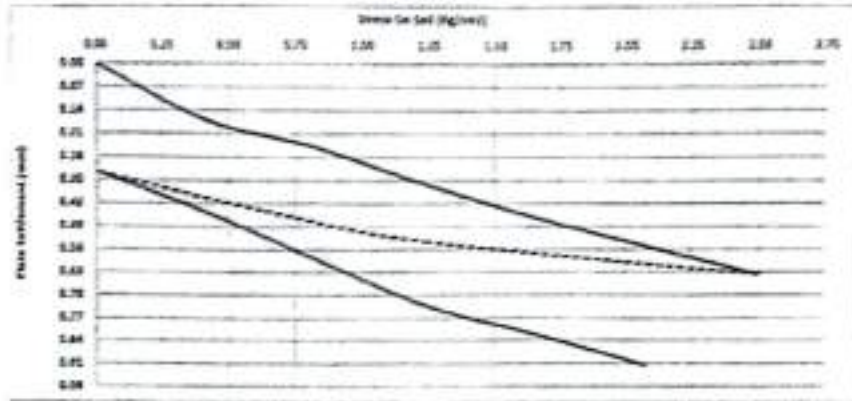
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Company Name : مستشار علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arak
Test Date : 18/1/2024
Report Date : 21/1/2024
Location : Station 501+525
Test No. : 501

Nonresilive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stages (Kg)	0	1186.32	2345.6	3532.5	4719.4	5879.1	7066
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.06	2.50
Settlement (mm)	0.00	0.17	0.25	0.36	0.47	0.55	0.64

UnLoading (1)	1	2	3	4
Stages (Kg)	7066	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.64	0.54	0.44	0.33

D (mm) = 600	S1 (mm) = 0.23	S2 (mm) = 0.46	ΔS = 0.25
E ₁ (MPa) = $(0.75 \cdot D^2) / (4 \cdot \Delta S)$	173		

$$E_v / E_{v1} = 0.9$$

Loading (2)	0	1	2	3	4	5
Stages (Kg)	0	1186.32	2345.6	3532.5	4719.4	5879.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.06
Settlement (mm)	0.33	0.45	0.59	0.73	0.82	0.91

D (mm) = 600	S1 (mm) = 0.56	S2 (mm) = 0.84	ΔS = 0.28
E ₂ (MPa) = $(0.75 \cdot D^2) / (4 \cdot \Delta S)$	156		

E₁ = Modulus of deformation during the loading stage.
E_{v1} = Modulus of deformation during the reloading stage.
D = Plate diameter (mm)

S₁ = The difference between S2 and S1 from the maximum loading result.
ΔS = Difference in settlements corresponding to S1 and S2.



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Company Name : منصور علي حسن
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
 Test Date : 18/1/2024
 report date : 21/1/2024
 Location : Station 000+050
 Test No. : 002

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.95	0.05	19.90	0.10	19.84	0.16	0.10
2	0.83	19.82	0.18	19.75	0.25	19.70	0.30	0.24
3	1.25	19.71	0.29	19.64	0.36	19.60	0.40	0.35
4	1.67	19.58	0.41	19.50	0.50	19.45	0.55	0.49
5	2.08	19.44	0.56	19.40	0.60	19.35	0.65	0.60
6	2.50	19.32	0.68	19.25	0.75	19.20	0.80	0.74

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.32	0.68	19.25	0.75	19.20	0.80	0.74
2	1.25	19.40	0.60	19.31	0.69	19.28	0.72	0.67
3	0.825	19.53	0.47	19.40	0.60	19.35	0.65	0.57
4	0.01	19.67	0.33	19.52	0.48	19.43	0.57	0.48

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.55	0.44	19.40	0.60	19.34	0.66	0.57
1	0.83	19.41	0.59	19.29	0.71	19.20	0.80	0.70
2	1.25	19.30	0.70	19.18	0.82	19.11	0.89	0.80
3	1.67	19.14	0.86	19.07	0.93	19.01	0.99	0.93
4	2.08	19.03	0.97	19.00	1.00	18.93	1.07	1.01



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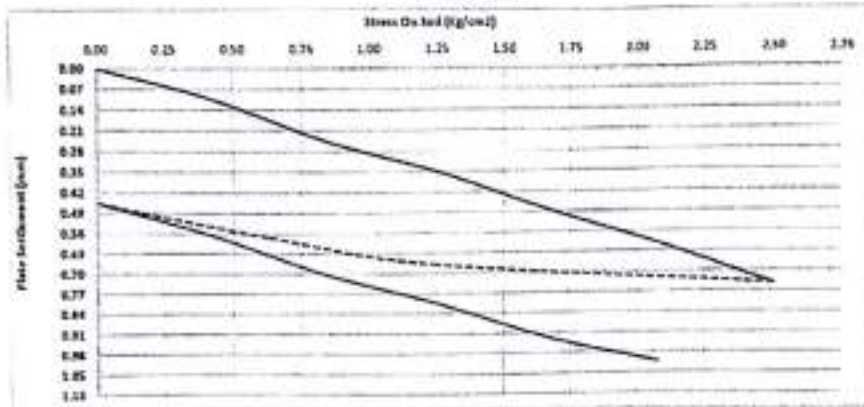


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Company Name
Project
Test Date
report date
Location
Test No.

مشروع خطي حديد
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
: 18/1/2024
: 21/1/2024
: Station 000+050
: 002

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1166.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.10	0.24	0.35	0.49	0.60	0.74

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.74	0.67	0.57	0.46

D (mm) =	600	S1 (mm) =	0.22	S2 (mm) =	0.51	ΔS =	0.29
E _{v1} (MPa) =	(0.75 * D * ΔS) / ΔS						

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1166.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.46	0.57	0.70	0.80	0.93	1.01

Ev2/Ev1 =	1.1
-----------	-----

D (mm) =	600	S1 (mm) =	0.67	S2 (mm) =	0.94	ΔS =	0.27
E _{v2} (MPa) =	(0.75 * D * ΔS) / ΔS						

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

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

D = Plate diameter (mm)

ΔS = The difference between 0.5 and 0.7 from the maximum loading (stress) (kg/cm²)

ΔS = Difference in settlements corresponding to 0.5 and 0.7 from the maximum loading (stress) (mm)



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Company Name : منصور علي حسن
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arzb
 Test Date : 18/1/2024
 report date : 21/1/2024
 Location : Station 000+075
 Test No. : 003

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.86	0.14	19.79	0.21	19.72	0.28	0.21
2	0.83	19.75	0.25	19.70	0.30	19.64	0.36	0.30
3	1.25	19.63	0.37	19.58	0.42	19.50	0.50	0.43
4	1.67	19.51	0.49	19.44	0.56	19.40	0.60	0.56
5	2.08	19.39	0.61	19.31	0.69	19.25	0.75	0.68
6	2.50	19.25	0.75	19.19	0.81	19.10	0.90	0.82

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.25	0.75	19.19	0.81	19.10	0.90	0.82
2	1.25	19.36	0.64	19.30	0.70	19.07	0.93	0.76
3	0.825	19.46	0.54	19.41	0.59	19.13	0.87	0.67
4	0.01	19.57	0.43	19.50	0.50	19.30	0.70	0.54

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.44	0.56	19.39	0.61	19.18	0.82	0.66
1	0.83	19.31	0.69	19.28	0.72	19.07	0.93	0.78
2	1.25	19.20	0.80	19.17	0.83	19.02	0.98	0.87
3	1.67	19.09	0.91	19.03	0.97	18.96	1.04	0.97
4	2.08	19.01	0.99	18.95	1.05	18.90	1.10	1.05



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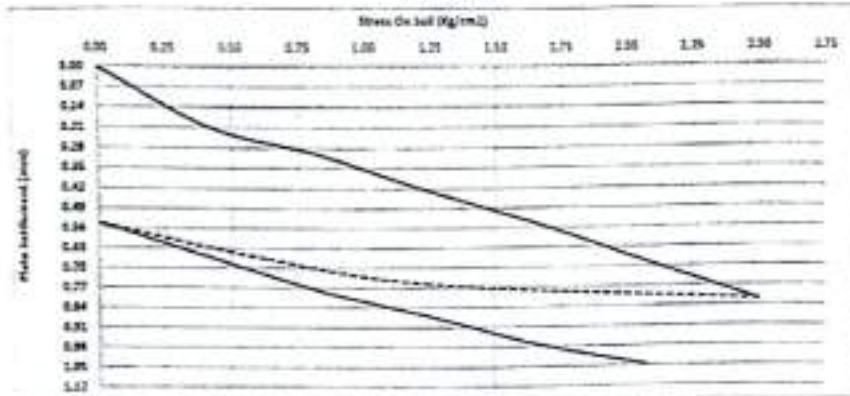


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Test No.

مشروع: خط سيناء
: Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
: 18/1/2024
: 21/1/2024
: Station 000+075
: 003

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5876.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.21	0.30	0.43	0.55	0.68	0.82

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1766	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.82	0.76	0.67	0.01

D (mm) =	600	S1 (mm) =	0.29	S2 (mm) =	0.64	ΔS =	0.29
Ev1 (MPa) =	(0.75/D²)ΔS						152

$$Ev2/Ev1 = 1.3$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5876.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.54	0.66	0.76	0.87	0.97	1.05

D (mm) =	600	S1 (mm) =	0.76	S2 (mm) =	0.90	ΔS =	0.23
Ev2 (MPa) =	(0.75/D²)ΔS						191

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

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



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ahn Sokhira to Mersa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 18/1/2024
report date : 21/1/2024
Location : Station 000+100
Test No. : 004

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1 Settlement mm	Dial 2 Settlement mm	Dial 3 Settlement mm	Average
0	0.00	20.00	20.00	20.00	0.00
1	0.42	19.90	19.83	19.75	0.17
2	0.83	19.77	19.71	19.64	0.29
3	1.25	19.65	19.59	19.50	0.42
4	1.67	19.51	19.44	19.40	0.55
5	2.08	19.40	19.34	19.30	0.65
6	2.50	19.28	19.21	19.14	0.79

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1 Settlement mm	Dial 2 Settlement mm	Dial 3 Settlement mm	Average
1	2.50	19.28	19.21	19.14	0.79
2	1.25	19.42	19.30	19.20	0.69
3	0.825	19.55	19.41	19.32	0.57
4	0.01	19.70	19.54	19.43	0.44

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1 Settlement mm	Dial 2 Settlement mm	Dial 3 Settlement mm	Average
0	0.42	19.62	19.41	19.30	0.56
1	0.83	19.50	19.30	19.19	0.67
2	1.25	19.37	19.19	19.09	0.78
3	1.67	19.26	19.07	19.02	0.86
4	2.08	19.16	19.01	18.95	0.96



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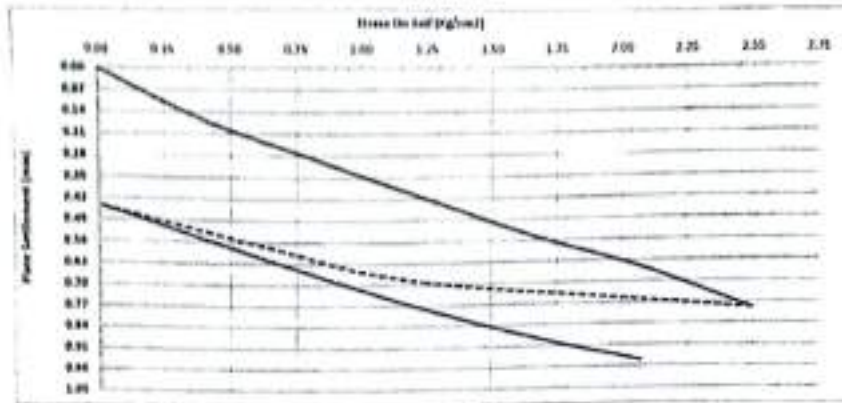


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Test Date
Report Date
Location
Test No.

معمول على
Electric Express Train, Al Ain Sukhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
18/1/2024
21/1/2024
Station 000+100
104

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.17	0.29	0.42	0.55	0.65	0.79

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.79	0.69	0.57	0.44

D (mm) =	600	S1 (mm) =	0.27	S2 (mm) =	0.57	ΔS =	0.30
Ev1 (MPa) =	(0.75*D*ΔS)/ΔS						147

$$Ev2/Ev1 = 1.2$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.44	0.56	0.67	0.79	0.88	0.99

D (mm) =	600	S1 (mm) =	0.65	S2 (mm) =	0.90	ΔS =	0.25
Ev2 (MPa) =	(0.75*D*ΔS)/ΔS						176

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the reloading stage.

D = Plate diameter (mm)

S2 = The difference between S3 and S7 from the maximum loading

ΔS = Difference in settlements corresponding to S3 and S7 from the maximum loading



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Company Name : منصور علي حسن
 Project : Electric Express Train, Al Ain Sakhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
 Test Date : 18/1/2024
 report date : 21/1/2024
 Location : Station 000+110
 Test No. : 005

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.83	0.17	19.80	0.20	19.75	0.25	0.21
2	0.83	19.70	0.30	19.61	0.39	19.55	0.45	0.38
3	1.25	19.57	0.43	19.48	0.52	19.42	0.58	0.51
4	1.67	19.45	0.55	19.40	0.60	19.35	0.65	0.60
5	2.08	19.34	0.66	19.28	0.72	19.21	0.79	0.72
6	2.50	19.15	0.85	19.09	0.91	19.01	0.97	0.91

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.15	0.85	19.09	0.91	19.03	0.97	0.91
2	1.25	19.35	0.64	19.18	0.82	19.10	0.90	0.79
3	0.825	19.48	0.52	19.29	0.71	19.21	0.79	0.67
4	0.01	19.62	0.38	19.40	0.60	19.32	0.68	0.55

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.80	0.50	19.28	0.72	19.21	0.79	0.67
1	0.83	19.29	0.61	19.17	0.83	19.08	0.92	0.79
2	1.25	19.27	0.73	19.06	0.94	19.00	1.00	0.89
3	1.67	19.16	0.84	19.00	1.00	18.95	1.05	0.96
4	2.06	19.07	0.93	18.95	1.05	18.90	1.10	1.03



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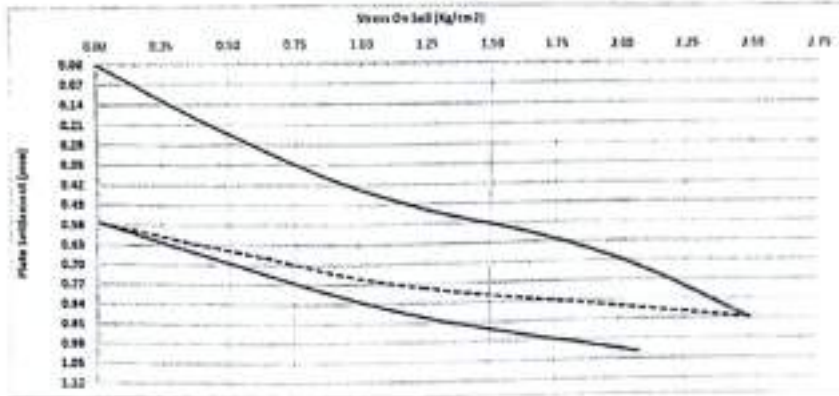


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مختبر علي حسن
1 Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
1 18/11/2024
1 21/11/2024
1 Station 000+110
1 004

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.21	0.38	0.51	0.60	0.72	0.91

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1766	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.91	0.79	0.67	0.55

D (mm) =	600	S1 (mm) =	0.35	S2 (mm) =	0.62	ΔS =	0.20
Ev1 (MPa) =	(0.75 * D³) / (ΔS * A²)						199

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.55	0.67	0.79	0.89	0.96	1.03

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

D (mm) =	600	S1 (mm) =	0.76	S2 (mm) =	0.98	ΔS =	0.21
Ev2 (MPa) =	(0.75 * D³) / (ΔS * A²)						208

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Reloading stage.
D = Plate diameter (mm)
A² = The difference between 0.3 and 0.7 from the maximum loading (mm²)
ΔS = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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Company : مكتب معامل الإستشارات الهندسية
منصور علي حسن

Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4)
- Alexandria to Borg Al Arab.
Subject : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements
Test Location : Station (316+400 to 316+560)
Test Date : 30/12/2023
Report Date : 01/01/2024
Type of soil : -----
Test level : Sub grade
Report No. : 034-39

Dear Gentleman,

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

Apparatus

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

Test Procedure

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

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Report

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

Report

Type of Soil : Sub grade

- Job Requirement : $E_{v2} > 80 \text{ MPa}$

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	600
- date of measurement	30/12/2023
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	E_{v2}/E_{v1} Ratio
		E_{v1} (MPa)	E_{v2} (MPa)	
1	316+413	142	176	1.2
2	316+438	129	178	1.4
3	316+463	146	216	1.5
4	316+488	136	183	1.3
5	316+513	152	234	1.5
6	316+538	159	159	1.0

Signature

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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+413
Test No. : 006

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.78	0.22	19.70	0.30	19.62	0.38	0.30
2	0.83	19.65	0.35	19.57	0.43	19.51	0.49	0.42
3	1.25	19.50	0.50	19.42	0.58	19.36	0.64	0.57
4	1.67	19.39	0.61	19.31	0.69	19.24	0.76	0.69
5	2.08	19.25	0.75	19.19	0.81	19.15	0.85	0.80
6	2.50	19.13	0.87	19.04	0.96	18.96	1.04	0.96

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.13	0.87	19.04	0.96	18.96	1.04	0.96
2	1.25	19.26	0.74	19.10	0.90	19.03	0.97	0.87
3	0.625	19.37	0.63	19.21	0.79	19.14	0.86	0.76
4	0.01	19.56	0.44	19.38	0.62	19.29	0.71	0.59

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.43	0.57	19.25	0.75	19.18	0.82	0.71
1	0.83	19.31	0.69	19.14	0.86	19.07	0.93	0.83
2	1.25	19.19	0.81	19.03	0.97	19.00	1.00	0.93
3	1.67	19.07	0.93	18.94	1.06	18.88	1.12	1.04
4	2.08	18.95	1.05	18.86	1.14	18.79	1.21	1.13



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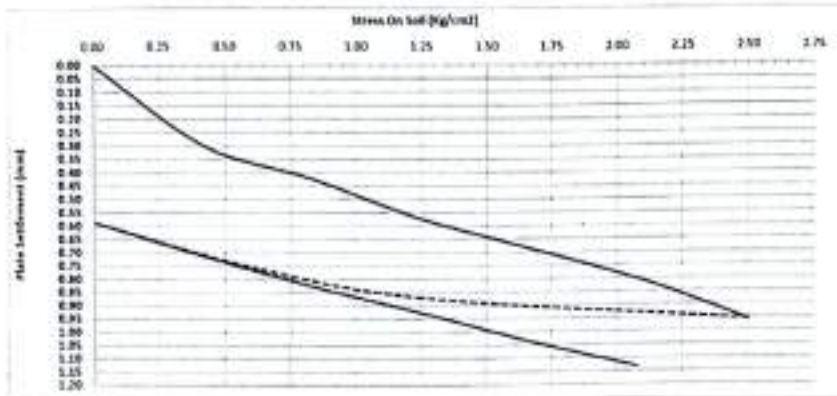
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Company Name : **معمور على حسن**
Project : **Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.**
Test Date : **30/12/2023**
Report date : **1/1/2024**
Location : **Station 316+413**
Test No : **008**

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.30	0.42	0.57	0.69	0.80	0.96

Unloading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.95	0.87	0.76	0.59

D (mm) =	600	S1 (mm) =	0.40	S2 (mm) =	0.71	ΔS =	0.31
Ev1 (MPa) =	(0.75*D³*Δσ)/ΔS						142

Ev2/Ev1 = 1.2

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.59	0.71	0.83	0.93	1.04	1.13

D (mm) =	500	S1 (mm) =	0.80	S2 (mm) =	1.06	ΔS =	0.26
Ev2 (MPa) =	(0.75*D³*Δσ)/ΔS						176

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



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sector to Marsa Matruh Priority Sector (A) - Alexandria to Borg El Jebel
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+438
Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	25.00	0.00	25.00	0.00	25.00	0.00	0.00
1	0.42	19.88	0.12	19.85	0.13	19.90	0.125	0.125
2	0.83	19.75	0.25	19.69	0.31	19.82	0.29	0.28
3	1.25	19.61	0.39	19.54	0.46	19.49	0.51	0.45
4	1.67	19.46	0.54	19.40	0.60	19.34	0.66	0.60
5	2.08	19.32	0.68	19.28	0.72	19.20	0.79	0.73
6	2.50	19.20	0.80	19.13	0.87	19.02	0.90	0.86

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.20	0.80	19.13	0.87	19.02	0.90	0.86
2	1.25	19.35	0.65	19.26	0.74	19.08	0.84	0.74
3	0.625	19.44	0.56	19.30	0.70	19.20	0.77	0.68
4	0.01	19.62	0.38	19.42	0.59	19.22	0.68	0.54

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.48	0.52	19.29	0.71	19.21	0.78	0.67
1	0.83	19.35	0.65	19.18	0.82	19.02	0.90	0.79
2	1.25	19.21	0.79	19.07	0.93	19.00	0.99	0.90
3	1.67	19.10	0.90	18.98	1.02	18.82	1.08	1.00
4	2.08	19.02	0.98	18.90	1.09	18.84	1.16	1.08



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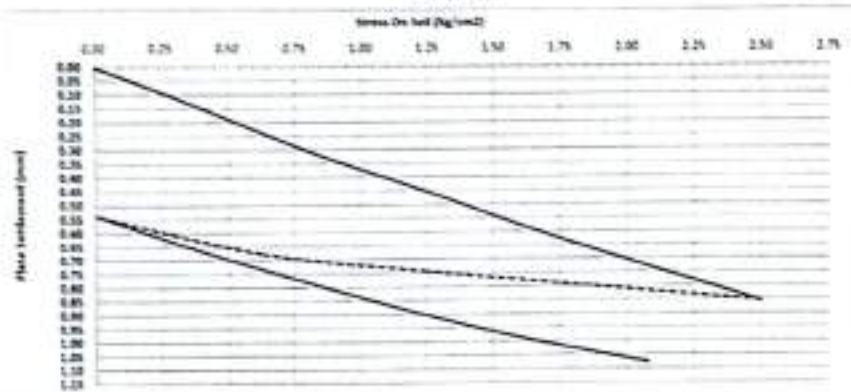
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Company Name : مصر علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 30/12/2023
Report date : 1/1/2024
Location : Station 316+438
Test No. : 007

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.18	0.32	0.45	0.60	0.73	0.86

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1766	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.86	0.74	0.68	0.54

D (mm) =	600	S1 (mm) =	0.28	S2 (mm) =	0.63	ΔS =	0.34
Ev1 (MPa) =	(0.75 * D³) / (ΔS * 128)						

$$Ev2/Ev1 = 1.4$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.54	0.67	0.79	0.90	1.00	1.08

D (mm) =	600	S1 (mm) =	0.77	S2 (mm) =	1.01	ΔS =	0.25
Ev2 (MPa) =	(0.75 * D³) / (ΔS * 128)						

Ev1 = Modulus of deformation during the loading stage.
Ev2 = Modulus of deformation during the Resisting stage.
D = Plate diameter (mm)
ΔS = The difference between S2 and S1 from the maximum loading (mm) (kg/cm²)
ΔS = Difference in settlements corresponding to S2 and S1 from the maximum loading (mm)



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arabi
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+463
Test No. : 008

Nonrepetitive Static Plate Load Tests of Soils DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.70	0.30	19.63	0.37	19.56	0.44	0.37
2	0.83	19.59	0.41	19.51	0.49	19.44	0.56	0.49
3	1.25	19.43	0.57	19.38	0.62	19.31	0.69	0.63
4	1.67	19.31	0.69	19.27	0.73	19.20	0.80	0.74
5	2.08	19.19	0.81	19.12	0.88	19.06	0.94	0.88
6	2.50	19.08	0.92	19.01	0.99	18.95	1.05	0.99

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.08	0.92	19.01	0.99	18.95	1.05	0.99
2	1.25	19.20	0.80	19.13	0.87	19.01	0.99	0.89
3	0.625	19.35	0.65	19.28	0.72	19.12	0.88	0.75
4	0.01	19.46	0.54	19.36	0.64	19.24	0.76	0.65

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.32	0.68	19.25	0.75	19.13	0.87	0.77
1	0.83	19.20	0.80	19.14	0.86	19.06	0.94	0.87
2	1.25	19.11	0.89	19.05	0.95	18.98	1.02	0.95
3	1.67	19.03	0.97	18.94	1.06	18.91	1.09	1.04
4	2.08	18.97	1.03	18.90	1.10	18.83	1.17	1.10



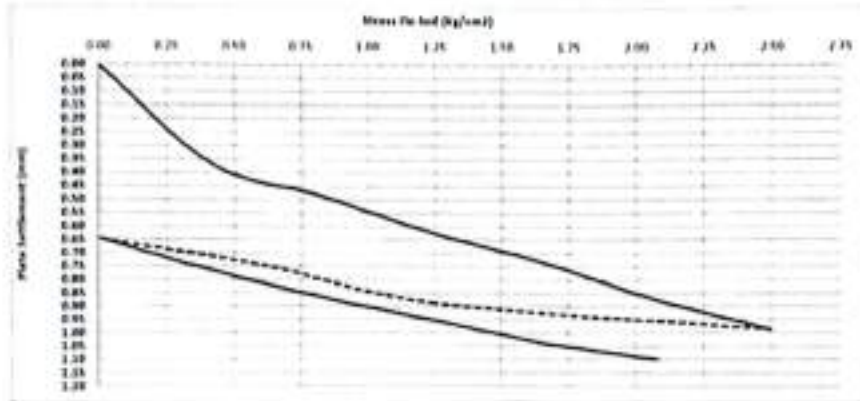
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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Solhwa to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
Test Date : 30/12/2023
Report Date : 1/1/2024
Location : Station 316+463
Test No. : 028

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (t)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.37	0.49	0.63	0.74	0.88	0.99

UnLoading (t)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.99	0.89	0.75	0.65

D (mm) =	600	S1 (mm) =	0.46	S2 (mm) =	0.77	ΔS =	0.30
Ev1 (MPa) =	$(D/75)^2 \cdot \Delta s / \Delta s$						

$$Ev2/Ev1 = 1.5$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.65	0.77	0.87	0.95	1.04	1.10

D (mm) =	600	S1 (mm) =	0.85	S2 (mm) =	1.05	ΔS =	0.20
Ev2 (MPa) =	$(D/75)^2 \cdot \Delta s / \Delta s$						

Ev1 = Modulus of deformation during the loading stage

Ev2 = Modulus of deformation during the Reloading stage

D = Plate diameter (mm)

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

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



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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+488
Test No. : 009

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.72	0.28	19.61	0.39	19.53	0.48	0.38
2	0.83	19.56	0.44	19.43	0.51	19.40	0.60	0.52
3	1.25	19.41	0.59	19.32	0.68	19.27	0.73	0.67
4	1.67	19.29	0.71	19.20	0.80	19.15	0.85	0.79
5	2.08	19.17	0.83	19.05	0.95	19.00	1.00	0.93
6	2.50	19.06	0.94	18.97	1.03	18.91	1.09	1.02

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.06	0.94	18.97	1.03	18.91	1.09	1.02
2	1.25	19.15	0.85	19.03	0.97	18.97	1.03	0.95
3	0.625	19.32	0.68	19.11	0.89	19.08	0.92	0.83
4	0.01	19.41	0.59	19.25	0.75	19.15	0.85	0.73

Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.29	0.71	19.16	0.84	19.09	0.91	0.82
1	0.83	19.17	0.83	19.07	0.93	19.00	1.00	0.92
2	1.25	19.04	0.96	18.98	1.02	18.91	1.09	1.02
3	1.67	18.95	1.05	18.87	1.13	18.80	1.20	1.13
4	2.08	18.88	1.12	18.81	1.19	18.70	1.30	1.20



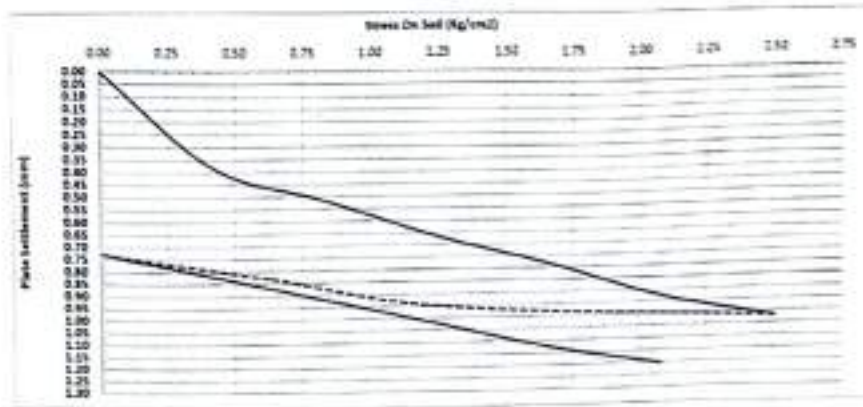
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Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+488
Test No. : 009

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7068
Stress (Kg/cm2)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.38	0.52	0.67	0.79	0.93	1.02

UnLoading (1)	1	2	3	4
Stage(Kg)	7068	3533	1788	0
Stress (Kg/cm2)	2.50	1.25	0.825	0.21
Settlement (mm)	1.02	0.95	0.83	0.73

D (mm) =	600	S1 (mm)=	0.43	S2(mm)=	2.81	ΔS =	0.32
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS						
	136						

$$Ev2/Ev1 = 1.3$$

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm2)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.73	0.82	0.92	1.02	1.13	1.20

D (mm) =	600	S1 (mm)=	0.90	S2(mm)=	1.14	ΔS =	0.24
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS						
	183						

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



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Company Name : منصور علي حسن
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.
 Test Date : 30/12/2023
 report date : 1/1/2024
 Location : Station 316+513
 Test No. : 010

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.56	0.44	19.51	0.49	19.48	0.52	0.48
2	0.83	19.43	0.57	19.38	0.62	19.29	0.71	0.63
3	1.25	19.31	0.69	19.24	0.76	19.18	0.82	0.76
4	1.67	19.20	0.80	19.12	0.88	19.06	0.94	0.87
5	2.08	19.09	0.91	19.03	0.97	18.94	1.06	0.98
6	2.50	19.02	0.98	18.92	1.08	18.85	1.15	1.07

Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.02	0.98	18.92	1.08	18.85	1.15	1.07
2	1.25	19.10	0.90	18.98	1.02	18.91	1.09	1.00
3	0.625	19.23	0.77	19.07	0.93	19.01	0.99	0.90
4	0.01	19.35	0.65	19.15	0.85	19.09	0.91	0.80

Loading Stage (2)

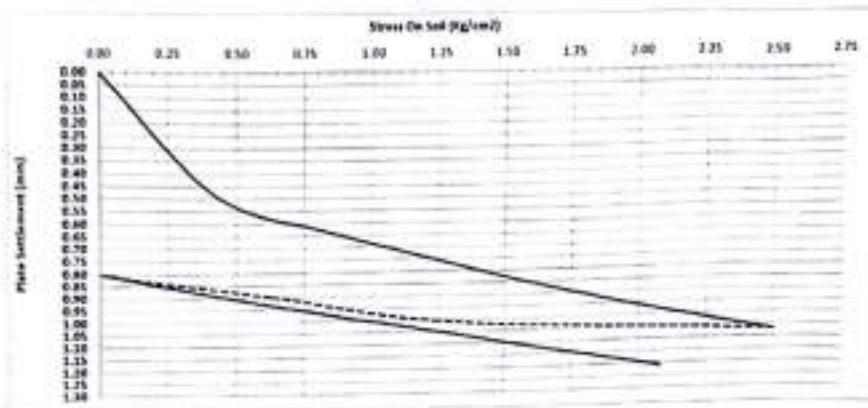
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.24	0.76	19.07	0.93	19.02	0.98	0.89
1	0.83	19.13	0.87	19.00	1.00	18.95	1.05	0.97
2	1.25	19.02	0.98	18.94	1.06	18.90	1.10	1.05
3	1.67	18.93	1.07	18.87	1.13	18.81	1.19	1.13
4	2.08	18.85	1.15	18.80	1.20	18.72	1.28	1.21



Company Name
Project
Test Date
report date
Location
Test No.

مشروع علي حسن :
Electric Express Train, Al Ain Sokhna to Marsa Matruh Priority Sector (4) - Alexandria to Borg El Arab.
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1/1/2024
Station 316+513
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Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1	7065
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.48	0.63	0.76	0.87	0.98	1.07

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	1.07	1.00	0.90	0.80

D (mm) =	600	S1 (mm) =	0.60	S2 (mm) =	0.88	ΔS =	0.29
E _{v1} (MPa) =	(0.75*D*Δσ)/ΔS						152

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

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.80	0.89	0.97	1.05	1.13	1.21

D (mm) =	600	S1 (mm) =	0.96	S2 (mm) =	1.15	ΔS =	0.19
E _{v2} (MPa) =	(0.75*D*Δσ)/ΔS						234

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

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

D = Plate diameter (mm)

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

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



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www.cel-egypt.com

Company Name : منصور علي حسن
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab,
Test Date : 30/12/2023
report date : 1/1/2024
Location : Station 316+538
Test No. : 011

Nonrepetitive Static Plate Load Tests of Soils
DIN 18134

Data sheet

Loading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.42	19.96	0.04	19.87	0.13	19.82	0.18	0.12
2	0.83	19.84	0.16	19.77	0.23	19.70	0.30	0.23
3	1.25	19.73	0.27	19.68	0.32	19.61	0.39	0.33
4	1.67	19.61	0.39	19.54	0.46	19.46	0.54	0.46
5	2.08	19.50	0.50	19.42	0.58	19.35	0.65	0.58
6	2.50	19.39	0.61	19.31	0.69	19.26	0.74	0.68

Unloading Stage (1)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	2.50	19.39	0.61	19.31	0.69	19.26	0.74	0.68
2	1.25	19.49	0.51	19.40	0.60	19.31	0.69	0.60
3	0.625	19.62	0.38	19.51	0.49	19.40	0.60	0.49
4	0.01	19.83	0.17	19.65	0.35	19.53	0.47	0.33

Loading Stage (2)

Loading	Stress Kg/cm ²	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.42	19.72	0.28	19.53	0.47	19.39	0.61	0.45
1	0.83	19.58	0.42	19.41	0.59	19.28	0.72	0.58
2	1.25	19.45	0.55	19.30	0.70	19.17	0.83	0.69
3	1.67	19.32	0.68	19.19	0.81	19.06	0.94	0.81
4	2.08	19.20	0.80	19.08	0.92	18.97	1.03	0.92



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Company Name :

Project :

Test Date :

report date :

Location :

Test No. :

منصور علي حسن :

Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (4) - Alexandria to Borg El Arab.

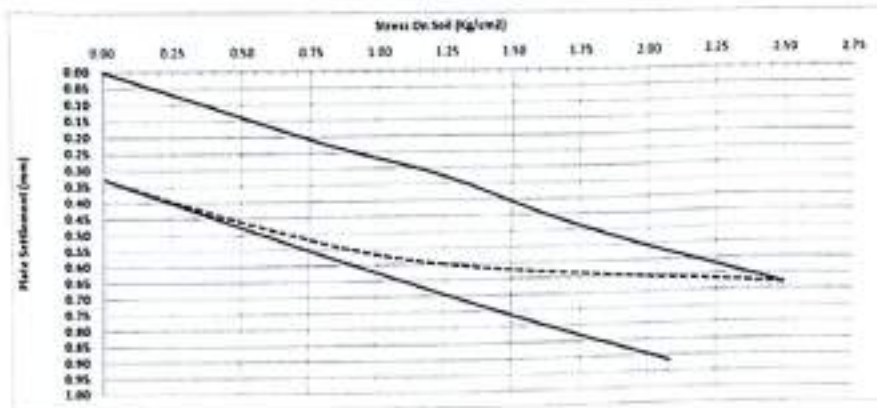
30/12/2023

1/1/2024

Station 316+338

011

Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	1186.32	2345.6	3532.5	4719.4	5878.1	7005
Stress (Kg/cm²)	0.00	0.42	0.83	1.25	1.67	2.08	2.50
Settlement (mm)	0.00	0.12	0.23	0.33	0.46	0.58	0.68

UnLoading (1)	1	2	3	4
Stage(Kg)	7065	3533	1768	0
Stress (Kg/cm²)	2.50	1.25	0.625	0.01
Settlement (mm)	0.68	0.60	0.49	0.33

D (mm) =	600	S1 (mm) =	0.21	S2 (mm) =	0.49	ΔS =	0.28
Ev1 (MPa) =	(D/75)² * ΔS / ΔS						
	159						

Ev2/Ev1 =	1.0
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Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	1186.92	2345.6	3532.5	4719.4	5878.1
Stress (Kg/cm²)	0.01	0.42	0.83	1.25	1.67	2.08
Settlement (mm)	0.33	0.45	0.58	0.69	0.81	0.92

D (mm) =	600	S1 (mm) =	0.55	S2 (mm) =	0.83	ΔS =	0.28
Ev2 (MPa) =	(D/75)² * ΔS / ΔS						
	159						

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

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

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



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